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# Philosophy, Scientific Knowledge, and Concept Formation in Geulincx and Descartes

*Filosofie, wetenschappelijke kennis en begripsvorming  
bij Geulincx en Descartes*

*(met een samenvatting in het Nederlands)*

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## Abbreviations

In the notes and the text, I use the following abbreviations for editions, works containing texts, and individual texts. I refer to the volume of Land's edition of Geulincx' *Opera* with roman numerals.

<i>AL</i>	Geulincx, <i>Extensive annotations on Descartes' Principles</i> , in Geulincx 1891-93, I 361-521.
<i>Ann.</i>	Refers to Geulincx' annotations to one of his writings.
<i>AT</i>	Descartes 1964-74 (Ed. C. Adam and P. Tannery).
<i>CSM</i>	Descartes 1984-91, vol. 1 and 2 (Transl. of philosophical writings, John Cottingham, Robert Stoothoff, and Dugald Murdoch).
<i>CSMK</i>	Descartes 1984-91, vol. 3 (Philosophical correspondence).
<i>Disp.</i>	Geulincx, <i>Disputations</i> , in Geulincx 1891-93, II 459-520, and III 273-360.
<i>Ethics</i>	Geulincx, <i>Ethics</i> I (1665); <i>Ethics</i> II-VI (1675), in Geulincx 1891-93, III 1-271.
<i>Logic</i>	Geulincx, <i>Logic</i> (1661), in Geulincx 1891-93, I 165-506.
<i>Method</i>	Geulincx, <i>Method of finding arguments</i> (1662), in Geulincx 1891-93, II 1-111.
<i>MP</i>	Geulincx, <i>Peripatetic metaphysics</i> (first published 1691), in Geulincx 1891-93, II 199-265, Ann. II 300-310.
<i>MV</i>	Geulincx, <i>True metaphysics</i> (first published 1691), in Geulincx 1891-93, II 139-198, Ann. II 266-300.
<i>Oratio I</i>	Geulincx, <i>First oration</i> (inaugural address held on 16 December 1652, published 1653), in Geulincx 1891-93, I 9-66.
<i>Oratio II</i>	Geulincx, <i>On removing accretions from and polishing the disciplines</i> (inaugural address held on 14 October 1662, published 1662), in Geulincx 1891-93, I 149-164.
<i>Oratio III</i>	Geulincx, <i>About keeping away the contempt caused by familiarity with the best things, especially with respect to the disciplines</i> (inaugural address held on 9 November 1665, published 1665), in Geulincx 1891-93, II 123-136.
<i>PF</i>	Geulincx, <i>False physics</i> , in Geulincx 1891-93, II 313-367, Ann. II 447-450.
<i>PV</i>	Geulincx, <i>True physics</i> (first published 1688), in Geulincx 1891-93, II 368-446, Ann. II 450-457.
<i>Saturnalia</i>	Geulincx, <i>Saturnalia</i> (1665), in Geulincx 1891-93, I 1-147.



## Introduction

After Descartes' death in 1650 his philosophy came to dominate intellectual life not only in the Low Countries but also in Western Europe as a whole.<sup>1</sup> Indeed, in the second half of the seventeenth century, Cartesian philosophy became a common phenomenon at Dutch universities, and a force to be reckoned with. It was, moreover, widely spread on the Continent and on the British Isles. Many regarded themselves as Cartesians, were viewed as Cartesians, or, at least, advanced views that were considered Cartesian. Add to this that followers had to defend his philosophy from criticisms Descartes never had to consider. Their response often went far beyond anything Descartes said or meant to say. In fact, philosophers who conceived of themselves as Cartesians rarely left his doctrine unaltered.

These adjustments were not only caused by the novelty of the criticisms to which Cartesian philosophy became exposed, but also found their roots in Descartes' own texts. Although on a superficial reading Descartes' philosophy appears to be coherent and well thought out, a closer look shows that many of his views are insufficiently elaborated, that the relations between elements of his philosophy are often weak, and that his philosophy raises many questions to which it has no answer. A case in point is Descartes' notion of 'idea'. His view of 'idea' caused many debates in the second half of the seventeenth century, most famously between Nicolas Malebranche (1638-1715) and Antoine Arnauld (1612-1694).<sup>2</sup> They show that even on such a central notion as that of 'idea' Descartes is more ambiguous than it appears.

Moreover, although Descartes presents his philosophy as a unity in which all elements are dependent on one another, this need not actually be the case. The reception of his philosophy shows that the various components of his philosophy could be employed separately, without any firm connection with others. In fact, in early modern reactions to Descartes it was common to choose certain elements of his system while rejecting others. Cartesian medicine was often employed independently from Cartesian physics; Cartesian physics independently from Cartesian epistemology; and all of those independently from Cartesian metaphysics.

Given that Descartes' philosophy was interpreted in so many different ways and adapted to such various contexts, it is convenient to classify the responses to Descartes' philosophy into five approaches: there were 1) those who follow Descartes in all respects, so were perfectly orthodox Cartesians; 2) those who choose one or several elements of Descartes' philosophy (such as physics), but disregard or reject other parts;

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<sup>1</sup> For Cartesianism in general see Bouillier 1868 and Schobinger 1993, 349-445; more particularly, for Cartesianism in the Netherlands, Verbeek 1992 and McGahagan 1976.

<sup>2</sup> On those debates particularly see Jolley 1990, Nadler 1989 and Nadler 1992.

3) those who criticize specific points in Descartes while retaining the overall structure of his philosophy and its fundamental tenets; 4) those who combine fundamental tenets of Descartes with other philosophical positions; 5) those who reject his philosophy completely or for the most part. Although not all of these responses may be mutually exclusive, to regard them as such is useful for getting a grip on the ways in which Descartes' philosophy was received.

The first approach is rare. Most philosophers found some form of adaptation necessary. The second type of response is, by contrast, fairly common. In France and England, for instance, many were acquainted with Cartesian philosophy through Jacques Rohault's (1618-1672) presentation of Cartesian physics. In fact, Rohault's *System of natural philosophy* (*Traité de physique*, 1671; Latin translation, 1674) became the leading university textbook in physics. Although it is unequivocally clear that Rohault wanted to be an orthodox Cartesian, he actually offered a probabilistic physics without (Cartesian) metaphysics. In his view, the explanations of natural philosophy are only probable and subject to constant revision. To support Cartesian physics he appeals to experience (*expérience*) and experimental practice. The same empiricist approach to Cartesian natural philosophy could already be found in *The foundations of physics* (*Fundamenta physices*, 1646) of the Dutch philosopher Henricus Regius (1598-1679), who was one of Descartes' early disciples. Although he followed Descartes in physics, he rejected his metaphysics as a whole, claiming, among other things, that there are no innate ideas but that all concepts come from experience, and that the existence of the material world can only be known by revelation.<sup>3</sup> Representatives of the third approach wanted to maintain the overall structure of Descartes' thought, and adhered to fundamental tenets of his physics, epistemology and metaphysics, even though they criticised specific points and made significant alterations to some components of Cartesian philosophy. French Cartesians like Robert Desgabets (1610-1678) and Pierre-Sylvain Régis (1632-1707), rejected fundamental doctrines like that of the existence of a pure intellect and innate ideas but do endorse mind-body dualism, the principle of clarity and distinctness, and Cartesian mechanical physics.

Malebranche is a good example of the fourth type of response. Although it is clear that part of his metaphysics and especially his physics are of Cartesian origin, he adapted Descartes' philosophy to his religiously inspired views. He attempted to transform Cartesian philosophy as a whole by synthesizing the teachings of Descartes with Augustine. Much in Malebranche's philosophy concerns accordingly natural theology. This is clearly a position which Descartes rejected, given the fact that he insists on separating philosophy from theology. Others accommodated Cartesianism with Aristotelian philosophy, either to make it suitable for teaching purposes or to fill in gaps in those parts in Descartes' 'system' that are lacking. Finally, the fifth type of response is

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<sup>3</sup> See Verbeek 2000.

exemplified by Thomas Hobbes (1588-1679) and Pierre Gassendi (1592-1655), who reject Descartes' philosophy almost entirely.

The fact that Descartes' philosophy was so differently interpreted and adjusted forms a challenge — there is no single model that can be applied to the various 'Cartesianisms' of the seventeenth century — but also creates an opportunity, namely, that of developing new perspectives on Descartes' own thought. Studies of the Arnauld-Malebranche debates on Descartes' notion of 'idea' showed how ambiguous that notion actually is in Descartes. And investigations of the reception of Descartes' physics made it clear to what extent his physics could be founded on a completely different ontology, like atomism.

In that respect the Low Countries constitute an excellent laboratory, especially Leiden University. In 1644, the Leiden philosopher Adriaan Heereboord (1614-1661) began promoting Descartes' philosophy in his lessons and disputations. He was joined by the brilliant Johannes de Raey (1622-1702) and the Cartesian theologian Abraham Heidanus (1597-1678). By the end of the 1650s, the former Louvain professor in philosophy Arnout Geulincx (1624-1669) arrived in Leiden. In the 1660s, Geulincx taught a highly original philosophy, which, although clearly Cartesian in inspiration, was also concerned with issues that do not originate in Descartes. His philosophy is particularly relevant to study for two reasons. First, he was probably the first to publish a more or less 'Cartesian' philosophy that is systematically thought out and embraces all four disciplines that were considered to belong to philosophy at the time, that is, logic, metaphysics, physics and ethics. Second, he continuously discusses the relation between the new philosophy and the dominant Aristotelian philosophy.

One of Geulincx' main themes is how the new philosophy affects and alters the notion of philosophy and scientific knowledge as a whole. The dominant university philosophy was Aristotelianism, which came with a specific notion of philosophy, as knowledge of the ultimate principles and causes of things, and of scientific knowledge, as demonstrative knowledge of properties of things. Descartes' mechanistic philosophy abolished many of the Aristotelian explanatory concepts in physics. He offers, in fact, a completely new view of nature, in which those concepts make no sense whatsoever. But what is left or can be maintained of the Aristotelian notion of philosophy and scientific knowledge? Although Descartes sometimes touches upon this issue, he nowhere discusses it explicitly. Geulincx, by contrast, focuses on the conception of philosophy and scientific knowledge, and draws on, and is in debate with, the Aristotelian tradition. In this context, he also deals with the question as to what extent reality can be known as it is in itself, as that was generally considered the ultimate objective of philosophy. This leads to the two key questions of this study: First, what does Geulincx do with the received views of philosophy and scientific knowledge? Second, what does that teach us about Descartes?

To answer these questions, I focus on four points. First, in what ways did Descartes and Geulincx assess the dominant Aristotelian philosophy of their times? Second, did

they develop a new understanding of philosophy and scientific knowledge? Third, what is their account of concept formation? Fourth, can reality be known as it is in itself? An answer to these questions will not only yield a fuller, and new, picture of Geulincx' philosophy, but will also throw new light on Descartes' philosophy.

This study is accordingly concerned with a detailed analysis of Geulincx' philosophy on the four points mentioned. As is clear from these points, the perspective of this study is primarily epistemological-metaphysical. I will therefore not extensively discuss Geulincx' ethics. His ethics will only be discussed in so far as it is needed for other purposes or to draw interesting parallels. Likewise, Geulincx' logic will only be discussed in so far as it is relevant for his theory of scientific knowledge and the formation of concepts. And the same goes for his natural theology and theory of mind.

This study is divided into four parts concerning the points mentioned, which consist of nine chapters altogether. Part I is composed of two chapters devoted to the theory of error. This is an important theme in the philosophy of Geulincx, and connects the various parts of his epistemology (and philosophy). In Chapter 1, it will become clear that the background of the theories of error of Bacon, Descartes, and Geulincx is an attack on Aristotelian philosophy in particular and common sense philosophy in general; and that all of them want to replace it with another type of (natural) philosophy and view of nature. In fact, their claim is that the way in which we experience the world does not accurately reflect objective reality. Particularly Bacon and Geulincx argue against the use of Aristotelian explanatory concepts as being based on the ordinary way of perceiving the world; Aristotelianism is, in their view, a common sense philosophy, which does not concern the world-in-itself but the world-as-experienced. We err if we regard common sense knowledge of the world as accurately 'picturing' the world outside the mind; which is precisely what is wrong with Aristotelian philosophy. Apart from this issue, also the way in which Descartes and Geulincx respond to Aristotelian philosophy will be compared in this chapter. The main point is that Geulincx is more consistently and radically opposed to Aristotelianism than Descartes (and some other Cartesians, for that matter).

In Chapter 2, I point out that Geulincx adopted from Descartes the view that wisdom, and thereby philosophy, consists in judging correctly. This is connected to Descartes' original theory of judgement, which is one of the components of his theory of error, the other being the theory of the prejudices. These two theories are discussed in detail in this chapter. Because of the fact that the freedom of the will is central to Descartes' conception of judgement (or belief-formation), the chapter commences with a comparison of Descartes' and Geulincx' account of the will. Apart from the fact that they agree that the will plays a vital role in a judgement, they have different views on important points of the theory of will, action and cognition. Their differences on the theory of cognition is the object of discussion in part three of this volume. Again, the theory of judgement is crucial for Geulincx' notion of philosophy. He explains that it is the will that refers a cognition to external reality or to the mind. Error arises when a

cognition that does not represent something outside the mind is nonetheless referred to it. This happens, for example, when a perception of red is referred to an apple, while true philosophy shows that sensory cognitions are mental phenomena only. Geulincx calls sensory cognitions perceptual forms of thought (*species sensibilis*) and explains that they are non-representational. Unlike Descartes, who sometimes argues for the same position as regards sense perceptions, Geulincx discerns also logical forms of thought (which he refers to by the scholastic term *species intelligibilis*) and claims that they are non-representational as well. The whole notion of logical form cannot be found in Descartes. Finally, Geulincx explains that human beings are wise when they refer both kinds of forms of thought to the mind only, even though they are strongly inclined to refer them to reality, that is, they are beset with prejudices to refer them to reality.

One of the significant conclusions of the first part is that Geulincx' does not reject Aristotelian logic in its entirety. In fact, he retains its fundamental components, including the Aristotelian philosophy of science. Because one of the aims of this study is to determine the epistemological status of scientific knowledge in Geulincx, it is important to know what precisely his conception of scientific knowledge is. Part II therefore consists of two chapters devoted to the theory of scientific knowledge, one on the conception of science in Aristotle, later Aristotelianism, and Descartes, and another on Geulincx' views of it. Central to Aristotle's conception of scientific knowledge is the fact that he makes a distinction between knowledge of the principles and subjects of scientific assertions and knowledge of the properties to be proved of those subjects. He emphasizes that scientific knowledge concerns only properties; it is nothing other than knowing with absolute certainty, through a demonstration, why a unique property belongs to a subject. Aristotle, and later Aristotelians, use, moreover, an intricate technical vocabulary for explaining scientific knowledge. None of this can be found in Descartes. By contrast, Geulincx' view of scientific knowledge converges with that of Aristotelian philosophy. However, his elaboration of the theory of the logical consequence – which is central to the scientific demonstration – may show signs of the influence of Descartes. Like Descartes, Geulincx holds that science concerns necessary logical relations between concepts. He explains that through his innovative theory of 'logical containment'.

But how do we acquire the concepts that function in scientific demonstrations? That will be the object of study in part III, which is devoted to Geulincx' theory of cognition and concept formation. Before discussing Geulincx' theory, I deal with Descartes' theory of ideas in Chapter 5. This is necessary because Geulincx often uses the term 'idea' to characterize his philosophy. The question therefore is whether his view of 'idea' resembles that of Descartes. Descartes' conception of idea, however, is ambiguous. He uses it for virtually any kind of cognition. When he is more specific, however, he explains that ideas are mental representations, which, as will be shown, represent by resembling their objects. The central issue of this chapter in turn is whether

also sensory cognitions represent external objects by resembling them. This appears to be the case. As a result, it can be said that Descartes conflates concepts with images.

Geulincx, by contrast, uses a completely different notion of ‘idea’, which belongs to the Platonic tradition. In Chapter 6, his notion of idea is examined, together with his remarks on kinds of cognition. For Geulincx, an ‘idea’ is a design or model that expresses the essence of a thing. God used them to create the world. Although man has only ideas of the acts of his own mind, he can also access the ideas in God’s mind. It is clear then that ideas are not sensory perceptions (or perceptual forms of thought); ideas are pure thoughts and complete concepts of (the essences of) things. Indeed, Geulincx thinks that sensory perceptions as well as logical forms of thought are non-representational, both of which he calls ‘species’. The dichotomy idea-species is consequently very important to Geulincx. This, however, is not the only classification of cognitions to be found in Geulincx. He also divides them in four classes: 1) sensory cognition; 2) experience; 3) doctrine (*doctrina*); 4) wisdom. I will not explain these kinds of cognition here. What interest me most is the third kind – doctrine. I argue that this kind of cognition is precisely what is meant by scientific knowledge, that is, explanations of why a property belongs to a subject. Geulincx’ major point is that doctrine is knowledge of reality as it appears to us, a type of knowledge I call ‘abstract knowledge of reality’. Wisdom, by contrast, concerns knowledge of things as they are in themselves. Most importantly, Geulincx holds that we have this knowledge of our mental acts only. As a result, all knowledge of external reality is abstract.

Because Geulincx holds that knowledge involves knowing *how* something comes about (which is, in fact, the expression of its essence), doctrine consists of such a type of knowledge of properties. He adds that we can only have knowledge-how of an object if we can produce it ourselves (which is, in fact, his main principle of causation for which he is well-known). As a result, we ourselves must produce properties, by mental activity. Still, properties are ascribed to subjects, which do represent objects outside the mind. Otherwise, doctrine would not concern external reality at all, which is a position Geulincx does not take. These subjects are known, according to Geulincx, by accessing the ideas of external things in God. This is possible by means of intuitive reason (*intelligentia*). But these objects or their ideas can only be apprehended through logical forms of thought.

Logical forms of thought are the formal aspects of concepts. In Chapter 7, I discuss the relation between form and content of concepts, what activities the intellect employs regarding the form and content of concepts, and whether forms of thought may be detrimental to the possibility of accurately representing objects to us. First the scholastic theory of concept formation is discussed and then that of Descartes. The most important conclusion with regard to the former is that for most scholastics the intellect is only active as regards the form of thought. The content is conveyed to the intellect by means of ‘species’, which are only means to produce a concept in the understanding. As for Descartes, he calls the intellect ‘passive’. I show that he means by this that the

intellect receives the representational content; it does not construct the conceptual content itself. By contrast, according to Descartes, the mind is active as regards the form of thought. But these forms are in themselves non-representational. Unlike Descartes and the scholastics, Geulincx holds that the intellect is active as regards both the form and content of thought. Species are (non-representational) forms of thought by which conceptual contents are apprehended. As will be shown, they also ‘distort’ these representations. This will be fully explained in Chapter 9.

So much for the forms of thought in Geulincx. Again, his major innovation is that he considers the intellect to be active also in the construction of conceptual content, the topic of Chapter 8. This activity cannot concern the concepts of external objects, because they are ‘seen’ in God, passively. So it must concern other concepts, in any case those of properties. I argue that properties – with which scientific knowledge is primarily concerned – are constructed by our intellect and accordingly do not belong to reality as it is itself. In other words, properties are notional instead of real. Roughly, Geulincx claims that reality consists of two absolute, infinite unities, namely, mind and body, and that all diversity in these objects is somehow produced by us. This diversity originates, in part, in acts of our intellect.

Finally, part IV is concerned with the preconditions for making reality intelligible to us. According to Geulincx, these preconditions are the logical forms of thought. He extensively discusses them in his *Peripatetic metaphysics*, a book on Aristotelian ontology. He may have arrived at such a view by reflecting on Descartes’ remarks on general ontological notions – transcendental notions, like ‘being’, and the categories – in the *Principles*. The epistemological status of these notions is problematic in Cartesian philosophy. The central issue is whether they refer to real aspects of reality or are purely notional. Descartes’ answer to this question is a moot point, but Geulincx’ answer is unequivocally clear. He argues extensively that these concepts refer to mental acts (logical forms) by which we necessarily apprehend reality. They make reality intelligible to us. Moreover, concepts referring to these acts are involved in every other concept. In short, logical forms are conceptual structures by which we understand reality. This is one of the reasons why we cannot know reality as it is in itself.

This introduction will be concluded by a short biography of Geulincx, including an overview of his works, and a survey of the various interpretations of his philosophy to date.

### **Geulincx: His life and works in brief**

Geulincx was born in 1624 in Antwerp as the son of a courier between Antwerp and Brussels.<sup>4</sup> In January 1641, he matriculated at Lily College, Louvain, as a student in the

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<sup>4</sup> Geulincx’ biography has been adequately dealt with by Van der Haeghen 1886 and Land 1895. Eekhof 1918 provides some information on Geulincx’ transfer to Leiden in 1658. Armogathe 2003 has contributed to our knowledge of his suspension in Louvain in 1658.

liberal arts, the licentiate of which he obtained in November 1643. Thereafter he studied theology. In 1646, he obtained a position in his former college as a secondary professor (*professor secundarius*) in philosophy, next to his former teacher William Philippi (1660-1665), one of the first Cartesians in Louvain. The philosophy curriculum lasted two years and embraced logic, physics and metaphysics, which were taught in this specific order. The core of the curriculum consisted of a reading of Aristotle's works. So Geulincx taught the *corpus Aristotelicum* to students for several years.<sup>5</sup> Although the philosophy professors Philippi, Willem van Gutschoven (1618?-1667), and his brother Gerard (1615-1668) were influenced by Cartesianism, the philosophy curriculum remained thoroughly Aristotelian until 1658, in which year some deviations from Aristotelianism were made as to physics.<sup>6</sup>

In 1652, Geulincx managed to get a position as a *professor primarius*. For this occasion he held his first inaugural address, on 16 December of that year during the yearly feasts called *Saturnalia*. He published this address in 1653, together with some other lectures which were held as part of these feasts.<sup>7</sup> Having fulfilled this position for five years, Geulincx was suspended at the very beginning of 1658, presumably because of his relation with his niece Susanna Stricker, whom he married later that year in Leiden, although it could well have been a result of his adherence to Cartesianism and Jansenism, too. Already on 5 January 1658 Petrus Damman was appointed in his place.

In spring of that year, Geulincx moved to Leiden, where he had some difficulty in getting tenure at the university. Perhaps for that reason, he took a doctorate degree in medicine, on 16 September 1658, probably to begin a medical practice. In March 1659, though, he was allowed to give private courses in philosophy, for which he received money from students attending these *collegia*. For a time everything went well, as he was also permitted in November, on probation, to supervise public disputations. This permission came with the common warning that he had to 'stay within the boundaries of the accepted Aristotelian philosophy, without adding any novelty'.<sup>8</sup> However, already in November 1660, he was suspended from supervising disputations, for unknown reasons.

All these troubles did not prevent him from elaborating his philosophy during the first years of his Leiden period, undoubtedly for the greater part in his private courses. A first result of his teaching was the publication of his *Logic* in 1662. In part as a result of this publication, he was appointed, in the same year, as a public lecturer in logic ('to hold lessons and exercises') along with David Stuart (1634-1669). Stuart was appointed

<sup>5</sup> He claims to have taught logic for twelve years from 1646 to 1658, see Geulincx, *Logic*, dedication, I 167.

<sup>6</sup> See Vanpaemel 1986b, 105; Vanpaemel 1986a, Vanpaemel 1989.

<sup>7</sup> The title of this writing is *Quaestiones quodlibetica*. Antwerp, 1653.

<sup>8</sup> Molhuysen 1913-24, vol. 3, 154: '... mits hem altijt houdende binnen de palen van de gerecipieerde Aristotelische Philosophie, sonder dat hy eenige nieuwicheyt daeronder sal mogen vermenigen, op poene van te verliesen het effect van dese concessie ...'

to teach logic together with some metaphysical questions connected to it in February of that year.<sup>9</sup> On 14 October 1662, Geulincx gave his (second) inaugural address. The next year he published his treatise on method, while some disputations on physics and ethics of 1663 and 1664 are left as well. Moreover, in 1665 he published the first treatise of his *Ethics*. All this led to his appointment as an extraordinary professor (*professor extraordinarius*) in August 1665, which included the free use, for three years, of the house of the subregent of the ‘Staten College’, an institution for theology students. An inaugural address for this occasion was held on 9 November 1665. Further, in 1667 he obtained official permission to teach ethics, while Stuart would continue to take care of logic.<sup>10</sup> Geulincx died of the plague in November 1669. His wife followed him in January 1670.

Geulincx must have held a lot of private courses, since his *Opera omnia*, edited and published by Land in the 1890s, contains apart from logical and ethical treatises also treatises on metaphysics, physics, as well as an extensive commentary on Descartes’ *Principles*. Most of these writings do not only contain the official text but also annotations by Geulincx, which presumably resulted from discussions on the main text in his private lessons. Most of his writings and annotations which Geulincx did not publish himself were published by his students in the seventeenth century, whereas a codex containing transcriptions of many of them is kept at the manuscript department of the library of the University of Leiden.

I now give a brief survey of Geulincx’ works.<sup>11</sup> Apart from the three inaugural addresses (of 1652, 1662, and 1665), he published four books, which were already mentioned above: *Logic* (1662); *Method of finding arguments* (1663), which is also a treatise on logic; *Ethics I* (1665), containing the first part of his *Ethics*, which is

<sup>9</sup> Molhuysen 1913-24, vol. 3, 178, 21 August 1662: ‘... lessen ende exercitien in Philosophia sal mogen doen, ende dat by provisie.’ He received 300 guilders annually for this work. ‘Lessen’ refers to his public lectures on logic, and ‘exercitien’ covers more than merely logical exercises, as is clear from the disputations he held on physics in 1663 and 1664 and ethics in 1664. On 8 February 1662 Stuart was permitted to read logic with ‘materien, die sonder nadeel van de selve Logica niet kunnen werden geomisseert’ (Molhuysen 1913-24, vol. 3, 177). In November 1662, Stuart made a request for a more precise division of labour between him and Geulincx, in such a way that he would be able to read ‘Logica omstandelyck, ampel ende in ‘t brede in ‘t publycq [...], mitsgaders Metaphysische materien ende question verhandelen’ and Geulincx would be restricted to read ‘de Logica compendieuselyck, sonder vermenginge van andere question ende materien’. Stuart’s request was adopted.

<sup>10</sup> According to the *Series lectionum* of September 1665, however, Geulincx already taught ethical subjects connected with logics (‘... cui pro re nata subinde aliquid ex Ethica adnectet.’) (see Molhuysen 1913-24, vol. 3, 192-193\*). And in the *Series* of September 1666 it is said that Geulincx ‘Alternis in Logicam ac Ethicam dicit’ (Molhuysen 1913-24, vol. 3, 203\*). Also Stuart had expanded the subject of his teaching to practical and moral questions (see Molhuysen 1913-24, vol. 3, 202-203\*).

<sup>11</sup> See for a bibliography of Geulincx’ works, Van der Haeghen 1886, 197-224.

concerned with the theory of the main virtues; a Dutch translation, made by Geulincx, of *Ethics I* (1667). During his lifetime, he also issued a number of disputations on ethics, metaphysics and physics.

Other works were printed after Geulincx' death. A fuller version of the *Ethics*, consisting of six parts, was published in 1675 by his pupil Cornelis Bontekoe (c. 1644-1685). Apart from these books on logic and ethics, there were also texts on metaphysics and physics, which Geulincx did not publish himself. It is clear, however, that they were meant to be printed. As to metaphysics, Geulincx wrote both a *True* and a *Peripatetic metaphysics* (both published in 1691). Both works seem to be relatively complete, while it is unequivocally clear that the essentials of his philosophy are fully elaborated in them. He also wrote both a *True physics* (published in 1688), which is in essence Descartes' physics, and a *False physics*, in which Aristotelian physics is laid out. The latter was not printed in the seventeenth century, but can be found in the Leiden-codex. Finally, an extensive commentary on Descartes' *Principles (Annotata majora in Principia philosophiae, Renati Des Cartes)* has been delivered as well (published in 1691).<sup>12</sup> Although the status of these writings is naturally less secure than that of the works Geulincx did publish himself, it is to be emphasized that they do not openly contradict the latter, and that they generally seem to be in a later stage of redaction. Therefore, these works can be used to determine his views.

### **Interpretations of Geulincx' philosophy in the secondary literature**

As is to be expected from a rather difficult philosophy, various interpretations of Geulincx' philosophy have been put forward in the secondary literature.<sup>13</sup> The classic interpretation focuses on the relation between mind and body. In the general histories of philosophy, Geulincx is marked as one of the first occasionalists, together with the French Cartesians Louis de la Forge (1632-1666) and Géraud de Cordemoy (1626-1684). Occasionalists maintain that God takes care of the coordination of the movements of the human body with the decisions of the human will on the one hand, and the perceptions of the mind with the bodily states on the other.<sup>14</sup> Geulincx, however, is not only seen as an occasionalist but also as a precursor of Leibniz' theory of the

<sup>12</sup> A smaller commentary on Descartes' *Principles (Annotate praecurrentia)* was published in 1690. Unlike the *Annotata majora*, however, Geulincx' comments in this work are uninteresting: he only explains and summarizes Descartes' texts. Geulincx also wrote a manual for holding disputations (*Tractatus de officio disputantium*) and *Collegium oratorium* (1696) about rhetoric, but those are not of philosophical concern.

<sup>13</sup> The following studies give a general picture of Geulincx' philosophy: Bouillier 1868, vol. 1, 301-309; Land 1895. De Lattre 1967 is rather confusing, but has been adequately summarized by Malbreil 1973. Studies specifically devoted to Geulincx' ethics are Göpfert 1883, Paulinus 1893, Terraillon 1912, and McCracken 1950.

<sup>14</sup> See about Geulincx and occassionalism, Monchamp 1886a, Stein 1888, Van Stockum 1952, Specht 1966, and, finally, Nadler 1999b and Nadler 1999c.

*harmonie pré-établie.* Leibniz' metaphor of the perfectly coordinated clocks can already be found in Geulincx' texts and this fact occasioned some discussion in the secondary literature.<sup>15</sup> Undoubtedly, the problem of the relation of mind and body plays a role in Geulincx because Cartesian philosophy necessarily raises that question, but the theory of occasionalism, or rather the solution to this problem, is merely an aspect of a much broader issue for Geulincx, which concerns causation in general. Indeed, the theory of causation is so important for him that it forms actually the point of departure for his ethics. For that reason, it is not only quite useless to characterize Geulincx' philosophy as 'occasionalism', but it also distorts the true import of his philosophy.

The importance of Geulincx' distinctive notion of causality has been duly emphasized by Brulez, who states that precisely Geulincx' principle of causality is his most innovative contribution.<sup>16</sup> The principle that 'it is impossible that he who does something does not know how it is done' (*impossibile est, ut is faciat, qui nescit quomodo fiat*) is, according to Brulez, a complement to Descartes' *cogito*, and, moreover, a principle which has far-reaching implications. Brulez claims that this principle ultimately implies that Geulincx reduces all being to consciousness, a position Brulez denotes by the term 'conscientialism'. That is, true being is founded in consciousness and can eventually be reduced to it. This means that consciousness is the only true reality, a view that Brulez calls 'conscientialist monism'. If this interpretation holds true, then Geulincx would be an idealist in the strong (Berkeleyan) sense that all reality can be reduced to the mental.

The issue of idealism in Geulincx has also been taken up by Cooney.<sup>17</sup> He, however, uses an approach quite different from that of Brulez. Cooney focuses on Geulincx' metaphysics, which he considers to be of equal rank with that of Spinoza and Malebranche. He interprets Geulincx' philosophy as a full-blown idealism in a Hegelian sense, claiming that according to Geulincx 'besides God, there is nothing but appearance'.<sup>18</sup> All things apart from God are merely 'a multiplicity of *appearances*' which are constituted by God 'restricting his self-consciousness to a corresponding multiplicity of limited viewpoints'. In other words, nature is not real. Of course, none of these expressions can be found in Geulincx' texts, and I think that Cooney's interpretation of Geulincx is anachronistic.

It was Grimm who first connected Geulincx' philosophy with Kant's idealism (in 1875).<sup>19</sup> He calls Geulincx one of the 'precursors and co-founders of the critical philosophy'. Some decades later (in 1906), Cassirer used Kant's 'forms of thought' to

<sup>15</sup> See for the discussion about the relationship between Leibniz and Geulincx: Eucken 1883, Eucken 1884, Eucken 1886, Pfeiderer 1884 and Pfeiderer 1885.

<sup>16</sup> Brulez 1926, 72-3.

<sup>17</sup> See Cooney 1978.

<sup>18</sup> Cooney 1978, 168.

<sup>19</sup> Grimm 1875.

explain Geulincx' philosophy.<sup>20</sup> More recently, Van Ruler took up the question of the relation between Geulincx and Kant as well.<sup>21</sup> I further discuss the views of Cassirer and Van Ruler in Chapter 9.

By far the most prolific Geulincx-scholar has been Herman J. De Vleeschauwer, whose first publication about Geulincx appeared in 1941. It was followed by several articles about Geulincx. One of his main points is de-emphasizing the explanation of occasionalism as the essence of Geulincx' philosophy.<sup>22</sup> Instead, he advocates that Geulincx' philosophy is to be characterised as a combination of Cartesian rationalism and Augustinian-Jansenist irrationalism, the latter pervaded by a pathos of human impotence.<sup>23</sup> According to De Vleeschauwer, this notion of impotence need not have come from Abraham Heidanus (1597-1678), who was an ardent admirer of Augustine and the main supporter of Geulincx, but he could simply have been susceptible to it in Louvain, where Augustinian Jansenism was widely dispersed.<sup>24</sup>

De Vleeschauwer claims that the strong influence of Platonic Augustinianism on Geulincx' philosophy finds its expression, among other things, in his emphasis on 'ideas'.<sup>25</sup> Also Geulincx' firm rejection of (late) scholastic thought has to be viewed, De Vleeschauwer holds, in the light of the seventeenth-century Renaissance of Augustine.<sup>26</sup> He thinks that Geulincx' particular brand of Augustinian criticism of scholastic philosophy ultimately goes back to the revival of Augustine by Henry of Ghent (c. 1217-1293). This type of Augustinianism is, according to De Vleeschauwer, in essence opposed to Aristotelianism and scholasticism.<sup>27</sup> Accordingly, Geulincx' philosophy is, above all, characterized by his opposition to scholasticism, which consists mostly in his rejection of both its sensualism and realism. Geulincx holds that the identity of the

<sup>20</sup> See Cassirer 1911, 532-553.

<sup>21</sup> See Van Ruler 1999, 2003a, 2003b, and 2003d.

<sup>22</sup> De Vleeschauwer 1941, 12; De Vleeschauwer 1958b,

<sup>23</sup> De Vleeschauwer 1978, 380; De Vleeschauwer 1958b, 122-3; De Vleeschauwer 1965, 59.

<sup>24</sup> De Vleeschauwer 1978, 393. De Vleeschauwer reacts to the view of Specht (Specht 1966, 104), who states that Heidanus may have been the main source of Geulincx' Augustinianism. That could not have been the case, De Vleeschauwer argues, because Heidanus' theory of the origins of errors in religion dates from his later years, as his book was published posthumously in 1678. De Vleeschauwer was, however, unacquainted with the fact that there are already disputations on this theme from the early 1660s. Of course, Heidanus might have had a decisive influence on Geulincx. But that is not very likely, given the fact that Geulincx was probably already exposed to both Cartesianism and Augustinianism in Louvain. Then again, I will establish that his inaugural address of 1652 does not show any influence of Cartesian thought yet. However, that Geulincx was already considered as an Augustinian before he arrived in Leiden in 1658 is confirmed by the letter of recommendation of the Leiden theologians (see Eekhof 1918). See about Heidanus, Cramer 1889, Goudriaan 1996, Van Ruler 2001, Van Ruler 2003c, and Aalderink 2004.

<sup>25</sup> De Vleeschauwer 1954, 482.

<sup>26</sup> De Vleeschauwer 1954, 484-485.

<sup>27</sup> De Vleeschauwer 1951; repeated in, De Vleeschauwer 1954, 482.

'sensible species' and the external thing, or of the objective world and the sensible world of appearances, is not only unnecessary but also impossible. Alternatively, he intended to construe a theocentric philosophy, in which God becomes the only source of causality.<sup>28</sup> This entails, according to De Vleeschauwer, that Geulincx is most of all a Jansenist.<sup>29</sup>

The philosophies of Descartes and Geulincx were compared by Grimm, the results of whose study can be summarized in the following three points.<sup>30</sup> First, like many other Cartesians Geulincx neither adopts Descartes' metaphysical doubt nor adheres to his peculiar theory of the creation of the eternal truths, which states that eternal truths are not dependent on God's intellect but on his will. This entails, according to Grimm, that Geulincx does not consider God a necessary guarantee for the truth of clear and distinct ideas. Second, Geulincx presents a theory of the origin of mathematical notions that cannot be found in Descartes (Geulincx' theory of abstraction). And, finally, he does not only criticize sensible species but forms of the intellect ('intelligible species') as well. These three points all concern epistemology. Another German scholar, Gronau, compared Geulincx' physics with that of Descartes. He shows that although Geulincx' physics is largely identical with that of Descartes, Geulincx does differ from him as to the conception of movement and rest, since Geulincx argues that they merely differ with respect to our way of considering them, whereas they are in reality one and the same.<sup>31</sup> A second point concerns the law of inertia, which Descartes deduces from God's immutability. Geulincx holds, on the contrary, that both the amount of movement and its constancy are completely contingent. To be able to do physics, one therefore has to make the hypothesis that the amount of motion remains constant. Thus, unlike Descartes, Geulincx espouses that physics is not only based on necessary truths but also on hypotheses.

Finally, more recently, a work of Bernard Rousset has been published in which he attempted a thorough comparison between Geulincx and Spinoza. Unfortunately, he was unable to finish this work.<sup>32</sup> He managed only to provide a systematic overview of Geulincx' philosophy, in which his writings are summarized. Like De Vleeschauwer, Rousset thinks that occasionalism is not the quintessence of Geulincx' philosophy, but that this aspect has to be seen from a broader perspective. Completely contrary to De Vleeschauwer, however, Rousset maintains that this broader perspective consists of

<sup>28</sup> De Vleeschauwer 1965, 67.

<sup>29</sup> De Vleeschauwer 1965, 59.

<sup>30</sup> Grimm 1875, see his conclusions pp. 67-68.

<sup>31</sup> Gronau 1911, 17-20.

<sup>32</sup> See Rousset 1999. Although Rousset was unable to finish his work and thus did not compare Geulincx with Spinoza, now and then he does give some hints as to their relation. In his view, Geulincx must have known something about Spinoza's philosophy, since he presents an argument in his *Ethics* against Spinoza's particular form of atheism, an argument also appearing in Van Velthuysen's letter to Spinoza. See Rousset 1999, 9, 15, 154-155.

## INTRODUCTION

Geulincx' pursuit of rationalism.<sup>33</sup> In addition, Rousset gives another, more general, characterisation of Geulincx' philosophy, namely, that it is a form of Cartesio-Aristotelianism. Rousset claims that this can, for instance, be detected from the order of his metaphysics, in which physics precedes natural theology, just like physics precedes metaphysics in Aristotle.<sup>34</sup>

In sum, Geulincx' philosophy, in its relation to Cartesianism, has been interpreted in different ways. A thorough discussion of his epistemology and a precise comparison with philosophers by which he may be influenced, however, is new. I start by discussing the theory of error and Geulincx' relation to Aristotelian philosophy.

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<sup>33</sup> Rousset 1999, 130.

<sup>34</sup> Rousset 1999, 53-54.

## PART I – THE THEORY OF ERROR



## CHAPTER ONE

# ARISTOTELIAN ERRORS: BACON, DESCARTES, AND GEULINCX ON ARISTOTELIAN PHILOSOPHY

### Introduction

Geulincx accuses Aristotelianism – Peripatetic or scholastic philosophy – of having corrupted both physics and ethics.<sup>35</sup> This strong anti-Aristotelian bent in his thought is connected to a broader theory of error, which offers a comprehensive explanation of scientific errors. Both Descartes and Geulincx have devised such a theory, by which I mean an explanation of the causes and origins of error.<sup>36</sup> Indeed, this topic is given special attention throughout their writings.

Given Geulincx' anti-Aristotelianism, this focus on error does not arise from a purely theoretical interest in the problem of error. In this chapter, I argue instead that for both Geulincx and Descartes the development of a theory of error is an essential part of their attempt to replace Aristotelianism with a new type of philosophy. They simply needed an explanation of the rise and appeal of their major competitor, the still dominant philosophy of Aristotelianism, as well as a method of breaking through its lines of defence – and that is precisely what they intended to achieve by their theories of error.<sup>37</sup>

Of course, criticizing Aristotelian philosophy is not original with Descartes and Geulincx. Apart from the many Renaissance critics of scholasticism, Francis Bacon's (1561-1626) theory of the origin of errors in the sciences plays an important role in seventeenth-century discussions. His *New Organon* (1620), in which the most elaborate version of this theory appears, was widely read in the seventeenth century, as it ran

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<sup>35</sup> See Geulincx, *Ethics* IV, §5, III 112.

<sup>36</sup> The theory of error, and the distinction between the causes and origins of error, will be fully explained in the next chapter.

<sup>37</sup> To be sure, there were other philosophies that had some influence, usually of a Platonic or atomist sort, as well as eclectic tendencies. But generally the philosophy taught at universities was Aristotelianism. See, for instance, Reif 1969, for an analysis of physics textbooks in the first half of the seventeenth century, which confirms that the content of university classes in physics was Aristotelian.

through several editions – many of which were published in the Netherlands.<sup>38</sup> I argue that central elements of Bacon's account of error, the 'anticipations of the intellect' and the doctrine of the Idols, are of importance to Descartes' view of the prejudices, while they may well have shaped Geulincx' theory, as well.<sup>39</sup> In addition, his views were also influential among other Dutch Cartesians.<sup>40</sup> A comparison of Bacon's views with those of Descartes and Geulincx will bring out the distinctive features of their critique of Aristotelianism.

Two questions will be discussed. First, what are the differences and correspondences between the ways in which Aristotelianism was criticized by Bacon, Descartes, and Geulincx? And what are the most original points? Second, how does Geulincx' assessment of Aristotelianism relate to that of Descartes?

This chapter is devoted, then, to comparing the respective reactions to, and critiques of, Aristotelianism by Bacon, Descartes and Geulincx. It sets the stage for the remainder of this study by providing historical background for philosophical issues and philosophers with which the following chapters will be concerned. In Section 1, a short outline is given of Renaissance Aristotelianism and anti-Aristotelianism. Subsequently, in Section 2, Bacon's criticism of Aristotelianism is set out as he presents it in the first book of his *New Organon*. Apart from a brief discussion of his well-known theory of the Idols, this section is largely concerned with Bacon's objections to the Aristotelian theory of concept formation. In Section 3, Bacon's theory is contrasted with Descartes' view of Aristotelianism. Section 4 is concerned with a brief discussion of the relation between Dutch Cartesianism and Aristotelian philosophy, particularly by giving a short account of how two influential Dutch Cartesians, Johannes Clauberg (1622-1665) and Johannes de Raey (1621-1702), deal with this issue. The last two sections are concerned with Geulincx' approach to Aristotelianism. The chapter concludes with findings that are relevant for the remainder of this study.

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<sup>38</sup> See about the influence of Bacon in the Netherlands, Hooykaas 1961, Dibon 1984, and Elena 1991.

<sup>39</sup> Bacon's criticism, as expounded in the first book of the *New Organon*, was presumably more influential than his method for doing scientific research, the theory of induction of the second book. At least, so much becomes clear from the way in which Bacon's writings were used. More specifically for Geulincx' circle, the Leiden theologian Abraham Heidanus, a close friend of Geulincx, uses the theory of the Idols to explain the occurrence of theological errors, such as the contemporary heresy of Socinianism. See for this, Aalderink 2004.

<sup>40</sup> Cf. Dibon 1984, 108. Also Johannes Clauberg, an influential Cartesian, uses Bacon extensively in his *Logic*. See more on him below.

## 1.1 Renaissance Aristotelians and their adversaries

### 1.1.1 Aristotelianisms

In the thirteenth century, Aristotle became ‘the Philosopher’ in the Christian medieval world.<sup>41</sup> This resulted from the translation of the complete *corpus Aristotelicum* into Latin in the twelfth century. Christian theologians like Albert the Great (c. 1200-1280) and Thomas Aquinas (1225-1274) subsequently combined Christian theology with Aristotelian philosophy, resulting in a form of Christianized Aristotelianism that proved to be fruitful in the next centuries. Even the condemnation of some Aristotelian theses by the bishop of Paris in 1270 and 1277 could not counter this development. Texts of Aristotle consistently remained the basis of the university curriculum despite objections of critics. Although from the end of the sixteenth century onwards textbooks gradually replaced the texts of Aristotle, their content was basically Aristotelian.<sup>42</sup> It was not before the second half of the seventeenth century that the dominance of Aristotelianism in the university curriculum was no longer taken for granted, at least in so far as some parts of northern Europe were concerned.

That does not mean Aristotelianism should be considered as a monolithic whole. Especially during the Renaissance many different kinds of ‘Aristotelianism’ emerged, so diverse that philosophers even differed on fundamental matters of philosophy. As is well known, already in the thirteenth century the great divide over the status of universals caused the emergence of the two *viae*, on the one hand the realists, soon divided into the Thomist and Scotist schools, and on the other hand the nominalists, who followed William of Ockham (c. 1285-1347/49). Moreover, Aristotelianism was never ‘pure’ but always combined with Platonic doctrines – largely as a consequence of the influence of Augustine. In addition, the fifteenth and sixteenth century saw an increase of editions of and commentaries on Aristotle. This resulted in part from the appearance of new translations from the original Greek text. The study of these texts, brought to Western Europe by the Byzantines after the fall of Constantinople (1453), was advanced, moreover, by the invention of printing. Shaped by Renaissance humanism, which urged a reading of Aristotle in the original Greek text, a humanist type of Aristotelians emerged that opposed some scholastic interpretations of Aristotle, or developed other attitudes to or interests in Aristotelian philosophy. At the same time Thomism was greatly favoured by the decision of the Council of Trent (1545-1563) to proclaim Aquinas a ‘Doctor of the Church’. In sum, many kinds of Aristotelianism emerged in the fifteenth and sixteenth century. They were united, however, in taking their starting-point in Aristotle’s writings, and, at least, used the general Aristotelian framework by

<sup>41</sup> This section is based on the following publications about early modern Aristotelianism and its critics: Mercer 1993, Schmitt 1973, Schmitt 1983, and Stone 2002.

<sup>42</sup> See on this, Reif 1969.

using principles of philosophy Aristotle had put forward, such as matter, form, and privation as explanatory principles in physics.

Lastly, in this context, the influence of Jesuit Aristotelianism has to be pointed out, which gained the upper hand in the seventeenth century owing to the order's eagerness in founding schools throughout Europe. One of these schools was Descartes' *alma mater* at La Flêche. Descartes was thus educated on the basis of the Jesuit curriculum, the *Ratio Studiorum* (Programme of Studies) of 1599, which is why particularly this type of Aristotelianism is present in his writings.<sup>43</sup>

Apart from Spanish Jesuit Aristotelianism, also Italian Aristotelian philosophers were influential. One of them, Jacopo Zabarella (1533-1589), will be encountered in this study. The influence of Spanish and Italian Aristotelianism was not limited to these countries, but was also perceptible in the Protestant world, leading to the so-called Protestant Scholasticism, with major representatives such as the German Reformed philosophers Bartholomew Keckermann (1571-1609), Clemens Timpler (1563/4-1624), and Johann Heinrich Alsted (1588-1638).<sup>44</sup> These philosophers and this type of Aristotelianism were very influential in the Low Countries, more specifically at Leiden.<sup>45</sup> Which can be readily observed in the work of Franco Burgersdijk (1590-1635), who taught philosophy at Leiden University from 1620 to 1635, as well as his pupil Adriaan Heereboord (1614-1661), who succeeded him in 1641.<sup>46</sup> The Leiden Cartesian philosophers, with whom this study is concerned, respond largely to this kind of philosophy.

### *1.1.2 Renaissance criticism of Aristotelian philosophy*

The dominance of Aristotelianism at universities was severely contested during the Renaissance. Renaissance anti-Aristotelians often used the same set of objections to scholastic philosophy.<sup>47</sup> In *On the ignorance of himself and of many* (1368), Francesco Petrarca (1304-1374) presents the following points of critique, which were to become standard: a) schoolmen love Aristotle more than the truth; b) they cannot see what stands before them because of their commitment to 'their god' Aristotle; c) they disagree among themselves; and finally, d) they use language that they do not even fully understand themselves.

<sup>43</sup> See on this, Dalbiez 1929, Cronin 1966, Marion 1991, and Ariew 1999.

<sup>44</sup> See about Protestant scholasticism, Leinsle 1995, 283-287. And on the relation between Spanish scholasticism and German Protestant philosophy, Eschweiler 1928, Petersen 1921, Lewalter 1935, Wundt 1939.

<sup>45</sup> See on the relation between Spanish scholasticism and Dutch Aristotelianism, Robbers 1956 and Van Straaten 1956. And, more specifically, on the major influence of Keckermann, Dibon 1954, 99-103, 123-124, 252.

<sup>46</sup> Chapter 3 will provide more information about Burgersdijk.

<sup>47</sup> These points are listed in Mercer 1993, 34-35.

Let us have a closer look at these objections, which boil down to lack of empirical observations, verbalism, and slavishly following Aristotle. The second point clearly concerns the lack of empirical observations made by the Aristotelians. Later critics elaborated on this theme by noting that scholastic philosophy had not led to inventions, and that science became a matter of reading books rather than studying nature. The last point of critique, philosophical language, includes technical terms, definitions, and distinctions Aristotelians employ. This critique amounts to the charge of verbalism, the use of words having no meaning. The third point, mutual disagreements, is immediately related to verbalism. It entails that Aristotelian philosophy leads to useless disputes and uncertainty, which was to be expected because their definitions and terminology are ambiguous, as well as because their objective is not truth as such, but merely defending Aristotle's views – an objection that is paralleled by the first two points.

This set of objections against scholasticism returns again and again during the Renaissance, and can be found most of all among seventeenth century natural philosophers opposing Aristotelian physics. This raises the question as to what degree these objections must be taken seriously. To be sure, there are reasons to downplay them. Mercer, in her article on early modern Aristotelianism, rightly concludes that 'however radical and extreme the anti-Aristotelian harangues of the seventeenth-century natural philosophers may sound, they are often no more than mere reiterations of a well-used stock of complaints.'<sup>48</sup> However, this observation certainly does not preclude that critics of Aristotelian philosophy do agree with the gist of these objections.

What is most important to notice here is that the main objection of some Cartesians to Aristotelian philosophy is missing in this set of objections. They advance that Aristotelianism is just a common sense philosophy, taking its starting-point in opinions and imprecise concepts of ordinary people instead of the exact notions of pure reason. Particularly with respect to natural philosophy, Cartesians oppose Aristotelian physics because it is based on a common sense picture of the world, resulting in a physics in which qualitative properties, such as warm and cold, play a fundamental role. They replace that view of nature with a mathematico-mechanical picture of the corporeal world, consisting entirely of exact notions. That this is the gist of the critique of Geulincx and De Raey, who will be encountered below, will become apparent later.

## 1.2 Bacon's critique of Aristotelian concepts and his theory of the Idols

### 1.2.1 Two anti-Aristotelian approaches

Bacon's writings contain influential criticisms of the state of science in his times. This suggests that he mainly opposes Aristotelian philosophy, since that was still dominant. Moreover, the title of one of his most influential writings, the 'New Organon', confirms

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<sup>48</sup> See Mercer 1993, 37.

this: Bacon intends to give a new method for the sciences that replaces the old *Organon* – that is, Aristotle's writings on logic and scientific method.

Although Bacon's critique in part amounts to a restatement of general Renaissance criticism of Aristotelianism, there are, apart from his forceful rhetoric, two features of his account that are original. First, although this point is rarely noticed, Bacon argues against the Aristotelian theory of acquiring scientific concepts and principles. He argues, moreover, that the Aristotelian explanatory concepts are vague and thus unscientific. The second striking feature of Bacon's account is his emphasis on origins of error *internal to* the mind, resulting from either the weakness of human nature or social interaction, instead of just detecting erroneous views. This means that errors are not just coming from outside the mind, as a set of false opinions, but have deep roots in human nature – they are, in fact, mental inclinations. As a result, overcoming error demands more effort than just refuting specific erroneous views or amending errors of reasoning. This psychological aspect is predominant in Bacon's theory of the Idols. Although Bacon does not mention this, also the theory of the Idols is primarily directed against Aristotelianism, as will be shown below.

These two points are closely connected. In the first book of the *New Organon*, Bacon insists and explains that Aristotelian logic and method are insufficient for obtaining scientific knowledge and adequate scientific concepts and principles – which is our first point. He in turn claims that the common (Aristotelian) logic assumes that errors can simply be corrected by pointing out logical fallacies. But this is a far too superficial an approach, according to Bacon. The deeply entrenched habits of the mind – the Idols – make it susceptible to error, and are to be uprooted somehow *before* commencing in science. In other words, the scientist has to be psychologically prepared for science. This theory of the Idols explains, among other things, why humans are inclined to form and hold on to vague (explanatory) concepts, such as the Aristotelian explanatory framework. Thus, Bacon's critique of Aristotelian concept formation explains what is wrong with the concepts and principles of the science of his days themselves, whereas the theory of the Idols explains why human beings are inclined to form and stick to them.

The discussion of these two points is important for the remainder of this study because the second aspect is conspicuous in Descartes' theory of the prejudices, while the first is taken up by Cartesians to criticize Aristotelian explanatory concepts. Let us now discuss these two points in more detail.

### *1.2.2 Bacon's rejection of Aristotelian method and concept formation*

A close reading of the first book of the *New Organon* shows that Bacon is chiefly attacking Aristotelian logic. He calls his own method the *interpretation of nature* (*interpretatio naturae*), whereas the way in which philosophers previously examined

nature is designated by the term *anticipations of the mind* (*anticipationes mentis*).<sup>49</sup> A closer look at the passage in which Bacon introduces these terms reveals that ‘anticipation’ refers mainly to the Aristotelian theory of acquiring knowledge about nature, namely, Aristotle’s method of induction, which is followed by a process of deducing ‘general laws’ by means of syllogistic reasoning. Bacon’s term anticipation refers both to the method by which these principles and laws are acquired as well as the results of this reasoning process, that is, the principles and general laws themselves. This interpretation is corroborated by the fact that Bacon likens the anticipations of nature to the interpretation of nature, a term Bacon uses for both the results of his own method and that method itself. Therefore, it is to be expected that the anticipations comprise both elements as well. Moreover, that Bacon’s target is the Aristotelian method is also clear from his explanation of the success of the anticipations in causing assent. He offers the following reason for that success: ‘... they [= the anticipations] are gathered from a few facts, and those of the most everyday kind, they at once impress the intellect and fill the fantasy.’<sup>50</sup> This remark refers again to the Aristotelian method of induction – which is a method, Bacon holds, that proceeds quickly from particular instances to general natures. As a result, a large part of Bacon’s critique concerns an essential part of Aristotelian philosophy, since he takes aim at the fundamentals of its scientific method.

Unlike rationalists, however, Bacon is not opposed to Aristotle’s view that philosophy starts with the senses. On the contrary, he considers that to be the right way to investigate nature. But he rejects the way in which Aristotle infers the principles of nature from the observed particular instances.<sup>51</sup> Bacon interprets the Aristotelian method of induction as one that proceeds immediately from the observation of a few instances, by making a ‘simple enumeration’, to knowledge of the principles of science.<sup>52</sup> Thereafter, those principles have to be accepted as the unalterable foundations of science.<sup>53</sup> Then, through the method of deduction, the philosopher infers general laws – which Bacon calls *axiomata* – from those principles. Although that may be quite

<sup>49</sup> Bacon 2004, *New Organon* I.26, 74: ‘Rationem humanam, qua utimur, ad Naturam *Anticipationes Naturae*, (quia res temeraria est & praematura), at illam Rationem quae debitum modis elicitor a rebus, *Interpretationes Naturae*, docendi gratia, vocare consuevimus.’ Cf. Bacon 2004, *New Organon* praef., 58. See about Bacon’s notion of the anticipations of nature, Urbach 1987, Ch. 2.

<sup>50</sup> Bacon 2004, *New Organon* I 28, 75; Latin text, 74: ‘... quia ex paucis collectae, iisque maxime quae familiariter occurunt, Intellectum statim perstringunt & phantasiam implent ...’

<sup>51</sup> Bacon 2004, *New Organon* I.22, 72: ‘Utraque via orditur a sensu & particularibus, & acquiescit in maxime generalibus; Sed immensum quiddam discrepant; cum altera perstringat tantum experientiam & particularia cursim; altera in iis rite & Ordine versetur; Altera rursum iam a principio constitutat generalia quaedam abstracta, & inutilia; altera gradatim exurgat ad ea quae revera Naturae sunt notiora.’

<sup>52</sup> See particularly Bacon 2004, *New Organon* I.69, and I.104-105, 108, 110, 160, 162.

<sup>53</sup> Bacon 2004, *New Organon* I.125, 188.

attractive to the human mind because of its natural inclination to rashness, it leads to serious errors in Bacon's view. Principles obtained in this way are uncertain, and, as a further consequence, every law deduced from them is uncertain, too. Instead, Bacon holds that a much more thorough investigation and observation of particular things, supported by experiments, is needed before any general law can be formulated, after which the true principles of nature can be acquired by gradual steps only. He insists on continually returning to the particular things themselves and on refraining from employing notions before they are obtained from those very things.<sup>54</sup>

Apart from rejecting Aristotle's scientific method in particular, Bacon's criticism also applies to Aristotelian logic as a whole.<sup>55</sup> According to Bacon, the common logic tends rather to reinforce error than to be useful in investigating the truth.<sup>56</sup> This results from the fact that error has taken hold of the human mind prior to implementing this logic, and all it does afterwards is limited to identifying logical fallacies and providing technical distinctions in order to circumvent overt contradictions.<sup>57</sup> For that reason, the common logic is simply part of the anticipations of the mind rather than a tool suitable for overcoming them.<sup>58</sup> In other words, logic is placed in service of reinforcing error.

An important target of Bacon's criticism concerns the concepts used in the sciences. Indeed, Bacon considers the Aristotelian method of concept formation to be more detrimental to philosophy than syllogistic reasoning. To be sure, the syllogism, one of the essential elements of Aristotelian logic, is characterised by Bacon as a way of reasoning that leads to the maintenance of errors. On his view, the assent extorted (*constringit*) by the syllogism relates to words rather than things. But that shows precisely what the real problem is. The underlying problem lies in the words that make

<sup>54</sup> Bacon 2004, *New Organon* I.36, 76, 78: 'Restat vero nobis modus tradendi unus & simplex, ut homines ad ipsa particularia & eorum Series & Ordines adducamus; & ut illi rursus imperent sibi abnegationem Notionum, & cum rebus ipsis consuescere incipient.'

<sup>55</sup> Nonetheless, Bacon still has an 'essentially Aristotelian view of natural philosophy', according to Jardine 1974, 76-77. On her view, 76-79, Bacon is committed to an Aristotelian framework of the sciences, which means that the causes and principles that are better known by nature are those which describe the true structure of nature, which underlies the appearances.

<sup>56</sup> Bacon 2004, *New Organon* I.12, 68: 'Logica, quae in usu est, ad errores (qui in notionibus vulgaribus fundantur) stabiliendos & figendos valet, potius quam ad inquisitionem veritatis; ut magis damnosa sit, quam utilis.'

<sup>57</sup> Cf. Bacon 2004, *New Organon* praef., 52, 54: 'Atque hoc proculdubio viderunt & illi, qui tantas Dialecticae partes tribuerunt. Ex quo licet, illos Intellectui adminicula quaesivisse, Mentis autem processum nativum, & sponte moventem, suspectum habuisse. Sed serum plane rebus perditis hoc adhibetur remedium; postquam Mens ex quotidiana vitae consuetudine, & auditionibus, & doctrinis inquinatis occupata, & vanissimis *Idolis* obsessa fuerit. Itaque Ars illa Dialecticae, sero (ut diximus) cavens, neque rem ullo modo restituens, ad errores potius figendos, quam ad veritatem aperiendam valuit.'

<sup>58</sup> Cf. Bacon 2004, 505, about the relation between the anticipations of the mind and the common logic.

up a syllogism or rather the inadequate concepts to which these words refer. Those concepts fail because of the way in which they are formed. Precisely this is what Bacon considers the major blow to the whole way of doing science of his day. If the ultimate foundations of science – the fundamental explanatory concepts – are unstable, the subsequent processes of reasoning inevitably lead to inadequate knowledge, and thus to errors. Indeed, Bacon does not hold that syllogistic or deductive reasoning from *true* principles, consisting of adequate concepts, is wrong. Rather, the problem with syllogisms lies in the concepts on which they are based. Bacon makes this explicit in the following quotation:

The syllogism is made up of propositions, propositions of words, and words are markers of notions. Thus if the notions themselves (and this is the heart of the matter) are confused, and recklessly abstracted from things, nothing built on them is sound.<sup>59</sup>

The emphasis, then, lies on the notions with which one reasons rather than demonstrative reasoning as such. This is also borne out by remarks of Bacon elsewhere.<sup>60</sup>

Accordingly, Bacon's criticism of the accepted notions of philosophy is wide-ranging. Indeed, it covers several disciplines. This is, for example, central to Bacon's statement that 'in notions nothing is sound, neither in logical nor in physical notions.'<sup>61</sup> He gives the following examples of inadequate logical notions: the notion of substance (*Substantia*), quality (*Qualitas*), acting (*Agere*), undergoing (*Pati*), and being (*Esse*). This means that he rejects the fundamentals of the Aristotelian doctrine of the (logical) categories, which are also metaphysical terms. Moreover, his examples of physical notions comprise the whole of Aristotelian physics as well. He mentions, among others things, the following notions fundamental to Aristotelian physics: heavy (*Grave*), light (*Leve*), dense (*Densum*), tenuous (*Tenuer*), moist (*Humidum*), dry (*Siccum*), generation (*Generatio*), corruption (*Corruptio*), attraction (*Attrahere*), repulsion (*Fugare*), element (*Elementum*), matter (*Materia*) and form (*Forma*).<sup>62</sup> These examples show that Bacon considers Aristotelian physics to consist entirely of confused notions, so that it has to be completely discarded. Notwithstanding the fact that he does not explicitly refer to Aristotelian philosophy in these aphorisms, it is actually the only philosophy in which this complete set of notions is used. Consequently, Bacon considers the entire conceptual framework for explanations of Aristotelian philosophy to be flawed.

<sup>59</sup> Bacon 2004, *New Organon* I.14, 69; Latin text, Bacon 2004, 68: 'Syllogismus ex Propositionibus constat, propositiones ex verbis, verba Notionum tesserae sunt. Itaque si notiones ipsae (id quod basis rei est) confusae sint, & temere a rebus abstractae, nihil in iis, quae superstruuntur, est firmitudinis.'

<sup>60</sup> See, for example, Bacon 1962-63, *De augmentis* V, Ch. 2, vol. 1, 621-622 (Eng. transl. vol. 4, 411); Bacon 1962-63, *De augmentis* V, Ch. 4, vol. 1, 640-641 (Eng. transl. vol. 4, 428-429).

<sup>61</sup> Bacon 2004, *New Organon* I.15, 68: 'In Notionibus nil sani est, nec in Logicis, nec in Physicis ...'

<sup>62</sup> Bacon, 2004, *New Organon*, I.15, 68.

More generally, Bacon rejects reliance on ordinary notions (*notionibus vulgaribus*), and holds that the greater part of the science of his day consists of just such notions.<sup>63</sup> This is clear from his remarks about notions we commonly have of natural kinds and sense impressions. Although Bacon mentions that the notions of the lowest species (*infimarum Specierum*), such as man and dog, and of the immediate impressions of sense, like hot and cold or white and black, do not deceive us greatly, even those notions are sometimes confused.<sup>64</sup> As a result, more abstract notions and natural laws based on them are even more inadequate.

In sum, Bacon's criticism is directed particularly against Aristotelian philosophy, and comprises four points: first Aristotle's method of induction, second the syllogistic form of reasoning, third the Aristotelian method of concept formation, and, finally, its reliance on ordinary concepts. For all these points, with the exception of demonstrative reasoning, Bacon's own method of induction is believed to form an alternative.

However, this analysis of what is wrong with the received philosophy does not explain why the human mind is prone to engage in philosophy in such a way. Bacon's doctrine of the Idols provides an answer to that question.

### 1.2.3 *The flaws of human nature: Bacon's theory of the Idols*

In contrast with Bacon's criticism of Aristotelian logic and concept formation, his theory of the Idols is much better known.<sup>65</sup> I will therefore be relatively brief on this theory. In the *New organon*, he introduces this theory with the following words:

The *Idols* and false notions that now occupy the human intellect and inhere deeply in it do not only obstruct the minds of men so that truth has difficulty gaining access but also when access is granted and allowed, they will turn up again at the renewal of the sciences and will disturb it, unless people, being warned of them, will guard against them as far as they possibly can.<sup>66</sup>

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<sup>63</sup> Bacon repeats this several times in the *New Organon*. See, for example, *New Organon* I.12, quoted in footnote 21, and I.18.

<sup>64</sup> See Bacon 2004, *New Organon* I.16, 68, 70.

<sup>65</sup> See about Bacon's theory of the Idols, Gaukroger 2001, 118-127, and Urbach 1987, Ch. 4.

<sup>66</sup> Bacon 2004, *New Organon* I.38, 78: '*Idola & Notiones falsae quae Intellectum humanum jam occuparunt, atque in eo alte haerent, non solum Mentes hominum, ita obsident, ut veritati aditus difficilis pateat; sed etiam dato & concessu aditu, illa rursus in ipsa instauratione Scientiarum occurrit, & molesta erunt; nisi homines praemoniti, adversus ea se quantum fieri potest, muniant.*' Cf. Bacon's description of the Idols in *De Augmentis* V, Ch. 4: 'As for the detection of false Appearances or Idols, Idols are the deepest fallacies of the human mind. For they do not deceive in particulars, as others do, by clouding and snaring the judgement; but by a corrupt and ill-ordered predisposition of mind, which as it were perverts and infects all the anticipations of the intellect. For the mind of man (dimmed and clouded as it is by the covering of the body), far from being a smooth, clear, and equal mirror (wherein the beams of things reflect according to their true incidence), is rather like an enchanted mirror, full of superstition and imposture. Now Idols

Some aspects of this description of the Idols must be emphasised. First of all, Idols are firmly entrenched and thus cannot be easily removed. They are deep inclinations of the mind, so that they will crop up again and again. As a result, people must continually ‘guard against them as far as they possibly can’; which entails that they can never be completely removed. This implies that science cannot start from scratch, but that the Idols have to be dealt with before engaging in science. That is why Bacon starts with a theory of the destructive inclinations of the mind, prejudices (the ‘false notions’), and error before offering the proper method of acquiring scientific knowledge. Further, one has to supply means capable of removing them as far as possible. In other words, the mind of the scientific researcher has to be prepared beforehand, owing to the fact that the mind is filled with prejudices and inclinations detrimental to pursuing science successfully.

As a result, the sources of error are mostly psychological. Therefore, error is not to be dealt with as objective but as subjective, that is, as a state of mind. In this context, Gaukroger makes the instructive comment that Bacon’s theory is ‘in many respects a novel theory of what might traditionally have been treated under a theory of the passions, one directed specifically at natural-philosophical practice.’<sup>67</sup> Just as with the traditional treatment of emotions, the mind has to be reordered to allow it to engage in science successfully.

Bacon classifies the Idols into four groups: the Idols of the Tribe, the Idols of the Cave, the Idols of the Market Place, and, finally, the Idols of the Theatre. I can be rather brief on these distinctions, because this aspect of the theory is well known. My discussion is limited to what is relevant to a comparison with Descartes and Geulincx.

Before discussing the classes of the Idols, it has to be pointed out that, although Bacon does not make this distinction in the *New Organon*, the first three groups of Idols are considered *internal* to the mind, whereas Bacon views the last group, the Idols of the Theatre, as *external*.<sup>68</sup> As a result, the latter group, which represents specific philosophical doctrines, can be removed completely, contrary to the other Idols.

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are imposed on the mind, either by the nature of man in general; or by the individual nature of each man; or by words, or nature communicative. The first of these I call Idols of the *Tribe*, the second Idols of the *Cave*, the third Idols of the *Market-Place*. There is also a fourth kind which I call Idols of the *Theatre*, superinduced by corrupt theories or systems of philosophy, and false laws of demonstration. But this kind may be rejected and got rid of [...] The others absolutely take possession of the mind, and cannot be wholly removed.’ (Bacon 1962-63, vol. 4, 431; Lat. text vol. 1, 643)

<sup>67</sup> Gaukroger 2001, 121

<sup>68</sup> Bacon does not put it this way in the *New Organon*, but in the *Distributio operis* of the *Instauratio magna*, the larger work of which the *New Organon* is a part, he does make the distinction between extrinsic (*Adscititia*) and innate (*Innata*) Idols, Bacon 2004, 34. The innate Idols inhere in the nature of the intellect.

The Idols of the Tribe represent mistakes human beings are inclined to make as a result of man's nature, which, for Bacon, includes both reason and sense. On his view, 'all perceptions of sense and mind correspond to the standard of man (*sunt ex analogia hominis*) instead of that of the universe.<sup>69</sup> Bacon's major point is, then, that the human intellect and the senses distort the knowledge of reality by mingling its own nature with the objects of knowledge. This is the basic thrust of this group of Idols, which Bacon uses further to refer to quite different inclinations. Let us list some of them.

In the first place, the mind ascribes more order and regularity to nature than there actually is.<sup>70</sup> This results from the inclination of the mind to ascribe the 'homogeneity of the substance of the human spirit' to external nature.<sup>71</sup> The mind applies thus one of its own features to nature. Second, the mind has a tendency to ignore counterexamples to accepted theories. It is prone to accommodate them to the received opinions by making a distinction, even though there are many contrary instances.<sup>72</sup> Third, the mind is inclined to extrapolate from things that strike the mind suddenly, by which the imagination (*phantasia*) is filled and with which one is familiar.<sup>73</sup> This precludes considering contrary instances, too. The mind explains, in turn, things with which it is less familiar through these striking cases as if they would behave in the same way. Fourth, the mind has the tendency to consider as true what it likes to be true. Which implies that the human intellect is contaminated by the will and the affections (*voluntate & affectibus*).<sup>74</sup> Fifth, the deception of the senses is another aspect of this kind of Idols, but according to Bacon that is less of a problem because it is so easily discerned.<sup>75</sup> Still, 'speculation commonly ceases where sight ceases' so that imperceptible bodies, such as air, are 'almost unknown.' In short, the Idols of the Tribe lead to grave errors because both the intellect and the senses are by nature unfit for doing scientific research.

The Idols of the Cave portray mistakes individuals tend to make according to their peculiar constitution, mentally or bodily, as well as their personal history. The latter involves teachings of tutors and teachers, books one has read, differences in impressions, authorities one is inclined to follow, and so on.<sup>76</sup> The peculiar constitution concerns mental dispositions like loving either antiquity or novelty, having a mind

<sup>69</sup> Bacon 2004, *New Organon* I.41, 78, 80: 'Falso enim asseritur, Sensus humanum esse Mensuram rerum; Quin contra, omnes Perceptiones tam Sensus quam Mentis sunt ex analogia hominis, non ex analogia Universi. Estque Intellectus humanus instar speculi inaequalis ad radios rerum, qui suam naturam Naturae rerum immiscet, eamque distorquet & inficit.'

<sup>70</sup> Bacon 2004, *New Organon*, I.45, 82.

<sup>71</sup> Bacon 2004, *New Organon*, I.52, 88.

<sup>72</sup> Bacon 2004, *New Organon*, I.46, 82, 84.

<sup>73</sup> Bacon 2004, *New Organon* I.47, 84.

<sup>74</sup> Bacon 2004, *New Organon*, I. 49, 86.

<sup>75</sup> Cf. Bacon 2004, *Instauratio magna*, 'Distributio operis', 34: 'At Innata inherenter Naturae ipsius Intellectus, qui ad errorem longe proclivior esse deprehenditur, quam Sensus.'

<sup>76</sup> Bacon 2004, *New Organon* I.42, elaborated on in aphorism 53 to 58.

either inclined to analysing things meticulously, which explains the philosophy of the ancient atomists, or predisposed for noticing general similarities, as can be seen in other ancient philosophers, and so on.<sup>77</sup> There is one aspect of these Idols on which Bacon particularly insists, namely, a passion for a specific science.<sup>78</sup> Some fall in love with a particular science, and come to see everything from a particular point of view. Aristotle is a case in point. According to Bacon, he made his physics a ‘mere slave to his logic.’<sup>79</sup>

The Idols of the Market Place concern especially human language.<sup>80</sup> When the belief prevails that words correspond to the things they denote, many mistakes in the sciences will follow – for words do not resemble reality. Another persistent problem with language lies in the facts that words:

... are commonly framed and applied according to the capacity of the vulgar, and follow those lines of division that are most obvious to the vulgar understanding. And whenever an understanding of greater acuteness or a more diligent observation would alter those lines to suit the true divisions of nature, words stand in the way and resist the change.<sup>81</sup>

Definitions do not help to overcome this problem, because they too are composed of words. This leads to lots of merely verbal disputes. There are two kinds of linguistically induced deficiencies. First, there are many words referring to things that do not exist, such as ‘fortune, prime mover, planetary orbits, the element of fire, and fictions of that kind whose origins lie in vain and deceitful theories’.<sup>82</sup> Second, words are often ambiguous, having multiple and/or ill-defined meanings, which particularly applies to terms that are further removed from observation. In short, language is problematic because it is based on the ‘vulgar’ understanding rather than scientific exactness.

The final class of Idols, the Idols of the Theatre, concern dogmatically held beliefs, principles and axioms, that is, general laws that are considered indisputable by specific groups.<sup>83</sup> Moreover, Bacon counts among these Idols also the misguided laws of demonstration. As has been said, this class of Idols is not innate as the others, but is

<sup>77</sup> See Bacon 2004, *New Organon* I.58, 92: ‘... *Idolis Specus*, quae aut ex praedominantia, aut ex excessu compositionis & divisionis, aut ex studiis erga tempora, aut ex obiectis largis & minutis, maxime ortum habent.’; *New organon* I.57, 90.

<sup>78</sup> Bacon 2004, *New Organon* I.54, 88.

<sup>79</sup> Bacon 2004, *New Organon* I.54, 88: ‘... id quod maxime conspicuum cernitur in *Aristotele*, qui Naturalem suam Philosophiam, Logicae suea prorsus mancipavit, ut eam fere inutilem & contentiosam reddiderit.’

<sup>80</sup> Bacon 2004, *New Organon* I.43, elaborated on in aphorism 59 to 60.

<sup>81</sup> Bacon 2004, *New Organon* I.59, 92: ‘Verba autem plerunque ex captu vulgi induntur, atque per lineas vulgari intellectui maxime conspicuas, res secant. Quum autem Intellectus acutior, aut observatio diligentior, eas lineas transferre velit, ut illae sint magis secundum naturam, verba obstrepunt.’

<sup>82</sup> Bacon 2004, *New Organon* I.60, 94-95: ‘... Fortuna, Primum Mobile, Planetarum Orbis, Elementum Ignis, & huiusmodi commenta, quae a vanis & falsis theoriis ortum habent.’

<sup>83</sup> Bacon 2004, *New Organon* I.44, elaborated on in aphorism 61 to 67.

handed down by philosophical traditions. On Bacons' view, mainly two schools have corrupted science: Aristotelianism by using a wrong kind of logic – he states that Aristotle has ‘corrupted natural philosophy by his logic, thus fashioning the world out of categories<sup>84</sup> – and the school of Plato by mingling science with natural theology.<sup>85</sup> Apart from these two schools of thought, Bacon also criticizes the ‘empiricist school’, for which he refers to the natural philosophy of Gilbert.<sup>86</sup> For our purposes, it is important to again emphasize Bacon's rejection of Aristotelian logic. Bacon here singles out the categories – that is, notions like substance and accident – as being the Aristotelian conceptual framework by which physical objects are understood. Employing this conceptual scheme leads, according to Bacon, to a complete corruption of physics.

### 1.3 Descartes' ambiguous relation to Aristotelianism

#### 1.3.1 Introduction

Descartes asserts that one of the main purposes of the *Meditations* (1641) is to detach the mind from the senses. This statement alone implies a radical critique of Aristotelianism, since Aristotelian philosophy systematizes the common sense worldview, which is based on sense perception.<sup>87</sup> Aristotelian physics starts with the senses and accordingly attributes qualitative properties, such as colour and warmth, to external objects. Descartes breaks with this kind of physics in *The world* (1633), and replaces it with a mechanical physics in which only extension and movement are admitted as explanatory concepts. This means that he intends to remove from physics most elements of the Aristotelian conceptual framework.

But that is just one side of the coin. Descartes also had various reasons to downplay his criticism of traditional philosophy.<sup>88</sup> Especially after the condemnation of Galileo in 1633, he was very cautious to publish his natural philosophy, and certainly would not have wanted to come across as a great adversary of the Christianized Aristotelianism advocated by the Roman Catholic Church. Moreover, after publishing the *Meditations*, he hoped that scholastic philosophers – particularly Jesuits – would accept his metaphysics, in which, as Descartes contends, the foundations of his physics were put forward. Thus, the *Meditations* were in part a strategic project to persuade traditional philosophers to accept his new physics, thus preventing Descartes from openly rejecting Aristotelian physics.

<sup>84</sup> Bacon 2004, *New Organon* I.63, 98, 100.

<sup>85</sup> Bacon 2004, *New Organon* I.96, 152, 154.

<sup>86</sup> Bacon 2004, *New Organon* I.64, 100.

<sup>87</sup> See particularly Gaukroger 2002, 28-29, about the purpose of the *Meditations*: ‘The *Meditations* uses a sceptically driven epistemology to systematically strip down the world – the world of common sense and the world of Aristotelian natural philosophy – so that the assumptions that lie behind this picture are laid bare, and found wanting.’

<sup>88</sup> See about the relation of Descartes to scholasticism, Gilen 1957 and Ariew 1999.

As a result, Descartes' relation to Aristotelian philosophy seems to be ambiguous. This section is concerned with examining this issue, as well as the question of how far Descartes' critique and rejection of Aristotelianism actually goes. Therefore, first his remarks on Aristotelianism are explored, followed, second, by a brief discussion of his main points of critique. I shall conclude by offering a comparison between Descartes' critique of Aristotelianism and that of Bacon.

### 1.3.2 Descartes' relation to Aristotelian philosophy

In contrast with the *Meditations*, Descartes openly attacks Aristotelianism in the *Discourse* (1637). In it, he relates why he did not profit much from studying at the Jesuit College in La Flèche and reading scientific books. That his criticism concerns the fundamentals of the current philosophy is clear from the following quotation:

Regarding philosophy, I shall say only this: seeing that it has been cultivated for many centuries by the most excellent minds and yet there is still no point in it which is not disputed and hence doubtful ...<sup>89</sup>

He infers from this that also other sciences are doubtful in so far as they depend on principles supplied by philosophy.<sup>90</sup> As a result, philosophy has to be entirely renewed. In addition, in part six of the *Discourse*, he is even clearer about his rejection of scholastic philosophy. At that point, he contrasts it with Aristotle himself, and accuses contemporary Aristotelians of wanting to find in Aristotle's writings 'the solution to many problems about which he says nothing and about which perhaps he never thought'.<sup>91</sup> According to Descartes, this is a manner of philosophizing for mediocre minds, which are only capable of speaking about everything confidently because of the obscurity of the distinctions and principles they use.<sup>92</sup>

Despite this overt critique, Descartes generally tried to refrain from openly criticizing the Aristotelian philosophy. Indeed, some signs of this are even found in the *Discourse*. Descartes states there that he used the metaphor of the fable of the world – which functions to explain his mechanical picture of nature – in *The world* (1633) for just that reason:

<sup>89</sup> Descartes, *Discourse I*, AT VI 8: 'Je ne dirai rien de la philosophie, sinon que, voyant qu'elle a été cultivée par les plus excellents esprits qui aient vécu depuis plusieurs siècles, et que néanmoins il ne s'y trouve encore aucune chose dont on ne dispute, et par conséquent qui ne soit douteuse ...', CSM I 114-115.

<sup>90</sup> See on this Chapter 3 of this study, which is concerned with the notion of philosophy.

<sup>91</sup> Descartes, *Discourse VI*, AT VI 70: '...y trouver la solution de plusieurs difficultés, dont il ne dit rien et auxquelles il n'a peut-être jamais pensé.', CSM I 147.

<sup>92</sup> Descartes, *Discourse VI*, AT 70-71: 'Toutefois, leur façon de philosopher est fort commode, pour ceux qui n'ont que des esprits fort médiocres; car l'obscurité des distinctions et des principes dont ils se servent, est cause qu'ils peuvent parler de toutes choses aussi hardiment que s'ils les savaient, et soutenir tout ce qu'ils en disent contre les plus subtils et les plus habiles, sans qu'on ait moyen de les convaincre.', CSM I 147.

But I did not want to bring these matters too much into the open, for I wished to be free to say what I thought about them without having either to follow or to refute the accepted opinions of the learned. So I decided to leave our world wholly for them to argue about, and to speak solely of what would happen in a new world.<sup>93</sup>

This suggests that Descartes was constantly on his guard for openly discussing or opposing the accepted philosophy. In addition, it is also likely that he was cautious to propose things that were controversial for theological reasons – theology was intimately linked with scholastic philosophy at that time.

A reading of Descartes' correspondence supports this suggestion. In a letter to Mersenne of December 1629, Descartes mentions that he did not want to publish 'the little treatise', probably a draft for his metaphysics, before Mersenne and some other intelligent people had scrutinized it, in order to see if there are any things offensive to theologians.<sup>94</sup> Moreover, in a letter to the Louvain professor in medicine Vopiscus Fortunatus Plemp (1601-1661) of October 1637 in which Descartes discusses Libert Froidmont's (1587-1653) comments on the *Discourse*, he says that he could have said many things to support his theses on the nature of the soul, but 'did not do so, partly for fear of writing something false while refuting falsehood, partly for fear of seeming to want to ridicule received scholastic opinions'.<sup>95</sup> Later, he dedicated the *Meditations* to the theological faculty of the Sorbonne. All this confirms that Descartes was trying not to provoke Aristotelians.

At the same time, he repeatedly tried to persuade Jesuits to adopt his philosophy.<sup>96</sup> That is why Descartes had his *Discourse* sent to some Jesuits – 'those members of your Society [= the Jesuits] who are the most reliable in such matters' – by the Etienne Noël (1581-1660), who was rector of various Jesuit colleges in France. In the accompanying

<sup>93</sup> Descartes, *Discourse* V, AT VI 42: 'Même, pour ombrager un peu toutes ces choses, et pouvoir dire plus librement ce que j'en jugeais, sans être obligé de suivre ni de réfuter les opinions qui sont reçues entre les doctes, je me résous de laisser tout ce monde ici à leurs disputes, et de parler seulement de ce qui arriverait dans un nouveau ...', CSM I 132.

<sup>94</sup> Descartes, *Correspondence*, to Mersenne, 18 December 1629, AT I 85-86, CSMK 14. See also later remarks of Descartes in which he says he wants Sorbonne theologians to read his books. For example, *Correspondence*, to Mersenne, 28 January 1641, AT III 296, CSMK 172; to Mersenne, 4 March 1641, AT III 328, CSMK 173; to Mersenne, 31 March 1641, AT III 350, CSMK 177-178; to Gibieuf, 19 January 1642, AT III 474, CSMK 201.

<sup>95</sup> Descartes, *Correspondence*, to Plempius for Fromondus, 3 October 1637, AT I 415-416: 'Haec et talia multa non tantum iis quae de anima scripsi, sed et aliis materiis fere omnibus potuissem adjungere ad propositiones meas roborandas, quae de industria subticui, tum ne quid falsi docerem, illud ipsum refutando, tum etiam ne ullis opinionibus in Schola receptis velle viderer insultare.', CSMK 63.

<sup>96</sup> This theme returns often in Descartes' letters. See for example, Descartes, *Correspondence*, to Huygens, 9 March 1638, AT II 661-662, CSMK 91-92; to Mersenne, 27 July 1638, II 267-268, CSMK 118.

letter, he stressed that his philosophy does not require innovations in theology.<sup>97</sup> Moreover, in a letter to Jean-Baptiste Morin (1583-1656), a professor in mathematics at the Collège de France and an ardent defender of Aristotle, he explicitly said that he neither scorns the schools nor is opposed to scholastic terms, even though he had not used them in the *Discourse*.<sup>98</sup> In 1640, he sent copies of the *Meditations* to Jesuits.<sup>99</sup>

However, in the same year, he mentioned his plan of refuting scholastic philosophy by attacking its foundations. To that end, he bought the *Sum of philosophy* of Eustace of St. Paul (1573-1640).<sup>100</sup> Descartes devised a way of explaining scholastic philosophy beside his own philosophy, in such a way that students learned to 'scorn' (*mépriser*) the former.<sup>101</sup> This was, of course, far from his former attitude towards Aristotelian philosophy, and, may be explained largely by his troubles with the Jesuits. At that moment, he simply did not deem it possible anymore to obtain their cooperation in promoting his philosophy. By the end of 1641, he also dropped the intention of refuting scholastic philosophy, simply because, as he says, his own philosophy destroyed its foundations well enough.<sup>102</sup> Still, in January 1642, Descartes asks Mersenne to not tell the Jesuits that he does not want to publish one of their textbooks with a refutation of their arguments anymore, but rather that he '*will* do so, if he judges it advantageous that the truth should be known'. In other words, Descartes is still pondering on whether he will proceed with his project of refuting a scholastic textbook. In this letter, he says that he lets it depend on the objections of Jesuits to his philosophy. All in all, Descartes' relation to Jesuits in particular and scholastic philosophy in general is a very complicated affair.

Indeed, despite these negative comments, Descartes used a part of the scholastic terminology for his own project, particularly for his metaphysics.<sup>103</sup> And, in a letter of 1644 to a Jesuit father who was well disposed towards his philosophy, Etienne Charlet (1570-1652), he asserts that he did not use principles that were not accepted by Aristotle; which is also mentioned in one of the final paragraphs of the *Principles*.<sup>104</sup> This

<sup>97</sup> See Descartes, *Correspondence*, to [Noël], October 1637, AT I 454-456, CSMK 74-75.

<sup>98</sup> Descartes, *Correspondence*, to Morin, 13 July 1638, AT II 201-202, CSMK 108.

<sup>99</sup> See Descartes, *Correspondence*, to Mersenne, 30 September 1640, AT III 185, CSMK 153-154.

<sup>100</sup> Descartes, *Correspondence*, to Mersenne, 11 November 1640, AT III 232, CSMK 156.

<sup>101</sup> Descartes, *Correspondence*, to Mersenne, December 1640, AT III 259-260, CSMK 161.

<sup>102</sup> Descartes, *Correspondence*, to Mersenne, 22 December 1641, AT III 469-470. Cf. *Correspondence*, to Mersenne, 19 January 1642, AT III 481, CSMK 204. From that time onwards, Descartes' letters contain stronger negative comments on scholasticism. See, for example, Descartes' remarks in his letter to Huygens, 31 January 1642, AT III 523, CSMK 209-210; and, to Huygens, 10 October 1642, AT III 797, CSMK 215. In his letter to Voetius of May 1643, AT VIIIb 25-26, CSMK 221, Descartes states that 'the ordinary philosophy which is taught in the schools and universities is [...] merely a collection of opinions that are for the most part doubtful ...'

<sup>103</sup> See for Descartes' use of scholastic terms Gilson 1979.

<sup>104</sup> Descartes, *Correspondence*, to [Charlet], October 1644, AT IV 141, CSMK 238; *Principles* IV §200, AT VIIIa 323: 'Nullis me in ea principiis usum esse, quae non ab omnibus recipiantur;

may give some credit to the idea that Descartes simply contrasted the flawed philosophy of the scholastics with the true philosophy of Aristotle – a common argument of Renaissance anti-Aristotelians. But, in his correspondence, he claims that his principles destroyed those of Aristotle himself, so his criticism was not just limited to scholastic philosophy.<sup>105</sup> Then again, even in 1645, he still had hope of convincing Jesuits, and therefore insisted that he ‘composed his *Principles* in such a way that it can be said to be not at all in conflict with the ordinary philosophy’.<sup>106</sup> Apparently, a little later, he definitively lost faith in the possibility of persuading Jesuits of the truth of his philosophy. This may be inferred from Descartes’ bold claim in his preface to the French edition of the *Principles* (1647) that neither Plato nor Aristotle had found the true principles or primary causes of nature.<sup>107</sup> Which makes it clear that Descartes no longer is reluctant to reject Aristotelianism.

What may be concluded from this overview as to Descartes’ relation to Aristotelian philosophy is that it was highly ambiguous. On the one hand, he uses scholastic terminology for its own means and tries to court scholastics, but on the other hand, when the latter strategy seems to break down, he becomes more critical of scholastic philosophy. This ambiguity can be best explained by the fact that he attempted to entice Aristotelians toward accepting his philosophy, while he unequivocally opposed fundamental tenets of Aristotelian philosophy at the same time.

### 1.3.3 Descartes’ objections to Aristotelian philosophy

It remains to be seen precisely on which points Descartes criticizes Aristotelian philosophy. Although we will encounter other points of critique in the sequel of this study, it is useful to briefly discuss here Descartes’ two major reasons for rejecting Aristotelianism, namely, sensualism and Aristotelian logic, which also includes the Aristotelian scientific methodology.

It is beyond doubt that Descartes’ number one target is the sensualism of Aristotelianism.<sup>108</sup> According to Aristotle and his followers, scientific knowledge always

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hancque Philosophiam non esse novam, sed maxime antiquam et vulgarem. Sed velim etiam notari, me hic universam rerum materialium naturam ita conatum esse explicare, ut nullo plane principio ad hoc usus sim, quod non ab Aristotele, omnibusque aliis omnium seculorum Philosophis fuerit admissum: adeo ut haec Philosophia non sit nova, sed omnium maxime antiqua et vulgaris.’, CSM I 286.

<sup>105</sup> See for instance, Descartes, *Correspondence*, to Mersenne, 28 January 1641, AT III 298, CSM 173.

<sup>106</sup> Descartes, *Correspondence*, to \*\*\*, [June 1645], AT IV 224-225, CSMK 252-253.

<sup>107</sup> Descartes, preface to the French edition of the *Principles*, AT IXb 6, CSM I 181.

<sup>108</sup> Already in the *Rules*, Descartes, implicitly, denounces a philosophy based on ‘the fluctuating testimony of the senses or the deceptive judgement of the imagination’, see Rule 3, AT X 368, CSM I 14. He there contrasts the intuition of the intellect, a conception that is so clear and distinct that it does not leave any room for doubt, with the senses and the imagination. In *Discourse IV*, moreover, Descartes censures the Aristotelian dictum ‘nihil est in intellectu quod non prius fuerit

originates in the senses and the imagination (*phantasia*).<sup>109</sup> External objects ‘communicate’ with human reason through the senses, according to Aristotle.<sup>110</sup> Descartes’ main objection to this is that the senses do not teach us what properties physical objects actually have – which is especially true of qualitative sensations. Rather, it is reason that provides us with notions that reveal the actual make-up – their essences and real attributes – of physical bodies.<sup>111</sup> Descartes thinks, moreover, that because Aristotelians start with the senses they conflate what are actually distinct things, such as mixing up perceptions – which are thoughts – with real attributes of bodies. On his view, only reason can teach us what entities are separate, by acquainting us with the essence of those things. For example, Aristotelians ascribe qualitative attributes, such as colours, to bodies, while they pertain to the mind alone – they are mere perceptions. Reason shows that this is the case, according to Descartes. The function of the senses, on the other hand, consists primarily in teaching what is to the advantage of the human body.

It needs to be emphasized that Descartes’ rejection of the scholastic species theory is closely attached to this criticism of sensualism.<sup>112</sup> Descartes denies the existence of intentional species, some sort of images containing information on the object, including information on qualitative attributes, which as it were flow from the known objects into the mind.<sup>113</sup> Nor does he accept that mental images in all respects resemble either external objects or impressions of them in the brains, because those objects and impressions are corporeal, whereas the mind is immaterial. There is no likeness relation between a mental and corporeal image, at least as regards the qualitative features of sensory cognition – there exists only some sort of causal relation (or sign relation) between them.<sup>114</sup> To be sure, the external material object plays a role in the occurrence of the perception and is its object. But sensory perceptions do not look like their objects.

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in sensu’ for being one of the main causes, as an expression of the exclusive reliance on the senses and the imagination, of why it is not generally noticed that man possesses innate ideas of God and the soul (AT VI 37, CSM I 129). In other words, Aristotelian sensualism prevents the use of pure reason.

<sup>109</sup> At several places in his oeuvre, Descartes emphasizes that reason is the standard of truth instead of the senses. See, for example, *Discourse IV*, AT VI 39-40, CSM I 131, and the preface to the French edition of the *Principles*, AT IXb 7, CSM I 182.

<sup>110</sup> See Chapter 7 for a fuller discussion of the Aristotelian theory of cognition.

<sup>111</sup> In Chapter 5, it will be shown that although this conclusion is warranted by some points in Descartes’ works, there are also utterances suggesting that the senses do acquaint us with real features of external objects.

<sup>112</sup> Cf. Perler 1997. I will deal more extensively with the species theory in Chapter 7.

<sup>113</sup> This is a somewhat crude description of the scholastic species theory, but not far from how Descartes understands it.

<sup>114</sup> The question of the resemblance between ideas and bodies will be further examined in Chapter 5, where it is shown how ambiguous Descartes’ account in fact is.

Thus, one of the essential features of the scholastic theory of cognition is false, according to Descartes.

Descartes' criticism of scholastic logic is also severe.<sup>115</sup> He claims that Aristotelian logic – by which he primarily means the theory of the deductive syllogism – is unnecessary, because everyone can reason logically and detect sophisms without using the rules of logic.<sup>116</sup> Moreover, the primary functions of reason, intuition and deduction, cannot be explained, but only practiced, while scholastic logic puts a lot of attention to describing, and offering rules, for acts of reason.<sup>117</sup> That is why learning and applying rules of logic is superfluous. Indeed, doing so can even diminish the light of reason, for the rules distract our attention from reason, and thereby also from the natures of the things known through reason. Moreover, Aristotelians use logic to cover up problems by employing so many logical terms and distinctions that eventually their words no longer have any meaning.<sup>118</sup>

In addition, also the scientific methodology of the scholastics – a part of logic – is mistaken. It is unsuitable for finding new truths, but useful only for teaching already discovered truths to others – it is a method of teaching rather than of discovery. Besides, their method just forces pupils to accept the conclusions.<sup>119</sup> That is why Descartes concludes that scholastic logic is in fact rhetoric.<sup>120</sup> Instead of being concerned with truth, it is all about persuasion. A further consequence of this rhetorical angle of logic is the practice that so many opinions are scattered around – that is, debated in disputations – that in the end every spark of truth that may still be present is extinguished.<sup>121</sup> In other words, scholastic logic is for Descartes only a debating

<sup>115</sup> See about Descartes' assessment of scholastic logic, Clarke 1981, and Gaukroger 1989, Ch. 1.

<sup>116</sup> Descartes, *Rules* X, AT X 405-406, CSM I 36. There are, however, also remarks in which Descartes admits that some of the rules of logic are 'excellent and true'. See, for example, *Discourse* II, AT VI 17, CSM I 119, and *Conversation with Burman*, AT V 175, CSMK 350, where Descartes makes a distinction between logic, which is concerned with demonstrative proofs, and dialectic. These remarks, however, stand in marked contrast with many others, to which I refer in these footnotes.

<sup>117</sup> Descartes, *Rules* IV, AT X 372-373, CSM I 16.

<sup>118</sup> Cf. Descartes, *Discourse* VI, AT VI 70, CSM I 147.

<sup>119</sup> Descartes, preface to the French edition of the *Principles*, AT IXb 13, CSM I 186. Scholastic logic seems therefore to coincide in part with the synthetic method, to which Descartes attaches the same qualifications. See for that, *Replies* II, AT VII 156-157, CSM II 110-111. Another fault with scholastic logic is that no new knowledge can be found this way, see *Rules* X, AT 405-406, CSM I 36-37; *Discourse* II, AT VI 17-18, CSM I 119. The four rules of the method in the *Discourse* are meant as a substitution for the entire scholastic logic.

<sup>120</sup> Descartes, *Rules* X, AT X 406, CSM I 37.

<sup>121</sup> Descartes, *Letter to Voetius*, May 1643, AT VIIIB 26, CSMK 221. In *Rules* III, Descartes admits that it is sometimes useful to examine the ancients, but emphasizes at the same time that it can also cause error, because the ancients have often mingled evident truths with conjectures. In the next rule, he states that the study of writings containing mistakes can diminish the light of reason.

technique that leads to empty verbalism, and thereby to the suppression of reason and truth.

It can be inferred from what we have discussed so far that Descartes rejects both Aristotelian physics and logic. Along with it comes a fundamental break with Aristotelian metaphysics, although he does not explicitly argue against that branch of philosophy. At any rate, he rejects, for example, the Aristotelian matter-form distinction, as well as the tripartition of the soul in a vegetative, animal, and rational soul – both fundamental tenets of Aristotelian metaphysics.<sup>122</sup> On the other hand, we have already noticed that Descartes retains elements of the conceptual apparatus of scholastic metaphysics, which can be observed particularly in the *Meditations*. In it, Descartes uses technical terms that belong to the scholastic tradition, such as *objective reality*, *material falsity* and *objective concept*. More generally, however, one must say that Descartes deviates decisively from scholastic ontology. Most strikingly, he introduces a completely different theory of substance, properties and accidents. As a result, although Descartes does not openly criticize all parts of theoretical philosophy, in practice he rejects two of them, namely, metaphysics and physics.<sup>123</sup> Besides, he abolishes most of the scholastic logic. What is lacking, however, is any – even implicit – criticism of practical philosophy, that is, Aristotelian ethics and political philosophy.

#### *1.3.4 The psychological origins of the errors of Aristotelians*

So much for Descartes' attitude towards Aristotelian philosophy and his main points of critique. Now we have to see what he considers to be the origins of those errors. Two suggestions can be found in the following sentence of the *Discourse*:

So, too, I reflected that we were all children before being men and had to be governed for some time by our appetites and our teachers, which were often opposed to each other and neither of which, perhaps, always gave us the best advice; hence I thought it virtually impossible that our judgements should be as unclouded and firm as they would have been if we had had the full use of our reason from the moment of our birth, and if we had always been guided by it alone.<sup>124</sup>

<sup>122</sup> Although scholastics often consider the theory of mind to be a part of physics, I include it here among metaphysics, because Descartes discusses the soul in his *Meditations*, as well as because it is, at the time, often considered to be part of metaphysics.

<sup>123</sup> See Chapter 3 about the distinction between theoretical and practical philosophy.

<sup>124</sup> Descartes, *Discourse II*, AT VI 13: 'Et ainsi encore je pensai que, parce que nous avons tous été enfants avant que d'être hommes, et qu'il nous a fallu longtemps être gouvernés par nos appétits et nos précepteurs, qui étaient souvent contraires les uns aux autres, et qui, ni les uns ni les autres, ne nous conseillaient peut-être pas toujours le meilleur, il est presqu'impossible que nos jugements soient si purs, ni si solides qu'ils auraient été, si nous avions eu l'usage entier de notre raison dès le point de notre naissance, et que nous n'eussions jamais été conduits que par elle.', CSM I 117.

In this quotation, Descartes distinguishes two main causes of error, namely, internal obstacles to the use of reason and external influence of authorities.<sup>125</sup> The former may be better called the human condition, by which is meant the fact that human beings are composed of mind and body. This condition has some detrimental effects on our cognitive abilities, according to Descartes. Our mind is so closely connected with our body that most of our thoughts, as well as our ‘appetites’, originate in the body. In so far as they originate in the body, those thoughts are confused. More specifically, the influence of the body over the mind was so overwhelming in infancy that reason was unable to function properly at the time. This has caused many powerful prejudices.

Most importantly, the fact that we were all born as children has caused prejudices regarding the cognitive status of sense perceptions. What actually happened is that our judgements about the ontological status of extra-mental things or qualities perceived by the senses are formed by conditions that prevailed during infancy, leading to the disposition that everything we perceive by sense perception is automatically attributed to things outside our mind. Often this involves conflating mental and material features – such as ascribing the perception of red, which is, on Descartes’ view, just a mental phenomenon, to an external object. In other words, because we did not use our reason in infancy, we did not distinguish properly between our perceptions. This resulted in mixing up features that belong exclusively to the body or to the mind, by attributing to the soul many things that only belong to the body, and vice versa.<sup>126</sup> Moreover, the assent to these confused cognitions produced persistent prejudices. These prejudices have such a strong grip on our mind that we can hardly remove them.

The second main cause of error consists of the influence of authorities, which also includes specific false philosophies. According to Descartes, this cause of error remains in force even when someone tries to find the truth on his own by renouncing all alleged truths conveyed by teachers and books. That is why people who have not studied are more inclined to accept the truth than the learned.<sup>127</sup> Descartes thinks that the learning of false opinions is never without deep influence on the memory and habits, and that therefore these kinds of prejudices always crop up again.<sup>128</sup>

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<sup>125</sup> In the first part of the *Principles*, §71-74, Descartes distinguishes four causes of error that are more or less treated in this section (AT VIIIa 35-38, CSM I 218-221). I will deal more thoroughly with the prejudices in the next chapter.

<sup>126</sup> See Descartes, *Correspondence*, to [De Launay], 22 July 1641, AT III 420, CSMK 188; to Hyperaspistes, August 1641, AT III 424, CSMK 190.

<sup>127</sup> See on this theme, Descartes’ preface to the French edition of the *Principles*, especially AT IXb 8-9, CSM I 183.

<sup>128</sup> These views of Descartes, which he continues to hold, are clearly developed under the influence of Bacon’s doctrine of the Idols. That preconceived opinions are hardly removable from memory is explicitly asserted by Descartes in *Principles* I §72, AT VIIIa 36-37, CSM I 219-220.

It is most important to observe here that for Descartes prejudices are not just opinions. Rather, they are habits or mental inclinations that can hardly be eradicated.<sup>129</sup> This holds true of externally obtained opinions, but is much more applicable to prejudices resulting from the close connection of mind and body. In his later writings, this goes above all for the inclination to ascribe qualitative perceptions to external objects.

### 1.3.5 A comparison with Bacon

Although Descartes nowhere refers to Bacon's theory of the Idols or to the *New Organon*, his explanation of the causes of error corresponds largely with Bacon's Idols, above all in that most of these causes are internal to the mind – as being prejudices or deep inclinations.<sup>130</sup> As for each group of Idols separately, roughly, the human condition agrees in part with Bacon's Idols of the Tribe, although, as will be further explained below, Bacon and Descartes differ on the assessment of reason. The Idols of the Cave, representing character traits and experiences of individuals, are present in his criticism of the reliance on authorities, as well as in his view of the effects of the appetites. At other points in Descartes' writings, which are not discussed here, both the Idols of the Market Place – the influence of language – and the Idols of the Theatre – specific philosophies – get their due as well. Of course, there are many differences on specifics between Bacon's Idols and Descartes' causes of error, while also the context in which some of them occur may differ. But they correspond on the whole. What is more important for our purposes is to consider where they part company.

First, although Descartes' assessment of the mental causes of error largely coincides with that of Bacon, the explanation of the eventual source of these inclinations is quite different. This is due to a specific Platonic element in Descartes' theory that is missing in Bacon's account. According to Descartes, the basic origin of error consists of the detrimental influence of the body on the mind. Hence, reason is to be given priority above sense perception as the faculty of conceiving innate concepts of the essences of things and of making correct judgements about the status of perceptions – by reason it can be infallibly known which perceptions have to be referred to ourselves and which to external objects. For reason to be able to fulfil these functions, it is necessary to

<sup>129</sup> See for instance, Descartes, *Principles I* §16 about the *habit* to distinguish essence from existence, AT VIIIa 10-11, CSM I 198.

<sup>130</sup> Unfortunately, not many studies are available on the relationship between Descartes and Bacon. See particularly Milhaud 1917, Lalande 1911, who juxtaposes quotations from Descartes' *Discourse* and from writings of Bacon, and Sortais 1922. Descartes only discusses Bacon's philosophy explicitly in his correspondence with Mersenne of 1630 (January and 23 December) and 1632 (10 May), see AT I 109, 195, 251, CSMK 38. In these letters, he is quite positive about Bacon's method. Although Bacon's criticism of Aristotelianism must have had some influence on Descartes, he never even alludes to it, neither in his correspondence nor in his published writings.

eliminate the influence of the body by withdrawing the mind from the senses and by eradicating as far as possible the prejudices. This method cannot be found in Bacon.

Second, Descartes' rejection of Aristotelian sensualism cannot be found in Bacon either, nor Descartes' promotion of pure reason as the sole capacity entitled to make scientific judgements. In contrast to Descartes, Bacon is not convinced of the power of reason, but rather of its weakness. According to Bacon, reason does not possess any innate content, but is merely an empty instrument, which is, moreover, by nature liable to go astray and therefore needs to be guided by a right method.<sup>131</sup> He thinks that reason is moved most by that which touches the mind only once and suddenly, is not fitted by nature for a thoughtful and careful investigation, but must be forced to that by 'hard laws and an uncompromising command', and, finally, is prone to be far too hasty.<sup>132</sup> As long as reason is not guided by a proper method, Bacon calls it the ordinary intellect (*vulgaris intellectus/intellectus nudus/intellectus sibi permissus*). The intellect has to be helped by a correct method – by *auxilia* – to produce science. However, Bacon's conception of reason is vague. He regularly uses a very broad concept of reason that seems often to coincide more with the mind as a whole than with the faculty of reasoning alone. At any rate, although Bacon sometimes distinguishes reason from sense, reason is certainly not, as with Descartes, a faculty for perceiving intellectual truths. He is too much of an empiricist for that. By contrast, Descartes needs the method (of doubt) because we are so easily distracted from reason, rather than to amend the inherent limitations of reason itself. Descartes holds that reason is infallible; he does not recognize a common intellect which is prone to mistakes. Reason is not liable to mistakes, in his view, because it is a gift of God, who only gives good things to his creatures, and is the author of neither error nor evil.<sup>133</sup> Reason is not responsible for human mistakes, but the human condition, that is, the intimate connection of mind and body, has caused human proneness to error.

What is missing in Descartes' account, in comparison to Bacon, is an explicit and elaborate critique of the Aristotelian method of concept formation, and with it, a more developed critique of Aristotelian logic. He simply dismisses it as unnecessary. To be sure, some criticism of Aristotelian concept formation is implied by the Cartesian

<sup>131</sup> Bacon 2004, *New Organon* I.2, 64: 'Nec manus nuda, nec Intellectus sibi permissus, multum valet.' Accordingly, the chief cause of errors in the sciences is that the powers of the human mind are valued too high and that therefore the right aids are not sought for. See Bacon 2004, *New Organon* I.9, 66: 'Causa vero & radix fere omnium malorum in Scientiis ea una est; quod dum Mentis humanae vires falso miramur & extollimus, vera eius auxilia non quaeramus.'

<sup>132</sup> Bacon 2004, *New Organon* I.47-48, 84.

<sup>133</sup> See, for instance, Descartes, Replies II, AT VII 144, CSM II 103. It should be noted, however, that besides the positive assessment of reason Descartes notes rather frequently the limitations and weaknesses of the human understanding. However, these qualifications do not relate to reason as such, but concern only the range of innate ideas. See for example, *Principles* III §2, AT VIIIa 80-81, CSM I 248; *Rules* VIII, AT X 396-400, CSM I 30-33.

method. Descartes' emphasis lies on acquiring clear and distinct notions, contrary to the confused notions of Aristotelian physics. But he does not spell out what is wrong with the Aristotelian conceptual framework for explanations, as Bacon had done. Nor again does Descartes make the point that Aristotelian philosophy mainly results from using the ordinary intellect, that is, the intellect without using a proper (Baconian) method. In fact, he does not distinguish the ordinary from the true understanding. Precisely Bacon's critique on Aristotelian concept formation and the use of the ordinary intellect is the most interesting – which goes much deeper than Descartes' analysis.

#### **1.4 Aristotelianism and Dutch Cartesianism**

##### *1.4.1 Problems for Cartesian philosophy on Dutch universities*

Descartes' philosophy had considerable impact on Dutch universities, including Leiden University.<sup>134</sup> The introduction of Cartesian philosophy in the university curriculum, though, caused several problems to its followers, mostly due to the requirement to stay within the boundaries of Aristotelian philosophy and to teach it. This in part shaped the development of Cartesianism in the Netherlands. In order to understand this, it is necessary to get a brief impression of the teaching of philosophy on Dutch universities in the second half of the seventeenth century. The Leiden, and later Utrecht, anti-Cartesian philosopher Gerardus de Vries (1648-1705) divides the professors of philosophy at Dutch universities into three groups: scholastics, Ramists – followers of the French philosopher Petrus Ramus (1515-1572) – and *novatores*.<sup>135</sup> This division shows that Peripatetic philosophy did not have complete hegemony at Dutch universities, even though philosophy professors were expected to teach it. Often philosophers combined Aristotelian philosophy with other doctrines – opting for some kind of eclecticism. Somewhat earlier, Adriaan Heereboord (1614-1661), a Leiden professor in philosophy who is somewhat influenced by Descartes, offered a similar listing, with the exception that he makes a distinction between those *novatores* who merely want to destroy the old philosophy and those who provide a new foundation for philosophy.<sup>136</sup> He counts among the latter Bacon, John Amos Comenius (1592-1670) and Descartes. He adds that Peripatetic philosophy takes its starting-point from

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<sup>134</sup> See about Descartes' influence in the Netherlands, McGahagan 1976 and Verbeek 1992.

<sup>135</sup> See Dibon 1984, 101-102. See about Dutch university philosophy in general, Dibon 1954.

<sup>136</sup> Heereboord 1680, vol. 1, *Advice on the way of studying*, 27: 'Veterem voco quae ab antiquioribus tradita, & ex Aristotele praesertim hausta, receptis Veterum & Aristotelis innitit principiis: hanc Peripateticam vulgo vocant [...] Novam appello quae a recentioribus tradita, non ex Aristotele aut alio haustis principiis innitit, sed naturam ipsam pro Philosophandi objecto, non hominum, nedum Aristotelis, assumit sententias.' See for Heereboord's division of *novatores*, p. 28.

Aristotle's principles, whereas the *novatores* do not adopt principles from humans, but take nature itself for the object of study.<sup>137</sup>

As said, even though teaching Peripatetic philosophy was expected from Dutch university professors, most of them were susceptible to influences other than Aristotelianism. Indeed, eclecticism was even predominant in the Netherlands.<sup>138</sup> For instance, Heereboord, whose philosophy is clearly permeated by some kind of Aristotelianism, says he opposes the scholastic method of philosophy because it follows authorities too slavishly.<sup>139</sup> In his disputation *On the liberty of philosophizing*, he defends eclecticism, and accordingly praises many non-Aristotelian philosophers, such as Bacon, Comenius, Patrizi, Telesio, Ramus, Campanella, Gassendi, and Fludd. Moreover, he stresses that instead of following Aristotle, philosophers should follow nature, as Aristotle himself has done.

It would appear, then, that because of the presence of eclectic tendencies on Dutch universities Cartesian philosophy could be quite easily introduced in the philosophy curriculum. However, that was not the case, most of all because Cartesian philosophy itself was not eclectic in nature. Accordingly, problems resulted primarily from the fact that Cartesian university philosophers had to cope with the requirement to teach philosophy on the basis of Aristotle, and that Aristotelian terms were necessary for other disciplines. Aristotelianism was still the prevailing philosophy which students were – even on an international scale – expected to understand. Moreover, philosophy belonged to the liberal arts (*artes liberales*), which were preparatory to the higher faculties, theology, medicine and law. Those faculties, and then in particular theology, relied heavily on scholastic terms and distinctions. As a result, the Aristotelian conceptual framework had to be taught in philosophy, while Cartesian philosophy did not provide for that. Apart from these two reasons, it is to be remarked that Descartes' philosophy was incomplete, so that there was no comprehensive Cartesian alternative for Aristotelian philosophy. Descartes did not offer a replacement for logic or ethics, nor did he have an elaborate ontology.<sup>140</sup> In fact, the only part of Descartes' philosophy that was in a more developed state is his physics, although his physics lacked biology.

<sup>137</sup> Heereboord divides Peripetic authors, or rather their works into three groups: *systematici*, *quaestionarii*, and *textuales*. Although he refers to authors from the classical period, such as Alexander of Aphrodisias, most of the authors he lists lived in the first half of the seventeenth century. Examples of systematic Peripatetics are, amongst many others, Keckermann, Alsted, and Burgersdijk, of *quaestionarii* Timpler, and of *textuales* the Jesuit Pedro Fonseca (1528-1599).

<sup>138</sup> See Verbeek 1992, 6-10.

<sup>139</sup> McGahagan 1976, 221. McGahagan calls Heereboord's type of Aristotelianism an 'open humanistic Aristotelianism.' According to him, Heereboord adopted it from his teacher, the influential Leiden professor of philosophy Franco Burgersdijk (1590-1634).

<sup>140</sup> Which has also been noticed recently. See about the lack of a comprehensive ontology, Marion 1986, Marion 2000, and Janowski 2001. This has also been noticed earlier by Gilson 1913. See for Descartes' logic, Gaukroger 1989. And, finally, for the limitations of his ethics, Marshall 1998.

There were different ways to cope with these problems. Given the prevailing practice of eclecticism, the most fruitful way seemed to be to opt for an eclectic approach. A natural consequence of this was the development of combinations of Cartesian philosophy with Aristotelianism.<sup>141</sup> Although proceeding in very different ways, the work of the following two Cartesians showed just this tendency: Johannes Clauberg (1622-1665) combined Cartesianism with both Aristotelian ontology and logic, and Johannes de Raey (1621-1702) tried to do so, in his early work, for physics.<sup>142</sup> In the remainder of this study, we will encounter Clauberg and De Raey more often, because they exemplify two diverging approaches which were both influential in Dutch Cartesianism. They will prove to be illuminating for understanding Geulincx' philosophy, and it is likely that he in part responds to them.

#### 1.4.2 *De Raey's two approaches to Aristotelianism*

De Raey is an interesting example of a Cartesian who puts much effort into reconciling Cartesianism with the philosophy of Aristotle.<sup>143</sup> His early writing, the *Key to natural philosophy or introduction to the Aristotelico-Cartesian contemplation of nature* (*Clavis philosophiae naturalis, seu introductio ad naturae contemplationem Aristotelico-*

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<sup>141</sup> See Weier 1970.

<sup>142</sup> See for Clauberg, Müller 1891, Bohatec 1912, Brosch 1926, Mancini 1957, Mancini 1960, Weier 1960, Weier 1970, Viola 1975, Trevisani 1992, Carraud 1999, Spruit 1999, Verbeek 1999a, Bardout 2002a, Savini 2004, Savini 2006, and for De Raey, Weier 1970, McGahagan 1976, Grene 1993, Verbeek 1993, Verbeek 1994, Verbeek 1995, and Schuurman 2001. *Johannes de Raey* was probably one of the most original Cartesian philosophers. He taught philosophy at Leiden University since 1648, where he was appointed extraordinary professor in philosophy in 1653, in which discipline he became a full professor in 1661. In 1668 De Raey moved to Amsterdam, where he was appointed as a professor in philosophy at the Amsterdam Atheneum, a post he occupied until his death in 1702. *Johannes Clauberg* studied philosophy, theology and oriental (Hebrew) philology in Bremen. Thereafter Clauberg continued his studies at Groningen University, where he was influenced by Tobias Andreea (1604-1676), the main proponent of Cartesianism at Groningen. After staying in Paris, where he met Claude Clerselier (1614-1684) and Louis de la Forge (1632-1666), Clauberg went to Leiden to attend lectures of De Raey. At the beginning of 1649 he was appointed professor in philosophy in Herborn, from which he went to Duisberg in 1651. He died there in 1665.

<sup>143</sup> McGahagan 1976, 243-260. Naturally, Geulincx must have known De Raey well. In Ole Borch's journal, there is a description of a confrontation between De Raey and Geulincx during a disputation, on 8 March 1662, about the activity of the will. See Borch 1983, vol. 2, 73: 'Hinc disputantem Dn. *De Raëi* audivi, et opponentem quendam Professorem Philosophiae Lovaniensem, Medicinae jam hic Doctorem, de actione voluntatis, num illa alia esset quam velle, *Raëi* volebat solius voluntatis esse perficere, non solum velle, illud n. velle esse perficere. Cumque bene se gereret opponens, Respondente aliquando interrogante de quantitate et qualitate animae, obortus omnibus auditoribus risus, et magna pedum supplosio coorta.'

*Cartesiana*) of 1654, testifies to this.<sup>144</sup> In it, he gives a systematic reinterpretation of Aristotle's philosophy by reading it through Cartesian principles. Moreover, he contends that Aristotle's philosophy itself does not contradict Cartesianism. This does not apply, however, to the Arab and scholastic commentary tradition on Aristotle, which has distorted his philosophy, and has given rise to a large number of errors that have impeded the progression of knowledge. This is the reason why the true Aristotle has so long been veiled behind a curtain of un-Aristotelian principles. Moreover, the scholastics have introduced philosophy into theology and corrupted both in that way. Aristotle's philosophy itself, however, remains valuable, but it has to be cleansed from scholastic dust by the light of Descartes' philosophy. He insists that the foundations of Cartesian philosophy are already latently present in Aristotle. Accordingly, Aristotle does not differ in essence from Descartes but merely in the way in which he expresses his philosophy.

However, De Raey restricted this appropriation of Aristotle to physics. Metaphysics did not appear to interest him much at that time, and his early career is accordingly dedicated to separating Cartesian physics from metaphysics. Which was also an interesting strategy to circumvent problems Descartes' metaphysics caused to strict Calvinists, who were suspicious of the consequences of Cartesian metaphysics for orthodox theology. In De Raey's account, accordingly, Descartes' three laws of physics are not deduced from Cartesian metaphysics, but are so-called *praecognita* instead.<sup>145</sup> *Praecognita* are self-evident truths, which means that they do not need to be demonstrated (more about which in Chapter 3). For instance, the identification of matter with extension is a *praecognitum* according to De Raey. Apart from viewing the fundamental laws and principles of physics as *praecognita*, De Raey also tries to support them by referring to passages in Aristotle's metaphysics, in which, supposedly, the same position can be found.

But there is also another line of thought pervading De Raey's work – which shows some resemblance with Bacon's distinction between the ordinary and philosophical intellect, with the difference that the philosophical intellect is the Cartesian reason. Already in his first inaugural address, held on 25 March 1651, De Raey emphasizes the difference between the common understanding and philosophical knowledge.<sup>146</sup> The

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<sup>144</sup> De Raey's career falls apart in two periods. In the 1650s, he tries to reconcile the philosophy of Descartes with that of Aristotle in order to make Cartesianism acceptable as a professional philosophy. Later he opposes Spinoza and radical Cartesians who want to introduce the Cartesian method in theology.

<sup>145</sup> See on this, Schuurman 2001, 240-244; Grene 1993, 72-77.

<sup>146</sup> De Raey 1654, *Dissertation about the aids, degrees and vices of common knowledge in the contemplation of nature, and the task of philosophy concerning the same* (*Dissertatio de subsidiis, gradibus ac vitiis notitiae vulgaris in Natura contemplatione, & officio Philosophi circa eandem*), 1: 'Naturalis cognitio [...] in vulgarem seu omnium communem & Philosophorum propriam dispescitur.'

former type of knowledge depends on the senses, the imagination and memory. The purpose or object of ordinary knowledge is not truth, but use; it teaches us what is to the advantage of everyday life. In his later writings, this basic distinction of types of cognition is also applied to Aristotle's philosophy. De Raey divorces Aristotelian philosophy from that of Descartes in his later work.<sup>147</sup> He confines Cartesian philosophy mostly to physics, which he considers part of theoretical or contemplative philosophy. By contrast, every discipline that involves experience, is based on the senses, or consists of the interpretation of texts, belongs to practical philosophy. This implies that not only ethics but also a discipline like medicine is not philosophical in a strict sense. Rather, they are just (refined) forms of ordinary knowledge.<sup>148</sup> Contrary to De Raey's earlier writings, physics is now based on Cartesian metaphysics, which he views primarily as a discipline providing the basic principles for physics. As a result, philosophy proper is completely divorced from all types of knowledge other than the purely rational. In so far as Aristotelian philosophy can be properly used, it falls under practical knowledge – and thus is not philosophy strictly speaking.

In short, De Raey has taken two approaches to Aristotelianism. His first strategy consists of trying to reconcile Cartesian and Aristotelian physics, while ascribing all flaws of the contemporary Aristotelian physics to the scholastics. But in his later work, Aristotelian philosophy is instead considered as belonging to practical philosophy, which De Raey in turn divorces from speculative philosophy – that is, Cartesianism.

#### 1.4.3 Clauberg's 'scholastic' Cartesianism

Clauberg's approach to Aristotelianism is completely different.<sup>149</sup> According to Weier, Clauberg constantly tries to reconcile the philosophy of Descartes with Aristotle and scholastic thought. He attempts to bring the terms and concepts of both in accordance with each other, for example by reducing the Cartesian theory of doubt to that of the traditional *quaestio*, and by proposing admiration as the starting-point of philosophy, as does Aristotle. Weier argues accordingly that Clauberg does not view the philosophy of Descartes as a new beginning of philosophy, but rather as a renewal of the old philosophy.<sup>150</sup> He takes, in other words, a reformist approach.

Indeed, this tendency becomes apparent from both his writings on metaphysics and logic. Already as a student, Clauberg published a book on metaphysics, the *Elements of philosophy or Ontosophia* (1647). This work does not show any influence of Cartesianism yet. By contrast, later editions of the same work – from 1660 and 1664 –

<sup>147</sup> See Verbeek 1993, Verbeek 1994, and Verbeek 1995.

<sup>148</sup> See Verbeek 1994.

<sup>149</sup> Clauberg's relation to both Cartesianism and Aristotelianism has caused some controversy in the secondary literature. Müller 1891 sees Clauberg as a pure Cartesian, who just adopted the views of Descartes. On the contrary, Weier 1960 emphasizes the prevailing Aristotelian character of Clauberg's thought. See on this, particularly Weier 1960, 87 ff.

<sup>150</sup> Weier 1960, 94.

do. But also in these later editions, Clauberg does not repudiate Aristotelianism, but rather combines it with Cartesian thought.<sup>151</sup> This is one of the main reasons why Bohatec speaks of a Cartesian scholastic philosophy. Another way to refer to a position like that of Clauberg is the term ‘novantique’, which stands for a combination of the traditional Aristotelian philosophy with the new Cartesianism.<sup>152</sup>

Also Clauberg’s logic attests to this attitude towards Aristotelianism. In it, for instance, the Cartesian notion of clear and distinct cognition is connected with scholastic ontology and terminology.<sup>153</sup> A major obstacle to that approach were, however, Descartes’ negative comments on logic in the *Discourse*, to which we have referred above. Consequently, Clauberg had to reinterpret these comments on traditional logic. Already in an early work, the *Defensio cartesiana* (1652), Clauberg downplays the comments of Descartes on Aristotelian logic in the *Discourse*.<sup>154</sup> The *Discourse* is, according to Clauberg, merely a popular instead of a scientific writing, unlike the *Meditations* and the *Principles*. Moreover, Descartes does not reject logic completely, Clauberg holds, but only the practice of many scholastics of emphasizing the dialectical character of logic, by which logic becomes a mere tool for disputations.

To conclude, we have seen that the Dutch universities were dominated by an eclectic type of Aristotelianism, the official philosophy prescribed for the philosophy curriculum. This led to problems for Cartesians, who tried to resolve them in different ways. For example, the attitude towards Aristotelian philosophy of the later De Raey and Clauberg differs completely. They either try to incorporate Aristotelian thought in Cartesian philosophy, as with Clauberg, or attempt to demarcate Aristotelianism from Cartesianism. But a more radical approach towards Aristotelianism is possible as well – namely, by trying to remove Aristotelianism, or more generally a common sense view of the world, from philosophy as far as possible. That Geulincx’ philosophy is to be viewed as an example of this more radical approach will be shown in the following sections.

## 1.5 Geulincx’ refutation of Aristotelianism in his Louvain period

### 1.5.1 Geulincx’ inaugural address of 1652

Geulincx began his career in Louvain, as a professor *primarius* in philosophy, with an inaugural address that is entirely concerned with the origin of errors in philosophy. Already in this first oration of 1652, he firmly opposes the Aristotelian philosophy of his time. This is a recurrent theme in his writings, which connects his first oration with his later philosophy. In this writing, we may discover some of Geulincx’ motives for the construction of an alternative philosophy. Central to our examination of this text is the

<sup>151</sup> Bardout 2002a, 133, states that it becomes clear from later editions of his metaphysics that Clauberg tries to synthesize the philosophy of Aristotle with that of Descartes.

<sup>152</sup> Bardout 2002a, 130, refers to Clauberg by that term.

<sup>153</sup> Savini 2006, 78-80.

<sup>154</sup> Clauberg 1968, *Defensio Cartesiana*, Ch. 1, vol. 2, 943-945. Cf. Risse 1964-70, vol. 2, 59.

question of whether Descartes has been of influence. Usually, Geulincx is seen as influenced by Cartesianism in his Louvain period already – generally through the influence of his teacher William Philippi (1600-1665).<sup>155</sup> If so, this should become visible in this address.

Before summarizing the oration, it is necessary to emphasize that there are two quite different editions of the oration. The first edition was published in 1653. For the second edition of 1665, Geulincx altered the text considerably, and also added a commentary to the main text.<sup>156</sup> There are remarkable differences between these two texts. Whether the text of 1665 or 1653 is used can be seen in the footnotes.

Geulincx held his first address on the occasion of the *Saturnalia*, an annual festival, of December 1652.<sup>157</sup> This oration is highly rhetorical, as was usual for lectures held during this event. Nevertheless, the content of this oration is telling, since it can be read as a programme for Geulincx' entire philosophical career, in which a critique of Aristotelian philosophy plays a significant, if not dominant, role. From the preface to the second edition of 1665, it is clear that Geulincx thought in this way about this oration. In it, he states that the second oration, which was held in October 1662 when he started as a lecturer in logic, is a supplement to his first oration.<sup>158</sup> Thus, his first oration sets the stage for the rest of his philosophical career.

The oration sets off with a description of the deplorable condition of the cognitive situation of humans, which is clear from the following exclamation: ‘How densely covered in darkness is the mind of mortals!’<sup>159</sup> Most characteristic of this situation is that we proceed without a sure guide, but cling to seducers instead.<sup>160</sup> Those seducers are called *genii* by Geulincx. The senses are excluded from the *genii* because they, contrary to the *genii*, do not penetrate into the soul.<sup>161</sup> The soul uses and trusts the *genii* as beloved companions and becomes completely familiar (*familiaritas*) with them. But the soul is not actually guided by them but rather ‘driven, dragged and ravaged’. And

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<sup>155</sup> See on Philippi, Monchamp 1886b, Ch. 16, 317-336; Ch. 19, 372-388; Ch. 21, 411-425.

<sup>156</sup> In his edition of Geulincx' *Opera philosophica*, Land offers as the main text the edition of 1665, while deviations from the original text of 1653 are given in footnotes. I have followed Land's edition. If I refer to ‘Oratio I’ only, the texts of the edition of 1665 and 1653 are identical.

<sup>157</sup> See for a summary of Geulincx' first oration, De Vleeschauwer 1942b. And for the relation between Geulincx and Aristotelianism, Wulf 1910a.

<sup>158</sup> Geulincx, *Saturnalia* 1665 praef., I 8: ‘... agnosces postremam hanc Orationem primae illius Orationis esse supplementum.’

<sup>159</sup> Geulincx, *Oratio I* 1653-ed, I 11.

<sup>160</sup> Geulincx, *Oratio I* 1665-ed, I 11: ‘Haeremus, cespitamus; inter salebras et vepres, inter confragosa caligamus sine duce; hoc deteriore conditione, quod nihilominus, et avidi ad pergendum et creduli, unius vicem ducis, varios amplectamur seductores.’

<sup>161</sup> Geulincx, *Oratio I* 1665-ed, I 12: ‘Sunt seductores alii, versipelles quidam Genii, ad fallaciam et technas nati. Hi non in cute substitere, sicut Sensus, sed percolati, et medullam subeuntes, ad Animum penetrarunt.’

even if reason discovers that they are treacherous, they have defenders stronger than reason.

The strongest support for the *genii* is custom (*consuetudo*). The crowd makes the *genii* into patrons (*patronos*), a superstition from which hate of novelty (*Novitatum osores*) follows. In that respect, philosophers are equal to ordinary people – the *vulgus* – for they cast out everything which is against convention and custom (*Consuetudo* and *Mos*) as well.<sup>162</sup> Owing to the force of custom new things – that contradict the *genii* – are treated with derision and scorn. In such a way, the seducers – the *genii* – become stronger and stronger, as well as more deeply ingrained in the mind.

Let us now examine what the *genii* are. Geulincx presents four *Genii*, with the names of Pantomimus, Mango, Dogmatistes and Gerro. In his commentary of 1665, Geulincx describes these seducers succinctly. But before offering these descriptions, he provides the following general description of the *genii*:

Those *genii* are certain persuasions, which become stronger and stronger, or rather instigations and inclinations of convincing oneself of something contrary to the precept of reason.<sup>163</sup>

The point of Geulincx, in 1665, is then that the *genii* are inclinations of the mind that persuade someone to accept things that are contrary to reason. In other words, as we will further see in the next chapter, they are deeply rooted prejudices.

Subsequently, Geulincx describes the first *genius*, Pantomimus, as a certain ‘instigation and inclination of confounding a metaphor with a property, or of so grasping what is said metaphorically as if it would be a property of the object of speech.’<sup>164</sup> The most important aspect of Pantomimus consists in the tendency to think (*proclivitas cogitandi*) that all things ‘are similar to our senses and life, and that our cognition of them is directed to our actions and movement.’<sup>165</sup> Indeed, we often ascribe exclusively mental items to inanimate objects by metaphors. In other words, we are

<sup>162</sup> Geulincx, *Oratio I* 1653-ed, I 13: ‘His accedit Philos. Vulgus, quibus mos est, quia rationem non percipiunt, inassueta quaevis explodore, et sicut vestium formas aut derident aut suspiciunt, prout eas recepti patriae suaे mores vel rejecere vel admisere, ita etiam philosophandi rationem; lydius lapis, ad quem examinant veritatem, solere, vel non solere dici.’

<sup>163</sup> Geulincx, *Com. Oratio I*, I 45: ‘Genii isti sunt persuasiones quaedam, quae increbuerunt, vel potius instinctus et proclivitates persuadendi sibi aliquid praeter dictamen Rationis.’

<sup>164</sup> Geulincx, *Com. Oratio I*, I 45: ‘Pantomimus est instinctus quidam atque proclivitas, Metaphoram cum Proprietate confundendi, seu ita capiendi, quod metaphorice dicitur, ac si id etiam in proprietate sermonis obtineret.’ Cf. his description of Pantomimus in *Oratio I* 1665-ed, I 13: ‘... Allegoriae, Similitudinum, et Fabularum Genie ...’

<sup>165</sup> Geulincx, *Com. Oratio I*, I 45: ‘Unde Pantomimi praecipua pars est proclivitas cogitandi, res omnes sensu nobis ac vita similes esse, et in actionibus motuque suo, sua se cognitione dirigere ...’

inclined by this *genius* to transform inanimate things into animated, and even human, beings.<sup>166</sup>

Pantomimus gets most attention in this oration. In this context, Geulincx focuses on the detrimental influence of language on the sciences. Not only ordinary people but also the learned are deceived by the anthropomorphism of language. Geulincx gives first some examples of this phenomenon among ordinary people, and then deals with his real object, the philosophers.<sup>167</sup> He draws attention to some views of philosophers that have had a pernicious influence on the sciences, such as Pythagoras and Plato in antiquity, and Kepler and Campanella in his own times, both of whom attribute feeling (*sensum*) to the earth, planets, and even to elements, stones and metals. They clearly conflate what pertains solely to human beings with what belongs to inanimate objects.

Then Geulincx turns to the Peripatetics, among whom he also counts himself – after all, he was appointed to teach Aristotelian philosophy.<sup>168</sup> That this is the real target of his criticism is apparent from the fact that he devotes much more space to discussing their failings than those of other philosophers. Indeed, Geulincx attempts to show that especially the Peripatetics are opposing reason by thinking of nature in anthropomorphic terms. He offers a number of examples of this, such as the notion of *horror vacui* and impediments to a vacuum, natural appetites and aversions, sympathy and antipathy, substantial forms, as well as the intelligences (*intelligentiae*), faculties and powers. According to Geulincx, all these notions are *Pantomimi*.<sup>169</sup> He elaborates on this set of examples in what follows. Especially the notions of appetite and aversion receive much attention in this discussion. For instance, Peripatetics think that matter *strives for* (*appetere*) the forms and vice versa, and that stones *desire* gravity (*gravitatem desiderare*).<sup>170</sup> The Aristotelian notion of movement is singled out for an even more extensive treatment, in which Geulincx criticises scholastic dictums as ‘everything which is moved naturally tends to rest’ (*Ea quae moventur, naturaliter ad quietem tendere*) and ‘nothing acts upon itself’ (*Nihil agere in se ipsum*). Also the fundamental Aristotelian

<sup>166</sup> Geulincx, *Oratio I* 1665-ed, I 14: ‘Genius hic, judices cum ad omnem Metamorphosim inclinat propendetque, tum in anima in animata transformandi longe cupidissimus est.’

<sup>167</sup> Geulincx, *Oratio I* 1665-ed, I 17: ‘Plebem decepisse te fateris, non Philosophos? Imo, inquam, Philosophos decepisti, non plebem.’

<sup>168</sup> Geulincx, *Oratio I* 1665-ed, I 18: ‘Ad illos potius orationem convertamus, quos aliud agentes, alio spectantes, et invitatos impullit, elusit, induxit. Nos, nos (aperte dico) Peripatetici defecimus, nos qui Rationis Triarii ferebamur, nos, o pudor! transfugae, nos Mimo illo imperatore meruimus, antequam scivimus.’

<sup>169</sup> Geulincx, *Oratio I* 1665-ed, I 18: ‘Pantomimi illa sunt, pro quibus hactenus, tanquam pro aris et focis, contra Rationem dimicavimus. *Fugae Vacui et Impedimenta Vacui, Appetitiones naturales et Aversationes naturales, Sympathiae et Antipathiae, Formae Substantiales et Intelligentiae, Facultates et Potentiae*, sunt, inquam, illa omnia Pantomini propria, mancipio et nexu, usu et fructu.’

<sup>170</sup> Geulincx, *Oratio I*, I 21.

principles of matter and form are rejected, which are, according to Geulincx, taken from the relation between husband and wife in a marriage.<sup>171</sup>

In short, the core of Geulincx' critique of the Peripatetics is contained in his objection that they confuse matter with thought – at least, this is the way in which he formulates it in his later, Cartesian, period.<sup>172</sup> His attack on the Aristotelian doctrine of the intelligences should also be seen in this light: ‘For what are intelligences (*Intelligentiae*), which are affixed to the stars or heavens, other than what we are, minds with a body?’<sup>173</sup> Substantial forms are considered likewise. As a result, most concepts of Aristotelian physics are considered to be *Pantomimi* by Geulincx, that is, they are based on our inclinations to apply mental features to physical objects.

*Mango* – the slave trader who displays his living wares dressed as neatly as possible – represents another type of anthropomorphism.<sup>174</sup> Mango tries to explain nature by applying our conception of harmony and decorum to it. It conceives of nature as in accordance with what is pleasing to the eyes, as if that would both represent objective perfections of nature and be the true measure of all perfection. Owing to this *genius*, we see the world as being in perfect harmony. This can be seen in the way in which order is attributed to the universe: earth and water are placed in the middle, surrounded by air and fire, and then follows the heavenly sphere with the planets. Although this way of perceiving nature is flawed, Geulincx notices in his commentary of 1665 that there nonetheless is a true harmony (*ornatum*) and order in nature that can be recognized by reason alone. In the case of Mango, by contrast, we are merely dealing with perfection attributed to things ‘from fancy and an inclination of decorating’ (*ex libidine et instinctu ornandi*), that is, as it is conceived by our imagination.

Mango is also responsible for the notion of a hierarchy of being, as if nature were a Republic in which one is nobler than the other.<sup>175</sup> In such a way, substance is considered to have more dignity than the accidents, spiritual substances regarded as nobler than corporeal, complete substances higher than incomplete, and so on. Likewise, heaven is seen as better than earth, simply because the elements of fire and air are ranked higher than water and earth. For the same reason, it is thought that heavenly bodies are neither generated nor destroyed, do not increase or decrease, and are also neither heavy nor

<sup>171</sup> Geulincx, *Oratio I*, I 20-21.

<sup>172</sup> Take note of the difference of expression at this place between the 1653-edition of the *Oratio* and the 1665-edition.

<sup>173</sup> Geulincx, *Oratio I* 1665-ed, I 23: ‘Quid enim aliud sunt *Intelligentiae* sideribus aut caelis affixae, infixae, quam id ipsum, quod nos sumus, mentes cum corpore?’ (1653-ed, I 23: ‘... sidera, dum intelligentias illis assigis, imo infingis, nisi animalia quaedam mente praedita?’).

<sup>174</sup> Geulincx, *Com. Oratio I*, I 45: ‘Mango est instinctus ornandi, ordinandi, concinne disponendi.’ Geulincx, *Oratio I* 1665-ed, I 26: ‘... Mango, ornatus et harmoniae Genius.’ ‘Mango’ is a Latin word denoting ‘a dealer, monger in slaves or wares, to which he tries to give an appearance of greater value, by adorning them ...’ (Lewis and Short 1962, 1108)

<sup>175</sup> See Geulincx, *Oratio I*, I 29.

light. In addition, Geulincx thinks that the whole theory of the elements, as well as that of the *mixta* (bodies consisting of several elements), is based on this notion of order and ornament – in other words, the inclinations of Mango. From this, it may be inferred, again, that Geulincx rejects Aristotelian physics in its entirety. It is as a whole just a product of a deeply rooted mental inclination.

Then, Geulincx notices that even though Aristotelian physics, and along with it metaphysics, is now proved to be flawed, still something remains to be criticized. He introduces this with the following words:

I see, judges, after casting out Pantomimus, banishing Mango, and at the same time tearing out from our books their dictates, fictions and opinions, that the whole scholastic philosophy is departed with them, and just a small mix of those swollen volumes is left in the library. I discover that hardly anything remains but certain axioms [...], common notions, and general rules.<sup>176</sup>

The third *genius*, *Dogmatistes*, deals with the rules and notions mentioned in this quotation. Geulincx describes this *genius* as an ‘instigation or inclination of establishing in general, of delivering rules and axioms, and of composing systems of arts and sciences’.<sup>177</sup> Again, Geulincx insists that it is allowed to draw up axioms, rules and systems provided one does it under the guidance of reason. But in the case of *Dogmatistes* reason is not in play. Instead, *Dogmatistes* can be likened best to the way in which ordinary people deal with religion. They consider religion to be the proclamation of mysteries with a kind of exaltation that is expressed by peculiar gestures and certain outward features. Its distinctive mark is that there is no internal connection between the separate mysteries, oracles and sayings. They are unconnected. Geulincx argues that the same goes for the common notions of the Aristotelians, such as logical axioms like ‘That for which a thing is such, that thing itself is more such’ (*Propter quod unumquodque est tale, ipsum est magis tale*). In the 1653-edition of the oration, he also lists the famous scholastic principle that ‘Nothing is in the intellect, which was not first in the senses’ (*Nihil est in intellectu, nisi prius fuerit in sensu*), apart from other rules, such as ‘One receives according to one’s own mode of reception’ (*Quidquid recipitur, ad modum recipientis recipitur*) and ‘No extremes last long’ (*Nullum violentum est perpetuum*).<sup>178</sup> If one asks for an account (*ratio*) of these notions, they send you away. Young beginners

<sup>176</sup> Geulincx, *Oratio I* 1665-ed, I 34-35: ‘Video, judices, ejecto Pantomimo, exterminato Mangone, evulsis simul eorum de libris nostris dictatis, commentis, et placitis, Scholasticam pene totam cum illis abiisse Philosophiam, et de turgentibus illis in Bibliotheca voluminibus non nisi exiguum superesse farraginem. Vix quidquam comperio reliquum, praeter Axiomata quaedam [...], Communes Notiones, et Generales Regulas.’

<sup>177</sup> Geulincx, *Com. Oratio I*, I 46: ‘Dogmatistes denique est instinctus et proclivitas generatim statuendi, Regularum et Axiomatum formulas tradendi, artium et scientiarum Systemata condendi.’

<sup>178</sup> Geulincx, *Oratio I*, I 35.

are simply told that those axioms are the foundations and principles of science (*Fundamenta sunt, Principia sunt*), and that they have to keep silent on them and just trust the authorities, because they are only novices. Consequently, these propositions (*effata*) are not explained, nor do Aristotelians make clear how they are connected to one another. Rather, they are simply held for principles that cannot be proved.

Geulincx counts among those principles not only logical axioms, but also notions like the intelligences (*intelligentiae*), substantial forms, primary causes, influences and occult qualities (*influentias et qualitates occultas*), as well as vapours and exhalations (*vapores et exhalationes*). Geulincx briefly clarifies all of them, and then explains why those principles do not actually explain anything. For example, when the question of why water becomes cold after being warm is answered by pointing out that the substantial form of water, or a certain potentiality (*potentiam*) inherent in that form, is responsible for this effect, nothing is really explained.

Lastly, Geulincx comments on the final *genius*, *Gerro*, in a mere few sentences. *Gerro* is the *genius* of wars. In this case, of course, ‘war’ is not to be read literally. We are dealing here with verbal wars, fought with the help of dialectics and grammar.<sup>179</sup> This is all Geulincx says about *Gerro*.

### 1.5.2 A comparison with Descartes and Bacon

We can conclude from our reading of Geulincx’ first address first of all that it is indisputable that Geulincx rejects Aristotelian physics in its entirety, and more implicitly also its metaphysics – for he rejects fundamental Aristotelian principles such as matter and form as well as substantial forms. The whole oration consists simply of an attack on scholastic philosophy. But the question remains of where his criticism stems from. And, more specifically, what role does Cartesian philosophy play in it?

There is no evidence that Descartes’ philosophy plays any role at all. All the typical Cartesian lines of criticism, such as conflating mental and material features, can only be found in the 1665-edition of the oration, in which Geulincx also refers to Descartes.<sup>180</sup> This can also be concluded from the fact that Geulincx emphasizes reason much more in his commentary of 1665 than in the oration of 1652.<sup>181</sup> For example, we have seen that, unlike the 1652-oration, Geulincx says in his commentary (of 1665) that there is an order in nature which may be discovered by reason, and also that reason presents the true axioms or common notions and rules, so that there is a rational counterpart for

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<sup>179</sup> Geulincx, *Oratio I* 1665-ed, I 41: ‘Antesignanum tamen novi: Gerro est; qui pridem ex trivialibus Scholis, ex Grammatica et ima Dialectica huc appellens, gerras multas nobis contexuit, verborum tricis detinuit, syllabis anxie discutiendis exercuit, proposuit quaestiunculas multas exiles, frivolas, rancidas, auctaria, corollaria, pererga.’

<sup>180</sup> See Geulincx, *Com. Oratio I*, I 50.

<sup>181</sup> See particularly his eulogy on reason in his commentary of 1665 (I 57-58), which is contrasted with authority (*Auctoritas*), convention (*Consuetudo*) and custom (*Mos*).

both Mango and Dogmatistes.<sup>182</sup> Accordingly, in this oration, we do not find as fundamental a critique of sensualism as in Descartes' *Discourse*. Geulincx mentions only that the senses are impostors and seducers, but stresses at the same time that they do not have to be explicitly pointed out as such, since they are not as cunning as the *genii* in deceiving, as well as because the fallacies of the senses are obvious.<sup>183</sup> His commentary from 1665 makes it clear that he thinks that every school of philosophy, including the Aristotelians, is well aware of the deception of the senses.<sup>184</sup>

Rather than the influence of Descartes, Geulincx' whole oration of 1652 smacks of Bacon's criticism of the schools.<sup>185</sup> Not only is this apparent from the fact that his *genii* resemble Bacon's Idols, but also from Geulincx' elaboration of the *genii*, as well as the programme for philosophy he briefly outlines at the end of his address. In general, both Idols and *genii* represent deep inclinations of the human mind. This is why Geulincx precludes the senses from the *genii*, as does Bacon, although both acknowledge the negative influence of sense perception. More specifically, it is to be noticed that Geulincx' *genii* are not just copies of Bacon's Idols. There is no strict correspondence between them. Still, most of the components of the Idols return in Geulincx' descriptions of the *genii*. I will not spell out all the similarities between Geulincx and Bacon, but only briefly point out some correspondences. First, the Idols of the Tribe are spread over the *genii* Pantomimus and Mango – both of them stand for the tendency of the mind to ascribe its own features to external reality. Second, the Idols of the Cave can be retraced to Dogmatistes. Third, the Idols of Marketplace are specifically represented by Gerro, and more generally also by Pantomimus. Finally, the Idols of the Theatre can be found in Dogmatistes. Most interesting, however, is that Geulincx extensively criticizes Aristotelian explanatory concepts, which, as we have seen, is also an essential feature of Bacon's account.<sup>186</sup> In short, virtually every point of Bacon's theory of the Idols can be retraced in Geulincx' account.

<sup>182</sup> See Geulincx, *Com. Oratio I*, I 45-49.

<sup>183</sup> Geulincx, *Oratio I* 1653-ed, I 12: 'Nec duntaxat sensus nostros infamia illa noteverim: impostores illi quidem, sed non admodum vafri, non conspirant satis, mutuas subinde fraudes detegunt; jam dudum ad omnia Philosophiae tribunalia citati, de apertis mendaciis convicti, fidem apud sapientes non habent.'

<sup>184</sup> Geulincx, *Com. Oratio I*, I 50: '... quod Sensus sint infames, et jam per omnium Philosophorum Scholas tamquam seductores traducantur.'

<sup>185</sup> This has also been noticed by De Vleeschauwer 1942b, see particularly pp. 12-13.

<sup>186</sup> This is, of course, closely related to criticism of language employed in the sciences. This is also a recurrent theme in Geulincx, which I will only sketch briefly. His main point of critique is that ordinary names (*nomina*) are not precise enough for philosophy. They do not allow us to determine to what idea (exact concept) they refer, thus causing many errors in philosophy if they are used indiscriminately. Words are often ambiguous, referring to several ideas. Besides, people often judge about things by the names they use for them. In order to avoid these problems, true philosophy should define their concepts very precisely. Indeed, for Geulincx exactness is as necessary in philosophy as in mathematics and has to conform to mathematical standards. See on

That Geulincx has been influenced by Bacon is indubitable from the fact that he uses the term ‘natural history’ in a specific Baconian sense in his didactic programme for philosophy.<sup>187</sup> The type of natural philosophy Geulincx proposes here is un-Cartesian, for he does not put forward an a priori, more or less metaphysical, physics. Instead, he uses the Baconian method of drawing up histories of natural phenomena, combined with experiments. He insists that instead of using books to discuss opinions and controversies of the ancients, one has to make observations, conduct experiments and draw up natural histories. One also has to use telescopes, botanical gardens, and other scientific instruments, as well as magnets, to which he adds anatomical theatres in the 1665-edition of his oration. On the basis of these observations and experiments, from which the natural histories are drawn up, the teachers arrange certain common classes.<sup>188</sup> In such a way, the controversies of the ancients can be settled. However, Geulincx adds that one has to be modest because new experiments and experiences may alter the picture.

Once the mind (*ingenium*) of the pupil is formed by practising the sciences, logic and mathematics, and also ripened by experiences or experiments (*experientias*), it is able to propose hypothetical explanations (*conjectura*) for natural phenomena which agree with the observations and experiments. And, then, one has also to make deductions (*continua diductione*) from those explanations, for which the knowledge of logic is necessary as well as a mind well-trained in making precise demonstrations. If those deductions do not fit the observations, the hypothetical explanations have to be discarded. Of course, also new experiments may render them false. Consequently, natural philosophy will always remain provisional, and never reach the same level of certainty as the pure sciences. But still, the method to be used in it is deductive – proceeding from hypothetical explanations (the *conjecturas*). This is why natural philosophy relies on logic.

If this reading of the passage about the way of proceeding in natural philosophy is correct, then it would mean that the relation of mathematics to physics is not necessarily the same as in Descartes. The question becomes urgent, then, of how Geulincx’ programme of 1652 relates to Cartesianism. The major point of agreement consists in the insistence of both Descartes and Geulincx on practising the mind (*ingenium*) by using mathematics. But, in my view, this also the *only* point on which they are in perfect accord. It is not apparent that Geulincx thinks that the explanations in natural

the problem with language, particularly the following passages: Geulincx *Ethics* I, Ch. 2, Sect. 1, §3, III 26-27; *Ethics* I, Ch. 1, §1, III 9-10, Ann. pt. 1, III 153-155; *Ethics* Ann. I, Ch. 1, §1, pt. 9, III 157; *Disp. On virtue*, §8, III 277.

<sup>187</sup> See Geulincx, *Oratio I* 1653-ed, I 42: ‘Post mathematicas ad rerum naturalium Historiam applicentur. Hanc voco congeriem ex diversis Naturae Phaenomenis experimentisque certis indubitatis, pura narratione exclusa tamen conjectura rationis, ob quam ita se habere videantur, cur ita sint.’

<sup>188</sup> Geulincx, *Oratio I*, I 42: ‘... a docentibus in communia quaedam capita digeretur ...’

philosophy have to be of a mathematical nature – that is to say, mechanical explanations. On the contrary, he says only that mathematics prepares the mind for reasoning consistently. In other words, mathematics plays only a didactic role in preparing novices for doing physics, and can be used in logic because it is a pure science. There is no sign that physics should be mathematico-mechanical. This changes in Geulincx' later philosophy. What is more, the deductions Geulincx wants to use in physics refer undoubtedly to traditional logic – he wants traditional demonstrative syllogisms. In this oration, he only says he wants to reform logic rather than reject it. Completely original with Geulincx is his insistence on remodelling logic in accordance with the geometrical method.<sup>189</sup> He intends to develop a strictly deductive logic, in which items that are commonly considered to be logical axioms are deduced from principles – a suggestion that can be found neither in Bacon nor Descartes. Contrary to Descartes, Geulincx does not take issue with scholastic logic as such.

That Geulincx' view of physics has changed later becomes clear from the fact that he made some significant alterations in these passages on natural philosophy in the 1665-edition. Geulincx simply deleted those sentences of the 1653-edition that emphasize the provisionality of the explanations of physics. Instead, he affirms that 'physical hypotheses unite with precision (*ad amissum*) the senses with reason and the experiments with the sciences'.<sup>190</sup> The hypotheses he has in mind are probably the assumptions of the existence and amount of motion, more on which in Chapter 4. This shift can be best explained by the influence of Cartesian physics on Geulincx after 1652 – his later physics is of a Cartesian sort.

## 1.6 Geulincx' later criticism of Aristotelian philosophy

### 1.6.1 Introduction

The preceding section made it amply clear that Geulincx' main target of critique is Aristotelian philosophy. He rejects most of the Aristotelian conceptual framework. Still, it remains to be seen, first, what his major objection as to Aristotelianism is in his later works, and, second, what the extent is of Geulincx' rejection of Aristotelian philosophy. Is it limited mostly to Aristotelian physics, as with Descartes? Or does he also criticize Aristotelian ethics? A discussion of this second point is needed to determine how Geulincx' attitude towards Aristotelianism compares to Descartes, Clauberg en De Raey.

### 1.6.2 Geulincx' main objection to Aristotelian philosophy

One of Geulincx' most comprehensive critiques of Aristotelian philosophy appears in his introduction to the *Peripatetic metaphysics (Metaphysica ad mentem peripateticam)*.

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<sup>189</sup> Geulincx, *Oratio I*, I 41-42.

<sup>190</sup> Geulincx, *Oratio I* 1665-ed, I 43: 'Intelligentia jam a scientiis culta, ab Experientiis firma ac matura, Hypothesis Physica proponatur, quae Sensus cum Ratione, Experimenta cum Scientiis ad amissum conciliet'.

In the first section of this introduction, he contrasts true wisdom (*vera sapientia*) with the doctrine of the Peripatetics (*doctrina Peripatetica*).<sup>191</sup> True wisdom considers things as they are in themselves (*res ut in se sunt*). The Peripatetic doctrine, by contrast, does not consider things as such, but as invested with our ways of cognizing them. This is Geulincx' main objection to Aristotelianism, which he summarizes in the following passage:

On the contrary, Peripatetic doctrine (which therefore is not wisdom) considers things in so far as they are infected by our modes of thinking; indeed in Physics it considers things subjected to the senses, by which they are extrinsically denominated, by that species and image of warmth, coldness, whiteness, heaviness; in Metaphysics, it considers things that flee the senses, in so far as they stand under the modes of our intelligence, and are extrinsically denominated from those modes as *genera*, *species*, whole, part, beings, modes, substances, accidents, and so on. Not as if he knows and understands this, namely, that the things he has taken to regard, that those are extrinsically affected in such a way, that those are merely denominated from our modes of thinking in such a way, either from the intellect or sense; but as it were believing and very firmly holding that those things are in themselves thus, existing in themselves under that species or phantasm under which they appear to the senses or the intellect.<sup>192</sup>

Thus, whereas, with regard to sensible things, true wisdom removes the perceptual forms of our cognitions – which Geulincx calls sensible species and more generally modes of thinking (*modi cogitandi*) – from our way of perceiving these things, Peripatetic doctrine ascribes these forms to the objects cognized. As for metaphysics, wisdom removes the ‘logical forms of thought’, that is, the structure of intelligibility the intellect applies to objects, allowing it to understand them. Peripatetic doctrine, by contrast, simply ascribes these logical forms to the objects themselves.

Although this complex theory is further explained in Chapter 7 and 9, it is important to make the following observation here. Geulincx' point is *not* that it is wrong to view objects by means of perceptual and intellectual ways of thinking. Rather, on his view, this is inevitable. We simply have to view physical objects by means of colours or other qualitative perceptions – perceptual forms of thinking. Likewise, forming concepts

<sup>191</sup> Geulincx, *MP Intr.*, §1, II 199-200.

<sup>192</sup> Geulincx, *MP Intr.*, §1, II 199-200: ‘Doctrina autem Peripatetica (quae ideo non sapientia est) considerat res quatenus inficiuntur modis nostrarum cogitationum; et in Physica quidem considerat res subjectas sub sensum, quibus extrinsece per speciem illam et imaginem sensus denominantur calidae, frigidae, albae, graves; in Metaphysica vero considerat res sensum fugientes, quatenus hae substant modis intelligentiae nostrae, ab iisque extrinsecus denominantur genera, species, tota, partes, entia, modi, substantiae, accidentia, etc. Non quasi id sciens atque intelligens, res quas contemplandas sibi praestituit, ita affici extrinsecus, ita denominari tantum a modis nostrarum cogitationum, sive intellectus sive sensus; sed quasi credens firmissimeque tenens, res eas in se tales esse, exsistere secundum se sub illa specie aut phasmate, sub quo sensui aut intellectui apparent.’

of objects necessarily involves considering them as, for example, either substances or accidents or as parts or wholes – we cannot understand them otherwise. All this is inevitable. But it is wrong to *judge* or expressly affirm that the objects in themselves have the same forms as those by which we apprehend them. We go far astray when we do consider forms of thinking to be real properties of the objects known. And that is precisely what Aristotelian philosophy does. Peripatetic philosophers ascribe features that only belong to sense or intellect to the objects that are known by these modes of thinking, thus conflating mental and material features in the case of physics, and likewise ascribing features or states of our mind to external objects in the case of metaphysics. In that respect, Geulincx argues, Aristotelians are like children.<sup>193</sup> Small children judge that a stick held under water is really bent, whereas adults certainly see a bent stick but do not judge it to be so. Aristotelian philosophy applies the mind's ways of cognition to external objects, for which reason it is not an 'adult' philosophy. Rather, Aristotelianism is a childish philosophy.

In sum, Geulincx' main objection to Aristotelian philosophy is that it applies our modes of thinking to the objects thought – which means that Aristotelian philosophers actually *judge* these modes to represent real properties of external objects.<sup>194</sup> He detected this mistake in both Aristotelian physics and metaphysics. It remains to be seen, however, whether this objection has also consequences for practical philosophy. In the next subsection, I briefly outline the specific points on which Geulincx criticizes Aristotelian physics, metaphysics, and then I discuss what consequences Geulincx' line of critique has for logic and ethics.

#### *1.6.3 The extent of Geulincx' criticism of Aristotelian philosophy*

In the previous section we have already seen that in his oration of 1652 Geulincx rejects Aristotelian physics in its entirety. Even so, he has written a small book on Aristotelian physics. Although it is titled 'False or Peripatetic (*ad mentem peripateticam*) physics', most of this treatise consists simply of an exposition of Aristotelian physics. Geulincx takes issue with Aristotelian positions only in a few instances. He singles out the following three points: the divinization of the heavenly sphere, the late-scholastic notion of imaginary space, and substantial forms. First, Geulincx censures Aristotle for his notion of the eternal movement of heavenly bodies, because motion and eternity are mutually exclusive.<sup>195</sup> Moreover, Peripatetics ascribe also other divine properties to

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<sup>193</sup> Cf. Geulincx, *MP* Intr., §3, II 209.

<sup>194</sup> This is a point that returns time and again in his works. See, for example, Geulincx, *AL* I, §68, III 409-410; *PV* Intr., II 368-369, Ann. II 451; *PV* V, Intr., II 428-429. Besides, as Descartes, Geulincx also refutes the scholastic theory of the intentional species, see *MP* I, §4, II 225-226, Ann. II 308-309; *PF* III, §7, II 355-356. I will deal more extensively with intentional species in Chapter 7.

<sup>195</sup> Geulincx, *PF* II, §1, II 318.

those bodies, like life and divinity.<sup>196</sup> This is, in his view, clearly an instance of conflating mental and material items, and amounts even to ungodliness and atheism. Second, at several places in his writings, Geulincx opposes the late-scholastic concept of ‘imaginary space’ (*spatium imaginarium*), which he takes to mean that space does not really exist and thus has no real properties but is nevertheless needed to explain local movement.<sup>197</sup> Geulincx argues that if space does not have real properties, it cannot be thought at all. Conversely, because space has properties, such as length and width, there must also exist a thing that has these properties. Geulincx expands this criticism of the Aristotelian notion of space in particular to the late scholastic explanations of and distinctions as to extension and quantity as a whole.<sup>198</sup> Finally, much room is devoted to arguing against the Aristotelian theory of substantial forms.<sup>199</sup> Substantial forms explain the actions of substances – they are the source of actions of substances – and since Geulincx confines the capacity of acting to minds alone, it is, on his view, impossible that physical bodies could have such forms. Bodies do not change by internal forces, but only by external causes.<sup>200</sup> In other words, there is no such thing as immanent action in the case of bodies. Only minds can produce something in themselves (*intra se agit*), namely, concepts or affects when the mind understands or wills, respectively. Moreover, the notion of substantial form has no explanatory power at all, because it is not a clear and distinct notion. This explains why Aristotelians clarify it by comparing it with artificial forms and shapes.<sup>201</sup>

I do not want to get too far into Geulincx’ criticism of Aristotelian ontology, to which the *Peripatetic metaphysics* (*Metaphysica ad mentem peripateticam*) is mostly devoted. This theme will get ample attention in following chapters. What is to be noticed here is that this writing comprises a discussion of most of the basic concepts of scholastic ontology. The text is divided into two parts, the first of which discusses the notion of being and the transcendentals – the one, good, and true – whereas the second part treats the modes of being, among which Geulincx counts, for example, relations and accidents. Although the basic thrust of Aristotelian ontology is rejected, as well as separate doctrines like the Aristotelian accounts of quality and quantity, a number of its basic concepts are re-interpreted or put into another perspective, in order to bring them in line with his own views of ontology. Roughly, the major concepts – such as being and the transcendentals – are considered to apply only to human intelligibility rather than to

<sup>196</sup> See Geulincx, *PF* II, §3, II 319-322. Cf. Geulincx, *AL*, IV §189, III 517; *MP Ann.* I, §2, II 305-306.

<sup>197</sup> Geulincx, *PF* II, §2, II 318-319; Disputations, *Isagoge pars prima*, 11 July 1663, §12, II 492; *Isagoge pars altera*, 12 July 1663, §10, II 498; *AL* I, §11, III 366-367. The notion of ‘imaginary space’ was a late-scholastic invention, see on this, Grant 1981, Ch. 6-7.

<sup>198</sup> See Geulincx, *AL* II, §§8-9, III 430-431; *MP* I, §4, II 221-223.

<sup>199</sup> See Geulincx, *PF* III, §7, II 354-355.

<sup>200</sup> See Geulincx, *PF* III, §9, II 358.

<sup>201</sup> Geulincx, *PV* IV, II 423.

external reality. As a result, they provide an internal conceptual framework for understanding reality. Again, this is a complex theme that will be further explored in the sequel of this study. At any rate, this means that fundamental notions like being, substance and accident are no longer considered properties of external objects but just manners of apprehending things by our intellect – they are, as we have seen, just logical forms of thought. One can conclude, then, that his discussion of Aristotelian ontology is so critical that nothing of its basic view remains.

Geulincx' criticism of physics and metaphysics has already been noticed prior to this subsection. Let us now see how Geulincx deals with two other disciplines that were also seen as parts of philosophy: logic and ethics.<sup>202</sup> Geulincx criticises the contemporary treatment of logic, but generally this critique is far less comprehensive than that of Aristotelian physics and metaphysics. He retains most of the concepts and distinctions of scholastic logic, as well as the traditional division of logic according to the three acts of the intellect, that is, in terms, assertions, and reasonings. His major correction consists in purifying logic from most of the notions that also appear in metaphysics, such as cause and effect and substance and accident. Moreover, there is a major difference between his logic and most contemporary variants in that he considers logic to be the science of consequences, which will be explained in Chapter 4. This emphasis on deduction, however, is not uncommon for medieval logicians. As a result, Geulincx' logic is to be regarded rather as an amendment than as a refutation of scholastic logic. He takes a reformist approach to logic.

However, Geulincx' critique of Aristotelian philosophy is not limited to theoretical philosophy. It also includes ethics. His disapproval of Aristotelian ethics runs deep. Geulincx indeed rejects the foundations of Aristotelian ethics by denying that virtue is a habit. For Aristotle, virtues are habits or dispositions (*habitus*) of the mind. According to Geulincx, habits are not mental but corporeal phenomena, while ethics is just related to the mind.<sup>203</sup> He argues that it is impossible that the mind could have dispositions because the mind is pure actuality. Since the mind only consists in the actuality of thinking (*cogitatio*), habits cannot occur in it. They only pertain to the body, as does memory. Consequently, Geulincx basic criticism of Aristotelian ethics can, again, be reduced to the objection that it conflates mental and material features.

In his *Ethics*, Geulincx' main target is undoubtedly Aristotelian moral philosophy. Geulincx argues that one of the main causes of errors in ethics is that human behaviour is frequently determined by prevailing customs and conventions.<sup>204</sup> The latter are, on his view, just human institutions based on authority, which greatly obstruct the observance

<sup>202</sup> Not every philosopher, however, considers logic to be a part of philosophy. Some regard it as an instrumental discipline that is neither a science nor an art.

<sup>203</sup> See Geulincx *MP I*, §4, II 224-225, especially II 224: ‘... cum enim animus noster, seu mens, tota consistat in cogitatione (ut parte 1. Verae Metaphysicae satis demonstratum est), non potest in eo intelligi aliquid habituale, et sine actu ...’

<sup>204</sup> See Geulincx, *Ethics I*, Ch. 2, Sect. 1, §2.3, III 22-23.

of the prescriptions of reason. At this point, Geulincx singles out Aristotle as ‘that popular philosopher’ (*popularis ille Philosophus*) who has tried to accommodate his ethics to human laws and the common understanding (*popularem intelligentiam*) rather than to the prescriptions of reason. Moreover, Aristotle did not set up his ethics as a proper science with demonstrations and the needed precision, according to Geulincx, but rather deals with it in a rough and perfunctory way. Aristotle even asserts that it is impossible to carry it out otherwise. By contrast, Geulincx intends to develop ethics as an exact science, starting with precise concepts and consisting further of strict deductions (of properties) from those concepts. On his view, this goes completely against the grain of Aristotle’s intentions for ethics. In short, Geulincx thinks that Aristotle’s ethics is based on common sense, leading to ‘popular vices’, which Aristotle ‘sells as virtues to his readers’.

Also elsewhere in Geulincx’ *Ethics* Aristotelians are severely attacked. He says, for instance, that Peripatetics hardly deserve the name of philosophers, and, unlike other ancient philosophers, deal with emotions like ordinary people – in other words, they are not actually philosophers, but just refine the opinions of ordinary people.<sup>205</sup> Aristotelians simply comply with emotions, which are bodily perceptions, and act on the basis of them. By contrast, the way in which other philosophers, like Stoics and Platonists, cope with the passions, by resisting (some of) them, is characterised by Geulincx as the philosophical life (*Vita Philosophica*).<sup>206</sup> This still is not a virtuous life – as the virtuous man does not regard the passions at all – but is certainly ranked higher than the moral life of ordinary men, as well as the common sense ethics of Aristotle that is accommodated to that way of dealing with emotions. As a result, Aristotelian moral philosophy is censured most strongly by Geulincx. In fact, he does not even consider it philosophical.

In sum, Aristotelian philosophy can hardly be called philosophy at all. As to physics, metaphysics and ethics, Aristotelian philosophy just follows the opinions of ordinary people. It only refines and systematizes them rather than following reason – as philosophy ought to do. Indeed, Geulincx’ oeuvre in its entirety is devoted to detecting and criticizing errors of Aristotelian philosophy. All three of his orations are concerned with this theme, and this is also the main reason why his logic is titled *The restored logic* (1661), that is, logic restored from wrong additions and errors that have taken hold of it. On nearly every page of his works, Geulincx warns against the errors of the schools. His criticism boils down to the claim that Aristotelian philosophy, in its entirety, is based on the common way of thinking, the perspective of the ‘common people’ (*vulgus*). As a

<sup>205</sup> Geulincx, *Ethics* IV, §2, III 107-108; Cf. Geulincx, *Ethics* IV Ann., §3, pt. 3, III 270: ‘Nota, Peripaticos in hunc censum non venire; vix enim illi in Ethicis nomen Philosophorum merentur, sed sunt tantum sapientior populus; itaque posuimus illos in quarto et supremo gradu praecedenti §., ubi de vita vulgi agebatur. Hi enim proprie sunt, qui passionem passione temperant et moderantur ...’

<sup>206</sup> See Geulincx, *Ethics* IV, §3, III 108.

result, Aristotelian philosophy is completely rejected, with the exception of logic. Aristotelian logic is to be amended instead of discarded.

#### 1.6.4 A Platonic alternative

Like so many of the Renaissance critics of Aristotelianism, Geulincx distinguishes Aristotle, whom he considers a fine philosopher, from later scholastics, who wholly corrupted philosophy.<sup>207</sup> But, again, this was a stock argument among Renaissance critics of Aristotelian philosophy. And, it is clear that Geulincx also rejects Aristotle's own philosophy. He often censures Aristotle himself, even in contexts where he quotes his texts in full. One might expect Geulincx to have extended this criticism to most other philosophies. But he just did not do that. To be sure, also sceptics, Epicureans and Stoics are severely censured. For example, Geulincx asserts that all heathen philosophers, Plato included, have taken the wrong point of departure in ethics, the seeking of happiness (*felicitas*), because they were deluded by self-love (*Philautia*).<sup>208</sup> Although he criticizes Plato on this point as well, this critique is expressed in very moderate terms, and at other places it is often accompanied by an expression in which Plato is praised.

The 'divine' Plato usually does not fall into the same category as other philosophers. Indeed, Geulincx speaks so positively of him that he must have had strong Platonic leanings. For example, in the passage referred to above, Geulincx claims that all ancient philosophies were motivated by self-love, including Plato. Although he censures Plato for this, he says at the same time that Plato '(I admit) deserved to be excused, if any of them deserved to be excused.'<sup>209</sup> Further, when discussing how to deal with the emotions Geulincx remarks that although Plato's response to the passions does not live up to the Christian way of dealing with them, he does rank higher than Aristotle.<sup>210</sup> Also Plato's dictum 'Blessed the land where the Philosophers rule, or kings philosophise' is called a divine mantra.<sup>211</sup> In addition, Geulincx is often quite positive on Plato's view of the recollection of ideas,<sup>212</sup> and he counts Plato among the true philosophers.<sup>213</sup> In general, Plato is only referred to in a positive way in Geulincx' writings.

There is only one philosopher who ranks higher for Geulincx: Augustine. Geulincx' praise for Augustine is even greater than for Plato. In the *True metaphysics*, Geulincx claims: 'St Augustine is the most authoritative Doctor of the Church after St Paul, and everything he wrote seems drawn from the innermost recesses of Philosophy, and

<sup>207</sup> Geulincx, *MV* III Sc. 6 Ann., II 292: 'Veteres illi fuerunt egregii Philosophi, ut et ipse Aristoteles, sed postea a Scholasticis corrupta est tota Philosophia ...'

<sup>208</sup> Geulincx, *Ethics*, praef., III 7-8.

<sup>209</sup> Geulincx, *Ethics* praef., III 7-8.

<sup>210</sup> Geulincx, *Ethics* IV, §3, III 108-110.

<sup>211</sup> Geulincx, *Ethics* V, §5, III 127.

<sup>212</sup> This will be further explored in Chapter 6.

<sup>213</sup> Geulincx, *MP* II §8, II 263: 'Apud Platonicos et veros Philosophos ...'

moreover agrees excellently with mine.<sup>214</sup> Geulincx' philosophy is, accordingly, replete with Augustinian themes and tenets. For example, Geulincx' ethics is determined by the notion of humility (*humilitas*), which plays a similar role in Augustine. As with Augustine, Geulincx emphasizes ineffability (*ineffabilitas*) for the boundaries of human knowledge, particularly with respect to God – a notion which will be discussed in Chapter 6. Finally, we have noticed that Geulincx uses custom (*consuetudo*) to explain the origin of error. This is also an important notion for Augustine.<sup>215</sup> Apart from these examples of Augustinian themes and positions in Geulincx, many others can be given. In short, Geulincx' philosophy is marked by the influence of Augustine.

As a final point, it is apparent that Geulincx' philosophy is marked by a strong Platonic tendency. It is possible to give many examples of this, but it is most apparent in that he repeatedly insists on turning inwardly, while pointing out the negative influence of the human body at the same time.<sup>216</sup> The body is considered to drag the mind from reason to bodily perceptions, and also causes our life to be dreadful. In Geulincx' philosophy, there is a strong Platonic dualism, emphasizing the radical divide between body and mind.<sup>217</sup> This dualism can be found in his philosophy of mind, in his epistemology, in which the radical divide between sensory and intellectual cognitions is continually emphasized, as well as in his ethics or theory of emotions. Some sort of dualism is certainly present in Descartes, but it does not come so strongly to the fore in his philosophy as in that of Geulincx. This Platonic dualism determines Geulincx' reading of Descartes, as we will further see in the next chapters of this study.

### 1.7 Conclusions

We may now conclude that Geulincx' anti-Aristotelianism goes back to the beginning of his philosophical career. It is *the* connecting theme of all his writings, both of his Louvain and Leiden period. We have also seen that Bacon, Descartes and Geulincx mainly argue against Aristotelianism. This philosophy was their main target of critique, and the background of their theories of error.

As to the specifics of their theories, it is to be remarked that the views of all three converge in that the origins of error are regarded as mostly internal to mind, as being persistent mental inclinations. Unlike Bacon, Descartes explains the origin of these inclinations by the pernicious influence of body on mind, particularly during childhood

<sup>214</sup> Geulincx, *MV* II Ann., Sc. 12, II 282: ‘... Augustinus enim post Paulum optimus doctor Ecclesiae fuit et omnia ejus ex intimis verae Philosophiae penetralibus hausta videntur, tam mirabiliter consentiunt nobiscum.’ The Leiden theologians who wrote a letter of recommendation to the University Senate for Geulincx in 1658 also emphasize Geulincx' attachment to Augustine; see Eekhof 1919.

<sup>215</sup> See on this, Fitzgerald 1999, entry ‘Habit (*consuetudo*)’, 409.

<sup>216</sup> See on this, Aalderink 1999.

<sup>217</sup> Cf. Geulincx, *AL* I, §71, III 411: ‘Recte igitur Plato, qui eam [= mens] ob peccatum in ergastulum hoc corporis, velut in carcerem detrusam esse dicit ...’

– a view also espoused by Geulincx. In comparison with Descartes, Bacon's original points are: 1) that he explicitly argues against the Aristotelian way of acquiring concepts; 2) that he rejects Aristotelian explanatory notions in general; 3) that he points out the corruptive influence of Aristotelian theory of the categories (and Aristotelian logic in general) on natural philosophy. What is more, Bacon's insistence that Aristotelian philosophy represents the – erroneous – common sense view of the world is particularly relevant. De Raey and Geulincx, to some extent, adopted these views from him. For Geulincx Aristotelian philosophy as a whole is a common sense philosophy, working with and systematizing ordinary concepts, which is, moreover, completely mistaken. Specific for Descartes is his anti-sensualism, again a position which Geulincx adopts, but one which Bacon does not advocate.

What is the origin of Geulincx' critique of Aristotelianism? And more particularly, was Descartes' influence decisive on this point? We may now conclude that Geulincx' inaugural address of 1652, written in his Louvain period, does not show any influence of Descartes, and that the origin of Geulincx' anti-Aristotelianism rather lies either in Bacon's account of scientific error, which he certainly had thoroughly appropriated at the time, and/or in Platonic-Augustinian philosophy. Given that Platonic themes are virtually non-existent in the address, it is likely that Bacon has been the most influential. Later, however, Geulincx employs many Cartesian lines of critique. Even so, Geulincx' rejection of Aristotelianism is not only more overt than that of Descartes, Clauberg, and De Raey, but also includes practical philosophy. Unlike Descartes, on the other hand, he does not reject Aristotelian logic.

This chapter has also provided us with a number of themes that will return in following chapters. Three of them are especially relevant for our study. First, the most interesting one is Bacon's critique of Aristotelian theory of concept formation. This critique comprises the manner in which Aristotelian philosophy acquires its concepts – mostly from ordinary concepts – and a comprehensive dismissal of Aristotelian explanatory concepts in physics as well as metaphysics. Especially intriguing is the status of abstract metaphysical notions, such as being and substance. What role is left for them? In this chapter we have briefly explained that Geulincx considers them necessary structures – or a conceptual framework – of intelligibility. In other words, they are necessary as logical forms of thinking, allowing us to conceptualize objects. In Chapter 5 to 8 we will consider Descartes' and Geulincx' account of how (the contents of) concepts are acquired. Chapter 9 in turn is mostly concerned with the conceptual structures or schemes of human intelligibility.

Second, it has been noticed that Geulincx rejects Aristotelian philosophy as a whole, with the exception of Aristotelian logic and thereby possibly the Aristotelian theory of scientific knowledge. This is a theme that requires to be further explored. Geulincx' conception of philosophy and logic needs to be thoroughly examined in order to explain this deviation. This will be done in Chapter 3 and 4.

Finally, some aspects of a broader theory of error have been discussed, such as the theory of the prejudices and judgement. As to Geulincx, we have noticed that he makes a distinction between thinking about something under a mode of thinking, such as seeing an object as red or considering it to be a substance, and judging that the object really has those properties. This distinction is an important element of Descartes' theory of judgement, which in turn is part of his theory of error. In the next chapter, this error theory will be explained in detail.

## CHAPTER TWO

# THE THEORY OF ERROR: JUDGEMENT AND PREJUDICES

### Introduction

Reflecting on the previous chapter, one may wonder whether Geulincx really is a Cartesian philosopher – all his motives for rejecting Aristotelianism could well have other origins. We have pointed out the influence of Bacon as well as Augustinian dualism as possible sources of his anti-Aristotelianism. Yet, in the literature Geulincx is seen almost without exception as a Cartesian philosopher. In this chapter, it is shown that this assessment is not without justification. This becomes especially clear from the fact that Geulincx adopts Descartes' idiosyncratic theory of judgement. Even so, it remains to be seen whether he differs from Descartes on the specifics and application of the theory.

Descartes' theory of error consists of two components: the theory of judgement and the theory of prejudices.<sup>1</sup> The core of the theory of judgement is that a judgement, or rather a *belief*, is composed of a content, coming from the intellect, and an additional act of the will. The will determines the attitude of the subject towards the content – the content may be affirmed, denied, or held in suspension. Descartes adds that because the will is free, that attitude is determined by ourselves. In other words, beliefs are up to us. This role of the will in judging is vital for Descartes' theory of error. We can err only in judgements, so the will takes on a crucial role. Assent (or denial) by the will is unwarranted when the content is unclear, which means that the mind errs if it judges such a content. This implies, conversely, that if we just entertain a proposition in our mind, that is, are aware of it without either affirming or denying it, we cannot err.

Descartes draws two significant conclusions from this theory. First, because beliefs are in our power, we are responsible for them. Second, the freedom of our judgement

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<sup>1</sup> See for an accurate description of Descartes' theory of error, Keeler 1934, 141-177. Keeler presents most problems associated with this topic and also discusses the position of Gilson 1913 and Koyré 1923. See for other general treatments of Descartes' theory of error: Williams 1978, Chapter 6, and Kemp Smith 1952, 78-80. Unhelpful are the accounts of Meyer 1920, who contrasts Descartes with Kant, and Mahler 1910, who summarizes most of the important texts of Descartes, but whose interpretation of these texts is mostly flawed.

enables us to guard ourselves against error by restricting our judgements to contents (or ‘perceptions’) that have features guaranteeing truth, namely, the criteria of clarity and distinctness. In such instances, affirmative judgements are justified, and error is impossible. Similarly, error is prevented when we suspend our judgement if contents (or ‘perceptions’) are not clear and distinct. Of course, this method is only possible if the mind can read off these criteria from the content. This is, according to Descartes, possible if we are attentive enough to our cognitions. In short, error can be prevented as long as the truth rule is observed that only clear and distinct contents – or what is clear and distinct in our ‘perceptions’ – are to be affirmed and that our judgements are to be suspended otherwise.

The theory of judgement explains, then, psychologically the *possibility* of erring. But it does not give an indication of the *origin of our actual errors*, nor of our palpable defect to observe the truth rule by nature – that is, automatically. A comprehensive theory of error needs to explain this deficiency of human nature. Hence the need to develop a separate theory on the origin of prejudice.<sup>2</sup> Although this theory was already introduced briefly in the previous chapter, it is further elaborated on in this chapter.

In sum, the main components of Descartes’ theory of error are a psychological-epistemological theory of judgement and a theory of prejudice. As for the former, Descartes is particularly concerned with the function of the will in judging. Accordingly, for a better understanding of the theory of error, it is needed to discuss Descartes’ theory of the will separately before turning to the theory of judgement itself, as well as the theory of prejudices. These three points shall be dealt with separately.

In the course of this chapter, it will become evident to what extent Geulincx was influenced by Descartes’ theory of error. However, since the previous chapter made it clear that Geulincx takes a more radical approach than Descartes to Aristotelian philosophy, the question arises of how this plays out for Geulincx’ appropriation of Descartes’ theory of error, especially so since – as shall be confirmed in this chapter – this theory is developed against the background of a refutation of Aristotelian philosophy. Does Geulincx make alterations to Descartes’ theory of error and to its application? There are, then, sufficient reasons to compare Descartes and Geulincx on the three points mentioned in order to ascertain if and, if so, on what specific points (the emphasis of) their theories differ.

## 2.1 The freedom of the will

### 2.1.1 Introduction

Descartes’ account of the human will is a new element of his philosophy, which appears for the first time in the *Meditations*, along with the closely connected theory of

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<sup>2</sup> Descartes also points out that lack of attention is a major cause of error. I will not deal with his theory of the causes of distraction from reason, which eventually can be reduced to the influence of the body on the mind. See for this, Descartes, *Principles I* §73, AT VIIIa 37, CSM I 220.

judgement.<sup>3</sup> His theory of the will is thus an addition to, or perhaps even an alteration of, his previous philosophy. In any case, he deemed it unnecessary to develop such a theory before. It is even missing in the fourth part of the *Discourse*, containing a summary of his metaphysics.<sup>4</sup> By contrast, after the *Meditations*, the will and its freedom play not only a pivotal role in metaphysical and epistemological contexts, but also in his moral philosophy. This entails that the theory of the will has become one of the cornerstones of Descartes' entire philosophy, both of theoretical and practical philosophy. Better still, Descartes even claims that freedom of the will is a precondition for the method of doubt, which is needed for starting philosophy. In short, philosophy would be impossible without our having a free will.

This evokes the question of why the will has to be free in both epistemological and ethical contexts, and also what the will actually does in each context. Besides, what does Descartes mean by freedom? Answers to these questions allow us to compare Descartes' theory of the will adequately with that of Geulincx. I focus on the *Meditations* for Descartes' theoretical, and on the letters to Elisabeth and the *Passions of the soul* for his moral philosophy.

### 2.1.2 Descartes on the will and its freedom

Although the will is discussed briefly in the third meditation, it is central only to the fourth meditation on 'truth and falsity'. This meditation is mostly devoted to an explanation of the formal aspect of the theory of error, that is, the psychological possibility of error.<sup>5</sup> In Descartes' philosophy error is problematic because our faculty of judgement (*judicandi facultas*) is given to us by a good God. And since this entails that also God's gifts are good, it appears to be impossible to err. Descartes' solution to this dilemma is that it is possible to misuse the faculty of judgement. This happens because the faculty of judgement is not confined to the passive intellect (the *facultas cognoscendi*

<sup>3</sup> However, it must be noted that before the *Meditations* Descartes dealt incidentally with the will in a few letters to Mersenne of 1637 in which he reacts to Mersenne's comments on the *Discourse*. In one of these letters, Descartes states that the will always follows what the intellect presents to it as good, so that the will can only incline to evil when the intellect presents it 'under some aspect of goodness' (see the letter to Mersenne, May 1637, AT I 366, CSMK 56). In the same letter, Descartes notices that the intellect often shows multiple possibilities from which the will has to choose, and argues that this leads to situations in which the mind sees the better but does the worse (which is a dictum of Ovid 1921, *Metamorphoses* VII, l. 20-21, 342: '... video meliora proboque, deteriora sequor.'). Neither remark shows an emphasis on the freedom of the will.

<sup>4</sup> Admittedly, it might be possible to accommodate Descartes' later theory to earlier remarks. Still, that does not alter the fact that Descartes in no way offers any substantial comment that amount to anything like a theory of the will prior to the *Meditations*. Practically all his earlier remarks are incidental, and reveal no underlying theory.

<sup>5</sup> Descartes calls this the cause (*causa*) of error. Instead, I prefer to speak of the *possibility* of erring, because in this meditation it is not explained why we *actually* err. For it is very well possible to be able to err without actually committing mistakes.

or *intellectus*), but includes also the active will (the *facultas eligendi, arbitrii libertatem* or *voluntas*). Unlike the intellect, the will lies in our power and is therefore used incorrectly if it extends judgement to confused ideas, and so violates the truth rule. The formal aspect of error consists thus in a wrong use of the freedom of the will.

In the same context, Descartes further investigates the nature of the will. Having observed that, unlike the intellect, the will is completely free as well as unlimited, perfect and infinite, so takes the largest share of the image of God in us, Descartes puts forward the following definition of the will:

... the will simply consists in our ability to do (*facere*) or not to do the same (that is, to affirm or deny, to pursue or avoid); or rather (*vel potius*), it consists simply in the fact that when the intellect puts something forward for affirmation or denial or for pursuit or avoidance, our inclinations (*feramur*) are such that we do not feel we are determined (*determinari*) by any external force.<sup>6</sup>

So, the will is that function of our mind which enables us to do or make (*facere*) something. Its essence consists, then, precisely in being an agent. Consequently, the power to act is the feature of the will that separates it from the intellect, which, accordingly, is unable to really *do* or *make* something. In other words, the will is the faculty of action. Between brackets, Descartes explains in turn what those actions are, namely, either the epistemic functions of affirming and denying or the conative functions of pursuing and avoiding. The second definition further clarifies what Descartes means by doing (*facere*). He means essentially self-determination (*determinari*). Although this definition affirms that in no more than an ambiguous way, it becomes unequivocally clear from a closer reading of the first definition. In it, Descartes states that the will consists in the ability of doing or not doing the same thing (*idem*), that is, what the intellect presents to it. To be sure, in the second definition this is somewhat played down, but Descartes has probably done this just to prevent him from being placed in a particular theological camp.<sup>7</sup> In any case, Descartes holds that self-determination belongs to the essence of the will.

These two points – being an agent and self-determination – allow us to rephrase Descartes' definition of the will as a self-determining faculty of action that reacts to a content presented to it by the intellect; in which case, given the second definition, self-determination need not be taken narrowly in the sense that individual acts of the will are uncaused. At any rate, Descartes wants to prevent that what is proposed by the intellect – the ‘*idem*’ of the quotation – is the determining factor or complete cause of a choice.

<sup>6</sup> Descartes, *Meditations* IV, AT VII 57: ‘... quia tantum in eo consistit, quod idem vel facere vel non facere (hoc est affirmare vel negare, prosequi vel fugere) possimus, vel potius in eo tantum, quod ad id quod nobis ab intellectu proponitur affirmandum vel negandum, sive prosequendum vel fugiendum, ita feramur, ut a nulla vi externa nos ad id determinari sentiamus.’, CSM II 40.

<sup>7</sup> See more about this in footnote 13.

This comes to the fore in Descartes' entire discussion of the will in the fourth meditation.

However, it is important to underline that the second definition makes it clear that acts of the will always concern 'perceptions'. They do not arise out of the blue, but are basically responses to contents presented by the intellect. This becomes very clear from the point in the third meditation at which Descartes makes a distinction between the idea – which is, as will be pointed out in Chapter 5, a representation of the intellect – and 'other forms' (*alias ... formas*), among which he counts acts of the will.<sup>8</sup> Those forms are added to the representations, and secondary to them. So, acts of the will require prior representations of the intellect.

Accordingly, even though the intellect does not fully determine the will's choice, Descartes does not deny that the intellect exerts some influence on the will. In other words, the will is not neutral as to the content on which it operates. The more certain the intellect presents something, the more inclined the will is to assent to it, and when the content is clear and distinct, the will can but affirm it.<sup>9</sup>

This account of determination is closely linked to Descartes' conception of freedom.<sup>10</sup> Just like the inclination of the will, the freedom of the will comes in degrees, proportionate to the certainty with which the intellect presents its object. That is why the will is free to the highest degree when handling clear and distinct ideas. As doubt is a function of the will, those ideas cannot be doubted, but are very easily – even automatically – assented to by the will.<sup>11</sup> Thus, freedom of the will is not identical to complete self-determination with respect to the persuasive force of the intellect, even though Descartes also grants the qualification of free to situations in which the will overrules the intellect. He calls it then freedom of the lowest degree. To the contrary, at most points at which freedom occurs in the fourth meditation, it is equated with a powerful determination of the will by the intellect.

<sup>8</sup> Descartes, *Meditations* II, AT VII 37: 'Aliae vero alias quasdam praetera formas habent: ut, cum volo, cum timeo, cum affirmo, cum nego, semper quidem aliquam rem ut subjectum meae cogitationis apprehendo, sed aliquid etiam amplius quam istius res similitudinem cogitatione complector; et ex his aliae voluntates, sive affectus, aliae autem judicia appellantur.', CSM II 25-26.

<sup>9</sup> See Descartes, *Meditations* IV, AT VII 57-58: 'Necque enim opus est me in utramque partem ferri posse, ut sim liber, sed contra, quo magis in unam propendeo, sive quia rationem veri et boni in ea evidenter intelligo, sive quia Deus intima cogitationis meae ita disponit, tanto liberius illam eligo ...', CSM II 40. Cf. *Meditations* V, AT VII 65, CSM II 45; *Replies* II, AT VII 146, CSM II 104, and AT VII 166, CSM II 117; *Principles* I §43, AT VIIIa 21, CSM I 207.

<sup>10</sup> Much has been written on the problem of free will in Descartes. Particularly helpful is Petrik 1992, who also discusses the greatest part of the secondary literature on this topic. Many studies merely repeat Descartes' texts verbatim or summarize their contents, such as Grimaldi 1987 and Grimaldi 1996. Not very helpful, and sometimes even quite confusing, are Peukert 1965 and Oeing-Hanhoff 1971.

<sup>11</sup> This notion of proportionality is neatly set out by Descartes in *Replies* VI, AT VII 432-433, CSM II 292.

As a result, Descartes uses, at bottom, two notions of freedom. These are connected in an uneasy and perhaps even contradictory way.<sup>12</sup> On the one hand freedom is defined as intrinsic self-determination by the will and on the other hand as complete determination by the intellect. Although Descartes tries to conceal this apparent contradiction by calling the former the lowest degree of freedom, he does make it unequivocally clear that the essence of freedom does not consist in being able to choose both sides. Moreover, if the essence of freedom would consist in that ability, then we would utterly lack freedom if our judgement concerns clear and distinct ideas. These two conceptions of freedom are probably incompatible and certainly different. Descartes may have realized this himself, given the fact that the second notion of freedom does not recur in later writings. Rather, he appears to incline more and more to freedom of choice as the essence of freedom.<sup>13</sup> Although the background of this change,

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<sup>12</sup> See Kenny 1972, 18-19, on the seeming opposition between the first and second definition as to the notion of freedom.

<sup>13</sup> In the *Principles*, the criticism of indifference as the lowest degree of freedom has disappeared. Moreover, Descartes does not resolve the problem of reconciling divine preordination with the freedom of the will (in *Principles* I §40, AT VIIa 20, CSM I 206) on traditional Augustinian lines by using a notion of freedom of constraint, according to which freedom is a matter of doing what one wants to do; in that case, only external coercion is opposed to freedom. The reason for Descartes' change of view may have been his attempt to keep his *Principles* acceptable to the Jesuits, who fiercely opposed freedom of constraint. In the 1640s, the Jesuits gained influence over the Jansenists, followers of Cornelius Jansenius (1585-1638) who advocated an Augustinian view of the will, grace, and predestination. On 1 August 1641, Jansenius' *opus magnum*, the *Augustine* (1640), was condemned by the Holy See for the first time, a condemnation renewed by Urban VIII next year. Which de facto meant that the Jansenist movement was outlawed by the Church. Still, the controversy continued in Paris, where Oratorians held on to the doctrines of the *Augustine*. This included the author of the fourth set of objections to Descartes' *Meditations*, Antoine Arnauld (1612-1694), who would become the foremost representative of the Jansenist movement as being the successor of the former leader St. Cyran (1581-1643). Although it is decisively shown that Descartes' notion of freedom in the *Meditations* is influenced by forerunners of the Jansenists like the Augustinian Oratorian Guillaume Gibieuf (1583-1650), who opposes the Jesuit notion of freedom of indifference, Descartes clearly wanted to avoid the theological battles of the 1640s (see on the influence of Gibieuf, Ferrier 1973 and Gilson 1913, 215-223). But in the 1640s, Descartes must have changed his view. A tendency toward the Jesuit conception of freedom becomes the most apparent in a letter to the Jesuit Mesland of 9 February 1645 (both date and addressee of this letter are uncertain), a letter which has caused a headache to many an interpreter (see for this, Alquié 1987, 24-31; Kenny 1972, 180-181; Williams 1978, 59-73; and Laporte 1951). Descartes declares, in this letter, that he agrees with the opinion of the Jesuit Denis Petau (1583-1652), who was one of the main adversaries of Jansenius' *Augustine* in his *Theological dogmas* of 1643. As a result, his shift with respect to the freedom of the will seems to be motivated more by political reasons than conceptual considerations (see for a similar type of explanation, Gilson 1913, Ch. 6, esp. 394 and 432, and Ch. 7; Janowski 2001, 177-178).

as several scholars have claimed, is rather theological and political in nature than purely conceptual, there lies also a conceptual difficulty at its root.

This difficulty can be clarified by discussing two well-known notions of freedom. These conceptions of freedom are termed liberty of indifference and liberty of spontaneity.<sup>14</sup> Let us briefly elucidate these notions.<sup>15</sup> Liberty of spontaneity means that a person is free when he does what he wants to do. This means that a sufficient condition for freedom is that a person's choice corresponds to his desires. In a sense, then, this freedom is greater according as the reasons are more persuasive, and especially so if they are invincible. This freedom is sometimes termed 'freedom of constraint' because it is opposed to *external* coercion only. The second notion of freedom, liberty of indifference, comes roughly in two flavours: positive and negative indifference. Positive indifference means that a different choice could have been made by the same individual given the same state of affairs both internal and external to that individual. Negative indifference is used for denoting a motivational equilibrium, which means that an individual has as many reasons for as against a decision. Sometimes negative indifference is thought of as a necessary condition for positive indifference, in order to retain some room for a rational explanation of human behaviour. Thus taken, liberty of indifference can be combined with liberty of spontaneity – which is impossible with a stronger type of positive indifference, according to which a person can opt to choose against his desires. In short, three notions of freedom can be distinguished: freedom of spontaneity or constraint, and a weak and strong version of freedom of indifference.

All three notions of freedom may be read in Descartes' account. It may, however, be argued that Descartes only allows a weak version of liberty of indifference. This certainly would abate the tension between Descartes' various notions of freedom. It makes sense to say that the will decides the outcome in the case of a motivational equilibrium, whereas the intellect determines it in all other instances. As we have seen, the notion of freedom of spontaneity can be combined with that of negative indifference. There are also other reasons for claiming this. Most of all, it is apparent that Descartes holds freedom of indifference in very low esteem. Indeed, he calls negative indifference the

<sup>14</sup> These two notions of freedom have given occasion to much debate among Descartes-scholars. The central issue of debate is whether the will is a 'counter-causal force'. In other words, whether the will can determine itself, resisting all external influences – from both intellect and emotions. Some scholars take the Cartesian will to be a counter-causal force, and thus consider Descartes to be a voluntarist. See for this position, Evans 1963, Grant 1976, Delahunty 1985, and Bennett 1986. Petrik 1992 opposes this view, and even thinks that all tensions within Descartes' theory of the will and freedom can be quite satisfactorily resolved. He upholds that Descartes presents a coherent theory of the will, and that Descartes essentially uses only liberty of spontaneity. See for a different position, Caton 1975, who holds that Descartes combines a voluntarist and intellectualist position.

<sup>15</sup> See for a modern discussion of these notions of freedom and its ramifications Watson 1982, who also offers a useful introduction to the problem of freedom.

lowest grade of freedom, and accordingly specifies it as lack of knowledge accompanied by indetermination of the will. Lack of knowledge could very well mean a state of motivational equilibrium. If so, Descartes' second definition – supporting freedom of spontaneity – can be interpreted as a specification of the former, which for that matter is also suggested by the use of the phrase 'or rather' (*vel potius*). This would make it clear that Descartes inclines to liberty of spontaneity. On this reading, then, Descartes would choose for combining negative liberty of indifference with liberty of spontaneity, with a preference for the latter notion of freedom. As a result, he would not hold a strong version of freedom of indifference.

On the other hand, Descartes argues nowhere in the fourth meditation for limiting freedom of indifference to a state of motivational equilibrium. For him, the removal of complete certainty seems to be enough for indifference, which accordingly comes in degrees depending on the force of the reasons. Indeed, Descartes claims that indifference occurs in 'every case where the intellect does not have sufficiently clear knowledge as long as the will deliberates'.<sup>16</sup> It is very unlikely that obscurity in itself is sufficient for causing negative indifference. In cases of uncertain knowledge, there may still be one preferred choice. As a result, Descartes' suggestion is sustainable only if it is combined with a clear conception of the truth rule. This knowledge of the truth rule could overrule the persuasive force of the probable reasons by the force of the insight that probability does not amount to scientific knowledge – thus causing that all our reasons for a position are of equal force. For example, our intellect presents the objects of our sense perceptions as material objects outside the mind. Therefore, the will is strongly influenced to affirm this. But the fact that this assessment is not included in our perception of these objects, and that we therefore are not allowed to affirm it, will lessen the force of the persuasion of the understanding, thus causing a motivational equilibrium. The will is then free in its choice. However, this view is nowhere espoused by Descartes, and it is even ruled out by some of his remarks. Most of all, why should Descartes firmly emphasize the freedom of the will, and having a resolute will for overcoming prejudices when rational considerations – arguments to put something in doubt combined with knowledge of the truth rule – would be enough to annul the force of the prejudices? This is precisely the gist of a paragraph from the second meditation.<sup>17</sup> And it is, moreover, also supported by our analysis of prejudices as deep inclinations of the mind, which can only be overcome by a strong resolution of the will to subdue them. Instead, it is more likely that Descartes considers the freedom of the will a necessary condition for following the truth rule. Otherwise, the will would immediately respond to the persuasive power of the intellect and thus follow the prejudices. As a consequence, it is likely that Descartes accepts a strong version of indifference.

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<sup>16</sup> Descartes, *Meditations* IV, AT VII 59, CSM II 41.

<sup>17</sup> Descartes, *Meditations* II, AT VII 22, CSM II 15.

At any rate, Descartes works with, at least, two notions of freedom, and he nowhere clarifies how both are related. A likely explanation for this is that Descartes was influenced by two distinct philosophical sources. A thorough discussion of this suggestion would take us too far afield, but a few remarks on his possible sources are helpful for our purposes. It may be argued that one source of his thoughts on the will is Augustinian, with its emphasis on freedom of spontaneity or constraint<sup>18</sup>, whereas the other source may be of Stoic origin.<sup>19</sup> Roughly speaking, it is very difficult to successfully accommodate the Stoic notion of the will as being completely in our power ('up to us'), with respect to the cognitive impressions and impulses, with the Augustinian notion of the will as doing something voluntarily – which precisely means that one's desires determine the will.<sup>20</sup> But both notions were available to Descartes, and he needed both for his theory. At least, that will be argued for in the next subsection.

<sup>18</sup> There are many places and remarks of Descartes on the will pointing to Augustinian influences, in which he advocates an intellectualist view of the relation between will and intellect, and accordingly inclines to freedom of constraint as the essence of freedom. He says, for instance, repeatedly that the will pursues what the intellect presents as good or as a perfection (see Replies II, AT VII 166, CSM II 117, and *Correspondence*, to Mersenne, 25 December 1639, AT II 628, CSMK 141-142). Later, Descartes infers from this that absolute perfection, that is, God himself, is the ultimate object of desire (see *Correspondence*, to Chanut, 1 February 1647, AT IV 608, CSMK 309). This entails that Descartes advocates an intellectualist position with respect to the relation between will and intellect instead of a voluntarist position; an opposition which is closely connected to the distinction between freedom of indifference and spontaneity. Intellectualism means that the will chooses what the intellect presents as a good. In other words, the will is determined by the intellect. Voluntarism, on the other hand, means that the will can operate independently from the intellect, so that the good is not determined by the intellect but rather by the will. Beckmann 1909 considers Descartes, accordingly, to be a 'deterministic intellectualist', with the exception of the role of the will as to confused cognition. Also Gilson thinks that Descartes takes an intellectualist position similar to that of Aquinas. He draws some interesting conclusions from this with respect to the activity and passivity of the intellect. Because the will follows the intellect, the intellect is active in relation to the will – it moves the will to act (see Gilson 1913, 247-266). The intellect is only passive, while the will is active, as to the object. Still, the problem remains that Descartes claims that the will is 'free' from the intellect with respect to confused cognitions. That is why Caton asserts that Descartes combines an intellectualist theory of truth with a voluntarist theory of error. The latter means that when the mind lacks true knowledge the freedom of indifference is left and the will is free to determine its judgement. At any rate, from several places in the *Meditations*, it is unequivocally clear that he prefers an intellectualist position. Which is also very strongly expressed in a letter to Mersenne of the end of May 1637 (AT I 366, CSMK 56).

<sup>19</sup> Although this is a crude rendering of the Stoic theory of the will, it was thus presented by Augustine and later philosophers. See for the Stoic theory of the will, Frede 2002, 192-200.

<sup>20</sup> See for Augustine, Rist 1994, Ch. 5. This also explains the debate in the secondary literature about whether Descartes is an Augustinian or a Stoic. Hanby 2003a, esp. 161-165, deems it wrong to regard Descartes as an Augustinian, because his notion of the will is basically Stoic, a conception

That there may be a Stoic origin is confirmed by Descartes' insistence on the basic opposition of understanding and will in terms of passivity and activity. Ever since the *Meditations*, Descartes marks the difference between these two faculties by calling the intellect passive and the will active. The intellect is the totality of all possible cognitions, comprising both sensory and intellectual cognitions. According to Descartes, all cognitions are passively received or 'perceived', which is why he calls them 'perceptions'. This resembles largely the Stoic account of the impressions, which I will not further explain here.<sup>21</sup> This opposition is an important element of Descartes' theory of judgement, as we shall see in the next section.

### *2.1.3 The freedom of the will as crucial for Cartesian philosophy*

It is now to be examined what explicit reasons Descartes offers for attributing freedom to the will, and why he gives the will such a prominent role in his philosophy. I shall first examine the reasons Descartes offers in the *Meditations* and then have a look at relevant passages on ethics in the *Discourse*, the letters to Elisabeth and finally the *Passions of the soul*. The issue here is not how philosophically coherent or successful Descartes is in applying his theory of the will to these domains, but rather what his explicit purposes are for introducing it.

Before dealing with these issues, a remark needs to be made on a function of the will that has not been addressed in the previous subsection, but is nonetheless important for ascertaining why the will is so important. At several places, Descartes insists that the will has the function of directing one's *attention* to something.<sup>22</sup> Attention is of central importance to Descartes' philosophy as a whole. Indeed, Descartes regards attention as a necessary condition for conceiving objects clearly and distinctly, that is, both for adequately distinguishing between cognitions and for having basic rational insights – of

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of the will that Augustine explicitly rejected. He generally tries to downplay Augustinian elements in the *Meditations* by claiming that every philosopher was influenced by Augustinianism to some extent, and argues in turn that the view that the will is free in withholding its assent to impressions is essentially Stoic, and, moreover, a theory that Augustine explicitly refutes in *De civitate Dei*. But other scholars uphold exactly the opposite view by pointing to other aspects of Descartes' theory (see, for instance, Janowski 2001 and Menn 1998). The best way to resolve these issues may simply be to admit that Descartes uses two different conceptions of freedom: one inclining more to a Stoic or Jesuit conception of the will and its freedom, whereas the other is essentially on a par with Augustine's theory. In the *Meditations*, he seems to prefer the Augustinian, anti-Jesuit view (see Gilson 1913, 309-316, and Janowski 2001, 175-176). Besides, it is also clear that some other Augustinian tenets are to be found in the fourth meditation, as Janowski 2001 argues. See for a broader perspective on Augustine's and the Stoic notion of the will, Kahn 1988.

<sup>21</sup> See Hankinson 2002, and Brennan 2002, 260-263.

<sup>22</sup> See Cottingham 2002, especially p. 354. Cottingham insists that for Descartes attention, or focussing, is an act of the will. By this function, the will can determine the formation of beliefs indirectly and freely. He argues that this function of the will is necessary to overcome prejudices, since their weight can only be counterbalanced by turning our attention to reason.

principles and common notions.<sup>23</sup> Conversely, errors mostly result from a lack of attention to what we actually conceive. Descartes argues in turn that this lack of attention is caused by – too many – mental images, the influence of emotions, weariness, and laziness, all of which have to be overcome by learning to focus our attention to reason.<sup>24</sup> At this point, the will has to play its part. A forceful *resolution* of the will is necessary to keep our attention fixed to reason. Attention is thus largely a function of the will.<sup>25</sup> And because the possibility of observing the rules of the method in the *Discourse* depends on attention, the will gets a central position in philosophy. Let us now explore the reasons Descartes offers for attributing freedom to the will.

In Descartes' writings, we can discern at least three reasons for considering the freedom of the will to be indispensable for philosophy: he regards it 1) as a necessary element of his theory of error; 2) as indispensable for carrying out the method of doubt; 3) as crucial for his epistemic theodicy. First, Descartes intends to give a theoretical and psychological foundation for his theory of error. A central element of this theory is the view that the will must affirm clear and distinct ideas, but can doubt all other ideas by using its freedom.<sup>26</sup> The freedom of the will is, consequently, the psychological capacity that allows us to comply with the truth rule, that is, not to assent to confused ideas. The will can only refrain from judging such ideas if it is free. In other words, Descartes wants to prevent that the will necessarily follows what the intellect presents to it when the content of the intellect is confused.<sup>27</sup>

Second, the freedom of the will is a necessary condition for carrying out the method of doubt, because the will has to be free for overcoming the force of the prejudices.<sup>28</sup>

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<sup>23</sup> See, for instance, Descartes, *Principles* I §45, AT VIIIa 22, CSM I 207, where attention is mentioned as a condition for perceiving something clearly. Cf. *Rules* IV, AT X 368, CSM I 14.

<sup>24</sup> See for this, Descartes, *Principles* I§ 73, AT VIIIa 37, CSM I 220; *Correspondence*, to [Mesland], 2 May 1644, AT IV 116, CSMK 233-234; *Correspondence*, to Chanut, 1 February 1647, AT IV 608, CSMK 309; *Rules* IX, AT X 401, CSM I 33; *Rules* XII, AT X 417, CSM I 43.

<sup>25</sup> That Descartes mostly ascribes attention to the will is clear from the following passages: *Passions* I §43, AT XI 361, CSM I 344; I §46, AT XI 363-364, CSM I 345; II §75-76, AT XI 384-385, CSM I 355. He also says that the emotion of wonder may bring about that our attention is focused on some object (see *Passions* I §70, §75, §78, AT XI 380-381, 384, 386, CSM I 353-356). But presumably this emotion accomplishes this by influencing the will.

<sup>26</sup> Descartes unequivocally claims that clear and distinct ideas cannot be doubted as long as we attend to them. See Descartes, *Meditations* V, AT VII 65: ‘... ea certe est natura mentis meae ut nihilominus non possem iis non assentiri, saltem quamdiu ea clare percipio ...’, CSM II 45; *Meditations* V, AT VII 69: ‘Etsi enim ejus sim naturae ut, quamdiu aliquid valde clare & distinete percipio, non possim non credere verum esse ...’, CSM II 48; *Replies* II, AT VII 166, CSM II 117.

<sup>27</sup> In *Replies* V (AT VII 368, CSM II 260), Descartes affirms against Gassendi that the mind can only guard itself against error when the will is free to avert from the final decision of the intellect. Otherwise, the mind would necessarily choose what the intellect has established.

<sup>28</sup> Peter Schouls presents a rather unusual picture of Descartes' philosophy of the will, but one which supports our argument greatly. He states that according to Descartes the will precedes the

There are several passages to that effect to be found in Descartes' works.<sup>29</sup> For example, in the synopsis of the *Meditations*, he states that 'the mind uses its own freedom and supposes the non-existence of all the things about whose existence it can have even the slightest doubt'.<sup>30</sup> The point is that prejudices are very deep inclinations, going back to infancy, that cause us to strongly believe, for instance, that there is an independent corporeal reality corresponding exactly to our sensory cognitions. Although Descartes affirms that we need reasons for doubting prejudices, those reasons are insufficient to undercut their persuasive force, and thus cannot prevent us from assenting to them.<sup>31</sup> In other words, although the intellect may have counterarguments, the prejudices are still too persuasive to be set aside. Being deep inclinations of the mind, prejudices are simply too powerful to be completely removed by rational arguments.<sup>32</sup>

To be sure, reasons are needed to lessen the force of prejudices. Before reasons were found to doubt the prejudices, they were completely evident to the mind, for which

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understanding because a free act of the will is necessary to start with the method of doubt. After all, reason is in bondage due to prejudices and will never confirm to use such a procedure. Moreover, reason also needs to be validated and that is only possible after applying the method of doubt. For that reason, the will must have primacy to reason, and be unrestrictedly free. Schouls calls this kind of freedom 'liberty of opportunity', which means in fact the same as autonomy. Schouls has presented, and slightly modified, his argument in various books and articles, see Schouls 1980, Schouls 1989, particularly Chapter 2 and 4, and, finally, Schouls 1994.

<sup>29</sup> See also Descartes, *Correspondence*, to Regius, 24 May 1640, AT III 65: 'Dicis etiam in tuis ultimis (quae heri receptae, me, ut simul ad praecedentes responderem, monuerunt): *omnem praecipitantiam intempestivi judicii pendere ab ipso corporis temperamento, tum acquisito, tum innato*; quod nullo modo possum admittere, quia sic tolleretur libertas, et amplitudo nostrae voluntatis, quae potest istam praecipitantiam emendare ...', CSMK 148.

<sup>30</sup> Descartes, *Meditations* synopsis, AT VII 12: 'In secunda, mens quae, propria libertate utens, supponit ea omnia non existere de quorum existentia vel minimum potest dubitare, animadvertis fieri non posse quin ipsa interim existat.', CSM II 9.

<sup>31</sup> See our discussion on prejudices as deep inclinations in the previous chapter and the last section of this chapter.

<sup>32</sup> This is the gist of some of Descartes' remarks. It is in particularly clear from Replies V, AT VII 204, CSM II 270. At this point, Descartes discusses the suspension of all judgements until they are examined anew. He underscores that it is necessary to have opposite reasons for being capable of doubting prejudices. An obvious interpretation of this passage is that we normally consider prejudices to be evident, and are therefore so strongly inclined to affirm them that the will cannot doubt them. Once reasons to the contrary are put forward, however, the prejudices lose their evidence and become susceptible to doubt, a function of the will. Contrarily, Petrik 1992, 96, uses this passage to uphold that Descartes clings to freedom of spontaneity in all instances. But my interpretation agrees not only better with this passage, but also with other remarks of Descartes. See for that especially, *Principles I* §44, AT VIIIa 21, CSM I 207, and *Principles I* §66, AT VIIIa 32, CSM I 216.

reason the will could not doubt them at all.<sup>33</sup> But because prejudices keep their persuasive force even after being criticized, reason alone is not sufficient to overcome them. A powerful free will is needed to refrain from judging propositions that come to the mind as being *very likely* true. Descartes' theory of judgement and the freedom of the will confirm that the will is capable of withholding its assent to those propositions. In fact, the suspension of judgement is only possible if, by using its freedom, the will persists in observing the rational guideline to refrain from judging ideas that are not clear and distinct.<sup>34</sup> For example, judgements that seemed to be very evident, such as the existence of the external world or the testimony of the senses, are rendered uncertain, if still very persuasive, by using arguments that undermine their alleged evidence. When those judgements have been made less clear, the will becomes more indifferent proportionate to their level of (un)certainty, and that enables the will to use its freedom by suspending its judgement or even by completely denying them. Apparently, Descartes thinks that attributing assent to the intellect would lead to a situation in which the strongest reason always prevails, which would entail that the strongly entrenched prejudices of the mind could never be overcome. As a further result, philosophy would be impossible if beliefs were only a matter of the intellect.

Lastly, the fourth meditation, in which the freedom of the will is considered essential to explain the possibility of error, is constructed as a theodicy.<sup>35</sup> This means that Descartes insists on the fact that we are free in using the will because that feature makes us responsible for the things we do instead of God, who has given us both will and intellect. Thus God is absolved of being the author of error. But even though it is indisputable that the notion of a theodicy plays a part in Descartes' thought, it appears to be secondary in comparison to the two motives mentioned above.<sup>36</sup> At least, it plays a minor role in the *Principles*.

So much for Descartes' reasons for considering the freedom of the will to be indispensable in epistemological-theoretical contexts. It is of the utmost importance to emphasize that the notion of a free will also functions in practical contexts. Although

<sup>33</sup> This is an effect of the power of the prejudices, by which things that are not actually conceived clearly and distinctly, such as the notion that qualitative sensations resemble features of objects to which they are ascribed, are nevertheless judged to be self-evident. In the *Principles*, Descartes ascribes this to the influence of memory; we think we once perceived those things clearly and distinctly. See *Principles* I §44, AT VIIa 21, CSM I 207, along with I §72, AT VIIa 36-37, CSM I 219-220.

<sup>34</sup> This guideline is the first rule of the method of the *Discourse* II, AT VI 18: 'Le premier était de ne recevoir jamais aucune chose pour vraie, que je ne la connusse évidemment être telle ...', CSM I 120. See also *Meditations* I, AT VII 18: '... ratio persuadet, non minus accurate ab iis quae non plane certa sunt atque indubitata, quam ab aperte falsis assensionem esse cohibendam, satis erit ad omnes rejiciendas, si aliquam rationem dubitandi in unaquaque reperero.', CSM II 17.

<sup>35</sup> See for this theme, Calvert 1972, Menn 1998, and Janowski 2000.

<sup>36</sup> Accordingly, this reason is missing in the synopsis of the *Meditations*. See Cress 1994, 151.

ethics is a late offspring of Descartes' philosophy, the core of his later ethical theory can already be found in the *Discourse*. The remarks on ethics in the *Discourse* are, however, part of an account of how to use Descartes' method for the sciences, so that there is no development of a separate moral philosophy there. Moreover, he also calls it a provisional ethics, consisting of just three maxims that function as transitory guidelines for acting as long as there is no more perfect moral theory. Notwithstanding the provisionality of this ethics, however, the third maxim has become in fact the core of Descartes' mature ethics. I quote this maxim in full:

My third maxim was to try always to master myself rather than fortune, and change my desires rather than the order of the world. In general I would become accustomed to believing that nothing lies entirely within our power except our thoughts, so that after doing our best in dealing with matters external to us, whatever we fail to achieve is absolutely impossible so far as we are concerned. This alone, I thought, would be sufficient to prevent me from desiring in future something I could not get, and so to make me content. For the will naturally tends to desire only what our intellect represents to it as somehow possible ...<sup>37</sup>

The point of this maxim is that we have to limit our desires to what lies in our power (*en notre pouvoir*), which, Descartes says, is limited to our thoughts (*nos pensées*). As long as this is remembered, our will, which Descartes identifies here with desire, will restrict itself to our thoughts. The mind will consider all external goods, such as the wealth, beyond the reach of our influence. Further, it is clear from the last sentence of the quotation that Descartes considers the will to be determined by the intellect – it is therefore simply impossible to desire what is known to be impossible.<sup>38</sup> In short, the will is identified with desire, and is not exclusively what lies in our power.

As a result, the picture that emerges from the third maxim differs greatly from Descartes' later theory of the will, the upshot of which is precisely that the will alone is in our power. Although Descartes does not explain here in what this power consists, the third maxim makes it clear that he applies this feature to thought in general. To be sure, Descartes subscribes also in the *Meditations* to the view that the will is unable to pursue what the intellect clearly knows to be impossible. This may entail that happiness – which Descartes defines as contentment – is mostly achieved in the same way on either theory,

<sup>37</sup> Descartes, *Discourse* III, AT VI 25-26: ‘Ma troisième maxime était de tâcher toujours plutôt à me vaincre que la fortune, et à changer mes désirs que l’ordre du monde; et généralement, de m’accoutumer à croire qu’il n’y a rien qui soit entièrement en notre pouvoir, que nos pensées, en sorte qu’après que nous avons fait notre mieux, touchant les choses qui nous sont extérieures, tout ce qui manque de nous réussir est, au regard de nous, absolument impossible. Et ceci seul me semblait être suffisant pour m’empêcher de rien désirer à l’avenir que je n’acquisse, et ainsi pour me rendre content. Car notre volonté ne se portant naturellement à désirer que les choses que notre entendement lui représente en quelque façon comme possibles ...’, CSM I 123-124.

<sup>38</sup> This is also confirmed a little later when Descartes states that the ‘will tends to pursue or avoid only what our intellect represents as good or bad ...’ (AT VI 28, CSM I 125)

namely, by establishing through rational considerations the sphere to which our influence is confined. The essence of Descartes' method for reaching happiness need not have changed, even though Descartes' theory of the will has completely altered.

It is worthwhile to examine the changes Descartes made to his moral theory, because this has precisely to do with his changing view of the will. In brief, it is now clear that the essence of what changes after the *Discourse* is that the intellect lies no longer in our power. Only the will is in that position. This becomes already clear from a letter of 1638, and is also the gist of Descartes' theory of the will in the *Meditations*. Descartes only needed to adapt his ethical theory to this new theory of the will, which is precisely what happens. This stands out most clearly in Descartes' definition of virtue. Which is why I focus on Descartes' notion of virtue in what follows.

Descartes offers his first definition of virtue in a letter to Elisabeth of 1645 in which he presents the three rules of the provisional moral code of the *Discourse*. Contrary to what one might expect, virtue is not connected with the third but with the second maxim of the *Discourse*, which runs as follows: 'My second maxim was to be as firm and decisive in my actions as I could, and to follow even the most doubtful opinions, once I had adopted them, with no less constancy than if they had been quite certain'.<sup>39</sup> He means by this that we have to be constant in our actions and hold on to what the intellect presented as the preferred choice, which is therefore the rational thing to do. Even though this choice may not be supported by absolutely certain knowledge, we have to be constant in sticking to it. This maxim is, in turn, rephrased in the letter to Elisabeth as follows:

The second is that he should have a firm and constant resolution (*résolution*) to carry out whatever reason recommends without being diverted by his passions or appetites. Virtue, I believe, consists precisely in sticking firmly to this resolution; though I do not know that anyone has ever so described it.<sup>40</sup>

Thus, virtue is the resolution to stick to choosing that for which one has the best reasons. These reasons need not be, as in theoretical philosophy, absolutely certain – scientific knowledge is not required in practical life. As long as we abide by the resolution to carry out what we conceived to be the best, we will be happy. However,

<sup>39</sup> Descartes, *Discourse III*, AT VI 24: 'Ma seconde maxime était d'être le plus ferme et le plus résolu en mes actions que je pourrais, et de ne suivre pas moins constamment les opinions les plus douteuses, lorsque je m'y serais une fois déterminé, que si elles eussent été très assurées.', CSM I 123.

<sup>40</sup> Descartes, *Correspondence*, to Elizabeth, 4 August 1645, AT IV 265: 'La seconde, qu'il ait une ferme et constant résolution d'exécuter tout ce que la raison lui conseillera, sans que ses passions ou ses appétits l'en détournent; et c'est la fermeté de cette résolution, que je crois devoir être prise pour la vertu, bien que je ne sache point que personne l'ait jamais ainsi expliquée; mais on l'a divisée en plusieurs espèces, auxquelles on a donné divers noms, à cause des divers objets auxquels elle s'étend.', CSMK 257-258.

Descartes qualifies this by asserting that the resolution also involves that we use our intellect properly, and therefore strive after the best possible knowledge – ideally scientific knowledge.

There are great differences between the second maxim and the definition of virtue. Freedom of the will is only presupposed by the latter formulation. What is more, in the *Discourse*, it is even unclear whether Descartes aims with the second maxim at the will at all. By contrast, in the letter to Elisabeth, he makes this unequivocally clear when asserting that ‘... the will and resolution to do well can carry us to evil courses ...’<sup>41</sup> Another difference between these two formulations is that Descartes makes a sharp distinction between reason on the one hand and the passions on the other hand in the second formulation, whereas that is missing in the first.<sup>42</sup> On the second formulation, we are as it were pulled in two directions by two motives of action, and the will can follow either of both. This is only possible if the will is essentially free in its choice; otherwise, it would always follow the strongest motive. Virtue consists, then, in sticking to the resolution to follow reason. In the *Discourse*, on the other hand, it is considered self-evident that the will follows the intellect, by which Descartes does not just mean rational considerations or guidelines, but rather the motive for action that prevails – which is what the intellect presents as the outcome of a deliberation, whether that may be eventually based on emotions or on reason. The view that the will chooses between two basic motives cannot be found in the *Discourse*. In short, Descartes’ new formulation differs in that it presupposes the freedom of the will and in that it distinguishes between two basic motives for action – emotions and reason.

That virtue is dependent on the freedom of the will is the upshot of many other remarks. When elaborating on the theory of virtue, Descartes largely equates virtue with a disposition of the free will – the resolution to behave rationally. In another letter to Elisabeth, he identifies his theory of virtue with that of the Stoic Zeno of Citium, whose notion of virtue he considers to depend ‘entirely on our free will’. He rephrases his own definition of virtue at the end of this letter as ‘to maintain a firm and constant will to bring about everything we judge to be the best and to use all the power of our intellect in judging well’.<sup>43</sup> Further, in a letter to Queen Christina of Sweden, Descartes identifies

<sup>41</sup> Descartes, *Correspondence*, to Elizabeth, 4 August 1645, AT IV 267: ‘Mais néanmoins parce que, lorsqu’elle n’est pas éclairée par l’entendement, elle peut être fausse, c’est-à-dire que la volonté et résolution de bien faire nous peut porter à des choses mauvaises, quand nous les croyons bonnes, le contentement qui en revient n’est pas solide ...’, CSMK 258.

<sup>42</sup> See Descartes, *Correspondence*, to Elizabeth, 1 September 1645, AT IV 285-287, CSMK 264-265, about the misrepresentation of the value of objects by the passions, and the task of reason in correcting these assessments.

<sup>43</sup> Descartes, *Correspondence*, to Elizabeth, 18 August 1645, AT IV 276: ‘Zénon, au contraire, a considéré celui que chaque homme en son particulier peut posséder; c'est pourquoi il a eu aussi très bonne raison de dire qu'il ne consiste qu'en la vertu, parce qu'il n'y a qu'elle seule, entre les biens que nous pouvons avoir, qui dépende entièrement de notre libre arbitre.’, CSMK 261, and

virtue with the highest good, which in turn consists in the good use of the free will.<sup>44</sup> The will is, accordingly, the highest perfection of man, and the only thing that makes us responsible for our deeds and therefore a proper object for praise and blame. As in the fourth meditation, responsibility is connected to freedom of action.

This theory culminates in the *Passions of the soul*. This writing is mostly concerned with the issue of how the mind can control the emotions, in which regard the will plays a central part. In the first part of the *Passions*, Descartes distinguishes between strong and weak souls. The quality of the soul differs according to the power of the will in controlling the emotions. In order to control the emotions, the will must make use of ‘firm and determinate judgements bearing upon the knowledge of good and evil, which the soul has resolved to follow in guiding its conduct’.<sup>45</sup> Weak persons are those whose will is indeterminate in following such guidelines. In other words, the quality of someone’s character depends on how strong their will is in acting on – more or less rational – rules of action, rather than immediately acting on the blind impulses of the emotions.

This aspect returns in Descartes’ notion of virtue in the third part of the *Passions*. He claims there that we may have esteem for ourselves for two reasons: first for exercising our free will properly and second for having control over our volitions.<sup>46</sup> Both these reasons agree in that the freedom of our will is central to them. Descartes clarifies these two reasons in the paragraph that follows. He claims that the fundamental freedom of the will of a person ‘to dispose his volitions’ is the only thing ‘that truly belongs to him’, and thus makes him a subject of praise and blame.<sup>47</sup> Virtue consists in a

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AT IV 277: ‘...il est besoin de suivre la vertu, c'est-à-dire d'avoir une volonté ferme et constante d'exécuter tout ce que nous jugerons être le meilleur, et d'employer toute la force de notre entendement à en bien juger.’, CSMK 262. The same definition of virtue also occurs in Descartes’ dedication of the French translation of the *Principles* to Elisabeth, AT VIIIa 2-3: ‘Quisquis enim firmam et efficacem habet voluntatem recte semper utendi sua ratione, quantum in se est, idque omne quod optimum esse cognoscit exsequendi, revera sapiens est, quantum ex natura sua esse potest ...’, CSM I 191.

<sup>44</sup> Descartes, *Correspondence*, to Christina, 20 November 1647, AT V 83, CSMK 325.

<sup>45</sup> Descartes, *Passions* I §48, AT XI 367: ‘Ce que je nomme ses propres armes sont des jugements fermes et déterminés touchant la connaissance du bien et du mal, suivant lesquels elle a résolu de conduire les actions de sa vie.’, CSM I 347.

<sup>46</sup> Descartes, *Passions* I §152, AT XI 445: ‘Je ne remarque en nous qu'une seule chose qui nous puisse donner juste raison de nous estimer, à savoir l'usage de notre libre arbitre, et l'empire que nous avons sur nos volontés.’, CSM I 384.

<sup>47</sup> Descartes, *Passions* I §153, AT XI 445-446: ‘Ainsi je crois que la vraie générosité, qui fait qu'un homme s'estime au plus haut point qu'il se peut légitimement estimer, consiste seulement partie en ce qu'il connaît qu'il n'y a rien qui véritablement lui appartienne que cette libre disposition de ses volontés, ni pourquoi il doive être loué ou blâmé sinon pour ce qu'il en use bien ou mal, et partie en ce qu'il sent en soi-même une ferme et constante résolution d'en bien user, c'est-à-dire

'firm and constant resolution to use it [= the will] well – that is, never to lack the will to undertake and carry out whatever he judges to be best.' Virtue then is nothing other than a basic resolution of the will to follow that for which one has the best reasons. In fact, this is a practical equivalent of the truth rule in theoretical philosophy. Again, this allows us to conclude that the freedom of the will is absolutely fundamental to Descartes in ethics: it is essential for human beings, makes man morally responsible, and explains how we can have a resolution to behave rationally.

We may infer from this that the function of the will in Descartes' theory of virtue runs completely parallel to the one in epistemic contexts. In both contexts, Descartes focuses on using the free will properly by listening to reason; and both theoretical and practical philosophy are inconceivable without the freedom of the will. This implies that in the case of practical philosophy the mind has to heed reason and to act according to its directives. On Descartes' view, the freedom of the will allows the mind to do so. The single – but essential – difference between theoretical and practical matters is that reason is not identified with absolutely certain knowledge in the latter case, but that for ethical issues the most probable reasons suffice. As a result, the norm – the truth rule – is less strict for ethics than for theoretical philosophy. Nonetheless, Descartes emphasizes that also for ethical matters one has to strive after certain knowledge, a disposition he considers to be an essential component of virtue.

In sum, the freedom of the will receives a more prominent place in Descartes' theoretical philosophy since the *Meditations*, in which it fulfils the following tasks: it is an essential component of Descartes' theory of error and judgement, is needed for following the method of doubt, and functions as an integral part of an epistemic theodicy that prevents God from being the cause of human error. Later, Descartes expands this theory of the will to practical philosophy. This is unequivocally clear from his notions of virtue and moral responsibility. Unlike theoretical philosophy, the will need not follow absolutely certain knowledge for practical matters, but just has to stick to the resolution of choosing that which is known to be the best – a weaker version of rationality. Let us now see whether Geulincx has followed Descartes in those respects.

#### *2.1.4 Geulincx' theory of the will*

Everything is now in place for a comparison of Descartes' theory with Geulincx' account of the will. In this subsection, the same points are discussed as in the previous one on Descartes. I first explore what Geulincx precisely means by the will. Therefore we have to explore his notion of action and freedom. I close with looking at what function the will has in his philosophy.

Unlike Descartes, Geulincx does not offer a definition of will. The reason for this is that he considers our concept of the will to be so clear that it cannot be properly

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de ne manquer jamais de volonté pour entreprendre et exécuter toutes les choses qu'il jugera être les meilleures. Ce qui est suivre parfaitement la vertu.', CSM I 384.

defined.<sup>48</sup> Nor is it necessary to define it, as we have intuitive knowledge of it. We even should not offer a definition for objects that are completely clear, because definitions that are not entirely correct may readily lead to error. Naturally, since we lack a definition of the will, it is difficult to assess whether Geulincx' notion of the will is the same as that of Descartes. The alternative method used here is to discuss the remarks Geulincx makes on the will in order to get to a description of the will. This is done by first outlining Geulincx' theory of action and then examining his notion of freedom.

For Geulincx, the notion of action is closely related to that of the will. Before elaborating on this relation, I offer a few words on Geulincx' idiosyncratic theory of action in general. This theory is not only central to his practical but also to his theoretical philosophy. It is precisely Geulincx' original principle of action, for which he is renowned, that is central to his metaphysics and epistemology. He introduces this principle in the fifth *scientia* of the first part of his *True metaphysics*, which is concerned with demonstrating that there has to be an infinite thinking (*sciens*) and willing (*volens*) being apart from himself. This proof for God's existence relies on the one hand on the fact that we are aware of having thoughts (*cogitationes*), like sense perceptions, that we have not caused ourselves, and on the other hand on the conditions for an action. Geulincx claims that, apart from an act of the will to start an external action, consciousness of how (*quomodo*) something is done is a necessary condition for action.<sup>49</sup> This is in turn codified in the following principle of action: 'it is impossible that he who does something does not know how it is done' (*impossibile est, ut is faciat, qui nescit quomodo fiat*) or 'What one does not know how to do, one does not do' (*Quod nescis quomodo fiat, id non facis*). In other words, comprehensive knowledge or full consciousness of something is necessary for being able to act (*facere*) or rather to be an agent – that is, to produce something.<sup>50</sup> As for Geulincx' proof of God in the *True metaphysics*, he concludes that only an entity having both an intellect and a will – that is, a mind – can cause our sensory cognitions. In addition, infinite power is needed to

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<sup>48</sup> Geulincx, *Logic* IV, Sect. 1, Ch. 6, §1-2, I 403-404: 'Ex secunda hac Proprietate sequitur Capitalis Regula Definitionum: *Quae satis clara sunt, definiri non debent. [...] Hac Regula excusamur a definienda Mente ac Animo nostro, eorumque operationes.*' Also Descartes emphasizes that some things are too simple and self-evident to be defined. See, for example, *Principles* I §10, AT VIIa 8, CSM II 195-196.

<sup>49</sup> Geulincx, *MV* I, Sc. 5, II 150: 'Sunt enim quidam modi cogitandi in me, qui a me non dependent, quos ego ipse in me non excito; excitantur igitur in me ab aliquo alio (impossibile enim est, ut a nihilo mihi obveniant). At aliis, quicunque sit, conscius esse debet hujus negotii; facit enim, et impossibile est, ut is faciat, qui nescit quomodo fiat. Est hoc principium evidentissimum per se, sed per accidens et propter praejudicia mea et ante coepitas opiniones redditum est non nihil obscurius ...'

<sup>50</sup> Geulincx also uses the term *producere*; see Geulincx, *Ethics* I Ann., Ch. 2, Sect. 2, §2, pt. 9, III 205-207.

bring about our sensory perceptions, so that the agent of our perceptions has to be an infinite mind, which is God.

As a result, unlike Descartes, Geulincx does not consider an act of the will as such to be a sufficient condition for action. Any true action also requires a specific type of knowledge, namely, a complete consciousness of the object of action.<sup>51</sup> This view of knowledge belongs to the essence of Geulincx' principle of action.

This principle of action has at least one far-reaching consequence, on which Geulincx elaborates in his *Ethics*, namely, that we cannot move our body, as we lack sufficient knowledge of *how* movement in our body comes about. This implies that the body does not lie in our power.<sup>52</sup> Neither can the will change the direction of motion in our body, as Descartes had advocated.<sup>53</sup> As a result, the only actions we really perform are the acts of our own mind. In addition, this theory involves a particular theory of knowledge in which mental activity plays a central role, which shall be further explored in the last three chapters of this study.

This metaphysical account of action is the point of departure for Geulincx' moral philosophy. Geulincx' moral principle of action relies intimately on its metaphysical counterpart, while at the same time also drawing on Descartes' moral theory of the *Discourse*, namely, by adopting the view that limiting our will to what lies in our power is central to ethics.<sup>54</sup> He translates the metaphysical in a moral principle as follows: 'As to which you do not have power, there you should not will anything' (*Ubi nihil vales, ibi*

<sup>51</sup> See Chapter 6.2 for a discussion of the kinds of cognition.

<sup>52</sup> See Geulincx, *MV I*, Sc. 11, II 155: 'Ago in ista condicione [the human condition, that is, the connection of mind and body] (i.e. vivo, ut vulgo vocant) nihil extra me agens; aut patior enim tantum a corpore, aut ago in illus (in his enim versatur condicio humana); pati non est meum, agere non est meum, etiamsi subinde fiant ad arbitrium voluntatis meae. Nunquam enim proprie fit, quia ego volo, sed quia moter [that is God] me volente vult, ut etiam me subinde volente non vult, ut in paralysi et defatigatione membrorum mihi constat.' Cf. Geulincx, *MV III Ann.*, Sc. 8, II 297: 'Voluntas nostra nullum habet influxum, causalitatem, determinationem, aut efficaciam quamcunque in motum [...] nullam apud nos invenimus ideam seu notionem determinationis.' In his *Ethics*, Geulincx elaborates on this in the *inspectio sui* (III 30-37), a part of the fourth property of virtue (*humilitas*). The *inspectio sui*, Geulincx' variant of the classic dictum 'know thyself' (*Ipse te nosce*), consists of the metaphysics of the human condition on which his ethics is founded. He summarizes his views regarding the power of action as follows: '1. In hoc mundo me extra me nihil agere posse. 2. Omnem Actionem meam, quatenus mea est, intra me manere.' (III 36). Cf. *Ethics I Ann.*, Ch. 2, Sect. 2, §5, pt. 4, III 226: 'Cum nihil possim agere extra me, quod ex inspectione sui patet, totum vero agere meum, quod intra me est, sit cognoscere aut velle; certum perinde est ac evidentissimum, neutrum horum habere vim aliquam ad solvendum me a corpore meo.'

<sup>53</sup> Geulincx, *MV I Ann.*, Sc. 10, II 270.

<sup>54</sup> Geulincx already announces this in the first part of his *True metaphysics*, Sc. 11, II 155, at which point he speaks of an excuse in ethics (*excursus in Ethicam*), which starts with the analysis of the human condition, and consequently with establishing the scope of human capacity for action.

*etiam nihil velis*), or by the more popular expression ‘never act in vain’ (*nihil frustra faciendum est*).<sup>55</sup> So much for Geulincx’ theory of action.

Naturally, this theory of action has deep consequences for Geulincx’ conception of freedom. Geulincx deals more extensively with the notion of freedom than with that of the will. Although there are two places where he discusses freedom, the *Ethics* and the *True metaphysics*, we will confine ourselves to the former because the latter is only concerned with the freedom of God’s will.

In the *Ethics*, Geulincx regards freedom as one of the rewards of virtue, a part of happiness (*felicitas*), which necessarily follows from virtue. More specifically, he considers freedom to be a fruit of obedience, the second unique property of virtue.<sup>56</sup> Geulincx explains that he is the freest who always does what he (ultimately) wants. Moreover, such a person never does anything in vain (*nihil facere invitum*). This type of freedom applies only to people who follow the prescriptions of reason as their sole principle of action. And, since reason has prescriptions for every circumstance of life, even a virtuous slave, although it may appear otherwise as to his outward circumstances, is completely free. Even if he is commanded by his master to do something, he does it only out of love for reason, which is his ultimate will (or resolution), and this entails that he is completely free.<sup>57</sup> This concerns only the highest degree of freedom, which only virtuous men possess. In his commentary on this paragraph, Geulincx elaborates on the notion of freedom in general.

In it, Geulincx discerns three different meanings or kinds of freedom.<sup>58</sup> They represent three increasing degrees of freedom. Although the first kind of freedom involves the essence of freedom, the next degree gives a deeper understanding of freedom, whereas the last step consists in the apex of freedom. It may be suggested that this is a commentary on Descartes’ notion of freedom, since we have seen that Descartes plays with two, or perhaps three, notions of freedom. Let us see if Geulincx’ degrees of freedom, in fact, coincide with those of Descartes.

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<sup>55</sup> Geulincx, *MV I*, Sc. 11, II 155, and *Ethics I Ann.*, Ch. 1, §2, pt. 3, III 164.

<sup>56</sup> Geulincx, *Ethics I*, Ch. 2, Sect. 1, §2.4, III 23-24.

<sup>57</sup> Geulincx, *Ethics I*, Ch. 2, Sect.1, §2.4, III 23: ‘Cum enim vir bonus ac Rationi obediens id unum ubique et faciat, et facere constantissime velit, quod Ratio praecipit; id vero nec faciat umquam, nec unquam facere animum suum inducat, quod illa prohibet; liquet eum et facere semper quod vult, nec unquam facere quod non vult.’ Geulincx summarizes the point of this subsection succinctly in the following paragraph: ‘Fructus Obedientiae est Libertas, seu nihil facere invitum; quam solus, quam semper et ubique is habet, qui soli obedit Rationi. Non est enim cogitabilis casus ullus, quo adigatur ad invitum; cum Ratio in utraque fortuna, in omni statu et condicione vitae, perinde et aequae suas partes habeat; qui proinde solam illam spectat, ea sola stat et cadit, nunquam cogi potest ad invitum, ad id quod contra animi sui sententiam esset.’ (*Ethics I*, Ch. 2, Sect. 1, §2, Argumentum, III 191-192)

<sup>58</sup> See Geulincx, *Ethics I Ann.*, Ch. 2, Sect. 1, §2, pt. 14, III 187-188.

We have seen that the connection between Descartes' notions of freedom is problematic to such an extent that it remains vague even what he considers to be the essence of freedom. For Geulincx, by contrast, it is completely clear what the essence of freedom (*libertas*) is. It is 'doing what one wants to do (*facere quod vis*)'.<sup>59</sup> This kind of freedom is limited to minds, in possession of a will, and makes acts morally relevant. Only natural acts, belonging to the physical domain, are excluded from this type of freedom.<sup>60</sup> In other words, acts of bodies are unrelated to morals. The same goes for our perceptions of bodily states, which are passively received by the mind.

This definition of freedom clearly rings a bell when it is compared to Descartes' definition of the will: Geulincx also uses the term *facere*. And it is apparent that Geulincx, like Descartes, considers this kind to be the lowest degree of freedom. But Geulincx does not mention that the agent could have acted otherwise as to the same thing. As a result, Geulincx' definition of the essence of freedom denotes freedom of spontaneity. Doing what one wants to do means nothing but acting in accordance with one's desires. Indeed, there is not the faintest ring of freedom of indifference to be found in Geulincx' first notion of freedom.

The second stage of freedom differs from the first in that the subject has consciously decided to perform the action. It consists in 'doing what one has decided' (*facere quod constituisti*).<sup>61</sup> Geulincx calls this kind of freedom 'accidental' (*accidentalis*), because it does not constitute the essence of freedom, nor follows necessarily from that essence, so that it can be absent. Rather, it poses a higher degree of freedom, because in the case of acts that conform only to the first kind of freedom the action proceeds just from custom (*ex consuetudine*) or violent passion (*ex vehementi aliqua passione*). By contrast, accidental freedom means consciously making decisions. However, unlike the final degree of freedom, those decisions can still be contrary to one's ultimate intention (or resolution), which is why this kind of freedom cannot be a reward of virtue, according to Geulincx.

Finally, the apex of freedom consists in 'acting in accordance with one's ultimate intention' (*agere quod ex animi sententia est*).<sup>62</sup> Geulincx notices in this context that the

<sup>59</sup> Geulincx, *Ethics I Ann.*, Ch. 2, Sect. 1, §2, pt. 14, III 187: 'Prima, radicalis, et essentialis libertas est *facere quod vis*.'

<sup>60</sup> Geulincx, *Ethics I Ann.*, Ch. 2, Sect. 1, §2, pt. 14, III 187: 'Haec libertas reperitur in omni opere morali, seu ad vitium, seu ad virtutem pertineat; quaeque hac libertate carent opera, ad naturam, non ad mores pertinent.'

<sup>61</sup> Geulincx, *Ethics I Ann.*, Ch. 2, Sect. 1, §2, pt. 14, III 187: 'Accidentalis autem libertas est *facere quod constituisti* ...'

<sup>62</sup> Geulincx, *Ethics Ann.*, I, Ch. 2, Sect. 1, §2, pt. 14, III 188: '... *facere quod libet*, aut, ut honestius loquimur (libere enim et lubere male solant, quandoque libidinem ingerunt audienti, non tantum libertatem), *agere quod ex animi sententia est*.' Instead of 'to one's ultimate intention', '*ex animi sententia*' can also be translated as 'to my best knowledge'. It is a standard Latin expression used for oaths (see Lewis and Short 1962, 1671). In the main text of the *Ethics* on which these

word *libertas* got its name from this notion of freedom. On his view, there can only be two ultimate intentions or motives, the intention either to preserve one's 'humanity' – man as a composition of mind and body – from self-love (*Philautia*) or to follow the prescriptions of reason (*Ratio*) out of love for reason, which he calls virtue.<sup>63</sup> As to the latter motive, Geulincx seems to aim at Descartes' conception of virtue, according to which a person has made the ultimate decision (or resolution) to pursue that for which one has the best reasons. For Geulincx, this is not virtue itself, but something that follows from virtue. Instead, virtue consists in love of reason. Only this ultimate intention is accompanied by this type of freedom. Freedom in the ultimate degree is a property which necessarily follows from (the essence of) virtue – and is therefore called a reward of virtue. If one loves reason, one will necessarily do only that for which one has the best reasons.

This account differs markedly from Descartes' moral theory. First, it is not evident that this opposition of two ultimate motives is the same as Descartes' distinction between passions and reason as motives of action. Descartes does not discern two ultimate intentions, but just contrasts acting from emotions with acting from rational considerations. Second, the major difference with Descartes consists in that Geulincx means by *Ratio* not merely the most likely reasons, but rather absolutely certain knowledge.<sup>64</sup> Indeed, he holds that the prescriptions of reason are known completely a priori, and accordingly are absolutely necessary and certain. He deduces them in his *Ethics* from the main ethical principle, combined with knowledge of human nature taken from metaphysics.

To sum up our results thus far, Geulincx nowhere uses freedom of indifference, but simply distinguishes between three types of freedom of spontaneity, which he considers, accordingly, to be the essence of freedom. The most crucial difference is that true freedom applies only to the virtuous man, because that kind of freedom consists in

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annotations comment, Geulincx offers a somewhat vaguer definition of this kind of freedom, the free man '... facit quod vult, quod non vult non facit, et tantum facit ac non facit, quantum ipse constituit, non citra, non ultra, ne latum unguem quidem (in quo sane consistit summa libertas)' (*Ethics* I, Ch. 2, Sect. 1, §2, III 23). Lastly, in his disputation on virtue (*Disp. On virtue* §10, III 278), Geulincx asserts that 'he is the freest who does nothing but his own resolution' (*liberrimus est, ut qui nihil faciat praeter propositum suum*). This can only refer to the virtuous man, because he is the only person who always decides what he really wants, namely, following the prescriptions of reason out of love for reason, whereas the vicious man often has to choose against what he ultimately wants.

<sup>63</sup> In the fourth treatise of the *Ethics*, Geulincx points out, after a host of distinctions and detours, that there are only two fundamental resolutions of the will, namely, a basic intention either to follow reason out of love for reason or to preserve our humanity – the external self as a composition of mind and body – out of self-love. See on this, Aalderink 1999.

<sup>64</sup> In *Ethics* I, Ch. 1, §2, Geulincx deals with *ratio*, for which he refers to his *Logic*. In Chapter 4, we will further elaborate on Geulincx' notion of reason. From this discussion, it is apparent that he means by *ratio* irrefutable arguments, relying on self-evident principles.

always acting on the basis of reason. Unlike Descartes, reason here does not mean the most probable reasons for acting, but rather the infallible dictates of reason Geulincx infers in his *Ethics*.

But despite the fact that Geulincx adheres to freedom of spontaneity, he affirms that the will is capable of choosing between acting from emotions or from reason. The will extends beyond the boundaries of cognitions and emotions arising from the unity of mind and body. Indeed, his concept of freedom presupposes that we do not necessarily act on the basis of perceptions of the body, sensory cognitions or emotions, but can also act on the basis of purely rational prescriptions. It is this ability of choice that entails moral responsibility. This implies that Geulincx rejects universal causal determinism.<sup>65</sup> Freedom from causal determinism is, as with Descartes, a necessary condition for morals.

What is most important from a moral perspective is that it is possible to choose as one's ultimate intention either for acting to preserve the body out of self-love or for observing reason out of love for reason. Because sensory cognitions and emotions arise necessarily or rather naturally from the unity of body and mind, they are as such morally irrelevant. Rather, the decision of the will to act either on them or on the basis of reason is what determines our moral quality. Thus, only the quality of the will is morally relevant. This moral quality refers not to individual choices, but rather to the ultimate intention or resolution of the will.<sup>66</sup>

This becomes clearer from Geulincx' discussion of diligence (*diligentia*). The mind's attention to reason originates in an act of the will, which he calls diligence (*diligentia*), the first of the four cardinal virtues, which are unique properties of virtue which necessarily flow from virtue itself. Geulincx defines diligence as follows:

Since the whole nature of Reason is to dictate, to prescribe, and to suggest, it is clear that no-one can rightly love Reason if he does not listen to it, apply his mind's ear to it, and direct his whole mind to what it dictates. This direction of the mind towards Reason, this fixed and profound attention to Reason, I call *Diligence*, which is accordingly an intense and continuous withdrawal of the mind (no matter what its current business) from external things into itself, into its own innermost sanctum, in order to consult the sacred Oracle of Reason.<sup>67</sup>

<sup>65</sup> Cf. Terraillon 1912, 78-88.

<sup>66</sup> This resolution constitutes the eventual goal of all our actions; willing concerns always a final end (*finem*), while the means are only willed because of that end. Geulincx, *Ethics* III, Intr., III 92: 'Finem proprie amamus, proprie volumus [...] Atque ita semper finis dat speciem et nomen actibus nostris; is proprie a nobis appetitur et amatuer.'

<sup>67</sup> Geulincx, *Ethics* I, Ch. 2, Sect. 1, §1, III 18: '... quia, cum natura Rationis in eo tota sit, ut dictet, ut praescribat, ut suggerat, liquet eam a nemine adamari rite posse, qui non auscultet, qui non mentis aurem arrigat, et totum animum attendat ad hoc dictamen. Et in ista mentis ad Rationem attentione, auscultatione defixa et alta, Diligentiam repono. Quae proinde est mentis a rebus extra

From this it has to be concluded that attention, the direction of the mind towards reason, is a consequence of an act of the will. Since virtue consists of the intellectual love of reason, that is, the firm resolution of the will to do whatever reason commands, the first act of the virtuous man is to direct his mind to reason. This means that through an act of the will the attention of the mind is turned from the body (sensory cognitions and emotions) to reason, which is its inner self. Accordingly, Geulincx divides diligence into two parts: aversion (*aversio*) and introversion or conversion (*conversio*). Aversion means that the mind turns away from external and sensible things (*a rebus externis et sensibilibus*) and introversion that the mind turns into itself (*intra se ipsam*). As a result, the initial and constant act of the virtuous will, considering that virtue consists in a *firm resolution*, is trying to direct the mind to reason. In other words, listening to reason becomes the final goal or ultimate good of the virtuous mind. Consequently, although attention itself may be a feature of the mind as a whole, the determination of attention results from the fundamental resolution of the will.

Everything is now in place for comparing Geulincx' theory of the will to that of Descartes. First of all, for Geulincx the will is particularly the function that allows the mind to direct itself either to the body, its external self, or to reason, its inner self. What is pivotal, for Geulincx, is the fundamental resolution or intention of the will rather than individual acts of the will. Although this view may be available in Descartes' concept of resolution as well, he has not articulated it in this way. Geulincx' account of the two basic intentions is probably a shift in accent from Descartes' theory of virtue owing to a stronger Augustinian and thereby dualist conception of mind and body. In other words, although Geulincx has seized upon Descartes' notion of a resolution of the will, he may have been led to this theory of two fundamental intentions primarily through his Augustinian convictions. This is apparent from his abundant use of Augustinian terminology in his ethics, which cannot be found in Descartes' works.<sup>68</sup> And it is Augustine who distinguishes between two basic loves, self-love and love of God – the two basic intentions. This view has been taken over by Geulincx and adapted to Cartesian moral philosophy.

Further, there are four points that do not just show a shift in accent from Descartes, but are rather points on which Geulincx completely differs from him. First, Geulincx holds another theory of action. On his view, an act of the will as such does not suffice for an action; comprehensive knowledge of the object has to accompany this act. To be sure, Geulincx does speak, in the case of the human condition, of acts of the will to move the body. But he asserts also that the whole concept of the human condition is a 'secondary notion' that does not explain what is actually the case – at an ontological level. For that reason, he does not further explain what he means by this action of the will, and how it

se positis, in se, in adyta sua, jugis quaedam et profunda recessio, ad consulendum, quolibet occurrente negotio, sacrum hoc Rationis Oraculum.'; Geulincx 2006, 19.

<sup>68</sup> See on this, Aalderink 1999.

is related to knowledge. He only says that these acts of the will are in accordance with the movements of our body, without causing them. For instance, if we want to move our arm, then it moves, even though our will does not cause this movement. It is in his annotations on this passage that Geulincx insists that comprehensive knowledge or a full consciousness is a necessary condition of a true action. Consequently, an act of the will in itself is not sufficient for an action; knowledge has to be an integral part of it. This has great ramifications for Geulincx' wider philosophy, some of which will be explored in the last three chapters of this study. For Descartes, by contrast, knowledge has no relation to action at all – an act of the will is a sufficient condition for that.

Second, unlike Descartes, Geulincx does not characterize the distinction between will and intellect in terms of activity and passivity. This is obvious in view of his theory of action. For Geulincx, only sensory cognition and emotions are strictly speaking passive, because they are not produced by our own mind, but rather by God through using the instrument of the body – they are but perceptions of bodily states. In short, Geulincx' way of characterising the difference between will and intellect differs completely from that of Descartes. This entails that Geulincx holds a completely different theory of cognition.

Third, as we have seen, Geulincx does not say that the will has freedom of indifference. Rather, the essence of the will's freedom consists in freedom of spontaneity. Geulincx consistently takes an intellectualist position on the relation between will and intellect. He also nowhere speaks of the self-determination of the will. Still, we have seen that in some sense the will has to be free from choosing on the basis of sensory cognitions and from the inclination to follow the emotions, and also that the freedom of the will explains the responsibility of man in epistemic and moral affairs. Geulincx, however, does not explain how these two positions are related. He also leaves it unexplained how the will is able to change its fundamental resolution.

Fourth, as a result, Geulincx holds that freedom does not come in degrees. One is either free or not free in each stage of freedom. This is a fundamentally different notion of freedom than that of Descartes. And especially as to the highest form of freedom, the only thing that matters is the basic resolution of the will, which concerns either the body or reason. There are only two opposite choices. Put differently, Geulincx applies his basic dualism between mind and body to freedom.

### 2.1.5 Conclusions

As to the three objectives of the theory of the free will in Descartes, none of them is of any importance for Geulincx. He is not interested in offering a theodicy, nor does he emphasize the freedom of the will in the context of the theory of judgement, with the exception of his commentary on Descartes' *Principles*. Thus, Geulincx' philosophy is driven by interests other than those of Descartes. In this regard, the most striking conclusion of this section is that Geulincx takes a more dualist position than Descartes. The will functions as a hinge between reason and body: it can either turn to the body or

to reason. Apart from this observation, it is to be emphasized that Geulincx' has a theory of action that differs fundamentally from that of Descartes. This has far-reaching consequences for his philosophy as a whole – it means in particular that he has a theory of knowledge is completely uncartesian. This will be further examined in Chapter 7 and 8. Let us now consider if there are also fundamental differences between Descartes and Geulincx as to the theory of judgement.

## 2.2 The theory of judgement

### 2.2.1 Introduction

As with the theory of the will, Descartes introduces the theory of judgement for the first time in the *Meditations*.<sup>69</sup> It is not even mentioned before the fourth meditation.<sup>70</sup> This means that the theory of judgement appears in the context of a theory of error – ‘truth and falsity’ – and is closely related to the freedom of the will. Truth and falsity are features of judgement alone according to Descartes, and, as is mentioned in the introduction of this chapter, a judgement is nothing other than a *belief*. In other words,

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<sup>69</sup> See for a general discussion of Descartes' theory of judgement Nuchelmans 1983, Ch. 2, and Christiansen 1902. Newman 1999 gives a clear overview of the fourth meditation. Not very useful is Evans 1963 who states that Descartes' view of error entails that humans err deliberately or wilfully, and that man can arbitrarily opt between two alternatives, even though he has more evidence for one side. A similar argument has been put forward by Grant 1976, who suggests that Descartes adheres to the position that a belief can be acquired at will. This interpretation has been satisfactorily refuted by O'Hear 1972. See for more discussion on the philosophical viability of Descartes' theory Tlumak 1983 and Markie 1983. Other, mostly German, studies focus on the interpretation of Brentano, who distinguishes between will and judgement as two separate *Grundklassen*, which is obviously an one-sided misreading of Descartes; see Seyring 1893, Kupka 1897, and Beckmann 1909.

<sup>70</sup> The attribution of the act of judgement to the will appears for the first time in the fourth meditation. Prior to this text, Descartes never mentions it and seems to attribute the act of judgement simply to the intellect, as becomes clear from some passages in the *Rules* and the *Discourse*. In the *Rules* falsehood can only arise from composite contents of the intellect, by which he means a proposition. He does not mention that a separate act of assent is necessary to make this judgement a belief, but simply takes for granted that this composition of the intellect is a belief. This is in fact the traditional scholastic theory of belief. See *Rules* VIII, AT X 399, CSM I 32, and *Rules* XIII, AT X 423: ‘Unde concluditur, nos falli tantum posse, dum res quas credimus a nobis ipsis aliquod modo componuntur.’, CSM I 47. In *Discourse* III (AT VII 28, CSM I 25), judgement is attributed to the intellect as well, while the will is restricted to pursuing or avoiding what the intellect presents as good or evil, again the traditional theory of the will as a (rational) appetite. This view is also supported by letters of Descartes from 1637 and 1638, so that Descartes' theory of judgement must have originated somewhere between 1638 and 1640. See for a comprehensive survey of all passages, Petrik 1992, Ch. 2. Most commentators agree with this interpretation, although there are some exceptions, see for example Kenny 1972, and Petrik 1992, 21-31.

the faculty of judging (*facultas judicandi*) consists in both intellect and will – only a combination of a cognition of the intellect and an act of judging of the will constitutes a judgement or belief. Cognitions as such – in Cartesian terms *perceptions* or *ideas* – are not beliefs yet, and are neither true nor false.

This is the upshot of Descartes' theory of judgement, which raises a number of questions. Most of all, Descartes' conception of judgement needs to be specified. Although it is clear that he intends to develop a theory of belief formation, it still has to be pinpointed what a belief exactly is for Descartes. Second, it is to be seen what functions the theory fulfils within his overall philosophy, some of which we have already noticed in the preceding section. Then it will be considered if Geulincx concurs with Descartes on these two issues.

### 2.2.2 Descartes' theory of judgement: Undermining resemblance-judgements

Before explaining what a judgement is for Descartes, it needs to be emphasized what it is not. A judgement is not the act of predication or its result, that is, the connection of a predicate to a subject, resulting in a proposition. Rather, Descartes holds that a judgement is a combination of some content, an idea that may be propositional in nature, with a propositional attitude.<sup>71</sup> Although Descartes does not explicitly ascribe the act of predication to the intellect, he nowhere says that ideas cannot be propositions. On the contrary, at some places this is expressly affirmed by him.<sup>72</sup> This means that propositions as such are not judgements or beliefs. On Descartes' view, it is very well possible to just entertain a proposition in the intellect without actually believing it.

It is better to view the act of judgement by the will as a propositional attitude.<sup>73</sup> It is, in other words, a response to an idea. This interpretation of judgement is confirmed by the point in the third meditation, to which we have already referred in the first section, where Descartes speaks, apart from ideas as representations, of other forms.<sup>74</sup> What he means here is that these forms of thought are connected to ideas. These forms may

<sup>71</sup> Some scholars have proposed that Descartes thinks that the will performs the act of predication. This was shown to be false by Kenny 1972, Curley 1975, Wilson 1978, Grene 1988, and finally Rosenthal 1997, see especially pp. 144-146. However, Descartes is very vague on the act of predication and other acts of the intellect, which is probably a consequence of the fact that he has not written a logic. Accordingly, Caton 1975 claims that Descartes has confounded predication and belief (assent). On his view, this results from the fact that his logic is psychological, and therefore does not consider issues of formal logic, such as the difference between concepts and judgements.

<sup>72</sup> See in particular, Descartes, *Correspondence*, to Mersenne, July 1641, AT III 395-396, CSMK 186.

<sup>73</sup> Cf. Rosenthal 1997; Kenny 1972, 10-15.

<sup>74</sup> Descartes, *Meditations* III, AT VII 37: 'Aliae vero alias quasdam praeterea formas habent: ut, cum volo, cum timeo, cum affirmo, cum nego, semper quidem aliquam rem ut subjectum meae cogitationes apprehendo, sed aliquid etiam aplium quam istius rei similitudinem cogitatione complector; & ex his aliae voluntates, sive affectus, aliae autem judicia appellantur.', CSM II 25-26.

either be emotions (*volitiones* or *affectiones*) or the epistemic functions of affirming, denying and doubting. The latter are called judgements (*judicia*) by Descartes. As a result, judgement means the act of assent to or denial of an ideational content; that is, having a particular attitude to that content. A judgement is, consequently, not a proposition, but consists of a proposition together with an attitude to it. This attitude is, as we have observed before, attributed to the will.

Even though this description of judgement is correct, propositional attitude might still be too unspecific to fully characterize what Descartes aims at. Rather, Descartes is concerned with what I call ‘existential judgements’. An existential judgement is the act by which an idea is referred to an external object. That Descartes aims at existential judgements is clear from the beginning of the third meditation, where he says the following: ‘Now as far as ideas are concerned, provided they are considered solely in themselves and I do not refer (*referam*) them to anything else, they cannot strictly speaking be false ...’<sup>75</sup> So what the will does is *referring* ideas to something outside the mind, thus making existential judgements.

This comprises two different but related types of judgement. First the object of the idea can be considered the cause of the idea, and second the objects can be regarded as resembling the idea.<sup>76</sup> When the term idea appears for the first time in the *Meditations*, it is immediately connected to these two types of existential judgement. Descartes asserts there that ideas have usually concomitant, possibly mistaken, judgements that ‘there were things outside me which were the sources of my ideas and which resembled them in all respects (*res quasdam extra me esse, a quibus ideae istae procedebant, & quibus omnino similes erant*)’.<sup>77</sup> But, on Descartes’ view, these judgements are neither given in the perception *per se* nor warranted by it. So two different types of judgement can be distinguished in the sentence quoted: the judgement 1) that some external object has caused the idea (*procedebant*), and 2) that the ideas completely resemble them (*omnino similes erant*).<sup>78</sup> A little further, Descartes asserts that the mind has a spontaneous impulse to make such existential judgements.<sup>79</sup> He singles out the judgement of

<sup>75</sup> Descartes, *Meditations* III, AT VII 37: ‘Jam quod ad ideas attinet, si solae in se spectetur, nec ad aliud quid illas referam, false proprie esse non possunt; nam sive capram, sive chimaeram imaginer, non minus verum est me unam imaginari quam alteram.’, CSM II 26.

<sup>76</sup> Cf. Nuchelmans 1983, 50.

<sup>77</sup> Descartes, *Meditations* III, AT VII 35, CSM II 25

<sup>78</sup> Also in the *Principles* Descartes distinguishes clearly between these two types of judgements regarding sense perceptions. For example, he says in paragraph 66 of the first part, ‘For all of us have, from our early childhood (*ab ineunte aetate*), judged that all the objects of our sense-perception are things existing outside our minds and closely resembling our sensations, i.e. the perceptions we had of them.’ (*Principles* I §66, AT VIIIa 32, CSM I 216)

<sup>79</sup> Descartes, *Meditations* III, AT VII 39-40: ‘Quae omnia satis demonstrant me non hactenus ex certo judicio, sed tantum ex caeco aliquo impulsu, credidisse res quasdam a me diversas existere, quae ideas sive imagines suas per organa sensuum, vel quolibet alio pacto, mihi immitant.’, CSM

resemblance as his main point of critique, in the following words: ‘... the chief and most common mistake which is to be found here consists in my judging that the ideas which are in me resemble, or conform to, things located outside me.’<sup>80</sup> This suggests that the primary target of doubt is our judgements concerning sense perception, and more specifically the prejudice that sense perceptions resemble their objects.

This analysis indicates which function the theory of judgement – primarily – fulfils in Descartes’ philosophy. Beliefs about sense perceptions are the main target because he intends to allow us to doubt both our common judgement as to the causes of sense perceptions and the preconception that external objects resemble them.<sup>81</sup> The latter type of judgement bothers Descartes the most. In fact, in the sixth meditation, he mentions that the former type of judgement is actually natural, has been instilled in us by God, and is therefore true.<sup>82</sup> He does not deny, in other words, that external bodies play a role in bringing about sense perceptions, and that these perceptions correctly indicate these external objects. By contrast, the second type of judgement is mistaken.<sup>83</sup> Consequently, criticizing the second type of judgement is what Descartes primarily aims at.<sup>84</sup>

Although it is clear from Descartes’ account that judgements are made by the intellect and will rather than the senses, we nevertheless commonly consider the judgement that objects resemble our perceptions of them as immediate and belonging to sense. Descartes deals with this issue in Replies VI, where he gives an account of sense perception that clearly reveals how existential judgements function.<sup>85</sup> At this point, Descartes discerns three grades of sense.<sup>86</sup> First, there is the purely bodily part of sense perception, which consists mostly in the alteration of the shape of the external senses by impressions of external bodies. The second grade consists of all the perceptions of the mind arising from the intimate connection of mind and body, which comprise sensory cognitions, sensations and emotions. The third grade includes also the judgements about external objects which we are used to make since our earliest years (*ab ineunte aetate*). This last grade of sense is to be ascribed to the intellect (here including the will)

<sup>80</sup> II 27. A little before, Descartes says that we are ‘taught by nature’ (AT VII 38: ‘...doctus a natura ...’, l. 14-15) that our sense perceptions resemble external objects.

<sup>81</sup> Descartes, *Meditations* III, AT VII 37: ‘Praecipius autem error & frequentissimus qui possit in illis reperiri, consistit in eo quod ideas, quae in me sunt, judicem rebus quibusdam extra me positis similes esse sive conformes ...’, CSM II 26.

<sup>82</sup> To be sure, Descartes argues for doubting mathematical truths, but he emphatically calls this doubt ‘... very slight and, so to speak, metaphysical ...’ (*Meditations* III, AT VII 35, CSM II 25)

<sup>83</sup> See Descartes, *Meditations* VI, AT VII 79-80, CSM II 55.

<sup>84</sup> See for the distinction between the two types of judgement, Descartes, *Meditations* VI, AT VII 81-83, CSM II 56-57.

<sup>85</sup> This is also Descartes’ main point on these two types of judgement in the *Principles*. See *Principles* I §§66-70, AT VIIIa 32-35, CSM I 216-218; see especially §70.

<sup>86</sup> Descartes, Replies VI, AT VII 436-439, CSM II 294-296.

<sup>87</sup> Descartes, Replies VI, AT VII 436: ‘Ut recte advertamus quaenam sit sensus certitudo, tres quasi gradus in ipso sunt distinguendi.’, CSM I 294.

rather than to sense, according to Descartes. For example, the judgement that an external object is really red – which is how we perceive it (the second grade) – and that it has a certain size are acts of the intellect and will, albeit they are often ascribed to sense itself. Some of these judgements concerning the size of objects are new and are therefore ascribed to the intellect – we notice that they involve rational activity. But other estimations are made instantly, because they are judgements we have already made in infancy, which is why they are attributed to sense instead.<sup>87</sup> The swiftness with which these judgements are made prevents us from noticing that it is the intellect that performs them.

Still, this is not all that is to be said about our judgements regarding bodily perceptions. It is phenomenologically clear that we do not refer all perceptions that arise from bodily states to external objects. Some of these perceptions are referred to external objects, others only to our own body, and still others to our mind alone. In the *Passions*, Descartes asserts that we distinguish between perceptions that arise from bodily states on the basis of how we judge about them (*rapportons*).<sup>88</sup> We either refer them to external objects, or to (certain parts of) our body, or to the soul. The first category comprises sensory perceptions, such as light and sound, of which we assume that they have been caused by external objects.<sup>89</sup> The second category comprises perceptions such as hunger and thirst, and pain and heat in our body, which are referred to our body as their cause.<sup>90</sup> Finally, emotions are ascribed to our soul alone, because we are ignorant of any proximate cause of them.<sup>91</sup> In other words, these perceptions are distinguished on the basis of what we regard as their cause. Descartes does not explain how we have acquired these judgements about the causes of our perceptions. Neither does he discuss why we are inclined to regard some of them as resembling their object. He simply has not elaborated this aspect of his theory of judgement.

As a final point, it has to be noted that this account of judgement, in which the act of assent is attributed to the will, is original with Descartes. Most contemporary philosophers ascribe the act of judgement to the intellect. This especially holds for

<sup>87</sup> Descartes, *Replies VI*, AT VII 438: ‘Sed in hoc tantum differentia est, quod ea quae nunc primum ob novam aliquam animadversionem judicamus, intellectui tribuamus; quae vero a prima aetate, eodem plane modo atque nunc, de iis quae sensus nostros afficiebant judicavimus, aut etiam ratiocinando conclusimus, referamus ad sensum, quia nempe de iis tam celeriter propter consuetudinem ratiocinamur et judicamus, aut potius judiciorum jam olim a nobis de rebus similibus factorum recordamur, ut has operationes a simplici sensus perceptione non distinguamus.’, CSM I 295.

<sup>88</sup> Descartes, *Passions I* §22, AT XI 345: ‘Toutes les perceptions que je n’ai pas encore expliquées viennent à l’âme par l’entremise des nerfs, et il y a entre elles cette différence que nous les rapportons les unes aux objets de dehors, qui frappent nos sens, les autres à notre corps ou quelques-unes de ses parties, et enfin les autres à notre âme.’, CSM I 336-337.

<sup>89</sup> See Descartes, *Passions I* §23, AT XI 346, CSM I 337.

<sup>90</sup> See Descartes, *Passions I* §24, AT XI 346-347, CSM I 337.

<sup>91</sup> See Descartes, *Passions I* §25, AT XI 347, CSM I 337.

Aristotelian philosophers. For example, although Aquinas, whose theory has become the standard scholastic account, makes a distinction between apprehending something (the *apprehensio*) and assenting to it (the *assensus*), notices the influence of emotions and will on the assent, and even mentions that it is impossible to deny our assent to clearly known first principles, still for him *assensus* remains a function of the intellect.<sup>92</sup> Nor can this theory be found in a contemporary Augustinian philosopher like Gibieuf.<sup>93</sup> And the same goes for other seventeenth-century philosophers.<sup>94</sup> Descartes' theory of judgement sets him apart from all contemporary philosophers.

There are, however, two possible sources that may have influenced Descartes in developing this theory of judgement. First, Augustine may be a possible source for Descartes. This would not mean that Augustine holds the same theory of belief, but rather that Descartes used Augustine's solution to the problem of evil to solve an epistemological problem.<sup>95</sup> If so, Descartes has changed Augustine's theory of evil, according to which man is responsible for sin by using the will wrongly, into a theory of error, thereby giving the will a specific role in the formation of beliefs. Because Augustine's theory of evil was widely spread, Descartes need not have consulted Augustine's texts themselves; he must have been acquainted with the theory through his university education. Second, another possible source is offered by the French Cartesian Louis de la Forge (1632-1666).<sup>96</sup> La Forge discovered the same view of judgement in the Stoic philosopher Epictetus and in Simplicius. On the Stoic theory, assent is attributed to the *prohairesis* or *hegemonikon*. Stoics regard this faculty as essentially free, and therefore as something that lies in one's power. Through it, man can determine his attitude towards the passively received external impressions, either by assenting to them or refraining from doing so. In the sixteenth and seventeenth century, both *prohairesis* and *hegemonikon* were translated by *voluntas*, so that everything was in place for Descartes' theory. This would, of course, be in line with what we have said in the preceding section. Again, it is likely that Descartes combines Augustinian and Stoic elements in his theory.

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<sup>92</sup> See about Aquinas' theory, Kenny 1972, 3; Nuchelmans 1983, 47-48; Stump 2003, 340-342.

<sup>93</sup> See on Gibieuf, footnote 13.

<sup>94</sup> Because Kenny 1972, 6-7, could not find any philosophical source that may have influenced Descartes in developing this theory, he concludes that Descartes was led to it only by conceptual considerations.

<sup>95</sup> Gilson 1913, 266, thinks, more specifically, of an adaption of Aquinas' theory of sin. Koyré 1922, 61-117, mentions both Augustine and Duns Scotus as possible sources, while at the same time trying to refute Gilson' thesis of Aquinas as Descartes' main source. See further on this, Menn 1998, 304-307, and Janowski 2001.

<sup>96</sup> See for the hypothesis of Stoicism, Nuchelmans 1983, 48-50, as well as Seyring 1893, 45-46. More recently, Hanby has advocated this view, see Hanby 2003a and Hanby 2003b. Caton 1975, 114-115, refers to Cicero's *Academica* as another possible source.

However this may be, it is clear that Descartes' theory of judgement divorces Descartes from both Aristotelian and other kinds of philosophers in the seventeenth century. It is a highly original theory at the time. Philosophers who use it are probably strongly influenced by Descartes.

### 2.2.3 Geulincx' theory of judgement

Geulincx agrees with Descartes on attributing the epistemic functions of affirming and denying to the will.<sup>97</sup> Unlike Descartes, he openly censures the schools for attributing these functions to the intellect. He uses their own device, the scholastic phrase 'aiming at an object' (*tendere in objectum*), to explain what is meant by the judgement of the will, as well as to argue why it should not be attributed to the intellect. Geulincx explains that affirmation and negation are, when translated in terms of aiming at an object (*tendere*), identical with striving (*annisus*) and resisting (*renisus*), respectively. As a result, it is clear that both are conative functions. According to the scholastics, conative functions cannot apply to cognitions or representations, but to the will (*voluntas*) alone. In short, Geulincx adheres to the core of Descartes' theory of judgement, supporting his position by an argument based on the scholastic theory of the will.

As a result, it is incontestable that Geulincx denies that judgement means the act of predication. Rather, he considers the conjunction of subject and predicate to be the primary act of the *intellect*. Although he calls this act as well as its product an affirmation (*affirmatio*), and explains further that it amounts to affirming the existence of a state of affairs<sup>98</sup>, it is unequivocally clear from Geulincx' *Logic* that the act of predication does not involve an act of the will.

Indeed, Geulincx makes it absolutely clear that the act of judgement is nothing other than an act of referring a cognition to an external object. In his *Commentary* on Descartes' *Principles*, he emphasizes that this is an act of the will. Most of Geulincx'

<sup>97</sup> This is unambiguously clear from Geulincx' discussion in his commentary on Descartes' *Principles*, AL I, §32, III 390: '[*Affirmare, negare*] Haec Scholae semper dederunt intellectui; Cartesius restituit voluntati, cui et debentur. Nam ultra perceptionem repraesentationemve reperitur in his modus aliquis tendendi in objectum, in affirmatione quidem annisus, in negatione vero renisus (ut totidem verbis Scholae antehac docuerunt); qui modi manifeste non pertinent ad repraesentationem aliquam (ut ipsi male tribuebantur), sed ad voluntatem, cujus est tendere, ut vel ipso verbo admoneri debebant Scholae.'

<sup>98</sup> See, for instance, Geulincx, *Method*, Ch. 1, def. 1, II 10: '*Enunciatio est dictio quae dicit esse*.'; *Logic* II, Sect. 1, Ch. 1, §5, I 234: 'Omnis Enunciatio quodammodo est Affirmatio. Omnis enim Enunciatio dicit sic esse, ita rem se habere, hoc vel illud verum esse ...' Geulincx does use the term assent (*Assensus*) in his *Logic*. He says there that it cannot be defined – again because it is too clear – but nonetheless provides the following description: 'Assentiri alicui propositioni a parte rei est dicere quod illa propositio sit vera; dicere, inquam, in animo et ex animi sententia.' (*Logic* IV, Sect. 2, Ch. 10, §2, I 438) He does not mention the will at this point. In Chapter 12, he says that reason strongly inclines us to assent to a proposition that is 'dictated' by it, see *Logic* IV, Sect. 2, Ch. 12, §1, I 442.

comments on the function of the will in forming a judgement can be found in this work. To be sure, there are other passages in which he discusses judgement, but at those points he simply is not concerned with the role of the will in forming judgements – which probably implies that this is not an important issue for him. In any case, it is central to Geulincx' account that judgement means *referring* a perception to an external object.

Like Descartes, Geulincx claims that error can only be found in judgements. This means, then, that error is only possible when cognitions are referred by the will to something they do not represent.<sup>99</sup> In order to explain this, Geulincx uses the example of a painting and a painter.<sup>100</sup> A painting may or may not represent something. This is an intrinsic quality of the painting. For example, if it is a painting of a tree, it refers naturally (*per se et suapte natura*) – a natural relation – to a tree. This is even the case if the painter has intended to paint a house, and still thinks it is actually a painting of a house.<sup>101</sup> If so, the error is found in the painter rather than in the painting, for the painting refers simply to what it depicts. The same goes for the intellect and the will. The intellect – consisting in representations or cognitions – refers just to what the cognitions depict, so that error can arise only when the will refers them to something other than what they represent.<sup>102</sup> As a result, as long as the cognition is just referred to what it refers to naturally, it is impossible to err. In addition, if the cognition is non-representational, the will should not refer it to anything but the mind itself – it is then just a thought, a form of thinking (*modus cogitandi*).

This theory differs slightly from that of Descartes, who speaks of giving one's assent to confused ideas. According to Geulincx, by contrast, perceptions as such cannot be confused. He argues that as long as the intellect apprehends something, the thought is true – and thus clear.<sup>103</sup> Cognizing a thing means nothing other than representing it, so that grasping something by the intellect is equal to holding a representation of that object. This implies that the intellect cannot grasp nothing (*nihil*), which would be the same as cognizing something that is not true – this means just that it does not apprehend anything at all or that it does not have a representation. As a result, the intellect cannot be the source of falsity; it does not misrepresent, nor is it confused. Instead, there are only thoughts that represent and those that do not represent. And even if a thought does not represent, it is not confused – in that case it just is not a representation. Non-representational thoughts become confused only if the will refers

<sup>99</sup> See Geulincx, *AL I*, §13, III 368–369.

<sup>100</sup> See Geulincx, *AL I*, §33, III 391.

<sup>101</sup> Geulincx, *AL I*, §31, III 390: ‘Voluntas habet se instar pictoris, qui picturam suam subinde refert ad aliud, quam ad quod ipsa natura sua refertur.’

<sup>102</sup> Geulincx *AL I*, §31, III 390: ‘Unde error omnis in pictore, in pictura ipsa tantum veritas.’

<sup>103</sup> Geulincx, *AL I*, §30, III 389: ‘Implicat plane etiam sine aperta illa relatione ad Deum, ut cognitio nostra attingat aliquid non verum, seu aliquid quod non est vera res; nam esset *nihil*, et hoc ipso non attingeretur. *Nihil* enim non attingitur, ne quidem mente, seu (ut loqui aliqui solent) attingitur non attingendo ...’

them to external objects – that is to say, if the will asserts there to be a specific relation between the cognition and an external object.<sup>104</sup> Confusion is a feature of mistaken judgements alone.

As a result, no error can be found in cognitions or thoughts per se (the *modi cogitandi*), whether they be representational or not.<sup>105</sup> Geulincx explains that, if this would be the case, we would inevitably err in nearly all our thoughts, since our sensory cognitions do not represent anything at all in the external world. But we are aware that we do not err just in having sensory cognition. Error comes only about if the will refers these non-representational thoughts to external reality.

Geulincx draws two conclusions from this theory of judgement. First, he infers that confusion always involves error. Unlike Descartes, he holds that only beliefs are confused, and holding a confused belief amounts to an error.<sup>106</sup> Second, it also means that in the case of mistaken judgements the will does not confirm an already existing – natural – relation between the cognition and an external object, but establishes a completely new relation. This can happen because some non-representational cognitions are in some respects akin to, or accompany, cognitions that do represent, so that they may be readily mistaken for representations.<sup>107</sup> In addition, this mostly happens because we have erred before, which is, according to Geulincx, ‘the right and true cause’ of error.<sup>108</sup> This means that we only reconfirm a non-natural relation when we refer non-representational thoughts to external reality. In other words, we have developed a habit – the non-natural relation – to refer some types of thought to external reality. This habit is based on previous judgements and makes it very easy to refer some non-representational cognitions to reality. As we will see in the next section, this habit is a prejudice.

But although we can fall so easily into error, we still bear responsibility for our errors, because they could have been prevented by giving heed to reason, that is, by contemplating clear and distinct ideas and other rational principles.<sup>109</sup> Like Descartes,

<sup>104</sup> Geulincx, *AL* I, §35, III 392: ‘Fiunt enim obscurae, non relatione intrinseca et essentiali, sed externa, et quidem a voluntate nostra dependente, cum illa refert cognitionem ad id, quod ipsa revera non attingit.’

<sup>105</sup> Geulincx, *AL* I, §13, III 368–369; *MP* Intr., §3, II 207: ‘In quorum primo, seu in modi cogitandi, ut tali, error nunquam versatur ...’

<sup>106</sup> Geulincx, *AL* I, §35, III 392: ‘Ex quo etiam patet, in omni obscuritate quodammodo errorem aliquem esse.’

<sup>107</sup> This is the explanation of error Descartes offers in *Principles* I §71, AT VIIIa 35, CSM I 219.

<sup>108</sup> Geulincx, *AL* I, §44, III 394–395: ‘Erramus igitur quia erravimus; quae quidem bona ac vera causa est, cur nunc erremus, non autem simpliciter, cur erremus.’ Cf. Geulincx, *AL* I, §66, III 406.

<sup>109</sup> Geulincx, *AL* I, §38, III 393: ‘Tunc enim voluntas nunquam eos poterit transilire, cum impossibile sit de eo judicare aliquid, quod clarissime agnoscamus nos ignorare. Si quae ergo rationalis creatura hoc lumine gaudeat, cum summa libertate evasit omne erroris periculum ...’

the will is inevitably but spontaneously drawn to assent to these cognitions of reason.<sup>110</sup> Clear and distinct ideas contain an intrinsic natural relation to their objects, which causes the will to affirm them readily.<sup>111</sup> Those ideas show us what reality is like, thus also confirming that sensory cognitions do not represent reality. Moreover, since the intellect knows its own boundaries very clearly, it is impossible to err if we are attentive to reason.<sup>112</sup> And, because attention is, as we have seen, a function of the will, we bear responsibility for not listening to reason.

As a result, we can detect a similar purpose for the theory of judgement in Descartes and Geulincx. Also Geulincx aims with this theory at undermining the judgements that some non-representational thoughts resemble external objects. He calls these non-representational thoughts, such as the perceptions of secondary qualities, *species*, and he denies in turn that the external objects are invested with them. For example, the judgement that an apple is red is false. Unlike Descartes, however, he does not think that such a perception is confused in itself. It is only the judgement that matters. As a consequence, he has made the Cartesian theory of judgement more consistent.<sup>113</sup>

But Geulincx is not only more consistent than Descartes, he also extends the theory of judgement to intellectual cognitions. The forms of these cognitions are also non-representational. Just as we can grasp external material objects through sense perception, we conceptualise them through 'logical forms'. These forms are just aspects of our thinking. I will deal more extensively with this point in the next section.

#### 2.2.4 Conclusions

We may conclude that it is indisputable that Geulincx has taken over Descartes' theory of judgement. Indeed, it is even the basis of his entire philosophy. For Geulincx, philosophy means wisdom and wisdom is nothing other than judging correctly. More specifically, he means by wisdom properly distinguishing between what belongs only to our mind (*species*) and what belongs to external reality (*ideas*).

There are also differences with Descartes. Unlike Descartes, Geulincx' account of the theory of judgement is more consistent, because he makes a sharper distinction between cognitions and judgements. Moreover, he is clearer on the purpose for which he uses the theory. Although it is apparent that both of them hold that a judgement means referring a thought to external reality, an existential judgement, particularly Geulincx makes it clear that the objective of the theory is explaining that the main type of error consists in referring non-representational thoughts to external reality. Most

<sup>110</sup> Geulincx, *AL* I, §43, III 394.

<sup>111</sup> Geulincx, *AL* I, §66, III 406: 'Magna est facilitas voluntatis referentis claram et distinctam cognitionem ad id, ad quod ipsa naturaliter refertur.'

<sup>112</sup> Geulincx, *AL* I, §44, III 394: 'Cum intellectus noster, re aliqua proposita, limites suos clare agnoscit, impossibile est ut voluntas illos transiliat, adeoque ut erret.'

<sup>113</sup> This has also consequences for his theory of ideas. I will show in Chapter 5 that Descartes' theory of ideas is ambiguous, precisely because of this notion of confused ideas.

importantly, contrary to Descartes, Geulincx does not limit non-representational thoughts to sensory cognitions, but also includes intellectual cognitions that are non-representational.

### 2.3 Prejudices

#### 2.3.1 Introduction

Attaining (theoretical) wisdom (*sapientia*) – adequate knowledge of reality – is prevented by prejudices. They cause us to make wrong judgements, which means, for Geulincx, that we refer non-representational thoughts to external reality. Owing to their influence, we think that reality resembles our (non-representational) thoughts, whereas these thoughts are just features of our mind. For both Descartes and Geulincx, it is clear that we have such prejudices, and also that they are very powerful. But it still has to be explained what prejudices exactly are and how we have acquired them.

#### 2.3.2 Descartes: Overcoming prejudices to counter Aristotelian physics

The primary aim of Descartes' theory of prejudices is a refutation of Aristotelian physics. I have already – albeit briefly – shown above that Descartes' theory of judgement is mostly intended to refute the ascription of qualitative perceptions, such as colours and warm and cold, to external objects. These qualities are of the utmost importance for Aristotelian physics. For instance, the four elements are distinguished on the basis of the qualities of warm, cold, wet and dry, all of which are qualitative perceptions. In Descartes' physics, on the contrary, only primary qualities, such as shape and motion, are allowed. For accepting Descartes' physics, then, it is absolutely necessary to overcome the natural inclination to believe that the objects of sense perception are actually endowed with all the qualities we perceive. That this is not only the main objective of Descartes' theory of judgement, but also the primary purpose of his theory of the prejudices will be shown now.

As we have noticed before, Descartes insists that our chief error is the opinion that things outside the mind are endowed with properties that resemble our perceptions.<sup>114</sup> Descartes notices first of all that this type of judgement seems natural.<sup>115</sup> This results from the fact that we receive sensory perceptions passively, whether we want to or not, for which reason they appear to be impressed by the object of perception. Given this state of affairs, the most probable judgement is that things transmit their own likenesses

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<sup>114</sup> Descartes, *Meditations* III, AT VII 37: ‘Praecipuus autem error & frequentissimus qui possit in illis reperiri, consistit in eo quod ideas, quae in me sunt, judicem rebus quibusdam extra me positis similes esse sive conformes ...’, CSM II 26.

<sup>115</sup> Descartes, *Meditations* III, AT VII 38: ‘Nempe ita videor doctus a natura. [...] ita doctum esse a natura, intelligo tantum spontaneo quodam impetu me ferri ad hoc credendum ...’, CSM II 26.

(*similitudines*).<sup>116</sup> The theoretical elaboration of this is the scholastic theory of the intentional species.<sup>117</sup> Nonetheless, nothing in our perception justifies this judgement.<sup>118</sup> We do not actually perceive that external objects are vested with these sensible qualities, so that both this judgement and the Aristotelian theory of intentional species based on it are unwarranted. And if we are attentive enough to our perceptions, we can easily see this. Where, then, does the readiness to make such judgements stem from?

Apart from the fact that the judgement seems natural, Descartes explains that it is a prejudice. The origin of that prejudice lies in that we have made judgements about things when we could not distinguish sharply between our perceptions. These flawed judgements have been made at the time when we were incapable of using reason. Owing to the very close connection of the mind with the body, the mind was entirely occupied with cognitions of confused, sensory ideas, such as pain and pleasure or warmth and coldness, all of which arise from this union.<sup>119</sup> For that reason, we were then completely devoid of clear and distinct ideas; our mind was replete with sensory cognitions.<sup>120</sup> The theory in the *Principles* differs slightly from the one in the *Meditations*. In the *Meditations*, Descartes underscores that sense perceptions are inherently obscure and therefore lead to wrong judgements. In the *Principles*, by contrast, he does not emphasize the confusedness of sensory cognitions, but rather that non-representational sensory cognitions are accompanied by thoughts that do represent, so that we readily confuse them.<sup>121</sup> In either case, prejudices arise in infancy.

Indeed, Descartes explains in article 71 that ‘the chief cause of error arises from the preconceived opinions of childhood (*infantiae*)’.<sup>122</sup> He distinguishes in this article between two stages, first early childhood (*prima aetate*) and second the point of age at which we can move our own body. In the early stage, all perceptions, including qualitative perceptions and the sensations of pleasure and pain, are attributed to the mind alone. At the same time, the mind has also perceptions of primary qualities, ‘which were presented to it not as sensations but as things, or modes of things, existing (or at

<sup>116</sup> Descartes, *Meditations* III, AT VII 38: ‘Nihilque magis obvium est, quam ut judicem istam rem suam similitudinem potius quam aliud quid in me immettere.’, CSM II 26. With it, Descartes may also refer to the scholastic theory of intentional species, because he describes that theory in similar terms in the *Optics* IV, AT VI 109-114, CSM I 164-166. If so, it gives even more credence to the view that the *Meditations* is an anti-Aristotelian work, one of whose purposes is to radically remove the foundations of Aristotelian physics.

<sup>117</sup> See for a brief description of intentional species, Chapter 1.3.3 and Chapter 5.3.3.

<sup>118</sup> See Descartes, *Principles* I §66, AT VIIIa 32, CSM I 116.

<sup>119</sup> See on this theme, especially Descartes, *Correspondence*, to Hyperaspistes, August 1641, AT III 423-424, CSMK 189-190.

<sup>120</sup> Descartes, *Principles* I §47, AT VIIIa 22, CSM I 208; Replies VI, AT VII 441, CSM II 297.

<sup>121</sup> Descartes, *Principles* I §71, AT VIIIa 35, CSM I 219.

<sup>122</sup> Descartes, *Principles* I §71, AT VIIIa 35: ‘Praecipuam errorum causam a praejudiciis infantiae procedere.’, CSM I 218.

least capable of existing) outside thought'.<sup>123</sup> The mind, however, is not aware yet of the basic distinction between qualitative sensations and things. Because it does not refer anything to outside objects, this is not a problem. The next stage sets in when the mind begins to notice that the objects of pursuit or avoidance have existence outside itself. The mind still does not sharply distinguish qualitative sensations from perceptions of primary qualities. Now, both of them are ascribed to the external objects. It does not only judge that these objects somehow cause our qualitative perceptions, but also that they are properties of them, just like the primary qualities of size, shape, and motion. Thus, it does not properly distinguish between perceptions at this age. This results in the development of the prejudice that qualitative perceptions resemble features of external objects.

At this point, Descartes discerns also another set of judgements, namely, assessments of the amount of reality of an object. The reality of an object is ascertained on the basis of the extent to which an object affects our mind through sense perception. That is why the mind judges that there is more corporeality or substance in rocks and metals than in water and air. Likewise, because we judge of things from the perspective of our senses, earth is considered to be flat. In short, all these prejudices converge in that reality is regarded as identical with the way in which we perceive it. Descartes summarizes this as follows:

Right from infancy (*a prima infantia*) our mind was swamped with a thousand such prejudices; and in later boyhood (*pueritia*), forgetting that they were adopted without sufficient examination, it regarded them as known by the senses (*tanquam sensu cognita*) or implanted by nature, and accepted them as utterly true and evident (*pro verissimis evidentissimisque*).<sup>124</sup>

Aristotelian philosophy has transformed, and systematized, these childish prejudices into a philosophy of nature. Descartes' need to criticize and substitute Aristotelian natural philosophy has thus been of major influence in developing his theory of judgement and prejudice. He has conceived his theory of prejudice in order to explain the appearance of errors in (Aristotelian) physics, as is amply clear from the context in which Descartes addresses the causes of error in the *Principles*. In the articles of the first part of the *Principles* immediately preceding those on the causes of error, Descartes discusses the distinction between judgements as to the primary and secondary qualities

<sup>123</sup> Descartes, *Principles* I §71, AT VIIIa 35: 'Simulque etiam percipiebat magnitudines, figuras, motus, et talia; quae illi non ut sensus, sed ut res quaedam, vel rerum modi, extra cogitationem existentes, aut saltem existendi capaces, exhibebantur, et si hanc inter ista differentiam nondum notaret.', CSM I 219.

<sup>124</sup> Descartes, *Principles* I §71, AT VIIIa 36: 'Milleque aliis ejusmodi praejudicii, a prima infantia, mens nostra imbuta est; quae deinde in pueritia non recordabatur fuisse a se sine sufficienti examine recepta, sed tanquam sensu cognita, vel a natura sibi indita, pro verissimis evidentissimisque admisit.', CSM I 219.

of sense perceptions. He maintains that judgements in which secondary qualities are attributed to external objects are false. The articles that follow – on the causes of error – are in turn an explanation of why we are nonetheless inclined to make those judgements.

However, although it is clear that prejudices are some sort of dispositions, Descartes does not explain what exactly they are. In any case, he does not distinguish them from actual judgements. Geulincx does just that.

### 2.3.3 Geulincx: Separating prejudices from judgements

Like Descartes, Geulincx insists that most prejudices can be reduced to or result from conflating mind and matter. His *Larger commentary on Descartes' Principles* commences with this observation.<sup>125</sup> He continues that this confusion has not only caused most errors with respect to spiritual things (*res spirituales*), but has also led to wrong explanations in physics, by which he means especially Aristotelian physics. Often a property that only belongs to sense perception – a form of thought or *species*, such as whiteness – is ascribed to external corporeal objects.<sup>126</sup> Indeed, conflating the mental and the corporeal is the basis of all errors according to Geulincx.

We have seen in the preceding section that Geulincx considers cognitions as such to be impervious to error. This includes the various ways of thinking (*modi cogitandi*) by which we apprehend objects, such as sense perception or concepts as acts of thought – the formal aspect of thoughts.<sup>127</sup> He emphasizes that using these forms to apprehend objects is necessary because our mind is finite.<sup>128</sup> But judging that the forms themselves also apply to the external objects themselves is unnecessary and mistaken. Those forms are nothing but states of our mind, and so do not belong to external objects. Error is only possible with judgements by which these non-representational forms of thought are referred to external objects, as if they would be real aspects of things.

This would mean that Geulincx' theory largely concurs with that of Descartes. But he inserts another layer between cognition and judgement: the attribution (*attributio*). Geulincx elaborates on this theory in the introduction to the *Peripatetic metaphysics*. Attribution causes us to refer our sensory cognitions immediately to external objects, so

<sup>125</sup> Geulincx, *AL I*, §1, III 363: ‘Prima praejudicia et errores nostri circa res sensibiles fuerunt, ut dicto art. 71. satis explicatur. Hinc tamen brevi itum est ad errores et praejudicia circa res spirituales, maxime ad capitalem illum errorem, qui mentem cum corpore confundit ...’

<sup>126</sup> See Geulincx, *AL I*, §11, III 367.

<sup>127</sup> The term mode of thinking (*modus cogitandi*) is used to denote all thoughts in general. But at most points, it refers to the forms of thoughts only, that is, thoughts in so far as they are non-representational. The more precise term Geulincx employs for forms of thinking is ‘species’. According to him, qualitative perceptions are but forms of thinking and thus non-representational. Only ideas represent. See more on this distinction in Chapter 6 and 7.

<sup>128</sup> Geulincx, *MP Intr.*, §3, II 207: ‘... cum enim intellectus noster finitus sit et limitatus, nunquam rem aliquam attingit, nisi sub certo modo ...’

seems to coincide with judgement.<sup>129</sup> But in fact, it is not a judgement. The major difference with a judgement lies in its immediacy; which also implies that we are unable to prevent attribution. Hence, attribution lies beyond our sphere of influence and immediate responsibility, even though Geulincx explains that we are responsible for it eventually, because particular attributions may result from previous errors. So, in fact, attributions are prejudices.<sup>130</sup> This means that prejudices are not just deeply held beliefs, but rather immediate responses to sensory cognitions, which cannot be avoided.

Attributions or prejudices belong to our intellect or sense rather than our will. This is clear from the fact that Geulincx divorces attribution from assent (*assentatio* or *assensus*) to attributions by the will. By an act of assent we affirm that things really are as our intellect presents them to us – we explicitly refer them to external reality. In other words, we give our approval to (*approbamus*) the attribution. Moreover, Geulincx ascribes the inclination to ascribe sensory forms of thought to external objects to sense instead of the will – it is an interpretation (*interpretatio*) immediately connected to sense perception. It is, in fact, a way of perceiving the world.<sup>131</sup> Accordingly, the best way to view attribution is to regard it as a non-natural relation, owing to which the will assents more readily, though not inevitably, to cognitions, even though they do not hold this relation by their nature. This non-natural relation is not an act of the will, but rather some sort of habit or custom (*consuetudinem*), which, however, eventually goes back to a judgement of the will.<sup>132</sup> These are the judgements we made in boyhood, when we referred sensory cognitions to external objects because we were unable to use reason at the time, as we have seen above. In sum, sense includes both cognitions and attributions of these cognitions to external objects.

As a result, we appear not to be responsible for our attributions. Geulincx acknowledges that this is true in the sense that we are not immediately responsible for

<sup>129</sup> See Geulincx, *MP* Intr., §3, II 207.

<sup>130</sup> Geulincx, *MP* Intr., §3, II 207: ‘... attributionem, qua modus cogitandi, speciem, seu phasma attribuimus rei cogitatae: constituit haec rei attributio potissimum partem praejudicij; praejudicium enim maximam partem, si non totum, in tali attributione formaliter constituit. Praejudicium enim anticipatum judicium, cui assensione mentis accidentis verum judicium subjungimus.’

<sup>131</sup> Geulincx, *MP* Intr., §3, II 201: ‘Ubi vides manifeste proritatem illam sensus, qua speciem suam appingit quodammodo rei a se perceptae; haec vero species modos quidam est ipsius sensus, seu istius cognitionis quae sensus vocatur.’ Cf. Geulincx, *AL* I, §72, III 419: ‘Non tantum haerent praejudicia in memoria nostra; sed vel maxime (quod potissimum intellige de prima illa pueritiae nostrae praecipitania) in ipso sensu et attributione illa, quae cum sensu quasi inevitabiliter conjungitur.’

<sup>132</sup> See Geulincx, *AL* I, §66, III 406: ‘... nam relatio quae sit in isto errore, per consuetudinem incepit esse tam facilis, quam relatio quae est in hac scientia, per naturam facilis sit.’ In other words, prejudices resemble (*similitudines*) scientific knowledge in that they are readily assented to by the will; they incline the will to assent to some proposition. These habits are in fact corporeal.

them, and do not formally err in the case of attributions.<sup>133</sup> But in a derivative sense we truly are responsible, and that for two reasons. First, because attributions are results from judgements we once made, which are truly errors.<sup>134</sup> And second, because attributions are erroneous when we do not oppose them by a judgement of the will.<sup>135</sup> Then we silently and unconsciously consent to our prejudices – in fact, we continue the former error. This is an error of omission rather than commission. In other words, one already errs when one holds a prejudice that is not expressly retracted (*retractes*) or disapproved (*improbes*). However, Geulincx mentions that we err greatly when we give our assent to these prejudices with an explicit and deliberate judgement (*judicium*), which amounts to repeating the initial error.

But overcoming prejudices requires a great amount of willpower since there is a very powerful inclination (*pronitas et inclinatio*) involved in the attribution – an inclination to attach forms of cognition to the cognized objects.<sup>136</sup> This is especially true of the fundamental prejudice or inclination, caused by the mind's connection with the body, to ascribe sensory forms of thought, such as colours, to external objects. These prejudices are not commonly considered erroneous at all, because they are 'so difficult to root out and present themselves as it were naturally and spontaneously'.<sup>137</sup>

In order to clarify this theory, Geulincx offers the example of a stick that looks bent in water. Children actually believe that the stick is bent, while grownups generally do not because they know that the stick is not really bent. But still, prior to judging this, also adults regard the *external* stick to be bent, rather than immediately considering this to be a feature of our perception. We can, accordingly, never get rid of these prejudices.<sup>138</sup> Nonetheless, the adult does not believe that the perception matches reality by a conscious judgement.

Many other prejudices are not retracted even by adults, but are either taken for granted or are expressly confirmed in a judgement. Most importantly, this holds for the

<sup>133</sup> See Geulincx, *MP* Intr., §3, II 206-207.

<sup>134</sup> Geulincx, *MP* Intr., §3, II 208: '... praejudicium enim non est sine praevio judicio, nec est aliud quam continuatus ex primo aliquo errore error.'

<sup>135</sup> That is why Geulincx argues against the scholastics that it is false that the simple apprehension (*apprehensio simplex*) is always without error. See Geulincx, *MP* Intr., §3, II 208-209: 'Unde et Scholae in simplici apprehensione negant errorem reperiri (ad quam sensus omnes referunt), sed tantum in compositione ac divisione, seu affirmatione negationeque, quas referunt ad judicium.' This may also be his interpretation of Descartes' notion of material falsity in the *Meditations*, see on this Chapter 5.4.4.

<sup>136</sup> Geulincx, *MP* Intr., §2, II 200: 'Pronitas humanae mentis ad affigendum modos suarum cogitationum rebus cogitatis.'

<sup>137</sup> Geulincx, *MP* Intr., §3, II 208: 'Hunc igitur errorem [...] errorem non putant vulgo, quia tam difficulter evellitur, tam quasi naturaliter et sponte adest.'

<sup>138</sup> Cf. Geulincx, *AL* I, §72, III 419-420: 'Haec est ergo insignis causa errorum nostrorum, quod etiam post saniorem doctrinam maneant praejudicia nostra in memoria nostra, nec hoc tantum, sed quod hic vel maximi momenti est, maneant semper in attributione nostrorum sensuum.'

prejudices by which secondary qualities are ascribed to bodies. Like Descartes, Geulincx argues that this prejudice has become the foundation of physics. In this respect, many adults look like children who judge that the stick is really bent. Geulincx infers from this that Aristotelian philosophy, whose physics is grounded in this prejudice, is childish. It is a philosophy that corresponds to the common way of perceiving the world – a perspective of the world determined by attributions (or prejudices) resulting from infancy. Aristotelians have systematized this perspective into a natural philosophy, which in turn is the source of all errors in physics.<sup>139</sup>

As a final point, Geulincx differs from Descartes in that he extends this theory to metaphysics and ethics. Whereas Descartes is just concerned with sensory cognitions, which are connected to physics, Geulincx applies the theory also to intellectual cognitions and thus metaphysics, as well as emotions and thereby to ethics. Connected to the emotions is an inclination to act from them, which is an equivalent of attribution and is also resulting from infancy. I will not discuss this theory here, but rather proceed to intellectual cognitions. Geulincx holds that prejudices (or attributions) are also connected to logical forms of thought, which he calls intelligible species, such as the act of predication by which we consider one thing as a subject and the other as a predicate or attribute of that subject. In metaphysical terms, the former is considered a being and the latter a mode of being. Connected to these ways of thinking are prejudices by which we attribute these logical forms to the cognized objects themselves. Thus, even if the mind does not judge that these species are actual properties of reality, it initially has to regard the conceived things as having those logical forms of thought. Just like an apple appears to us as being red, objects come to the mind as being either beings or modes of being; we have to think of them in such a way. Even though these attributions are necessary, our assent to them – the *judicium mentis* – is not. Rather, we should always be aware that those attributions do not fit reality, and have to retract them continually. Geulincx insists that it is reason that points out to us that our forms of thinking – both sensory and logical forms – do not correspond to the external things in themselves.

In conclusion, in Geulincx' view, a prejudice is unlike a judgement in that it does not involve assent. Instead, he calls them attributions, which are necessarily connected to sensory or logical forms of thought. This means that our primary response is attributing those forms – which are just non-representational features of our acts of apprehending an object – to external objects. Although these attributions are not judgements proper, they do rely on previous judgements, most of all those performed during childhood. We cannot get rid of them, but instead need to battle with them constantly.

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<sup>139</sup> Geulincx, *MP* Intr., §1, II 199: ‘Doctrina autem Peripatetica [...] in Physica quidem considerat res subjectas sub sensum, quibus extrinsece per speciem illam et imaginem sensus denominantur calidae, frigidae, albae, graves ...’; *AL* I, §68, III 408.

### 2.3.4 Geulincx on the origin of the prejudices

It is now clear what prejudices are for Geulincx. However, it still remains to be explained what their origin is. Geulincx intensively uses Descartes' explanation in the *Principles* for that. He emphasizes that the prejudices result from infancy (*infantia*), and also that eventually all our errors are caused by it.<sup>140</sup> At that age, our mind was replete with perceptions of the body, so that it was unable to focus on reason, that is, its innate ideas.<sup>141</sup>

But that is only the general explanation. To be more specific, it is first needed to discuss Geulincx' theory of the degrees of attribution.<sup>142</sup> He discerns three levels of attribution, belonging to perceptions 1) of vision and audition, 2) of touch and taste, and 3) of sensations of hunger and thirst and emotions. Sensory cognitions of vision and audition are attributed to external objects. We consider the object to be actually red or actually making a sound. But sensations arising from the sense of touch, like pain and tickling, are ascribed to a part only of our own body. Rather than considering the knife that cut us has the same pain as we do, we ascribe the pain to our body. By contrast, the light of the sun is attributed to the sun itself instead of our eyes. Finally, hunger and thirst, as well as emotions, are attributed to the mind alone. If we are afraid of someone, we do not hold that the person we are afraid of is also in fear. To the contrary, we only ascribe the fear to our own mind. It is clear that Geulincx derives this theory from Descartes' account of types of perception from the *Passions of the soul*, which we have discussed above.

We still have to consider what the origin is of these three degrees of attribution. Geulincx discusses this in his commentary on *Principles* I.71. In it, Geulincx remarks first that the general cause of the attributions is the close connection of mind and body, which is a consequence of original sin.<sup>143</sup> For that reason, the mind does not turn to reason. In fact, as Plato has rightly said, the mind has been thrown into the prison of the body (*in ergastulum hoc corporis*) because of sin. Nonetheless, we can guard against errors *after* we grow up, because then we are able to use reason. Geulincx explains at this point how the different types of attribution have come about. He discerns three conditions connected to a specific phase of life: first the condition of dullness (*status stuporis*), which is connected to infancy; second the condition of recklessness (*status proterviae*), belonging to boyhood (*pueritia*); and third the condition of discernment (*status discretionis*), which is linked to adulthood.

<sup>140</sup> Geulincx, *AL* I, §1, III 363: 'Constat saltem infantiam esse solam et praecipuam causam omnium nostrorum errorum; quod et art. 71 satis expeditur, et nos fusius diximus in nostra Metaphysica Peripatetica.'

<sup>141</sup> Geulincx, *AL* I, §1, III 363: 'Infantia nostra consistit in eo (ut art. 71. Auctor ostendit) quod mens nostra arcta alligata sit corpori, et per consequens integrum rationis usum non habeat.'

<sup>142</sup> Geulincx, *AL* I, §67, III 407-408; *MP* Intr., §2, II 203-204.

<sup>143</sup> Geulincx, *AL* I, §71, III 411.

The first condition – *status stuporis* – consists in that the mind does not refer any of his thoughts to objects outside the mind.<sup>144</sup> In this condition, perceptions come to the mind as sketches (*schetse*), that is, as nothing but scattered dots rather than as an awareness of specific objects. We remain in this state of stupor as long as we are in the womb of our mother and a short time after birth – which Geulincx argues for by referring to the observation that just-born infants do not withdraw a hand when it is burned, but only scream.

Completely opposite to the first condition is the second state – the *status proterviae* – in which every perception is referred to an external object. This is, in Geulincx' view, the state of which Descartes speaks in the *Principles*, which is connected to childhood.<sup>145</sup> This condition is much more pernicious than the first: it hinders us in acquiring wisdom (*sapientia*) and always involves error.<sup>146</sup> The state of recklessness consists in the *praecipitantia* of the human mind to consider external objects as being invested with the forms of thinking (*species*) by which we apprehend them.<sup>147</sup> This involves a certain perversion of the human mind, the origin of which Geulincx traces back to the fall of mankind – but this is, as he says, a theological issue which must not be discussed in philosophy.<sup>148</sup> He continues that there is also some sort of childish discernment between objects at this point, according to which the mind assesses the reality of objects on the basis of how forceful our sense perceptions of them are; which is also mentioned by Descartes, as we have seen.<sup>149</sup> It is very difficult, if not impossible, to get rid of these assessments afterwards. All of them are prejudices. Indeed, the period of boyhood is the period in which the prejudices are formed, because the first period was without any judgement.<sup>150</sup>

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<sup>144</sup> Geulincx, *AL I*, §71, III 411-412: ‘... primum statum, hic in eo consistit, quod mens humana nullas suas cogitationes referat ad aliquid extra se positum ...’

<sup>145</sup> Geulincx, *AL I*, §71, III 412: ‘Secundus status in eo consistit, quod mens humana omnes promiscue suas perceptiones referat ad res extra se positas ...’

<sup>146</sup> See Geulincx, *AL I*, §71, III 413.

<sup>147</sup> Geulincx, *AL I*, §71, III 414: ‘Mira humanae mentis praecipitantia (in qua consistit pueritiae complementum seu protervia) ex notitia, qua cognoscit res aliquas extra se positas sensum commodi atque incommodi in se creare, itemque sensum saporis, odoris, etc. (quae profecto notitia bona atque vera est), colligit, res illas ipso illo sensu seu specie infectas esse. Quod equidem fieri non potest sine aliqua ipsius mentis perversitate; nam in re ipsa secundum se considerata nulla est proportio ad talem consequentiam; quomodo enim sequitur: *efficit talem speciem, ergo habet talem speciem?* seu *talis species est ab ipso, ergo et in ipso?*’

<sup>148</sup> Geulincx, *AL I*, §71, III 415.

<sup>149</sup> Geulincx, *AL I*, §71, III 415-416.

<sup>150</sup> Geulincx, *AL I*, §71, III 418.

The last stage – the *status discretionis* – sets in when we begin to discriminate between perceptions, referring some to external objects and others to the mind alone.<sup>151</sup> Also human wisdom belongs to this condition; it consists in nothing other than correctly distinguishing between perceptions, particularly by referring our species, unlike our ideas, to our mind alone.<sup>152</sup> This means that some of the judgements made during boyhood are now retracted, and instead referred to one's own mind (*retrahat ad se*).<sup>153</sup> While during boyhood a stick held under water is really judged to be bent, adults do not judge it to be so, even though they perceive it thus. What happens is that reason corrects the senses. But, of course, it is very well possible to be in the state of discretion without being wise (*status sapientiae*), because we do not refer all species to our mind. This is precisely the difference between the common and true philosophers (*vulgi et verorum Philosophorum*), according to Geulincx.

After discussing the three stages, Geulincx explains why we refer some perceptions to external bodies, others just to our own body, and still others to our mind only. In infancy, corresponding to the *status stuporis*, our body is moved completely automatically. Still, we do have some sense of what is advantageous or disadvantageous to us.<sup>154</sup> But because we are not aware of being affected by our own or other bodies, we do not connect these evaluations to external objects. As a result, all perceptions we experience during infancy are referred to our mind only. Geulincx explains that infancy refers mostly to the foetal period. According to him, the mind is already joined to the body in the womb of the mother, a prison in which reason is completely fettered and where even the senses can be hardly used. The only things the mind experiences in the womb are sensations such as hunger and thirst. That is why these types of sensation are attributed to the mind itself. When the period of infancy fades, we begin to connect our sense of advantageousness or disadvantageousness to movements of our own body. The perceptions we experience then, pain and pleasure, are therefore attributed to (parts of) our body. Finally, some perceptions are attributed to external objects. These do not just involve motions of our own body, but also the effects of other bodies on our body. This third type of judgement corresponds to the state of recklessness or boyhood (*status*

<sup>151</sup> Geulincx, *AL I*, §71, III 412: ‘Tertius denique status in eo consistit, quod deluctu habito, quasdam perceptiones nostras referamus ad res extra nos positas, quasdam referamus ad nos ipsos nostramque apparentiam.’

<sup>152</sup> The distinction between ideas and species is clarified in Chapter 6 and 7. Geulincx, *AL I*, §71, III 412: ‘Et ad hunc quidem statum ipsa etiam humana sapientia pertinet. Cum enim juste decreverimus et istas quidem perceptiones, quae nobis debentur, nobis reservaverimus (scilicet species nostras), eas vero, quae referenda sunt ad res extra nos positas, ad eas retulerimus (scilicet ideas nostras), tunc vero sapientes erimus; sed si quid in his turbemus (quod facile propter superiores nostros status contingit), erimus quidem in statu discretionis, sed non in statu sapientiae; et ecce hic discrimen vulgi et verorum Philosophorum.’

<sup>153</sup> Geulincx, *AL I*, §71, III 418.

<sup>154</sup> See Geulincx, *AL I*, §71, III 413-414.

*proterviae* or *pueritiae*). In this condition, the mind does not just deem external objects as advantageous or disadvantageous – which is fine – but also ascribes its own perceptions to these external bodies. As a result, error starts in boyhood (*pueritia*). In infancy, there are no errors, because perceptions are not referred to anything outside the mind.

Geulincx offers also other explanations for the differences of ascriptions, which do not contradict the one outlined above. He explains that immediately after birth the mind is overwhelmed by sensory perceptions, arising from impressions on our body by external objects, which we either had not experienced before or were so faint that they were not noticed by the mind. These sensory perceptions, such as of light and colours, sounds, odours, tastes, warmth and coldness and other sensations of touch, affect the mind stronger than before. In the womb their force was so slight that we did not refer them to external causes, but just to the mind. They were then hardly noticed, just as we are not aware of the air or of our hair unless the wind blows or our hairs are so long that they fall on our face. But once we become aware of them, in boyhood, they are ascribed to external objects because they are accompanied by the awareness of impressions by external objects. Still another explanation Geulincx offers is that sensations experienced after birth – in boyhood – are referred to external objects because we already consider ourselves to be complete before the influx of these impressions. Consequently, we consider these species as coming from the things that seem to occasion them. Further, the distinction between species we refer to external objects or parts of our body results from the degree in which impressions of external objects affect us. For example, colours and light do not alter the form (*figura*) of our body very much, whereas pain and tickling do.<sup>155</sup> Accordingly, colours are ascribed to external bodies, while pain is attributed to our own body.

Finally, Geulincx explains that the inclination to act on emotions is brought about by boyhood as well.<sup>156</sup> This has to do with self-love – our seeking to retain humanity. This is Geulincx' basic point of critique on all non-Christian moral philosophies. In brief, all of these ethical theories are founded on the search for happiness. Only Christianity shows that human happiness cannot be the goal of ethics. But how did this fundamental error come about? Geulincx general explanation for all inclinations and prejudices is that because man is a mind-body composite and has undergone many impressions since birth, he is completely oriented towards his body.<sup>157</sup> The following quotation expresses this view the most clearly:

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<sup>155</sup> Geulincx, *MP* Intr., §2, II 204: 'Sensus enim reliqui (luminis, colorum, etc.) non magnopere mutant corpus nostrum, non variant aliquid in crassa illa et sub sensum subjecta figura; dolor vero atque titillatio eam figuram notabiliter mutant; hinc enim factus est, ut reliquas quidem species in objectis, doloris vero atque titillationis speciem in corporibus nostris esse putaverimus.'

<sup>156</sup> Geulincx, *Ethics* IV, §1, III 105-106.

<sup>157</sup> See Geulincx, *Ethics* I Ann., Ch. 2, Sect. 2, §11, pt. 3, 8-9, III 257-260.

Man is entirely diffused outside himself, mixed with the body, distract, dispersed; he collects himself with difficulty, he withdraws into himself with difficulty, to see himself there, and see himself as subject to God, and so subject to God that nothing can be thought of by anyone so made subject and obnoxious.<sup>158</sup>

Again, boyhood has caused this situation of externality. At that period, our fundamental inclinations were formed. These inclinations include acting on the basis of what the senses and emotions indicate, and cause severe difficulty for listening to reason, thus preventing wisdom.

But none of this explains why we are inclined to attribute logical forms of thought to external objects – the biological explanation does not seem to hold for them. Intelligible species are not brought about by the body, nor do they involve any corporeal image, but are purely intellectual. At the outset of the *Peripatetic metaphysics*, Geulincx honestly admits that he does not have a proper explanation for this inclination. He only says that we probably follow or imitate the senses with our understanding. But he does not know what has caused this corruption of the mind.<sup>159</sup> Although he offers some other suggestions, he eventually settles with the view that it has to be caused somehow by our close connection to the body.

### 2.3.5 Conclusions

From the discussion in this section it is above all clear that prejudices are not primarily a set of convictions imposed by external sources – authorities – but rather a way of perceiving or interpreting the world that goes back to boyhood. This common perspective of the world can only be changed with great effort – indeed, it needs to be assailed constantly. These inclinations result from the close connection of mind and body. We have also seen that the background of Descartes' theory of prejudices is a refutation of Aristotelian physics. This can be concluded from the fact that Descartes emphasizes one type of judgement, namely, the judgement by which we refer qualitative perceptions to external objects.

Geulincx has adopted this theory of prejudices from Descartes and has further elaborated it. There are, however, three points on which he differs from Descartes. First, his most original point is an explanation of why we can never get rid of our prejudices as regards the sensory and intellectual modes of cognition. Second, Geulincx has offered explanations of the three different types of ascription. Third, Descartes is vague on what

<sup>158</sup> Geulincx, *Ethics* I, Ch. 2, Sect. 2, §11, III 61: 'Effusus extra se totus, cum corpore confusus, distractus, dispersus homo est; aegre se colligit, aegre se intra se revocat, ut ibi se videat, et se sub Deo videat, et ita sub Deo, ut nihil cuiquam tam subjectum et obnoxium cogitari possit.'

<sup>159</sup> Geulincx, *MP* I, Intr., II 210: '... nos intellectu sequi atque imitari quodammodo, nescio qua corruptela, sensum et modum illum agendi depravatum, quem in sensu ante notavimus.'; cf. *MP* I Ann., §2, II 305: 'Cum etiam mens nostra ex colligatione sui cum corpore, et prima labe, non tantum praejudiciis sensuum laboret, sed etiam in omnibus pene suis intellectionibus sequatur modum istorum praejudiciorum, quae sunt in sensu ...'

prejudices precisely are. He does not divorce them from judgements or beliefs. Geulincx does just that. He points out that prejudices are attributions rather than judgements. These attributions are affixed to sensory and intellectual cognitions. He thus offers a better explanation of why prejudices are not just beliefs but rather deeply entrenched dispositions.

Most importantly, this leads also to a new conception of philosophy. Philosophy or wisdom consists in making correct judgements. This means that we should not follow our prejudices by ascribing our modes of cognition to external reality, but rather retract them in our judgement.

#### **2.4 Conclusions**

We can now draw the following general conclusions. It has been decisively shown that Geulincx is deeply influenced by Descartes. He can rightly be called a Cartesian philosopher because he adopts Descartes' original theory of judgement and uses it for similar purposes. Indeed, this theory is even the foundation of Geulincx' philosophy as a whole. For him, philosophy or wisdom is nothing other than properly distinguishing between cognitions that belong to us – species, which are non-representational – and those that disclose reality – ideas. In the course of this chapter, it has also become clear that for both Descartes and Geulincx the theories of judgement and prejudice function most of all in the context of refuting Aristotelian philosophy. Geulincx explicitly uses Descartes' theory of error as a powerful instrument to oppose scholastic philosophy.

Apart from the similarities between Geulincx and Descartes as to the theories of the will, judgement and prejudices, there are also great differences. First, Geulincx not only adopts the theory of judgement and prejudice from Descartes, but extends their application as well. Whereas Descartes uses them mainly to explain why the mind is inclined to attribute secondary qualities to external objects, Geulincx applies them to what may be called the logical forms of thought, too. This means that he holds that metaphysical notions like substance and being (*ens*) should not be considered real aspects of external objects, but are to be treated just as the secondary qualities, that is, as merely pertaining to the mind itself. Moreover, Geulincx also uses the theory of the prejudices in ethics – the inclinations to follow the emotions are the moral counterparts of the proneness to ascribe species to external objects.

Another important difference with Descartes is the fact that Geulincx has a completely different theory of the will. This is accompanied by a theory of action, which differs substantially from that of Descartes as well. A discussion of that theory has made it clear that also Geulincx' theory of cognition is utterly different from that of Descartes. For Geulincx, the intellect is not passive, but active in producing cognitions. This is a fundamental point that needs to be examined in detail. Geulincx' theory of cognition will therefore be examined in the chapters 6 to 8 of this study.

We have seen that Geulincx adopted the view from Descartes that philosophy – that is, wisdom – consists in making correct judgements. To acquire a fuller understanding

of Geulincx' view of philosophy as a whole, however, it is necessary to examine his theory of scientific knowledge in detail. This will be done in the two chapters that follow.

## PART II – THE THEORY OF SCIENTIFIC KNOWLEDGE



## CHAPTER THREE

# SCIENTIFIC KNOWLEDGE (SCIENTIA) IN ARISTOTELIAN AND CARTESIAN PHILOSOPHY

### Introduction

Geulincx' criticism of Aristotelian philosophy runs deep and wide. This devastating criticism of Aristotelianism could not but create a problematic relation to his duties as a university teacher in Leiden – after all, he was charged with teaching Aristotelian philosophy, more specifically logic.<sup>1</sup> In previous chapters, we have amply pointed out that he considers Aristotelian philosophy as proceeding from a wrong starting-point – namely, from the prejudices of infancy – which corrupted physics, metaphysics, and ethics. Geulincx, consequently, rejects Aristotelian philosophy in its entirety. However, apart from these three disciplines, seventeenth-century Aristotelians also recognized logic as a part of philosophy (or as an instrument, an auxiliary science, for philosophy).

Geulincx' assessment of Aristotelian logic is important, because logic, at the time, comprises also what we call philosophy of science. It focuses particularly on the nature of and the conditions for scientific knowledge (*scientia*). Hence, if Geulincx rejects Aristotelian logic in its entirety, he also discards the Aristotelian theory of scientific knowledge. But, as was shown in Chapter 1, he does not reject Aristotelian logic completely. Although Geulincx criticizes the logic of his time, arguing in particular that scholastic logic is not properly developed as a (strict) science, he intends to amend rather than discard it. What does this emendation of logic mean specifically for Geulincx' conception of scientific knowledge? Does he adopt the Aristotelian theory?

But was there any viable alternative? In any event, Geulincx could not adopt Descartes' theory, because Descartes did not have a developed theory of scientific knowledge. Still, there may have been some general remarks and views of Descartes which may have influenced Geulincx.

The questions that arise from this are first whether and, if so, why Geulincx rejects or changes the Aristotelian notion of scientific knowledge (*scientia*), and second whether Cartesian philosophy has had any effect on his notion of *scientia*. To answer

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<sup>1</sup> Before teaching logic at Leiden University, Geulincx had already taught logic for twelve years at Louvain University. The fruits of these efforts are the *Logic* of 1662 and the *Method of finding arguments* of 1663.

these questions, it is necessary to have a sufficient understanding of the Aristotelian theory of science, the more so because both Geulincx and Descartes were responding to it. It was prevalent at universities in the first half of the seventeenth century.

In this chapter, only the Aristotelian theory and Descartes' view of scientific knowledge are discussed. In the next chapter, Geulincx' theory of science will be extensively laid out, and compared to both the Aristotelian account and Descartes' theory. Section 1 of this chapter contains a discussion of the notion of scientific knowledge (*scientia*) in Aristotle. In Section 2, I show that the same notion of science is found in the Renaissance Aristotelian philosopher Jacopo Zabarella, as well as in the Leiden professor in philosophy Franco Burgersdijk. In Section 3, I give an overview of Descartes' remarks on scientific knowledge, which are compared to the Aristotelian conception of science in the conclusions of this chapter.

### **3.1 Aristotle's theory of scientific knowledge (*épistème*) and demonstration (*apodeixis*)**

#### *3.1.1 Scientific demonstration and the objects of scientific knowledge*

Apart from some remarks made elsewhere, Aristotle's view of philosophical knowledge is found mostly in the *Posterior analytics*, an exceptionally difficult writing. Although this makes it hard to be certain on specifics, it is possible to outline his general theory of scientific knowledge – and just that is what is needed here.<sup>2</sup> I will also add a brief discussion of Aristotle's distinctions between the cognitive faculties in *Nicomachean ethics* VI, because this is a passage on which later Aristotelians often rely for their definition of science and for the demarcation of science from other types of knowledge.

For Aristotle, scientific knowledge consists in answers to scientific questions. He discusses the four types of scientific question at the beginning of the second book of the *Posterior analytics* (II.1). On Aristotle's view, scientific knowledge involves seeking

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<sup>2</sup> This subsection relies heavily on Burnyeat 1981 and Smith 1995. Cf. also De Jong and Betti (forthcoming) in which they define the 'Aristotelian model of science'. By this model, they do not pretend to give a correct interpretation of Aristotle's philosophy of science, but rather attempt to offer a reconstruction of what were regarded the conditions for a genuine science throughout the ages. They define an Aristotelian science (or discipline) as a system of true propositions and concepts (terms) about a specific set of objects or domain of beings (the subject matter of a science). A scientific discipline has some fundamental concepts of which all other concepts in the same science are composed (or defined), and also fundamental propositions from which all other propositions follow (or are grounded in, or provable/demonstrable from). All scientific propositions are universal and necessary, and are also known to be true, while all concepts are adequately known. More generally, a proper (Aristotelian) science has the structure of a more or less strictly axiomatized system with an operative distinction between fundamental and non-fundamental elements. This characterisation of a scientific discipline is certainly true of how Geulincx conceives of science.

answers to the following items: 1) the fact, 2) the reason why, 3) if it is, and 4) what it is.<sup>3</sup> These questions introduce us to two basic items of philosophical knowledge: properties and the subjects of the properties. The first two questions concern the properties and the latter two the substances or subjects to which the properties are ascribed. Accordingly, the first question asks ‘whether subject x has property y?’, the second ‘why subject x has property y?’, the third ‘if there is such a thing as subject x?’, and the fourth ‘what is subject x?’<sup>4</sup>

Scientific knowledge in the strict sense relates only to the first two questions, which regard properties. Scientific knowledge is concerned with explaining *that* or *why* some property belongs to a subject. By contrast, knowledge of the subject is presupposed for scientific knowledge. For instance, if these questions are applied to the moon as the subject and the feature of being eclipsed as the property, scientific knowledge can only be had of the fact that the moon is eclipsed and of why it is eclipsed. Both the existence and the essence of the moon are assumed – as they concern the subject of a scientific question.

So scientific knowledge consists in answers to the first two questions alone. They must also be very specific answers which take the form of *demonstrations*. As a result, there are two types of scientific demonstration corresponding to the two questions: demonstration of knowledge of the fact and demonstration of knowledge of the reason why (or of the reasoned fact).<sup>5</sup> These kinds of demonstration were in later times subsumed under the terms *demonstratio quia* and *demonstratio propter quid*, respectively. The demonstration of the reason why proceeds from the (proximate) cause to the effect. In other words, it explains why a subject has a particular property by providing the true cause of that property. Unlike the demonstration of the reasoned fact, the demonstration of the fact does not provide the true (and proximate) cause of the property, but proves only that some unique property belongs to a subject. It does not explain, however, why that property belongs to the subject. It proves, for instance, *that* the moon is eclipsed, but not *why* that is the case.

Although the conclusion of the demonstration of the fact falls short of what one may expect from scientific knowledge in the strict sense, that is, explaining *why* a property belongs to an object, it is still certain knowledge obtained through a demonstration and may therefore be rightly called science. Ideally, however, knowledge proceeds from cause to effect. But that is not always possible. Sometimes we can only ascribe a certain property to a subject through knowledge of an effect.

<sup>3</sup> Aristotle 1984, *Posterior analytics* II.1, 89b23-24, vol. 1, 147.

<sup>4</sup> See on this Barnes’ comments (Aristotle 1994, 203-204), who interprets Aristotle’s four questions in this way. He gives the following examples of the questions: 1) Is the moon eclipsed?; 2) Why is the moon eclipsed?; 3) Whether there is such a thing as the moon?; 4) What the moon is?

<sup>5</sup> See on the distinction between the demonstration of the reasoned fact and the demonstration of the fact, Aristotle, *Posterior analytics* I.13.

The difference between these types of demonstration can also be explained through Aristotle's distinction between perception – that is, things that are more familiar to us – and conceptualization – that is, things that are more familiar by nature or are conceptually prior.<sup>6</sup> Knowledge of the fact starts with the perception, acquainting us with an effect or property of some thing, and then ascribes this property to the subject by means of a demonstration. In such a way, however, it is impossible to know *why* the subject has the property – and that is what scientific knowledge primarily aims at. For in scientific knowledge one intends to know both what the essence of the property is and why it belongs to some subject. Both questions are answered, at the same time, by giving a demonstration of the reasoned fact, as Aristotle explains in the following quotation:

Since, as we have said, to know what something is and to know the explanation of the fact that it is are the same ...<sup>7</sup>

Aristotle's argument for this identification, which immediately follows on this quotation, is difficult to comprehend. In essence, it boils down to the fact that the thing is explained by its formal cause, which concerns precisely the essence of the thing. In any case, we can conclude that the demonstration of the reason why is central to scientific knowledge – even the essences of properties are known in such a way. Indeed, Aristotle asserts that to know something scientifically is 'to know the cause or reason of why it must be as it is and cannot be otherwise'.<sup>8</sup> This definition clearly refers to the demonstration of the reason why.

A scientific demonstration consists of true assertions. But not every assertion amounts to scientific knowledge. Rather, assertions come in two basic classes, namely, first axioms and principles that do not have to be demonstrated but are self-evident, and second theorems demonstrated from the principles. The truth of the theorems is thus determined by the principles. Strikingly, only the class of theorems concerns scientific knowledge (*epistêmê*) proper. This is apparent from the following quotation of the *Posterior analytics*:

Now whether there is also another type of understanding we shall say later; but we say now that we do know through demonstration. By demonstration I mean a scientific deduction; and by scientific I mean one in virtue of which, by having it, we understand something. (71b17-19)<sup>9</sup>

Aristotle's point is that principles are known through themselves, and thus do not need to be demonstrated or, which amounts to the same, cannot be explained – at least, in the scientific discipline in which they are considered as principles. Because scientific

<sup>6</sup> Aristotle holds that the conceptual or logical order mirrors the natural order.

<sup>7</sup> Aristotle 1984, *Posterior analytics*, II.8, 93a3-5, vol. 1, 153.

<sup>8</sup> Translation by Smith 1995, 47. Cf. Aristotle 1994, *Posterior analytics* I.2, 71b9-12, 2, and Aristotle 1984, vol. 1, 115.

<sup>9</sup> Aristotle 1984, vol. 1, 115.

knowledge is nothing other than affirming some theorem, which appears as the conclusion of a scientific demonstration, it concerns only assertions that are inferred either from principles or from other scientific assertions, which are already proved – if the property is caused by another property. As a result, whereas principles can only occur as premises of the demonstration, theorems – scientific assertions – can either function as a premise or as the conclusion. And, consequently, conclusions are always theorems.

But what can be known scientifically? In other words, what are the objects of science and what features do they have? It follows from Aristotle's description of the scientific demonstration that only those things can be known scientifically which are necessary and have a cause. Indeed, Aristotle affirms expressly that only necessary and imperishable entities can be known rather than contingent and transient things.<sup>10</sup> Likewise, scientific knowledge of particular things or facts is impossible in so far as they are particular – as such they are perishable things. Rather, they can be known only in so far as they fall under unchanging universals. Further, because scientific knowledge is always knowledge of causes, it is impossible to have scientific knowledge of uncaused things. In short, scientific knowledge is causal-explanatory, necessary and universal knowledge which concerns only what is eternal and unchanging.

### *3.1.2 The elements of proof: Subject, unique property, and principle*

We now have to further consider of what elements a scientific proof consists. Aristotle discerns the following three ingredients of every scientific demonstration: the subject of a demonstration, the property to be demonstrated of the subject, and the principles – including the causes or middle term – by which it is demonstrated that a property pertains to a subject. Aristotle explicitly distinguishes these three elements in the following quotation:

For there are three things in demonstrations: one, what is being demonstrated, the conclusion (this is what belongs to some genus in itself); one, the axioms (axioms are the things on which the demonstration depends); third, the underlying genus of which the demonstration makes clear the attributes and what is accidental to it in itself.<sup>11</sup>

The proper objects of science – that which is to be demonstrated – are the unique properties (*idion*) of things. These properties appear as predicates in the conclusion of a demonstration. In the *Topics*, Aristotle claims that a unique property ‘is something which does not indicate the essence of a thing, but belongs to that thing alone, and is

<sup>10</sup> See Aristotle 1984, *Posterior analytics* I.8, 75b21-26, vol. 1, 122: ‘It is evident too that, if the propositions on which the deduction depends are universal, it is necessary for the conclusion of such a demonstration and of a demonstration *simpliciter* to be eternal. There is therefore no demonstration of perishable things, nor understanding of them *simpliciter* but only accidentally, because it does not hold of it universally, but at some time and in some way.’

<sup>11</sup> Aristotle 1984, *Posterior analytics* I.7, 75a39-75b2, vol. 1, 122.

predicated convertibly of it.<sup>12</sup> He means by this that such a property is not something that is incidental to a thing – something which it may or may not have – but rather that which necessarily belongs to it, although it does not constitute the essence of the thing.<sup>13</sup> At this point, Aristotle offers the example of the property of man as being capable of learning, which can be demonstrated to inhere in the subject – man – through the form or essence of man. An example that frequently occurs in later Aristotelian writers is the property of being able to laugh. This is the example Porphyrius uses in his *Isagoge*, an introduction to Aristotle's *Categories*, which often functioned as an introductory text to logic at the universities.<sup>14</sup>

Principles have to be sharply distinguished from unique properties. They are not known by deduction. This is impossible because there have to be ultimate foundations of scientific knowledge, otherwise it would lead to an infinite regress. Aristotle says therefore that it is necessary for 'demonstrative understanding in particular to depend on things which are true and primitive and immediate and more familiar than and prior to and explanatory of the conclusion' (71b20-23).<sup>15</sup> This means that the premises of a demonstration are to be truths of a special kind: they must be primary and unmuddled, and must stand in an appropriate relation to the conclusion. They must be prior to the conclusion and be more intelligible, as well as a cause and explanation of it. In short, the principles should be epistemically, causally and logically prior to scientific knowledge. The conclusion of the proof – the scientific assertion – gets its certainty by the deduction and through the principles.

But are all principles alike? Aristotle divides principles into common principles, the axioms that are presupposed by any branch of knowledge, and proper principles, which are in turn divided into those that state what a thing is (definitions) and those that state that a thing is (hypotheses). In other words, there are three types of principles, which Aristotle calls axioms, definitions and hypotheses in *Posterior analytics* I.2. They have in common that they cannot be proved in the discipline in which they are used as principles. An example of an axiom is the law of the excluded middle (72a13-14) and of a definition 'unit is what is quantitatively indivisible' (72a23-24). Unlike axioms, definitions concern concepts rather than assertions. Finally, a hypothesis is an existence-claim, stating, for instance, 'that a unit is' (72a14-24).

So, knowledge of the principles is not scientific knowledge; they are not known by a proof. Rather, they are known otherwise, at least in the particular discipline in which

<sup>12</sup> Aristotle 1984, *Topics* I.5, 102a17-19, vol. 1, 170.

<sup>13</sup> See also Aristotle 1994, *Posterior analytics* I.6, 75a18-37, 12-13, where he asserts that it is impossible to have demonstrative knowledge of items that are incidental to a thing. Rather, he claims that 'Since in each kind what belongs <to something> in itself and as such belongs to it from necessity, it is evident that scientific demonstrations are about what belongs to things in themselves, and depend on such things.'

<sup>14</sup> See Porphyry 1975, *Isagoge*, 48.

<sup>15</sup> Aristotle 1994, *Posterior analytics* I.2, 2-3; cf. Aristotle 1984, vol. 1, 115-116.

they function as principles. In fact, some of them can be proved in other disciplines, because they are properties of some other kind (*genus*) with which that discipline is concerned. Others, however, are never obtained by scientific knowledge. It is presumably this class of principles of which Aristotle claims that we have an inborn faculty for acquiring them. Like all types of knowledge, the process of coming to know these principles starts with sense perception of particulars. Thereafter, sense perception brings about memory, which in turn leads to experience. Finally, by an accumulation of experiences, a universal is recognized that is present in the series of perceptions.<sup>16</sup> This whole process of acquiring knowledge of the principles is called induction (*epagogē*), which ends in a disposition of knowing the principles – intelligence (*noûs*), which was later translated in Latin by *intelligentia*.<sup>17</sup> In short, while having a disposition to affirm assertions known to be true and unchangeable through a demonstration is called scientific knowledge (*epistêmê; scientia*), a disposition to affirm principles is called intelligence or intuitive reason (*noûs; intelligentia*). This confirms that knowledge of principles is not scientific knowledge.

Lastly, what remains to be explained is the subject – or genus – of the scientific question and conclusion. What Aristotle means by this becomes clear from the following quotation of *Metaphysics* VI.1:

... but all these sciences mark off some particular being – some genus, and inquire into this, but not into being simply nor *qua* being, nor do they offer any discussion of the essence of the things of which they treat; but starting from the essence – some making it plain to the sense, others assuming it as a hypothesis – they then demonstrate, more or less cogently, the essential attributes of the genus with which they deal. (1025b7-13)<sup>18</sup>

So, what he means by the subject matter of a scientific discipline is a branch of knowledge – a domain of beings with which a specific discipline is concerned. For example, physics is concerned with the natural body. This does not mean, of course, that the subject of all demonstrations is the ‘natural body’. Rather, there are numerous kinds of natural bodies each of which may function as the subject of a scientific proof – these are species of the genus natural body. Through a demonstration, unique properties are proved to belong to these subjects. Again, Aristotle emphasizes that knowledge of the subject is not scientific knowledge. Instead, the essence and definition of the subject matter are first principles of demonstrative knowledge (meaning that we have some acquaintance with these subjects, which allows us to give nominal definitions), as well as the fact that the subject exists – both are assumed rather than proved in the discipline in which they function as subjects.

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<sup>16</sup> See for a description of this process, Aristotle 1984, *Posterior analytics* II.19, vol. 1, 165-166.

<sup>17</sup> See for the *nous*, Aristotle 1984, *Posterior analytics* II.19, vol. 1, 166.

<sup>18</sup> Aristotle 1984, *Metaphysics* VI.1, vol. 2, 1619.

So, scientific disciplines are distinguished by the domain of beings – the genus – with which they are concerned. The three theoretical sciences Aristotle distinguishes, mathematics, physics, and metaphysics, are all concerned with being. Their objects differ according to the degree in which being is abstracted from matter. The least abstracted from matter is physics, because that science is concerned with matter in motion. Next comes mathematics, which is more abstract because it leaves out motion. Finally, metaphysics is the most abstract for its complete lack of matter – it is concerned with being per se and immaterial objects.

Aristotle distinguishes not only between scientific disciplines on the basis of the domain of beings with which they are concerned, but also on the basis of the intellectual faculties of the mind.<sup>19</sup> In this regard, it is to be stressed that for Aristotle scientific knowledge is primarily a subjective state of a person. Because he holds that someone may have knowledge of something without actually thinking of it, scientific knowledge (*epistêmê*) is not just a demonstrated proposition that is actually known at a particular time and place, but rather a disposition of the mind – more specifically, the demonstrative faculty (*hexis apodeitike*) – by which we *can* give a proof of some proposition by deducing it from known first principles. Because Aristotle's definitions of these dispositions of knowledge in *Nicomachean ethics* VI have become standard, we need to comment on them here. In this text, Aristotle distinguishes five faculties or dispositions of having rational knowledge (VI.3): science (*epistêmê*), intuitive reason or intelligence (*noûs*), wisdom (*sophia*), prudence or practical wisdom (*phronêsis*), and art (*technê*). The first three habits are concerned with natural or necessary things and aim at knowing truth through grasping being, whereas the latter relate to contingent things, namely, human action or production, respectively. They account for the threefold division of philosophy in the three theoretical-contemplative sciences mentioned above, practical disciplines such as ethics and politics, and productive disciplines such as poetry and rhetoric.<sup>20</sup> As a result, the practical and productive disciplines do not concern scientific knowledge in a strict sense.

In the *Nicomachean ethics* VI, Aristotle insists also that the object of scientific knowledge exists necessarily and is therefore eternal. Moreover, scientific knowledge, as being a conclusion from a proper demonstration, relies on first principles that are known with certainty. In the chapter that follows, Aristotle contrasts the objects of scientific knowledge with the class of things that admit of variation, which are either objects of art, concerned with making, or of prudence, which is concerned with action. Acquiring knowledge of the principles is the task of intuitive reason (*noûs*) (VI.6), whereas (theoretical) wisdom (*sophia*) consists of both having knowledge of the

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<sup>19</sup> See for a brief overview of Aristotle's division of philosophy, Flint 1904, 77-84.

<sup>20</sup> See for the tripartition of philosophy, Aristotle 1984, *Topics* VIII.1, 157a8-11, vol. 1, 264; *Metaphysics* I.1; Aristotle 1984, *Metaphysics* XI.7, 1064a10-19, vol. 2, 1681; *Metaphysics* VI.1; *Nicomachean ethics* VI.4.

principles and of conclusions from them: ‘Therefore wisdom must be intelligence (*noûs*) combined with knowledge (*epistêmê*) – knowledge of the highest object which has received as it were its proper completion.’<sup>21</sup> It consists, in other words, in knowing the ultimate causes and principles of all things, which is the final goal of philosophy. As a result, the account of the *Nicomachean ethics* agrees completely with that of the *Posterior analytics*, with the difference that the explanation is more technical and more detailed in the latter writing.

To conclude, Aristotle holds a very strict view of scientific knowledge. Although we have not extensively elaborated on all the preconditions for scientific knowledge, it has become clear that only a specific kind of deduction leads to science proper. That is, science consists in firmly assenting to a conclusion, knowing that things cannot be otherwise, by holding an absolutely certain deduction that explains why something is the case – why and that some subject has a particular unique property – and, moreover, one that eventually goes back to absolutely certain and intuitively known first principles. Some of these principles are proper to a scientific discipline. Others are common principles (axioms), which are necessary as rules for deduction. As a consequence, science can only be had of necessary and universal things. Hence, scientific assertions are eternal truths. Everything which is in some sense uncertain, merely probable or contingent has to be precluded from science.

Although this account need not necessarily agree in all respects with Aristotle’s real intentions, it represents the way in which most of the later Aristotelians interpreted his texts.<sup>22</sup> More particularly, it was the common interpretation of Aristotle’s conception of scientific knowledge of Geulinckx’ times. This can be concluded from Zabarella’s and Burgersdijk’s accounts of science, to which we turn now.

### 3.2 Late-Aristotelian conceptions of scientific knowledge: Zabarella and Burgersdijk

#### 3.2.1 Zabarella on necessity and contingency

Because Aristotle’s writings, especially those concerning logic, are difficult to interpret and have therefore led to much dispute and a wide variety of interpretations, we should determine the common interpretation of Aristotle that forms the immediate background for Geulinckx’ theory. I shall therefore discuss briefly the essentials of Zabarella’s theory of science. The way in which he represented the major points of

<sup>21</sup> Aristotle 1984, *Nicomachean ethics* VI.7, 1141a18-19, vol. 2, 1801. Cf. Aristotle 1984, *Metaphysics* I.2, 982a20-b10, vol. 2, 1554; Aristotle 1984, *Metaphysics* I.1, 981b25-982a2, vol. 2, 1553: ‘... all men suppose what is called wisdom to deal with the first causes and the principles of things.’

<sup>22</sup> In this regard, I refer particularly to the interpretation of Aristotle’ *Posterior analytics* as a ‘logic of presentation’. On this interpretation, the view of science as a deductive system represents a model of how teachers should present and impart knowledge, and thus should not be regarded as characterizing the essence of Aristotle’s scientific methodology. See on this, Barnes 1969.

Aristotle's philosophy of science are virtually standard at the beginning of the seventeenth century, and particularly so among Protestant scholastics.

Indeed, the Paduan philosopher Jacopo Zabarella (1533–1589) is of great importance for seventeenth century discussions on the nature of scientific knowledge – Zabarella's particular emphasis on certain aspects of Aristotle's philosophy of science can be found everywhere in seventeenth-century Aristotelian writings. He is also rightly renowned for being one of the greatest interpreters of Aristotle's logical writings. Most important to notice here is that Zabarella does not consider himself an original philosopher, but rather wants to be an orthodox Aristotelian. His writings should accordingly be seen as attempts to properly explain Aristotle's real intentions.

Most important for our purposes is the fact that the distinction between necessary and contingent things determines Zabarella's view of philosophy.<sup>23</sup> By this bifurcation, he marks off natural and scientific things from artificial matters, which are not objects of science. Indeed, the first treatise of Zabarella's *Opera logica, On the nature of logic* (*De natura logicae*), in which Zabarella wants to determine, among other things, whether logic is a science, begins with the distinction between the eternal world of nature and the contingent world of human affairs, depending on the human will.<sup>24</sup> He explains that it is precisely necessity that separates objects of science from other things. In other words, there is only science (*scientia*) of necessary things. This does not mean that the objects of science have to exist always – for example, most natural bodies come into being – but at least that they depend on universal causes. The distinctive mark of the objects of science is that they are not made by the human will, like artificial objects, which are contingent. Contingent things depend on the human will, and thus are not natural.

As can be gathered from the previous subsection, Zabarella has adopted this view of science from Aristotle. He also refers explicitly to Aristotle's *Nicomachean ethics* VI.3, in which the same distinction – between necessary and contingent things – can be found. Zabarella's original insight is that he sharply distinguishes between theoretical and practical philosophy on these grounds, the former of which treats of necessary and the latter of contingent things. Moreover, Zabarella argues that theoretical and practical are the only two categories of discipline (*disciplina*), because all things are either necessary

<sup>23</sup> See on Zabarella's notion of philosophy, Mikkeli 1992, Mikkeli 1997, Mikkeli 1999, Poppi 1972, Poppi 2004, and Edwards 1960.

<sup>24</sup> Zabarella 1966a, *On the nature of logic*, 2: 'Res omnes in duo genera dividuntur ab Aristotele in 3. cap. 6. libri de Moribus ad Nicomachum, alias enim necessarias, ac sempiternas esse dicit, alias contingentes, quae esse, & non esse possunt: necessarias quidem vocat tum eas omnes, quae ipsae per se semper sunt, & nunquam fiunt, tum eas, quae fiunt quidem, non tamen a voluntate nostra, sed a natura per certas causas operante; hae namque etsi quatenus sunt singulares, non semper sunt, tamen quatenus ad universalitatem rediguntur, & ita a certis causis necessario pendere considerantur, ut eas esse, vel non esse, fieri, aut non fieri, non sit in nostra voluntate constitutum, eatenus necessariae, ac sempiternae dici possunt, cuiusmodi esse res omnes naturales manifestum est.'

or depend on human volition.<sup>25</sup> In addition, the two kinds of discipline can also be distinguished by their objectives. The aim of the theoretical-contemplative sciences is knowledge (*cognitio*), whereas that of the practical disciplines is to bring about something (*efficere* or *operatio*).<sup>26</sup> Practical disciplines in turn are divided into arts, which are concerned with producing material things (*effectio*), and *prudentia*, which are related to human action (*actio*).<sup>27</sup> Zabarella insists that only contemplative disciplines consist of science proper because only those disciplines concern necessary truths and have eternal beings as their objects.<sup>28</sup> Conversely, because practical and productive disciplines are concerned with contingent or man-made matters, they are not genuine sciences.

Zabarella's point becomes clearer by discussing his views on the two kinds of demonstration, which he calls methods (*methodus*) of proof.<sup>29</sup> Methods are particular kinds of syllogism, namely, that type of syllogism that yields science.<sup>30</sup> The difference between method and scientific knowledge is that the method is the way to acquire scientific knowledge (*scientia*), while *scientia* is nothing but the way in which the mind clings to the conclusion of a demonstrative syllogism.<sup>31</sup> Because the method is related to

<sup>25</sup> See Zabarella 1966a, *On the nature of logic*, 2: 'Quoniam igitur disciplinam omnem, quae aliquid doceat, rem aliquam tractare necesse est, duo oriuntur disciplinarum genera, quorum unum in iis rebus versatur, quae a nobis fieri possunt: alterum in iis, quae non a nobis fiunt, sed vel semper sunt, vel certas alias causas extra nostra voluntatem positas consequuntur: aliud equidem disciplinae genus non video, nam si quae alia praeter has statuatur, ea, quum nihil tractet, profecto nihil erit.'

<sup>26</sup> Zabarella 1966a, *On the nature of logic*, 3.

<sup>27</sup> Zabarella 1966a, *On the nature of logic*, 4.

<sup>28</sup> Zabarella 1966a, *On the nature of logic*, 3: 'Reliquae omnes disciplinae in rebus illis versantes, quae quod ab humana voluntate aequi fieri, ac non fieri possunt, Contingentes ab Aristotele vocantur; si proprie loqui velimus scientiae appellandae non sunt, tum quod cognitionem pro fine non habent, quemadmodum diximus; tum etiam quod ea cognitio, quum rerum necessarium non sit, scientia nominari non debet ...'

<sup>29</sup> Zabarella makes a distinction between method (*methodus*) and order (*ordo*). The purpose of the former is rendering confused knowledge (*cognitio confusa*) into distinct knowledge (*cognitio distincta*), whereas the latter is concerned with disposing the different parts of a science – the individual proofs – in such a way that the discipline is easily teachable – it is an order of presentation (see Zabarella 1966a, *On methods*, 139-140, 154). Unlike the order, method has deductive force (*vis illativa*) (see Zabarella 1966a, *On methods*, 139, 223). See further on this topic, Mikkeli 1992, Ch. 4.

<sup>30</sup> Zabarella 1966a, *On methods*, 224-225: 'Methodus est intellectuale instrumentum faciens ex notis cognitionem ignoti: intellectuale instrumentum genus methodi est, quod ordinem quoque complectitur: facere autem ex notis cognitionem ignoti est differentia, qua methodus ab ordine separatur [...] hanc differentiam si bene consideremus, dicere cogimur, eam nil aliud significare, quam illationis necessitatem, ut quando talis est progressus, quo aliquid ex aliquo necessarie colligatur, ea proprie methodus appelletur ...'

<sup>31</sup> See on this difference, Zabarella 1966a, *On methods*, 230.

scientific knowledge, it has to consist of necessary propositions, which means that the connection between predicate and subject is ‘essential’.<sup>32</sup> Apart from the syllogism in which one proceeds from the cause to the effect, also induction is a legitimate scientific method.<sup>33</sup> The former is called the *demonstratio propter quid* and the latter the *demonstratio quia*. Thus, there are two methods of proof: the compositive-demonstrative method (the *demonstratio propter quid* or *demonstratio potissima*), proceeding from cause to effect, and the resolute-inductive method (the *demonstratio quia* or *syllogismus a signo*), going from the effect to the cause. Although the demonstrative method ranks higher than the resolute method, both are syllogisms with inferential force.

This is simply a presentation of Aristotle’s account of the two kinds of scientific demonstration. Again, Zabarella’s originality lies in how he applies this distinction to the process of obtaining scientific knowledge. He explains the relation between both methods in such a way that it is apparent why the demonstration of the reasoned fact is more properly science. The purpose of the resolute method is finding (*inventio*) the causes. This makes the resolute method a servant of the demonstrative method. Resolution (analysis) is not an end in itself in the process of acquiring knowledge, but functions as the supplier of the starting-points for the demonstrative method – the principles. In other words, the goal of the resolute method is invention of the principles rather than the production of scientific knowledge. It seeks the principles or causes, the effects of which are later demonstrated by the compositive method.<sup>34</sup> The ultimate end of science is to proceed from knowledge of the principles to a complete knowledge of the effects, which means knowledge of things through their causes, by means of the demonstrative method. As a result, if all principles were known, the method of resolution would not be necessary.<sup>35</sup> As a further result, theoretical sciences should consist of demonstrations of the reasoned fact only. This is what theoretical philosophy aims at.

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<sup>32</sup> Zabarella 1966a, *On methods*, 230: ‘... nullam propositionem hoc modo necessariam esse posse, nisi essentiale praedicati cum subiecto connexionem habeat, & nullam praedicati cum subiecto connexionem essentiale esse posse, nisi alterum alterius causa sit. Hinc sit, ut in omni syllogismo sciendi gratia constructo necesse sit vel a causa ad effectum, vel contra ab effectu ad causam progressum fieri ...’

<sup>33</sup> Zabarella 1966a, *On methods*, 230: ‘... duae igitur scientiae methodi oriuntur, non plures, nec pauciores, altera per excellentiam demonstrativa methodus dicitur [...] potissimam demonstrationem, vel demonstrationem propter quid [...] altera, quae ab effectu ad causam progreditur, resolutiva nominatur [...] demonstrationem quia, vel syllogismum a signo, vel secundi gradus demonstrationem.’

<sup>34</sup> Zabarella 1966a, *On methods*, 267.

<sup>35</sup> See Zabarella 1966a, *On methods*, 265-267.

As for science as a habit of the mind, Zabarella argues that the knower only possesses science if he knows with absolute certainty that things cannot be otherwise.<sup>36</sup> But although scientific knowledge proper is held by the knower with absolute certainty, Zabarella says also that the term *scientia* can be used in a wider sense.<sup>37</sup> In its widest sense, it includes all cognition (*cognitio*). This, however, is not the proper and strict meaning of science. In its proper sense science is ‘firm and certain knowledge of necessary and sempiternal things’, for which Zabarella refers, again and again, to Aristotle’s *Nicomachean ethics* VI.3.<sup>38</sup> This notion of science forms, then, the basis for distinguishing the scientific faculty from other faculties of cognition. He simply repeats Aristotle’s definitions of the intellectual faculties. Thus, *intellectus* – a synonym of *intelligentia* – and *sapientia*, both of which involve knowledge of the principles, are distinguished from *scientia*.<sup>39</sup> It may be concluded that Zabarella simply gives an accurate account of Aristotle’s definitions of the faculties in the *Nicomachean ethics*.

### 3.2.2 Zabarella’s account of the *praecognita*: Subject, property, and principle

Although most of Zabarella’s remarks amount to an orthodox rendering of Aristotle’s theory of science, he also introduces some original points, such as a new interpretation of ‘the *praecognita*’. Following Aristotle, Zabarella states that knowledge of the principles and subject matter – the underlying kind – is not science. He infers from this that neither belongs to any philosophical discipline per se. Instead, Zabarella claims that they are part of the *praecognita* of a scientific discipline, an introductory section which is concerned with the preconditions for scientific knowledge – the things we have to be acquainted with beforehand, and from which scientific knowledge flows. Zabarella explains that every scientific discipline has its own *praecognita*, functioning as an

<sup>36</sup> See Zabarella 1966a, *On the nature of logic*, 4: ‘... docet autem [...] Aristoteles, duplicum in scientia requiri necessitatem; unam in ipsa re scita, quae simpliciter necessaria sit, & aliter esse non possit; alteram in animo scientis, qui omnino certus esse debet, rem illam aliter esse non posse; harum duarum conditionum altera utravis sublata non habemus scientiam, ut si rerum contingentium nostra cognitio sit, vel necessarium quidem, sed cum animi incertitudine et haesitatione.’ Zabarella refers to Aristotle’s *Nicomachean ethics* VI.3 (1139b23-35), and *Posterior analytics* I.2 (71b9-16), for this position.

<sup>37</sup> Zabarella 1966a, *On the nature of logic*, 17: ‘... dum enim scientiae nomen late sumitur, pro omni cognitione, quaecunque ea sit, non modo logica, sed et activa philosophia, & ars omnis docens potest vocari scientia: propterea quia cognitionem aliquam tradit; hac ratione medicina solet quandoque appellari scientia.’

<sup>38</sup> Zabarella 1966a, *On the nature of logic*, 3: ‘... scientia namque est firma, ac certa cognitio rerum simpliciter necessarium, & sempiternarum ...’

<sup>39</sup> Zabarella 1966a, *On the nature of logic*, 4-5: ‘... intellectus quidem dicitur principiorum cognitio, ex qua scientiam conclusionum adipiscimur, quare maiorem habet certitudinem et necessitatem, quam scientia, ut probat Aristoteles in 2. cap. 1. libri posteriorum Analyticorum, & in ultimo capite 2. libri. Sapientia vero est habitus praestantissimus, scientiam cum intellectu coniungens, & veluti scientia caput habens, ut in illo 6. lib. de Moribus docet Aristoteles.’

introduction to the discipline. This, however, is not necessarily what Aristotle means in *Posterior analytics* I.7 and I.10, in which he discusses the *praecognita*. At these points, Aristotle simply deals with what is necessary to be known before a scientific demonstration can be drawn up.<sup>40</sup> He does not mention disciplines at all. Still, the step is readily made from a single demonstration to the discipline as a whole.

The *praecognita* comprise the three elements of a scientific demonstration. Aristotle asserts that the *praecognita* consist of some preliminary knowledge – awareness – of the following three items: 1) the subject matter of a science, 2) the properties to be demonstrated of that subject matter, and 3) the principles or axioms of the science.<sup>41</sup> Some acquaintance with these three items is required for having scientific knowledge.

Zabarella elaborates on these three items in a separate treatise, the *Book on the three praecognita* (*Liber de tribus praecognitis*). He starts with Aristotle's remarks in *Posterior analytics* I.10, stating that Aristotle says that every demonstrative science (*demonstrativam scientiam*) is concerned with three things, which he renders as follows: the subject of which things are demonstrated, the properties (*affectiones*) that are demonstrated to be in (*in esse*) the subject, and finally the principles from which the properties are demonstrated to be in the subject.<sup>42</sup> Like Aristotle, Zabarella contends that something has to be known of these three items before scientific knowledge can be obtained. He says, in turn, that every doctrine or discipline (*doctrina ac disciplina*) starts from *praecognita*. Every science proceeds from known items – the principles and the subject matter – to the unknown. These unknown items are the properties (*accidentia*). The primary objective of every contemplative science is to obtain knowledge of properties through their causes. He underscores that this holds only for contemplative sciences. Let us now look at Zabarella's remarks on these three items separately.

It has to be known of the subject of a science what it is and that it is (*quid sit & quod sit*).<sup>43</sup> The former does not mean that one has to provide a definition of its essence

<sup>40</sup> Aristotle 1984, *Posterior analytics* I.7, 75a39-75b2, vol. 1, 122: ‘For there are three things in demonstrations: one, what is being demonstrated, the conclusion (this is what belongs to some genus in itself); one, the axioms (axioms are the things on which the demonstration depends); third, the underlying genus of which the demonstration makes clear the attributes and what is accidental to it in itself.’

<sup>41</sup> Aristotle 1984, *Posterior analytics* I.10, 76b12-16, vol. 1, 124: ‘For every demonstrative science has to do with three things: what it posits to be (these form the genus of what it considers the attributes that belong to it in itself); and what are called the common axioms, the primitives from which it demonstrates; and thirdly the attributes, of which it assumes what each signifies.’

<sup>42</sup> Zabarella 1966a, *Book on the three praecognita*, 497: ‘Omnem demonstrativam scientiam in tribus versari asseruit in lib. 1. Poster. Analyt. Aristot. in subjecto, de quo demonstrationes fiunt, in eius affectionibus, quae in ipso inesse demonstrantur, & in principiis, ex quibus illae demonstrantur; & horum quodlibet ante demonstrationem censuit esse aliqua ratione praecognoscendum.’

<sup>43</sup> Zabarella 1966a, *Book on the three praecognita*, 499.

(*essentialem definitionem*), which can still be unknown, but rather an explanation of the meaning of the word (*nominis significationem*) – a nominal definition.<sup>44</sup> Moreover, one has to know that the subject exists, as well as that it does not depend on our will – it has to fulfil the requirements for being an object of science.<sup>45</sup> But these conditions do not distinguish the subject of a science from the principles and properties. For that reason, Zabarella adds the following qualification: ‘... the subject is that which is the substrate of the whole science, and lies underneath everything which is considered, either properties or principles, as it were the basis and foundation of all things; therefore whatever is considered in it in so far as it is in another, that cannot be called the subject of that science in any manner’.<sup>46</sup> The subject has to have, moreover, its proper properties and principles (*affectiones proprias* and *propria principia*). The properties are unknown because they depend both on the subject in which they inhere and on the principles as their causes – they emanate from the principles. Consequently, also knowledge of them depends on knowledge of the subject and the principles.<sup>47</sup> Finally, the subject matter of a discipline (*genus*) also has to have species. This means that if, for instance, we are dealing with natural philosophy, which has the natural body as its subject matter, there are also species of the natural body, such as the elements or animate and inanimate bodies. These species of natural body are not principles but subjects of scientific demonstrations, of which properties can be demonstrated.

As for the properties, Zabarella explains that they should inhere (*inhaerens*) in the subject.<sup>48</sup> This is also the perspective from which they are considered in a particular scientific discipline. This does not mean that they cannot function as subjects in other disciplines. In other words, Zabarella’s point is that an item can be considered a property in one discipline, while serving as a subject in another discipline. For example, magnitudes and numbers are properties of bodies, but function as subjects in mathematics. Although this difference of perspective is allowed between disciplines, the same item cannot appear both as a subject and as a property in the same discipline. In addition, Zabarella insists that this relation between subject and property is not only a

<sup>44</sup> Zabarella 1966a, *Book on the three praecognita*, 500: ‘... significatio autem ad nomen, non ad rem pertinet.’

<sup>45</sup> Zabarella summarizes these conditions in the following sentence: ‘Subjectum igitur scientiae speculativae debet esse ens, & necessarium, & praecognitum tum quid nomen significet, tum etiam quod sit.’ (Zabarella 1966a, *Book on the three praecognita*, 500)

<sup>46</sup> Zabarella 1966a, *Book on the three praecognita*, 500: ‘... subjectum enim est illud, quod toti scientiae substratum est, & aliis omnibus, quae considerantur, sive affectionibus, sive principiis subjacet tanquam omnium basis, & fundamentum; ideo quicquid consideratur ea ratione quatenus in alio inest, id nullo pacto subjectum in ea scientia vocari potest.’

<sup>47</sup> Zabarella 1966a, *Book on the three praecognita*, 500: ‘... necesse est igitur ut subjectum & affectiones habeat, & principia, a quibus affectiones emanent.’

<sup>48</sup> Zabarella 1966a, *Book on the three praecognita*, 503: ‘Accidentium autem proprietatum ea est conditio, ut subjecto inhaereant, & ut tanquam ipsi inhaerentia considerentur ...’

purely subjective way of considering an item of knowledge, but also reflects the natural order. It is a necessary condition for a property that it actually inheres in the essence of the subject, and follows from it.<sup>49</sup> As for our preliminary knowledge of properties, like the subject matter, the meaning of the property's name should be known before formulating any scientific demonstration – again, a nominal definition (*nominalem accidentis definitionem*). This definition does not contain the cause of the property, so it does not explain its essence. Following Aristotle, Zabarella claims that explaining why some property belongs to a substance – by giving the proximate cause – equals defining the essence of that property. Science, then, consists precisely of definitions of the essences of properties; they are defined through their causes.

As for the principles through which properties are demonstrated from a subject, Zabarella starts by making a distinction between common and proper principles (*communia* and *propria principia*).<sup>50</sup> The latter are in turn divided into hypotheses and definitions (*suppositiones, ac definitiones*). Thus, Zabarella uses the Aristotelian division of the principles. Common principles do not appear in individual demonstrations, but are necessary conditions for demonstrating in general, such as the rules of inference. As such, they do not bring forth any science. Proper principles are either hypotheses, stating that a subject is, or definitions, declaring what it is.

Another division of principles is between principles of knowledge (*principia cognoscendi*) and principles of being (*essendi*).<sup>51</sup> The major difference between them is that the principles of being (*principia essendi*) are not propositions but things or rather concepts of things, whereas the principles of knowledge are always assertions. An example of a principle of knowledge is the self-evident truth ‘the whole is greater than its part’. Principles of being, by contrast, are simple concepts, which represent the true causes of the properties, such as the principles of matter and form in physics.<sup>52</sup> These are, in fact, properties of the natural body, although they cannot be demonstrated in physics to be so. Instead, they function as principles – concepts – through which it is proved that properties belong to the natural body, and from which they also actually flow. Contrary to the principles of cognition, which are known to be true when the

<sup>49</sup> Zabarella 1966a, *Book on the three praecognita*, 503-504: ‘Praeterea conditio affectionis est non solum ut tanquam inhaerens consideretur, sed etiam ut tanquam per se, & essentialiter inhaerens & naturam, atque essentiam propriam illius, subjecti consequens ...’

<sup>50</sup> Zabarella 1966a, *Book on the three praecognita*, 504.

<sup>51</sup> Zabarella 1966a, *Book on the three praecognita*, 505.

<sup>52</sup> Zabarella 1966a, *Book on the three praecognita*, 506: ‘Talia igitur principia simplicia sunt, non complexa, quia causae rerum sunt res, non sunt propositiones; & haec quadam ratione sunt etiam cognoscendi principia, quadam etiam ratione non sunt; & qua ratione sunt principia cognoscendi, ea ratione etiam praecognita dicuntur tum quid significant, tum quod sint: nam simpliciter quidem non sunt cognitionis principia: quoniam ab effectibus notioribus demonstrari possunt; simpliciter igitur non sunt praecognita quod sint, sed quaesita, ac demonstrata in eadem scientia.’

terms are known, these simple principles are not known *per se*, but can only be demonstrated *a posteriori*, through the effects.

In conclusion, Zabarella's main contribution is that he has given an authoritative interpretation and account of Aristotle's philosophy of science. He is usually not very original, but his presentation is always clear and therefore proved to be attractive. There are three original ideas. First, what stands out most is Zabarella's insistence on restricting scientific knowledge to natural or necessary things, which do not depend on the human will. It is the basis for separating theoretical from practical disciplines. Second, he points out that theoretical disciplines ought to consist of demonstrations of the reasoned fact alone, whereas the demonstration of the fact is only needed to find the principles. Third, his interpretation of the *praecognita* as introductory to a scientific discipline has been influential.<sup>53</sup> Let us now see whether a similar view of scientific knowledge was put forward at Leiden University by analyzing Burgersdijk's textbooks on this topic.

### 3.2.3 Leiden Aristotelianism: Franco Burgersdijk

A discussion of Burgersdijk's views on philosophy allows us to determine in what climate Geulinckx had to operate. Although Burgersdijk had passed away more than twenty years before Geulinckx' arrival, his presence loomed large in Leiden. His textbook on logic was widely used in Latin schools, which prepared students for university education, while also his textbooks on moral philosophy, physics and metaphysics were amply available.<sup>54</sup> Moreover, Burgersdijk's pupil and successor Adriaan Heereboord, Geulinckx' predecessor, used Burgersdijk's textbooks for his disputations – published in his *Meletemata* in ever expanding editions.<sup>55</sup> He also published a new edition of Burgersdijk's *Logic*, which he expanded with his own comments. In short, Burgersdijk provides the best access to the prevailing views on scientific knowledge in Leiden.

Before laying out Burgersdijk's view of scientific knowledge, it has to be determined what type of Aristotelianism we meet in his works. His philosophy has been characterised as 'open humanistic Aristotelianism', which is a rather vague expression.<sup>56</sup> To be more specific, Burgersdijk's philosophy is closely connected to Jesuit philosophy, as is apparent from the many references to the Conimbricenses, Suarez and Toletus in

<sup>53</sup> See on this, Hotson 2007.

<sup>54</sup> According to Ruestow 1973, Ch. 2, Burgersdijk's textbooks were standard study material at Leiden University. Especially his textbook on logic, the *Institutes of logic*, was widely spread. It was officially prescribed for Latin schools by the States of Holland in the 'Hollandse Schoolordre' (1625). Moreover, it was even in use in Cambridge, where eight editions were published. Cf. Van Reyen 1993, 9. See about Burgersdijk, Dibon 1954, 91-106; Wundt 1939, 87-90; Bos and Krop 1993; Kuiper 1958.

<sup>55</sup> Cf. Dibon 1954, 117-118.

<sup>56</sup> McGahagan 1976, 221.

his textbooks. Besides, he also refers frequently to Zabarella and Keckermann.<sup>57</sup> What is more, Keckermann's logic has even been the main model for his own logic, as he explains in the preface. Like Keckermann, the content of all Burgersdijk's textbooks is basically Aristotelian. Often, he refers directly to Aristotle's works.

At the outset of his textbooks, Burgersdijk discusses philosophy in general, the relation between the disciplines, and the subject matter and goal of the discipline studied. In his *Idea of moral philosophy*, he defines philosophy as 'the perfection of our soul, in so far as it can be obtained by a natural endeavour of the mind'.<sup>58</sup> In the *Collegium physicum*, he defines it as wisdom (*sapientia*), which is 'philosophy, knowledge of things gathered from principles which are self-evidently known'.<sup>59</sup> Because the human mind does not only have a cognitive faculty but also a faculty of action, philosophy is divided into theoretical and practical disciplines.<sup>60</sup> The former is concerned with natural, divine, necessary and eternal things, and has a contemplative goal, namely, finding truth, that is, knowing the things as they are (*res ut sunt*) – which is wisdom.<sup>61</sup> Practical philosophy, to the contrary, deals with contingent matters, which are dependent on the human will, and has a pragmatic purpose, namely, directing human actions. Furthermore, whereas theoretical philosophy has knowledge as its

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<sup>57</sup> See for Keckermann, Chapter 1.1.1.

<sup>58</sup> Burgersdijk 1654, *Idea of moral philosophy*, Ch. 1, §1, 1: 'Philosophia est animi nostri perfectio, quanta quidem naturali mentis nostrae conatu ea potest obtineri.' Cf. Burgersdijk 1655, *Idea of natural philosophy* I, Ch. 1, §2, 1: 'Philosophia definiri potest, rerum divinarum & humanarum cognitio, quantam homo naturali intellectus lumine consequi potest.'

<sup>59</sup> Burgersdijk 1650, *Collegium physicum*, Disp. 1, Th. 1, 1: '... Philosophia, rerum ex principiis per se notis collecta cognitio ...'

<sup>60</sup> Burgersdijk 1654, *Idea of moral philosophy*, Ch. 1, §1, 1-2: 'Itaque, cum animus noster, non solum cognoscendi, sed etiam appetendi, & agendi facultate sit instructur; necesse fuit Philosophiam non in sola veritatis speculatione, sed etiam in vitae & humanarum actionum directione consistere.', and §2, 2: 'Quarum illa res sempiternas, & a naturalibus, ac necessariis causis fluentes, solius veritatis desiderio contemplatur [...] haec occupata est iis, quae nostro arbitrio subjecta sunt; quorum cognitionem non propter se amplectimur, sed ut secundum eam vitam nostram & actiones componamus, & mores formemus. [...] in intellectu speculativo cuius munus est res absolute simpliciterque cognoscere, ut res sunt, hoc est, quatenus habent essentiam, quae definitione potest explicari; bonitate aut malitia nullo modo considerata. Philosophia practica est in intellectu pratico: cuius munus est res cognoscere, ut bonae vel malae sunt ...' Cf. Burgersdijk 1655, *Idea of natural philosophy* I, Ch. 1, §4, 2: 'Philosophia speculativa residet in intellectu speculativo, versaturque circa res *divinas*, hoc est, necessarias, idque solius veritatis gratia; Philosophia practica haeret in intellectu pratico, versaturque circa res *humanas*, hoc est, contingentes, & nostro arbitrio subjectas, idque non nudae cognitionis, sed praeceos cognitionem sequuturae gratia. *Perer: lib 1. cap. 3.*'

<sup>61</sup> See also Burgersdijk 1650, *Collegium physicum*, Disp. 1, Th. 1, 1.

objective, the goal of practical philosophy is human happiness.<sup>62</sup> It may be concluded that Burgersdijk concurs with Zabarella in his basic classification of philosophy. Like him, he also distinguishes practical philosophy from the productive disciplines, the arts (*artes*), by calling them *prudentiae*.<sup>63</sup> Likewise, Burgersdijk holds on to the division in three theoretical *scientiae*, physics, mathematics, and metaphysics.<sup>64</sup> The *prudentiae* are also divided into three disciplines, a general part called ethics and a special part consisting of politics and economics.<sup>65</sup> In short, Burgersdijk's division of philosophical disciplines is Aristotelian, and follows, more specifically, Zabarella's emphasis on contingent and necessary things.

As to scientific knowledge, it is to be noticed that the standard Aristotelian account of scientific knowledge is present in Burgersdijk's works. Burgersdijk explains what scientific knowledge is by contrasting it with the other habits of knowledge. Like other Aristotelians, he distinguishes between the three theoretical intellectual faculties of science (*scientia*), intelligence (*intelligentia*) and wisdom (*sapientia*). Intelligence (*intelligentia*) is the faculty by which the first principles are known.<sup>66</sup> Science flows from intelligence, or rather from knowledge of the principles of things, which concerns both the essences of things, expressed in a definition, and the first principles, by which Burgersdijk means axioms.<sup>67</sup> Wisdom is science (*scientia*) of the most excellent things, joined with intelligence. All these definitions are simply quotations from Aristotle's *Nicomachean ethics* VI, to which Burgersdijk also refers.

What concerns us most here is scientific knowledge (*scientia*). Burgersdijk deals more extensively with scientific knowledge in a separate chapter of his logic on 'the demonstration' (*De demonstratione*).<sup>68</sup> He defines demonstration as 'a syllogism

<sup>62</sup> Burgersdijk 1654, *Idea of moral philosophy*, Ch. 1, §13, 5: 'Finis Philosophiae moralis est felicitas humana, hoc est, ejusmodi status, quo perfectior nullus in hominem cadit, secundum praescriptum rectae naturalisque rationis in terris, inter homines, viventem.'

<sup>63</sup> Burgersdijk 1654, *Idea of moral philosophy*, Ch. 1, §8, 4: 'Philosophia practica non est ars, sed prudentia ...'

<sup>64</sup> Burgersdijk 1654, *Idea of natural philosophy* I, Ch. 1, §6, 2: 'Philosophia speculativa non est una scientia, sed compages trium scientiarum specie differentium. Conimb. prooem. Phys. qu. 1. Perer. lib. 1. cap. 8. Suar. tom. 1. disp 1. sect. 2.'

<sup>65</sup> Burgersdijk 1654, *Idea of moral philosophy*, Ch. 1, §21, 8: 'Philosophia moralis duae sunt partes: altera communis, quae Ethica strictiore quadam significatione nominatur; altera specialis, quae in Oeconomicam, & Politicam subdividitur.' Cf. Burgersdijk 1655, *Idea of natural philosophy* I, Ch. 1, §12, 3-4.

<sup>66</sup> Burgersdijk 1666, *Logic* I, Ch. 1, Th. 4, 2: '... intelligentia primorum principiorum esse dicitur, quae inductione innotescunt, & ex quorum cognitione scientia fluit [...] sapientia definitur scientia rerum praestantissimarum, cum intelligentia conjuncta ...'

<sup>67</sup> See on this, Burgersdijk 1666, *Logic* II, Ch. 20, 179.

<sup>68</sup> Burgersdijk 1666, *Logic* II, Ch. 20, 178-181. Cf. Burgersdijk 1650, *Collegium physicum*, Disp. 1, Th. 3, 2: '... scientia stricte sumitur & proprie pro habitu apodicto, sive cognitione rei necessariae

producing science', which is Aristotle's definition of scientific knowledge in *Posterior analytics* I.2, which we have quoted in Section 3.1.1.<sup>69</sup> Thus, all demonstrations are syllogisms – the syllogism is a genus to which the types of demonstration belong as species. Not all syllogisms amount to a demonstration, however, because there are also syllogisms that yield merely probable knowledge. The distinguishing mark of a genuine demonstration is precisely that it concerns scientific knowledge (*scientia*).<sup>70</sup>

Like Zabarella, Burgersdijk explains that the term 'science' (*scientia*) can be taken in several meanings, the broadest of which is true knowledge in general (*pro qualibet cognitione, sive assensu vero*). For a scientific demonstration, science has to be taken in its strictest meaning, in which case science is 'the assent to propositions that are known by cause or effect'.<sup>71</sup> Thus, scientific knowledge concerns always assertions, namely, conclusions of scientific syllogisms. Moreover, science is 'firm and infallible knowledge' (*cognitio firma & infallibilis*).<sup>72</sup> It shares this feature with sensory cognition, with the difference that sense perception concerns singulars, whereas science deals only with universal propositions. In addition, sense perception is intuitive, while scientific knowledge is discursive. This is also the feature by which science is marked off from intelligence (*intelligentia*), which is firm and infallible knowledge, too. Intelligence concerns propositions that are known intuitively, without a demonstration, such as the axiom 'the whole is more than its part'. In contrast to *intelligentia*, *scientia* is discursive knowledge (*cognitio dianoetica*).<sup>73</sup> Finally, science concerns only necessary things or proper properties (*accidentia propria*), which are immutable and have a cause.<sup>74</sup> In sum,

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per suas causas ...', for which he refers to Aristotle's *Posterior analytics* I.2 and *Nicomachean ethics* VI.2.

<sup>69</sup> Burgersdijk 1666, *Logic* II, Ch. 20, Th. 1, 178: '... syllogismus scientiam pariens.'

<sup>70</sup> Burgersdijk 1666, *Logic* II, Ch. 20, Th. 1, 178.

<sup>71</sup> Burgersdijk 1666, *Logic* II, Ch. 20, Th. 1, 178 : '... strictissime, pro assensu propositionum, quae per causam aut effectum cognoscuntur.'

<sup>72</sup> Burgersdijk 1666, *Logic* II, Ch. 20, Th. 1, 178: 'Cognitio enim firma & infallibilis, vel a sensu est, veluti cum cognoscimus meridie lucere solem; vel ab intellectu, veluti cum agitur de propositionibus universalibus, ad quarum veritatem sensus non pertingit, ut qui in singularibus subsistit. Cognitio propositionum universalium vel sine syllogismo generatur, vel per syllogismum. Sine syllogismo generatur cognitio, cum propositiones sua luce conspicuas, pleno mentis assensu amplectimur, sine ulla probatione. Sic cognoscimus, *Totum est majus sua parte, Deum est colendum, & id genus caetera.* Ejusmodi cognitionem appellat Aristoteles [...] *intelligentiam*, eamque distinguit a scientia, quam ait esse [...] cum ratiocinatione conjunctam. Cum autem ratio ex variis locis peti possit, ea solum cognitio *scientiae* nomine hic venit, quae dignitur a cause, aut ab effectu. Atque haec est strictissima scientiae acceptio, & huic loco propria, ut ex sequentibus liquebit.'

<sup>73</sup> See on this, Burgersdijk 1666, *Logic* II, Ch. 20, 179.

<sup>74</sup> Burgersdijk 1666, *Logic* II, Ch. 22, Th. 3, 183: 'Itaque neque propositiones immediatae, neque fortuita demonstrari possunt; sed tantum accidentia propria. [...] Fortuita quoque demonstrari

science consists of an assertion in which a property is affirmed of a subject, an assertion that has absolute certainty by being proved in the proper way. It is, in other words, a conclusion from a scientific demonstration.

In short, Burgersdijk's notion of scientific knowledge is simply identical with that of Aristotle. His textbooks are also larded with quotations from Aristotle. Like Zabarella, he emphasizes the opposition of contingent and necessary things as the basis for distinguishing objects of scientific knowledge from objects of other types of knowledge.

That Burgersdijk is a traditional Aristotelian as regards scientific knowledge is also apparent from his treatment of its other aspects: that is, the two types of proof and his explanation of the three elements of a demonstration – subject, principle, and property. He adheres to the traditional position on the two types of demonstration, with a preference for the *demonstratio propter quid*.<sup>75</sup> Unlike the demonstration of the fact, the *demonstratio propter quid* does not only prove that a thing is or is not, but also provides the cause of why the thing, or rather a unique property, is or is not.<sup>76</sup> The major difference between these types of demonstration is that through the *demonstratio propter quid* a thing – a unique property – is known through its proximate cause, whereas the *demonstratio quia* proves either from an effect or from a remote cause (*causa remota*).<sup>77</sup> Also Burgersdijk thinks that the demonstration of the reasoned fact is better than the demonstration of the fact.<sup>78</sup> The *demonstratio propter quid* belongs more properly to science than the other type of demonstration, even though the *demonstratio quia* certainly yields certain and evident knowledge.

Similarly, Burgersdijk emphasizes that every demonstration consists of three elements: the subject, property (*affectio*), and the cause or principle through which it is demonstrated that the property is in the subject (*inesse subjecto*).<sup>79</sup> Because his textbooks

nequeunt, quia non pendent a certa, atque immutabili causa; unde neque certa lege contingunt. Sola accidentia demonstrari possunt, & quidem propria.'

<sup>75</sup> See Burgersdijk 1666, *Logic* II, Ch. 20, Th. 2, 178.

<sup>76</sup> Burgersdijk 1666, *Logic* II, Ch. 20, Th. 3, 178: 'Demonstratio to dioti est, quae non solium probat rem esse, aut non esse; sed etiam reddit causam, cur res sit, aut non sit.'

<sup>77</sup> Burgersdijk 1666, *Logic* II, Ch. 24, Th. 1-2, 191: 'Demonstratio to oti alia est ab effectu, alia a causa remota. II. Quarum illa colligit causam ex effectu sensibili, haec colligit effectum ex causa remota.'

<sup>78</sup> See on this, Burgersdijk 1666, *Logic* II, Ch. 20, 179-180.

<sup>79</sup> Burgersdijk 1666, *Logic* II, Ch. 20, Th. 1, 181: 'Omnis demonstratio dioti, omnisque demonstrativa scientia, versatur circa tria. Haec tria sunt, subjectum, affectio, & causa, qua demonstratur affectionem inesse subjecto.' Similarly, Heereboord argues that physics is a science, because 'Scientia proprie dicta est, quae dignitur demonstratione [...] estque cognitio rei necessariae per causam proximam: aliquin quaelibet cognitio cujusque rei, quoconque modo accepta, scientia dici potest, sed improprie.' (Heereboord 1680, vol. 2, *Natural philosophy*, Ch. 1, Th. 1, 805). He explains, in turn, that in physics 'proper properties' (*proprias affectiones*) are demonstrated from the subject matter of physics – the *corpora naturalia* – through their proximate causes. These proximate causes are the principles of matter and form. The properties of

are ordered in such a way that these items are clearly distinguished, it can be readily seen how this plays out in practice. For example, Burgersdijk asserts that the subject of physics is the natural body, from which several properties are demonstrated through principles.<sup>80</sup> For example, the principles of matter, form, and privation, serve to prove properties of the natural body. Likewise, metaphysics is a science because it has its own subject matter, properties, and principles.<sup>81</sup> Its subject matter is real being (*ens reale*), of which properties (*affectiones*) are deduced through principles or causes. In other words, metaphysics explains how the properties of being are related to the nature of being by means of their true principles or causes. For example, unity (*unitas*) is proved to be a property of being (*ens*) by the principle of essence (*essentia*) as its cause. Apart from these three elements, a scientific discipline can also be divided into the species of the subject.<sup>82</sup> Also, the unique property (*proprium*) to be proved of the subject is traditionally defined as ‘what does not declare what the thing is, and yet is in it alone, and is reciprocal with it’.<sup>83</sup> Properties follow or emanate from the essence of a thing.<sup>84</sup>

Finally, principles are either propositions or simple terms, both of which are known intuitively, and need not and should not be demonstrated in the discipline involved, although they may be proved elsewhere. For instance, principles common to several disciplines are demonstrated in metaphysics.<sup>85</sup> Burgersdijk distinguishes proper from

the natural body, proved by means of these principles, are, for example, quantity, quality, place, motion, and time. Also Geulincx' colleague David Stuart defines philosophy as ‘the cognition of a thing by its cause’ (*cognitio Rei per causam*) (Stuart 1661a, *Disp. On philosophy in general* I, B3v, pt. 45). It is also true knowledge because it is concerned with the things as they are in themselves (*Cognitio Vera, quia rei ut in se est*), certain because it is evident (*Certa, quia Evidens*), discursive because it is knowledge through causes, and also perfect because of these features (Stuart 1661b, D2r, Th. 8). The objects of scientific knowledge have to be both necessary and universal (Stuart 1661b, C4v-D1r). The major difference between the philosopher and the common people is that the former know the things as they are in themselves (*ut sunt*), whereas the latter know them as they appear to us (*ut apparent*). The former involves that the unique properties are known through their essence and causes/principles (Stuart 1661b, Th. 7, D1r). He explicitly precludes knowledge of principles from scientific knowledge.

<sup>80</sup> See Burgersdijk 1650, *Collegium physicum*, Disp. 1, Th. 8, 6: ‘Scientiam corporum naturalium cum dico, intelligo perfectam cognitionem omnium proprietatum, quae corporibus naturalibus per se convenient. Harum cognitio tum demum perfecta est, cum causa earum atque principia, usque ad elementa, perspecta sunt. 1. Phys. cap. 1.’

<sup>81</sup> See Burgersdijk 1657, *Metaphysical institutes* I, Ch. 1, §12, 8.

<sup>82</sup> See Burgersdijk 1650, *Collegium physicum*, Disp. 1, Th. 9, 6-7.

<sup>83</sup> See on the *proprium*, Burgersdijk 1666, *Logic* I, Ch. 13, 36-38, especially 36: ‘*Proprium est, quod non declarat quid res sit, & tamen soli inest, & cum ea reciprocantur.*’

<sup>84</sup> Burgersdijk 1666, *Logic* I, Ch. 13, 37: ‘... non continetur in essentia rei, sed essentiam illius sequitur.’

<sup>85</sup> Burgersdijk 1666, *Logic* II, Ch. 23, 190: ‘Praeterea notandum est, axiomata fere esse universaliora thesibus, & pluribus scientiis communa; cum theses propriae sint unicuique

common principles. The former are only used in a specific discipline with the same subject matter and mode of consideration of that subject, whereas the latter are used in several disciplines. Another way of distinguishing principles is by dividing them into axioms and theses. He defines the axiom as a ‘principle whose truth nobody can be ignorant of when the meaning of the words is known’ – axioms are self-evident.<sup>86</sup> By contrast, the thesis is an assertion the content of which is known either by sense perception or otherwise. Theses are either definitions of entities or hypotheses declaring the existence of some entity.<sup>87</sup> An example of a definition is the point as ‘that which has no parts’, and of a hypothesis the assertion that ‘a point exists’. Unlike axioms, which are used in several disciplines, theses belong to one discipline alone. Geulinckx considers these three types of principle to be all assertions. Apart from them, he also recognizes simple principles or concepts, such as essence and existence in metaphysics, and matter, form and privation in physics.

All this is simply in accord with the views of Aristotle and Zabarella. There is, however, one point, which will prove to be crucial for the remainder of this study, that is original with Burgersdijk, at least in comparison to Zabarella. Burgersdijk distinguishes between a property that flows from the essence of the subject and a property that follows from an external cause.<sup>88</sup> That man can laugh clearly emanates from the essence of man, but that the moon can eclipse, albeit being a unique property of the moon, depends on external causes. The moon can eclipse only if the earth stands between the moon and the sun – eclipsing will become necessary given the fact that the earth stands between the moon and the sun.<sup>89</sup> Thus, given the constellation of our solar system, being able to eclipse is a necessary property of the moon. As a result, a property need not be absolute, but can also be relative to some other thing. These relative properties cannot be said to inhere in the subject in the ontological way in which Zabarella explains that inherence. The major difference with properties that flow from the essence is that the latter can

scientiae: ideoque axiomatum considerationem ad Metaphysicam spectare, & in solis demonstrationibus Metaphysicis adhiberi posse, ut partes; caeterarum scientiarum demonstrationibus fulciendis inservire, ut instrumenta quaedam externa ...’

<sup>86</sup> Burgersdijk 1666, *Logic* II, Th. 10, Ch. 23, 189: ‘*Axioma est principium, cuius veritas, cognita significatione vocabulorum, nemine potest ignorari.*’

<sup>87</sup> Burgersdijk 1666, *Logic* II, Th. 11, Ch. 23, 189: ‘*Thesis est principium, cuius veritas non ex sola significacione vocabulorum cognita, sed ex sensuum iudicio, aut qualiscunque declaratione innotescit.*’

<sup>88</sup> Burgersdijk 1666, *Logic* I, Ch. 13, Th. 2, 37: ‘*Propria vel manant ab essentia subjecti, vel a causa externa.*’

<sup>89</sup> Burgersdijk 1666, *Logic* I, Ch. 13, 38: ‘*Sic quamvis luna non semper eclipsin patiatur; posita tamen inter lunam & solem terra, tam necessarium est lunam eclipsin pati, quam necessarium est corpus esse quantum ...*’ This provides the reason why this property is not an accident, which Burgersdijk defines as a property that can be present or absent (*quod adest & abest, sine subjecti interitu*), and can thus be separated from the subject.

never be separated from the subject in thought, while relative properties can.<sup>90</sup> Unlike the relative properties, the denial that these properties pertain to the subject results in a contradiction.

### 3.3 Descartes on scientific knowledge

#### 3.3.1 Introduction

Our discussion of Descartes' concept of scientific knowledge can be relatively short because he says little about it. Very roughly, one can say that although Descartes' notion of *scientia* shows some resemblance with the accounts given by Aristotelian philosophers, his remarks on the traditional components of science are generally so vague that it is difficult to be precise about his notion of scientific knowledge. It is therefore needed to study Descartes' response to the traditional elements of scientific knowledge – subject, principle and property – more thoroughly. This is done by first discussing the *Rules* and then looking at Descartes' remarks in his preface to the French edition of the *Principles*, as well as some scattered remarks in the correspondence.

#### 3.3.2 Descartes' early account of scientific knowledge in the *Rules*

Most of Descartes' remarks about *scientia* can be found in the *Rules*. In Rule 2, Descartes defines scientific knowledge as 'certain and evident cognition'.<sup>91</sup> This implies that merely probable knowledge has to be excluded from science. Instead, only that is to be believed by seekers of science 'what is perfectly known and incapable of being doubted'.<sup>92</sup> For that reason, Descartes claims that the only disciplines of his times that are actually sciences are arithmetic and geometry, as only they have reached the status of indubitable knowledge – only they are completely free from falsity and uncertainty.<sup>93</sup> From this example, it is unequivocally clear that the condition of indubitableness has to be taken in a very strict sense here. As a result, Descartes' notion of science does not differ much from the Aristotelian account with respect to the way in which the mind assents to scientific assertions. Aristotelians adhere to the same conditions – evidence and certainty – for scientific knowledge. However, we still have to see whether the evidence and certainty result from a deduction from intuitively known first principles.

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<sup>90</sup> Burgersdijk 1666, *Logic* I, Ch. 13, Th. 3, 37: 'Propria, quae manant ab essentia subjecti, ita necessario subjecto suo insunt, ut ne cogitatione quidem possint ab illo separari.'

<sup>91</sup> Descartes, *Rules* II, AT X 362: 'Omnis scientia est cognitio certa et evidens ...', CSM I 10.

<sup>92</sup> Descartes, *Rules* II, AT X 362: '... nec nisi perfecte cognitis, et de quibus dubitari non potest, statuimus esse credendum.', CSM I 10.

<sup>93</sup> Descartes, *Rules* II, AT X 363, CSM I 11.

Unlike Aristotelians, Descartes recognizes only two ways of obtaining knowledge: experience and deduction.<sup>94</sup> He argues that the experience of things is often deceptive and thus does not amount to scientific knowledge – it does not meet the requirements of certainty and evidence. In contrast to experience, he claims that deduction – the ‘pure inference (*illationem*) of one thing from another’ – can only be performed correctly by the intellect.<sup>95</sup> Deduction gives certainty to assertions that are not self-evident. Mathematics is, again, the primary example for this, as it both consists of deductions and is free from experience.

All this concerns the subjective side of scientific knowledge, now it needs to be considered what requirements the *objects* of science have to meet. In this regard, it is significant that Descartes claims that the fact that mathematics consists only of pure inferences is not the sole reason for its success. Indeed, the major difference between mathematics and other disciplines is the simplicity of the objects of mathematics. This feature allows us to correctly carry out the deductions in mathematics. We can ‘see’ clearly how the simple elements of mathematics are related to one another. This observation gives a suggestion of how we should proceed in other sciences as well. The only way to obtain scientific knowledge is to first find simple concepts and assertions and then to work deductively from simple assertions towards more complex notions. The point is that we can only have scientific knowledge of things we can ‘clearly and evidently intuit or deduce with certainty’.<sup>96</sup> Descartes concludes from this that ‘in seeking the right path of truth we ought to concern ourselves only with objects which admit of as much certainty as the demonstrations of arithmetic and geometry’.<sup>97</sup> In Rule 3, he continues this theme by stating that the only objects to be studied are those that can be either intuited clearly and distinctly or deduced with certainty.

It is to be emphasized that this is a completely different approach for determining what the objects of science are than the way in which Aristotelians determine them, as well as the principles and properties, of scientific disciplines. Descartes does not start by making a distinction between necessary and contingent or universal and particular

<sup>94</sup> Descartes, *Rules* II, AT X 364-365: ‘...nos duplici via ad cognitionem rerum devenire, per experientiam scilicet, vel deductionem.’, CSM I 12. Cf. Descartes, *Rules* XII, AT X 422-423, CSM I 46-47.

<sup>95</sup> Descartes, *Rules* II, AT X 365: ‘Notandum insuper, experientias rerum saepe esse fallaces, deductionem vero, sive illationem puram unius ab altero, posse quidem omitti, si non videatur, sed nunquam male fieri ab intellectu vel minimum rationali.’, CSM I 12

<sup>96</sup> Descartes, *Rules* III, AT X 366: ‘Circa objecta proposita, non quid alii senserint, vel quid ipsi suspicemur, sed quid clare et evidenter possimus intueri, vel certo deducere, quaerendum est; non aliter enim scientia acquiritur.’, CSM I 13.

<sup>97</sup> Descartes, *Rules* II, AT X 366: ‘Jam vero ex his omnibus est concludendum, non quidem solas Arithmeticam et Geometriam esse addiscendas, sed tantummodo rectum veritatis iter querentes circa nullum objectum debere occupari, de quo non possint habere certitudinem Arithmeticis et Geometricis demonstrationibus aequalem.’, CSM I 12-13.

things. He does not start with external objects at all, but rather takes a completely different starting-point, namely, human knowledge. Only what can be clearly and distinctly cognized should be allowed as an object of science.

As a result, only those acts of the intellect that bring about clear and distinct cognition are allowed to play a part in obtaining scientific knowledge. Those acts are intuition and deduction. The mental capacity of intuition is used for conceiving both the simple elements of knowledge – single assertions such as ‘a triangle is bounded by just three lines’ – and the relations between them.<sup>98</sup> The former are self-evident, meaning that they do not need to be or can be deduced from principles, but are rather principles themselves. Descartes defines in turn deduction as ‘the inference of something as following necessarily from some other assertions which are known with certainty’.<sup>99</sup> He explains that some things are evidently known only if they are inferred ‘from true and known principles through a continuous and uninterrupted movement of thought in which each individual proposition is clearly intuited’.<sup>100</sup> These are truths that are not immediately inferred from first and self-evident principles, as Descartes reckons immediate inferences to be products of intuition.<sup>101</sup> Although even the individual inferences that lead to a remote conclusion are also known by intuition, the remote conclusion is not intuited but deduced from the principle because we cannot proceed immediately from the principle to the deduction.<sup>102</sup> Descartes asserts that deduction differs from intuition because there is a movement of thought, the proceeding from one assertion to the other. His main point is that deduction can yield scientific knowledge if the assertion cannot be immediately inferred from first and self-evident principles, and thus give certainty to our knowledge.<sup>103</sup> The major requirement for keeping this certainty is that the deduction is nowhere interrupted – in other words, it has to be continuous: no step may be omitted, and every little step needs to be intuited.<sup>104</sup> In short, a deduction consists of a chain of successive intuitions, and that guarantees the certainty of the conclusion. Thus, the certainty of a remote conclusion rests on self-

<sup>98</sup> Descartes, *Rules* III, AT X 369: ‘At vero haec intuitus evidentia et certitudo, non ad solas enuntiationes, sed etiam ad quoslibet discursus requiritur.’, CSM II 14-15.

<sup>99</sup> Descartes, *Rules* III, AT X 369: ‘...illud omne quod ex quibusdam aliis certo cognitis necessario concluditur.’, CSM I 15.

<sup>100</sup> Descartes, *Rules* III, AT X 369: ‘Sed hoc ita faciendum fuit, quia plurimae res certo sciuntur, quamvis non ipsae sint evidentes, modo tantum a veris cognitisque principiis deducantur per continuum et nullibi interruptum cogitationis motum singula perspicue intuentis ...’, CSM I 15.

<sup>101</sup> Descartes, *Rules* VII, AT X 387, CSM I 25. In Rule 3, however, Descartes says that assertions that are immediately inferred from principles ‘can be said to be known in one respect through intuition, and in another respect through deduction.’ (AT X 370, CSM I 15)

<sup>102</sup> See Descartes, *Rules* VII, AT X 389, CSM I 26. Descartes’ point is that every step in an argument should be clearly and distinctly ‘seen’ to be evident. This is only possible for small steps.

<sup>103</sup> See Descartes, *Rules* VII, AT X 387, CSM I 25.

<sup>104</sup> See Descartes, *Rules* VII, AT X 388, CSM I 25.

evident principles. And this conclusion is also evident because it is intuited from the assertion directly preceding it.

We may now conclude that assertions that are not self-evident indeed get their evidence and certainty from a deduction. What is not certain, however, is whether Descartes makes a basic distinction between the kind of knowledge by which we know the principles on the one hand, and the type of knowledge acquired through inferences, that is, conclusions, from these principles on the other hand, as in Aristotle's distinction of *intelligentia* and *scientia*. To be sure, he distinguishes intuition from deduction. But the problem is that this is not a clear-cut distinction, sharply divorcing one from the other.<sup>105</sup> To the contrary, a deduction relies completely on intuitions. Moreover, Descartes asserts explicitly that intuition does not only concern assertions (*enuntiationes*) but also inferences (*discursus*).<sup>106</sup> This can only be meant as a rejection of the Aristotelian distinction between *intelligentia* and *scientia*. Descartes simply does not allow any division of cognitive faculties in the mind, as in the Aristotelian theory.

Still, there are some questions left on the table. Is knowledge of the principles scientific knowledge (*scientia*) or intelligence (*intelligentia*)? Thus far, we have not seen that Descartes distinguishes between them. *Scientia* is simply defined as certain and evident cognition, which holds both for self-evident assertions – principles – and assertions that get their certainty and evidence through a proper deduction. To answer this question conclusively, it is necessary to examine what Descartes understands by principle.

In Rule 6, Descartes explains that the method to be used in the sciences is to start from the 'most simple in each series of things in which we have directly deduced some truths from others' and then to 'observe how all the rest are more, or less, or equally removed from the simplest'.<sup>107</sup> This means that the most important for science is order and arrangement of concepts. More specifically, Descartes thinks that knowledge is either of a simple nature or of combinations of them.<sup>108</sup> Descartes asserts that there are only few 'pure and simple notions', known by intuition.<sup>109</sup> At this point, he does not separate simple concepts from simple assertions. Rather, he immediately goes on to

<sup>105</sup> See for this problem, Beck 1952; Joachim 1957, 27–61; Descartes 1977, 217, 220–223.

<sup>106</sup> Descartes, *Rules* III, AT X 369: 'At vero haec intuitus evidentia et certitudo, non ad solas enuntiationes, sed etiam ad quoslibet discursus requiritur.', CSM II 14–15.

<sup>107</sup> Descartes, *Rules* VI, AT X 381: 'Ad res simplicissimas ab involutis distinguendas et ordine persequendas, oportet in unaquaque rerum serie, in qua aliquot veritates unas ex aliis directe deduximus, observare quid sit maxime simplex, et quomodo ab hoc caetera omnia magis, vel minus, vel aequaliter removeantur.', CSM I 21

<sup>108</sup> Descartes, *Rules* VI, AT X 383, CSM I 22; Descartes, *Rules* 12, AT X 422, CSM I 46.

<sup>109</sup> Descartes, *Rules* VI, AT X 383: '... paucas esse duntaxat naturas puras et simplices, quas primo et per se, non dependenter ab aliis ulla, sed vel in ipsis experimentis, vel lumine quodam in nobis insito, licet intueri ...', CSM I 22.

speak of the most simple propositions (*maxime simplici propositione*), as well as conclusions that are more or less far removed from these propositions.

Now we have to turn to Rule 12 in which Descartes further explains the differences between simple and composite natures. It becomes clear from his description of the simple natures that they are in fact principles, and also that he does not think that the major difference between simple and composite natures accords with the distinction between simple concepts and assertions. He defines simple natures as ‘things which we know so clearly and distinctly that they cannot be divided by the mind into others which are more distinctly known’.<sup>110</sup> The central point is then that those concepts cannot be analyzed by our intellect into even simpler notions. From the examples Descartes offers of these simple natures, it is clear that he does not think primarily of assertions, but of terms or concepts instead. He mentions shape, extension and motion as examples of simple natures. Thereafter, he divides simple natures into three classes: purely material natures (such as shape, extension, and motion), purely mental natures (such as thought, doubt, and will), and natures that are common to both domains (such as existence, unity, and duration).<sup>111</sup> To the class of common notions belong also the rules of inference, which are obviously assertions. Thus, although simple natures appear to be mostly simple terms or concepts, Descartes probably is not interested in the difference between terms and assertions. That this is not his focus as to simple and composite natures is also clear from the fact that he often speaks of simple propositions. Furthermore, it is clear that simple notions are principles. They are the primary objects of intuition, and therefore also the primary objects of all knowledge. Moreover, all simple natures are self-evident.<sup>112</sup> In short, simple notions are self-evident, intuitively known principles of knowledge, which can be either concepts or assertions.<sup>113</sup>

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<sup>110</sup> Descartes, *Rules XII*, AT X 418: ‘... illas tantum simplices vocamus, quarum cognitio tam perspicua est et distincta, ut in plures magis distincte cognitas mente dividi non possint ...’, CSM I 44.

<sup>111</sup> See Descartes, *Rules XII*, AT X 419, CSM I 44-45; Cf. Descartes, *Rules 8*, AT X 399, CSM I 32.

<sup>112</sup> Descartes, *Rules XII*, AT X 420, CSM I 45.

<sup>113</sup> The theory of the simple notions occurs also in Descartes’ later writings under the term primitive notion. The term primary or primitive notion occurs late in Descartes’ writings. They are discussed for the first time in the Second Replies (see AT VII 135-136, 140, 156-157, CSM II 97, 100, 111.). His thoughts on this topic are the most clearly expressed in a letter to Elisabeth of 1643 (see *Correspondence*, to Elisabeth, 21 May 1643, AT III 665-668, CSMK 218-219; see also, *Correspondence*, to Elisabeth, 28 June 1643, AT III 691-692, CSMK 226-227). In this letter, Descartes distinguishes four types of primitive notion. The first type is the most general, which applies to anything whatsoever that can be conceived. Examples of these are the concepts of being, number and duration – in other words, general ontological notions, not referring to any specific kind of being. The second and third type of primitive notion are applicable to just the mind or the body, respectively. Lastly, the fourth type of primitive notion concerns notions that relate to the unity of mind and body, such as sensory cognitions and emotions. All knowledge consists in correctly distinguishing between these notions, according to Descartes. It is not clear whether

Composite natures are composed of simple natures. They are either known by experience or composed by our intellect.<sup>114</sup> This composition may come about by impulse, conjecture, or deduction (*deductionem*). Only the last yields scientific knowledge, making us certain of the truth. In that case, we intuit that the ‘conjunction of the one with the other is wholly necessary’.<sup>115</sup> Descartes had already explained that ‘the conjunction is necessary when one of them [= a concept] is somehow implied (albeit confusedly) in the concept of the other so that we cannot conceive either of them distinctly if we judge them to be separate from each other.’<sup>116</sup> He offers the example of the intuition that what does not have extension cannot have shape, because there is a logically necessary connection between extension and shape. The same holds for arithmetic truths, such as the assertion that four and three make seven, because four and three are implied in seven. A little later he offers the proposition ‘I am, therefore God exists’ as still another example of logically necessary relations. Necessity means here, in other words, logical containment, according to which one concept is contained or implied in the other, so that they cannot be separated. These connections between notions are intuited. Therefore, intuition is necessary both to know the simple natures and for seeing the necessary connections between them. According to Descartes, it is relatively easy to see these connections, because simple notions can be readily discovered owing to their self-evidence; they only need to be properly distinguished from one another by mental attention.<sup>117</sup>

As a result, intuition (*intuitus*) functions both to understand basic concepts and to understand the necessary connection between concepts, leading – in a deduction – to composite natures. Therefore, scientific knowledge concerns either principles – simple terms and simple propositions – or deductions, that is, combinations, of those principles.

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Descartes reckons axioms like ‘nothing comes from nothing’ to be included in the first class, but this seems likely.

<sup>114</sup> Descartes, *Rules XII*, AT X 422: ‘Dicimus sexto, naturas illas, quas compositas appellamus, a nobis cognosci, vel quia experimur quales sint, vel quia nos ipsi componimus.’, CSM I 46.

<sup>115</sup> Descartes, *Rules XII*, AT X 424-425: ‘Superest igitur sola deductio, per quam res ita componere possimus, ut certi simus de illarum veritate; in qua tamen etiam plurimi defectus esse possunt: ut si, ex eo, quod in hoc spatio aeris pleno nihil, nec visu, nec tactu, nec ullo alio sensu percipimus, concludamus illud esse inane, male conjungentes naturam vacui cum illa hujus spatii; atque ita fit, quoties ex re particulari vel contingenti aliiquid generale et necessarium deduci posse judicamus. Sed hunc errorem rem vitare in nostra potestate situm est, nempe, si nulla unquam inter se conjungamus, nisi unius cum altero conjunctionem omnino necessariam esse intueamur: ut si deducamus nihil esse posse figuratum, quod non sit extensem, ex eo quod figura necessariam habeat cum extensione conjunctionem, etc.’, CSM I 48.

<sup>116</sup> Descartes, *Rules XII*, AT X 421: ‘Necessaria est, cum una in alterius conceptu confusa quadam ratione ita implicatur, ut non possimus alterutram distincte concipere, si ab invicem sejunctas esse judicemus ...’, CSM I 45.

<sup>117</sup> Descartes, *Rules XII*, AT X 425, CSM I 48.

To conclude, it is clear that Descartes' notion of scientific knowledge agrees with the Aristotelian conception on some points, but greatly differs on other points. The accounts agree in that scientific knowledge is absolutely certain and evident cognition. Further, also Descartes distinguishes between self-evident principles and conclusions from those principles. What is missing, however, is, first, the distinction between *intelligencia* and *scientia*. Both knowledge of principles and of conclusions are scientific knowledge, according to Descartes. Second, he does not propose a formal demonstration, so that there is no discussion of the separate elements of the demonstration either. There is, then, no theory of the subject, principle and property. Third, he also does not make a clear distinction between terms (or simple concepts) and assertions. Fourth, for Descartes, scientific knowledge has primarily to do with logically necessary relations between concepts. Certainly, also the Aristotelian theory is largely concerned with conceptualization, and thus with logical relations. But the major difference is that Aristotle does not explain this in terms of conceptual containment. Finally, Descartes does not determine the objects of scientific knowledge on the basis of objective features, such as necessity and universality. Instead, his determination of objects is completely epistemological.

### 3.3.3 *The later account in the Principles of Philosophy*

A close study of the conception of scientific knowledge in Descartes' *Principles of Philosophy* has to start with the preface to the French edition, because it contains his fullest exposition of this topic. At the outset of the preface, Descartes explains that the term philosophy means 'the study of wisdom (*Sagesse*)'.<sup>118</sup> Here the term wisdom is taken very broadly, as Descartes mentions as examples of wisdom 'prudence in everyday affairs', knowledge to the advancement of health, the arts, and 'perfect knowledge of all things man is capable of knowing'. In the paragraph that follows, on the other hand, Descartes defines wisdom more traditionally as 'the knowledge of truth through its first causes'.<sup>119</sup>

This definition of wisdom implies that knowledge of the first causes or principles is absolutely fundamental to philosophy. Indeed, Descartes claims that philosophizing consists precisely in the search for first causes or principles. Next, he claims that knowledge of things becomes perfect by being deduced from these primary causes or principles. Thus, one has, first of all, to find the first causes or principles (*premieres causes, c'est à dire des Principes*), which, Descartes insists, have to be so clear and evident

<sup>118</sup> Descartes, preface to French edition of the *Principles*, AT IXb 2: '... ce mot Philosophie signifie l'estude de la Sagesse, & que par la Sagesse on n'entend pas seulement la prudence dans les affaires, mais une parfaite connoissance de toutes les choses que l'homme peut sçavoir, tant pour la conduite de sa vie, que pour la conservation de sa santé & l'invention de tous les arts ...', CSM I 179.

<sup>119</sup> Descartes, preface to the French edition of the *Principles*, AT IXb 4: '... la connoissance de la vérité par ses premières causes, c'est à dire la Sagesse, dont la Philosophie est l'estude.', CSM I 181.

(*si clairs & si evidents*) that the human mind cannot doubt their truth. Moreover, they are to be absolutely primary in the order of knowing, so that knowledge of all other things should depend on them. They are, in other words, primary concepts from which other concepts follow. As nothing can be known prior to these principles, they are intuitively known. Descartes concludes that knowledge of things other than the principles has to be deduced from those very principles in a continuous series in which every deductive step has to be evident. This description of wisdom and principle shows great similarities with Descartes' account of scientific knowledge in the *Rules*. But from the discussion that follows and the first two parts of the *Principles*, it turns out that Descartes' notion of principle is, in fact, wider than that of the *Rules*.

But what does Descartes actually mean by principles here? Above all, principles are primary causes. For that reason, common notions or axioms are not considered principles. Descartes makes this explicit by separating principles from common notions, which he introduces as 'notions which are so clear in themselves that they can be acquired without meditation'.<sup>120</sup> These common notions comprise more than just the rules of inference, as, for instance, also the concepts of truth and existence are included among them, as well as the causal likeness principle.<sup>121</sup> Although these concepts are necessary for science, they are not causes of things, and having knowledge of them thus

<sup>120</sup> Descartes, preface to the French edition of the *Principles*, AT IXb 5: 'Le premier ne contient que des notions qui sont si claires d'elles-mêmes qu'on les peut acquérir sans méditation.', CSM I 181. Descartes also discusses common notions at other places. He mentions a number of common notions in his letter to Mesland of 2 May 1644 (AT IV 111, CSMK 231). Some of them also occur in Replies II, in which Descartes offers his arguments for God's existence according to the geometrical order of exposition. He lists there ten 'axioms or common notions' (AT VII 164-166, CSM II 116-117). More generally, Descartes considers common notions to be a subset of primitive notions, the fundamental elements of human knowledge. Sometimes Descartes even seems to equate primary and common notions (see Replies II, AT VII 135, CSM II 97). They differ, however, from other types of primary notion in that common notions are not ideas of things, because they do not represent anything (see *Conversation with Burman*, AT V 154: 'Aliae etiam dantur ideae notionum communium, quae non sunt ideae rerum proprie; sed tum idea latius sumitur.', CSMK 338; Descartes, *Correspondence*, to Hyperaspistes, August 1641, AT III 424: 'Nec minus tamen in se habet ideas Dei, sui & earum veritatum, quae per se notae esse dicuntur ...', CSMK 190). They are self-evident, meaning that they are known to be true whenever they are thought of, as long as our mind is not beset by prejudices obscuring them. According to Descartes even the existence of God is a common notion. The only reason why this is not recognized by everyone is the effect of our prejudices and the influence of the imagination (see Descartes, *Meditations* V, AT VII 69, CSM II 47, and Replies II, AT VII 163-164, CSM II 115; *Principles* I §50, AT VIIIa 24, CSM I 209). Accordingly, Descartes makes a distinction between common notions that are impossible to doubt and those that are subject to prejudices. In general, however, Descartes deems that it is unnecessary to use the method of doubt to clearly know them, unlike notions of concrete beings such as the idea of God.

<sup>121</sup> See Descartes, *Conversation with Burman*, V 156, CSMK 339-340.

does not amount to wisdom.<sup>122</sup> Rather, wisdom is ‘the search for the first causes and the true principles which enable us to deduce the reasons for everything we are capable of knowing’.<sup>123</sup>

The context in which Descartes makes the distinction between common notions and principles is that of an account of the principles of other philosophers. One of the principles he rejects in natural philosophy is gravity as the explanatory concept or cause that accounts for the fact that bodies descend. Other examples of principles he mentions are void and atoms, hot and cold, dryness and humidity, salt, sulphur, mercury, ‘and all other similar things which some people have proposed as their first principles’.<sup>124</sup>

Of course, this set of false principles does not give us a clue as to Descartes’ own views on the requirements for principles. What is Descartes’ own conception of principle then? Is it as strict as that of Aristotle? If so, it would mean that Descartes’ principles are capable of being intuitively known, are assumed as starting-points of some discipline, and can be divided into axioms, definitions and hypotheses. As we have seen, Descartes has ruled out the first class from the principles he wants to find – they are common notions. Rather, he wants to know the causes of things, so that also the last class of hypotheses is precluded. This indicates already that Descartes’ notion of principle differs from that of Aristotle. He uses it exclusively to refer to the causes of phenomena.

Despite precluding axioms and hypotheses, Descartes’ notion of principle is broader than that of Aristotle. This can be concluded from the principles he proposes. Descartes says that he has taken the *cogito* as the first principle, from which he deduced first the existence of God, then the certainty of clear and distinct perceptions, and thereafter the basic principles of physics.<sup>125</sup> Descartes calls the principles provided in the first part of the *Principles* ‘the principles of knowledge’.<sup>126</sup> The second part contains the principles of natural philosophy, which are the nature of the body as extension, that bodies have

<sup>122</sup> Descartes indeed affirms that common notions are indispensable for scientific knowledge. Examples of axioms that are of crucial importance to Descartes’ philosophy are principles like ‘nothing does not have properties’, which allows the intellect to infer from the *cogito* that there is a *res cogitans*, and the principle of causality, ‘there is nothing in the effect which was not before in the cause, either formally or eminently’ (see Replies II, AT VII 136, CSM II 97).

<sup>123</sup> Descartes, preface to the French edition of the *Principles*, AT IXb 5: ‘... c'est de chercher les premières causes et les vrais principes dont on puisse déduire les raisons de tout ce qu'on est capable de savoir ...’, CSM I 181.

<sup>124</sup> Descartes, preface to the French edition of the *Principles*, AT IXb 8, CSM I 183.

<sup>125</sup> See Descartes, preface to the French edition of the *Principles*, AT IXb 10, CSM I 184. Cf. *Discourse IV*, AT VI 32, CSM I 127.

<sup>126</sup> Descartes, preface to the French edition of the *Principles*, AT IXb 16: ‘...dont la première contient les Principes de la connaissance, qui est ce qu'on peut nommer la première Philosophie ou bien la Métaphysique ...’, CSM I 187.

various shapes and the laws of motion.<sup>127</sup> As a result, principles need not be intuitively known, as was the case in the *Rules*. Rather, they are mostly inferences from other principles. This must mean that they are called principles for other reasons. The main reason is that they provide the explanatory framework – offering the true causes – for the particular parts of physics, such as astronomy and biology. In other words, their function is to explain the phenomena of nature.

The principles do not only provide the basic concepts and explanatory framework to form explanations of phenomena, but are in fact also the more fundamental causes of things. This implies that all proper explanations of phenomena are constructed in terms of bodies in motion. Descartes even says that he wants to deduce (*deducere*) the causes of the phenomena from these principles, and later claims that he has actually done that.<sup>128</sup> Still, the explanations that are regarded as causes of the phenomena are not as certain as the principles. It suffices to have an explanation that fits the phenomena; there is often more than one explanation possible, so that we cannot be absolutely certain that we have offered their *real* cause and thus their real nature.<sup>129</sup> It is very well possible that God has made things otherwise. Nonetheless, Descartes thinks that it is very likely that he has actually provided the true causes of phenomena.<sup>130</sup> However that may be, we do know with *absolute* certainty that these causes have to accord with the basic physical principles and are composed of them – that is what is demonstrated in the second part of the *Principles*, in which all assertions have absolute certainty. Thus, natural phenomena really consist of extension, shape and motion.

After having explained the general principles of physics, including the three laws of motion, Descartes turns in part three to ‘the visible universe’, which is concerned with heavenly phenomena, and in part four to ‘the earth’, treating of earthly phenomena, comprising such diverse phenomena as the planet earth, magnets, and sense perception. All these phenomena are to be explained through the physical principles of the second part, which are deduced from the metaphysical principles of the first part. However, with respect to natural phenomena, it is impossible to proceed in the same way as in the first two parts, in which the form of deduction is very strict, at least that is how Descartes regards it. Still, Descartes intends to proceed from causes to effects in the case

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<sup>127</sup> Cf. Descartes, *Principles* IV §187, AT VIIIa 314-315: ‘...et reliqua, quorum causas, meo judicio, satis evidentes, ex principiis omnibus notis et ab omnibus admissis, figura scilicet, magnitudine, situ et motu particularum materiae, in hoc scripto deduxi [...] nihil denique in natura universa, quod ad causas tantum corporales, sive mente et cogitatione destitutas, debeat referri, cuius ratio ex iisdem illis principiis deduci non possit: adeo ut aliqua alia ipsis adjungere non sit necesse.’, CSM I 279.

<sup>128</sup> Descartes, *Principles* III §4, AT VIIIa 81-82, CSM I 249.

<sup>129</sup> See Descartes, *Principles* IV §204, AT VIIIa 327, CSM I 289.

<sup>130</sup> See Descartes, *Principles* IV §205-206, AT VIIIa 327-329, CSM I 289-291.

of phenomena as well.<sup>131</sup> This means that he attempts to explain them through causes which rely on and are composed of the physical principles.

As a result, the explanations in the third and fourth part of the *Principles* are considered demonstrations of the reason why (*demonstrationes propter quid*), offering the proximate cause of the phenomena. Still, as we have noticed above, they do not meet the requirement that one has to be absolutely certain that things cannot be otherwise. In other words, they do not amount to scientific knowledge (*scientia*) in the strict sense. Descartes, however, attempts to ensure that also these explanations have this kind of certainty in the second last paragraph of the *Principles*, where he says the following:

Besides, there are some matters, even in relation to the things in nature, which we regard as absolutely, and more than just morally, certain. <Absolute certainty arises when we believe that it is wholly impossible that something should be otherwise than we judge it to be.> This certainty is based on a metaphysical foundation, namely, that God is supremely good and in no way a deceiver, and hence that the faculty which he gave us for distinguishing truth from falsehood cannot lead us into error, so long as we are using it properly and are thereby perceiving something distinctly. Mathematical demonstrations have this kind of certainty, as does the knowledge that material things exist; and the same goes for all evident reasoning about material things. And perhaps even these results of mine will be allowed into the class of absolute certainties, if people consider how they have been deduced in an unbroken chain from the first and simplest principles of human knowledge. Their certainty will be especially appreciated if it is properly understood that we can have no sensory awareness of external objects unless these objects produce some local motion in our nerves; and that the fixed stars, owing to their enormous distance from us, cannot produce such motions unless there is also some motion occurring both in them and also throughout the entire intervening part of the heavens. Once this is accepted, then it seems that all the other phenomena, or at least the general features of the universe and the earth which I have described, can hardly be intelligibly explained except in the way I have suggested.<sup>132</sup>

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<sup>131</sup> Descartes, *Principles* III §4, AT VIIIa 81-82: ‘... brevem historiam praecipuorum naturae phaenomenon (quorum causae hic sunt investigandae), nobis ob oculos proponemus; non quidem ut ipsis tanquam rationibus utamur ad aliquid probandum: cupimus enim rationes effectuum a causis, non autem e contra causarum ab effectibus deducere; sed tantum ut ex innumeris effectibus, quos ab iisdem causis produci posse judicamus, ad unos potius quam alios considerandos mentem nostram determinemus.’, CSM I 249.

<sup>132</sup> Descartes, *Principles* IV §187, AT VIIIa 328-329: ‘Praeterea quaedam sunt, etiam in rebus naturalibus, quae absolute ac plusquam moraliter certa existimamus, hoc scilicet innixi Metaphysico fundamento, quod Deus sit summe bonus et minime fallax, atque ideo facultas quam nobis dedit ad verum a falso dijudicandum, quoties ea recte utimur, et quid ejus ope distincte percipimus, errare non possit. Tales sunt Mathematicae demonstrationes; talis est cognitio quod res materiales exstant; et talia sunt evidenter omnia ratiocinia, quae de ipsis fiunt. In quorum numerum fortassis etiam haec nostra recipientur ab iis, qui considerabunt, quo pacto ex primis et

The first part of this quotation, which runs until Descartes speaks of ‘these results of mine’, concerns the first two parts of the *Principles* (as well as mathematics). Metaphysics and the general principles of physics are absolutely certain, and cannot be believed to be otherwise. They thus fulfil the requirements of the strict notion of science. The certainty of the physical principles relies on the proof for the certainty of clear and distinct ideas, which is in turn based on the proof that God is not a deceiver. At several points, Descartes argues that this is a necessary condition for the scientific certainty of, say, mathematics. If God’s existence and veracity are not proved, mathematical demonstrations yield nothing but probable knowledge or persuasion.<sup>133</sup> The same goes for physical principles. This confirms that Descartes adheres to a strict notion of scientific knowledge. Although he puts it cautiously by starting this passage with the words ‘perhaps even these results of mine will be allowed into the class of absolute certainties’, in the remainder of the quotation he argues that also his explanations of the phenomena in the third and fourth part have actually the same level of certainty. The main reason for this claim is that he still wants to hold on to the Aristotelian conception of scientific knowledge, that is, knowing with certainty that things cannot be otherwise.

In conclusion, it is clear that Descartes adheres, at some basic level, to the classic Aristotelian ideal of scientific knowledge (*scientia*), as consisting of demonstrations that offer the real causes of some phenomenon. It is unclear, however, whether Descartes’ notion of principle accords with the Aristotelian account of principles. To be sure, principles are the true causes of phenomena, and can be either terms or assertions. But it is unlikely that some of the items Descartes proposes as principles agree to the Aristotelian requirements for the principles. Most of all, not all of Descartes’ principles can be known intuitively. It is clearly impossible to know the laws of motion intuitively – they have to be demonstrated. Add to this the fact that Descartes does not distinguish scientific knowledge (*scientia*) from intuitive knowledge of the principles (*intelligentia*), as with Aristotle. This distinction simply does not interest him. Most likely, this has also

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maxime simplicibus cognitionis humanae principiis, continua serie deducta sint. Praesertim si satis intelligent, nulla nos objecta externa sentire posse, nisi ab iis aliquis motus localis in nervis nostris excitetur; talemque motum excitari non posse a stellis fixis, longissime hinc distantibus, nisi fiat etiam aliquis motus in illis et in toto celo interacente: his enim admissis, caetera omnia, saltem generaliora quae de Mundo et Terra scripsi, vix aliter quam a me explicata sunt, intelligi posse videntur.’, CSM I 290-291. In the French translation of the *Principles* the first sentence is rendered as follows: ‘L’autre sorte de certitude est lorsque nous pensons qu’il n’est aucunement possible que la chose soit autre que nous la jugeons.’ (AT IXb 324)

<sup>133</sup> See, for instance, Descartes’ letter to Regius from 1640, in which he distinguishes *scientia* from conviction (*persuasionem*). Scientific knowledge is defined as ‘a conviction based on a reason so strong that it can never be shaken by any stronger reason.’ (*Correspondence*, to Regius, 24 May 1640, AT III 65: ‘Quae duo ita distinguo, ut persuasio sit, cum superest aliqua ratio quae nos possit ad dubitandum impellere; scientia vero sit persuasio a ratione tam forti, ut nulla unquam fortiore concurti possit ...’, CSMK 147.) Descartes argues here that it is necessary condition for having scientific knowledge to know for certain that God exists and is not a deceiver.

to do with the fact that Descartes does not consider scientific disciplines to be autonomous unities, as Aristotle and later Aristotelians do.<sup>134</sup> It is more likely that Descartes considers the metaphysics of the first part of the *Principles*, the metaphysical physics of part two, and the explanation of phenomena (in the third and fourth part) to have some sort of unity. The latter parts cannot be developed without the prior. This is completely contrary to Aristotle's view of philosophy as an aggregate of autonomous disciplines.<sup>135</sup>

### 3.3.4 Descartes and the traditional terminology regarding scientific knowledge

We have seen that Descartes' account of scientific knowledge agrees on some points with the Aristotelian theory, and differs from it on other points. As for the latter, we have observed that the traditional Aristotelian notion of *scientia*, as a conclusion of a scientific demonstration, does not occur in Descartes. Neither does he give a traditional account of the subject of a scientific demonstration. His notion of scientific knowledge is broader, and he certainly nowhere proposes the strict view that scientific knowledge consists exclusively in knowing why a subject has some property, in either the *Rules* or *Principles*. At other points, however, he does seem to adhere to this view. Let us consider some of these passages.

Unlike the preface to the French edition of the *Principles*, the term *proprietas* or *proprium* does appear in the main text of the *Principles*. For example, Descartes speaks of saltiness and sweetness of water as its properties (*proprietates*), and claims that these properties are deduced from the flexibility and inflexibility of water, respectively.<sup>136</sup> Similarly, a little later, he enumerates the properties of the magnet.<sup>137</sup> Of course, the term property (*proprium*) also occurs in Descartes' discussion of the predicables in part one.<sup>138</sup> Although he does not define *proprium* there, his interpretation is orthodox. But this occurrence of *proprium* does not mean that it is of any importance for his notion of scientific knowledge. To the contrary, it is just mentioned in isolation, so that it does not contribute to his conception of scientific knowledge. Still, it may be the case that he uses the metaphysical counterpart *attributum* instead of the logical term *proprium* to convey

<sup>134</sup> See Flint 1904, 77-84; and for the medieval period, Weisheipl 1985.

<sup>135</sup> I will discuss this view of philosophy as a systematic unity in a forthcoming article.

<sup>136</sup> Descartes, *Principles* IV §48, AT VIIIa 232: 'Quantum ad aquam, jam ostendi cur duae tantum particularum species in ea reperiantur, quarum unae sunt flexiles, aliae inflexiles; atque si ab invicem separantur, hae salem, illae aquam dulcem componunt. Et quia jam omnes proprietates, cum salis tum aquae dulcis, ex hoc uno fundamento deductas ...'

<sup>137</sup> Descartes, *Principles* IV §145, AT VIIIa 284: 'Quae omnia ex principiis Naturae supra expositis ita sequuntur, ut quamvis non respicerem ad illas magneticas proprietates, quas hic explicandas suscepi, ea tamen non alter se habere judicarem. Deinceps autem videbimus, horum ope tam apte et perspicue omnium istarum proprietatum dari rationem, ut hoc etiam videatur sufficere, ad persuadendum ea vera esse, quamvis ex Naturae principiis sequi nesciremus.'

<sup>138</sup> See Descartes, *Principles* I §59, AT VIIIa 28, CSM I 213.

the same idea. The term ‘attribute’ is indeed more important in Descartes’ philosophy than *proprium*, but, although it is true that unique properties are ranked among the attributes, the extension of attribute is much wider.<sup>139</sup> It also includes the essence of a thing, in which case it is named the primary attribute. Besides, it also includes the modes of a substance, which are not essential attributes either. As a consequence, attribute does not function as an alternative for *proprium*. Another metaphysical counterpart of *proprium* or *proprietas* is *affectio*. This term does not occur in the *Meditations*, but appears in the *Principles*. But as with *attributio*, the term is not confined to unique properties.<sup>140</sup> As a result, Descartes uses the traditional notion of property incidentally, but it does not function as an element of a general model for science, as in the Aristotelian theory.

There is, however, one point in Descartes’ main works in which a more traditional notion of property is present. This is the fifth meditation, where Descartes speaks of immutable natures. Such an immutable nature is the concept of a triangle – it has its own eternal essence. Descartes argues for this by pointing out that ‘various properties (*proprietates*) can be demonstrated of the triangle’, which can only be done if it is a genuine essence.<sup>141</sup> He offers the Pythagorean theorem as an example of such a property. This is clearly the traditional view of a unique property, which occurs, most interestingly, in a mathematical context.<sup>142</sup> Moreover, he also calls the existence of God

<sup>139</sup> See Descartes, *Principles* I §52-53, AT VIIIa 25, CSM I 210-211, I §56-57, AT VIIIa 26-27, CSM I 211-212.

<sup>140</sup> See Descartes, *Principles* I §48, AT VIIIa 22-23, CSM I 208-209.

<sup>141</sup> Descartes, *Meditations* V, AT VII 64: ‘Quodque hic maxime considerandum puto, invenio apud me innumeratas ideas quarumdam rerum, quae, etiam si extra me fortasse nullibi existant, non tamen dici possunt nihil esse; et quamvis a me quodammodo ad arbitrium cogitentur, non tamen a me finguntur, sed suas habent veras et immutabiles naturas. Ut cum, exempli causa, triangulum imaginor, etsi fortasse talis figura nullibi gentium extra cognitionem meam existat, nec unquam extiterit, est tamen profecto determinata quaedam ejus natura, sive essentia, sive forma, immutabilis et aeterna, quae a me non efficta est, nec a mente mea dependet; ut patet ex eo quod demonstrari possint variae proprietates de isto triangulo, nempe quod ejus tres anguli sint aequales duobus rectis, quod maximo ejus angulo maximum latus subtendatur, et similes, quas velim nolim clare nunc agnosco, etiamsi de iis nullo modo antea cogitaverim, cum triangulum imaginatus sum, nec proinde a me fuerint efficitae.’, CSM II 44-45.

<sup>142</sup> In a letter to Mersenne, Descartes connects this view of demonstrating properties from ideas (which are primary notions) with Aristotle’s method of demonstration. Descartes, *Correspondence*, to Mersenne, 16 June 1641, AT III 383: ‘...et aliae innatae, ut Idea Dei, Mentis, Corporis, Trianguli, et generaliter omnes quae aliquas Essentias Veras, Immutabiles et Aeternas representant. Jam vero, si ex Idea facta concluderem id quod ipsam faciendo explicite posui, esset manifesta petitio principii; sed quod ex Idea Innata aliquid eruam, quod quidem in ea implicite continebatur, sed tamen prius in ipsa non advertebam, ut ex Idea Trianguli, quod ejus tres anguli sint aequales duobus rectis, aut ex Idea Dei, quod existat, etc., tantum abest ut sit petitio principii,

such a property. Although this shows that Descartes was aware of the traditional notion of scientific knowledge, he is not much concerned about it, so that there is not much to be found on the traditional elements of scientific knowledge in Descartes.

Apart from this passage of the *Meditations*, there is one other place in which we encounter the traditional terms, namely, in Descartes' correspondence with the English philosopher Henry More (1614-1687). In his reply to More, Descartes discusses why it is wrong to define the body as a perceptible, tangible or impenetrable substance rather than as an extended substance.<sup>143</sup> He explains that the former features are just unique properties, so that they do not constitute the essence of the body. If we define body in such a way, then it is defined in relation to our senses. Certainly, they are properties of the body, but they do not constitute its essence. It is clear that he refers to unique properties in that he calls them properties of the fourth kind, such as being able to laugh.<sup>144</sup>

In sum, Descartes is well aware of the traditional terms, and presumably also of the theory accompanying them, involved in scientific knowledge. At some points, he even appears to allude to the traditional model. But that does not allow us to conclude that Descartes adheres to the specifics of this theory.

### 3.4 Conclusions

There are four important differences between the Aristotelian conception of scientific knowledge and that of Descartes. First, in Descartes' works, scientific knowledge is not defined as a disposition to assent to some assertion. Also, the notion of intuitive reason (*intelligentia*) does not occur in his writings. He simply does not make a difference between the traditional intellectual faculties *scientia* and *intelligentia*. Still, *scientia* is traditionally defined as absolute certain and evident cognition. Second, the traditional terminology regarding scientific knowledge is missing. The view that scientific knowledge consists in knowing some property through their proximate causes is alien to Descartes. That does not mean that he does not strive after knowledge through causes. Certainly, that is the gist of some passages of the *Principles*. But he never uses this traditional terminology. Likewise, the terms subject and property have disappeared. Nor does he offer formal demonstrations. A likely explanation of why many of the traditional terms are missing is that Descartes does not have a logic in which he explains what he precisely understands by scientific knowledge and of what elements it consists.

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quin potius est, etiam secundum Aristotelem, modus demonstrandi omnium perfectissimus, nempe in quo vera rei definitio habetur pro medio.', CSMK 183-184.

<sup>143</sup> Descartes, *Correspondence*, to More, 5 February 1649, AT V 268-269, CSMK 360-361.

<sup>144</sup> Descartes, *Correspondence*, to More, 5 February 1649, AT V 269: 'Sed rursus ista tangibilitas et impenetrabilitas in corpore, est tantum ut in homine risibilitas, proprium quarto modo, juxta vulgares logicae leges, non vera et essentialis differentia, quam in extensione consistere contendit; atque idcirco, ut homo non definitur animal risibile, sed rationale, ita corpus non definiri per impenetrabilitatem, sed per extensionem.', CSMK 361.

Third, the objects of the science are not based on objective features, such as necessity and universality. Instead, Descartes thinks that only things that can be clearly and distinctly known are objects of science. Finally, although Descartes makes a distinction between principles and conclusions, his notion of principle differs from that of Aristotle. In the *Principles*, the laws of motion are considered principles, whereas they cannot be known intuitively. He also does not sharply distinguish metaphysical from logical principles. Rather, the principles of the first part of the *Principles*, which is mostly concerned with metaphysics, are called principles of knowledge. It is, most of all, to be underscored that for Descartes scientific knowledge is concerned with logically necessary relations between concepts – which is a matter of logical containment, according to which one concept is implied in the other. A deduction or scientific proof brings these relations between simple and complex concepts to the surface.

In the next chapter, it is ascertained how Geulinckx' view of scientific knowledge is related to the Aristotelian theory on the one hand and to that of Descartes on the other.



## CHAPTER FOUR

# GEULINCX' NOTION OF SCIENTIA

### Introduction

In 1668, Geulincx held a series of disputations on Cicero's *On moral ends* (*De finibus bonorum et malorum*). These disputations are largely concerned with outlining and assessing historical positions on moral philosophy, such as the philosophy of Epicurus. Before Geulincx carries out this task, he makes some preliminary comments on the relation between historical investigation and scientific knowledge. He emphasizes that dealing in an historical manner with philosophy is new to him and is not science, but nonetheless legitimate.<sup>1</sup> I focus on the difference between history and philosophy to clarify what Geulincx understands by the latter. He introduces the discussion with the following words:

Although that [= historical treatment of philosophical positions] is not in accordance with my custom, given the fact that I have continued up to this day to stay within the boundaries of narrow and strict Science (*limites arctae rigidaeque Scientiae*), believing that it is enough to demonstrate what I believe to be true about the things proposed; if something had to be determined about a thing, I have demonstrated it; this has also weakened the foundations of the adversaries and has broken down their opinions.<sup>2</sup>

Thus, a discussion of opinions of other philosophers does not pertain to science strictly taken, but to history instead, because science relates only to demonstrative proofs. Geulincx continues by explaining that philosophy consists only of eternal and necessary

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<sup>1</sup> A little later, Geulincx mentions that he had to teach about Cicero's *On moral ends*. Geulincx, *Disp. On moral ends* I, III 283: '... cum ordo rerum tractandarum atque series eo nos deducet, ut nostra post aliorum confutatas opiniones expromenda sit sententia; et denique inter commemorandum de Summo Bono veterum judicia, erumpet aliquando quasi premi nolens, et per transennam se prodet Veritas.'

<sup>2</sup> Geulincx, *Disp. On moral ends* I.1, 14 Jan. 1668, III 283: 'Atque id quidem praeter morem meum; ut qui ad hunc diem intra limites arctae rigidaeque Scientiae usque me continui, satis esse ratus, si quid de re proposita censendum esset demonstrassem; hoc et adversariorum fundamenta concuti et corruere sententias.'

truths (*aeternas necessariasque veritates*).<sup>3</sup> He insists that what is contingent, transient, or depending on the human will is of no concern to philosophy. All these matters are not known by philosophy, but by cognitive sources other than reason, namely, the senses, memory, imagination, consciousness, and even history and trust in what others say. In other words, contingent matters are not objects of rational knowledge, and therefore not suited for science.

In view of this notion of philosophy, a historical treatment of the philosophy of Epicurus clearly does not have anything to do with science; it deals neither with common notions (*Notiones Communes*), by which demonstrations are established, nor with conclusions (*Conclusiones*) of demonstrations or eternal truths. Geulincx argues accordingly that true scientific knowledge (*vera scientia*) is nothing other than ‘the assent we give to the conclusion of a demonstration, resting on the premises and consequence of that demonstration; to which nothing but the eternal pertains, nothing but that which can go into a demonstration.’<sup>4</sup>

This is, considering what we have seen in the preceding chapter, a thoroughly Aristotelian notion of scientific knowledge. Geulincx makes this explicit by invoking a passage from Aristotle's *Topics* in which Aristotle defines the scientific demonstration as ‘a syllogism from premises which are primitive and true or such that our knowledge of them has originally come through premises which are primitive and true’.<sup>5</sup> Geulincx explains, in turn, that those first and true things are either principles (*Principia*) or common notions (*Communes Notiones*), and that both of them are necessary truths. Because only necessary things follow from necessary things, nothing that is contingent can be deduced from them. Thus, there is no scientific knowledge of the contingent (*Contingentium non esse scientiam*), a rule which, Geulincx mentions, is also chanted in the schools. In short, philosophy only relates to necessary things, which means that it consists of demonstrations, common notions, conclusions and eternal truths. As a result, by demarcating philosophy from other types of knowledge by means of the

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<sup>3</sup> Geulincx, *Disp. On moral ends* I.2, 14 Jan. 1668, III 283-284: ‘Philosophia enim solum aeternas necessariasque veritates attingit; contingentes autem, temporarias, et ab arbitrio cuiuscunq[ue] tandem dependentes non curat, sed hasce sensibus, memoriae, imaginationi, conscientiae, ad extremum etiam historiae, et fidei quam aliorum dictis adhibemus, transcribit.’

<sup>4</sup> Geulincx, *Disp. On moral ends* I.2, 14 Jan. 1668, III 284: ‘Vera enim scientia non est aliud quam assensus, quem praestamus conclusioni demonstrationis, innixi praemissis ac consequentiae illius demonstrationis; ad quam nihil nisi aeternum pertinet, nihil nisi quod demonstrationem ingredi possit.’

<sup>5</sup> Geulincx, *Disp. On moral ends* I.2, III 284: ‘Demonstratio vero est syllogismus ex primis et veris, aut ex talibus, quae per aliqua prima et vera cognitionis suae initium sumpserunt ...’ Cf. Aristotle 1984, *Topics* I.1, 100a25-29, vol. 1, 167: ‘Now a deduction is an argument in which, certain things being laid down, something other than these necessarily comes about through them. It is a demonstration, when the premises from which the deduction starts are true and primitive, or are such that our knowledge of them has originally come through premises which are primitive and true ...’

distinction between necessary and contingent things, Geulincx taps into the Aristotelian tradition set by Zabarella.

At another point, Geulincx claims that these necessary things are God himself, who is eternal, as well as all things that follow from his nature.<sup>6</sup> Extension and all eternal truths, concerning the essences of things and their properties, emanate from God's nature and intellect. All contingent things, on the other hand, depend on his will, such as the world, which is body in motion, as well as the existence, the quantity and the conservation of motion.<sup>7</sup> So necessary or natural things are determined by God's intellect, whereas contingent things depend on God's will for their existence. The objects of philosophy are thus the natural things (*res naturales*), by which Geulincx means those things that depend on the *intellect* of God, and are therefore necessary.<sup>8</sup> This is an adjustment of Zabarella's view, who refers by contingency only to things depending on the *human* will. For Geulincx, the locus of contingency is rather to be placed in *God's* will.

This is the gist of Geulincx' conception of scientific knowledge, which is considered in more detail in this chapter. The central issue of this chapter is the question of how Geulincx' account of scientific knowledge specifically relates to the Aristotelian notion of scientific knowledge on the one hand and to that of Descartes on the other hand. So, Geulincx' notion of science will be compared on the topics of the subject, principles, properties, and conclusions (scientific assertions) of a scientific demonstration. Does he, unlike Descartes, maintain the traditional terminology, and also use the traditional meanings of the terms? And are there any signs of influence of Descartes?

Section 1 of this chapter is concerned with an examination of Geulincx' conception of reason, which is intertwined with the notion of the scientific demonstration. An important finding of this section is that logical containment is central to Geulincx' conception of scientific knowledge. Hence, Section 2 deals more thoroughly with this notion. In the following three sections, I discuss the three elements of the scientific demonstration: principle, property, and subject. In the last section, I show how Geulincx applies his theory of science to his physics and ethics.

## 4.1 Reason as a scientific instrument

### 4.1.1 Introduction

Geulincx explains the separate elements of a scientific demonstration most extensively in his *Logic*, because in his view logic provides the rules for the scientific deduction and supplies the 'instruments' of science.<sup>9</sup> In other words, Geulincx' *Logic* contains his most

<sup>6</sup> See Geulincx, *MV* III, Sc. 7, II 193-194.

<sup>7</sup> Geulincx thus parts company with Descartes who deduces the conservation of motion from the immutability of God's will.

<sup>8</sup> See Geulincx, *MV* III Ann., Sc. 7, II 294-295.

<sup>9</sup> See on Geulincx' logic in general, Nuchelmans 1988.

elaborate philosophy of science. I focus on the fourth instrument of science, which Geulincx calls ‘reason’ (*ratio*), because reason is precisely what scientific knowledge consists of. The central issue of this section is what Geulincx understands by reason. Is it a separate faculty or function of the mind – one of its operations? Or does he consider it to be an argument, demonstration or explanation – not so much an act of the intellect as its content? If the latter is the case, it would have been better to translate *ratio* by ‘argument’ or ‘demonstration’, but because that is unclear I use ‘reason’ in what follows.

#### 4.1.2 Scientific instruments

According to Geulincx, reason (*ratio*) is one of the instruments of science. The term ‘instrument of knowledge’ is used in a particular tradition. It is mostly used by those philosophers who emphasize that each scientific discipline is an art (*ars*) or system (*systema*).<sup>10</sup> This is, among others, advocated by Keckermann and Timpler. It is also central to Burgersdijk’s view of logic, given the fact that the second part of his *Logic* is called *organica*, by which he refers to the instruments of knowledge. By using the term ‘instrument’, these philosophers emphasize that scientific disciplines are arts in so far as they are products of the human mind; products which can, moreover, be expressed in books. These products are propositions, which are to be systematically ordered to render a discipline a proper science. More specifically, science is an art in so far as it consists of these propositions, whereas it is a habit of the mind (*habitus mentalis*) in so far as it concerns the fact that individual human beings may have scientific knowledge.<sup>11</sup> Logic in turn teaches us which instruments are used in the sciences and how they are to be properly constructed. Usually the following four instruments are distinguished: definition, division, syllogism, and method.<sup>12</sup> The last does not concern the construction of propositions and arguments, but the ordering of them in a particular discipline.

In part four of his *Logic*, Geulincx defines a logical or scientific instrument (*Instrumenta Scientiarum*) as ‘a suitable answer to a scientific question’.<sup>13</sup> He in turn explains that science itself is nothing other than the correct answer to such a question. Hence, science itself is an instrument. For example, the scientific question ‘What is body?’ is scientifically answered by the definition ‘body is an extended being (*ens extensum*)’. Such an answer, a definition, is an instrument. Unless one prefers to call the forms of these answers instruments, it can be said that science – or philosophy – consists entirely of such instruments. In other words, science consists of a specific type of assertions, that is, answers to scientific questions. But what types of scientific question does Geulincx distinguish?

<sup>10</sup> See on this, Risse 1964–70, vol. 1, Ch. 6.

<sup>11</sup> Timpler therefore distinguishes between internal and external arts (see Risse 1964–70, vol. 1, 442).

<sup>12</sup> See, for example, Burgersdijk 1666, *Logic*.

<sup>13</sup> Geulincx, *Logic* IV, Sect. 1, Ch. 1, §1, I 391: ‘Instrumentum Logicum est apta responsio ad quaestionem Scientificam.’

Geulincx remarks that science consists, first of all, of a suitable answer to the scientific question ‘What is it?’ (*Quid est?*). This is the primary scientific question from which three other scientific questions follow, namely, the questions ‘What is an instance of it?’ (*Quod/Quodnam est?*), ‘How many kinds are there?’ (*Quotuplex est?*), and ‘Why is it?’ (*Cur est?*)<sup>14</sup> The first three questions concern the subject of a scientific demonstration, whereas the last question refers to the unique property to be proved of that subject.

Geulincx thus takes the same starting-point as Aristotle at the beginning of *Posterior Analytics* II: science has to do with four scientific questions. However, Geulincx’ questions differ markedly from those of Aristotle. Above all, the two questions asking whether something – a property or a subject – exists are missing.<sup>15</sup> For Geulincx, the question of existence is not a (separate) scientific question because the existence of a thing is already implied in the first and last question. In place of the questions concerning existence, there appear two other questions, which are answered by a division and an example, respectively. As will become clear below, he wants these two questions because their answers clarify a subject, just like the first question. The first three questions, then, ask for a clarification of a subject, whereas the last wants a reason (*ratio*).

The fact that the first and primary scientific question asks what something is implies that science is first of all concerned with the essences of things, for an adequate and suitable answer to this question expresses the essence of the subject. Geulincx confirms thereby that science deals only with necessary things. He argues extensively that essences of things are necessary and eternal, so that also the ‘affirmation of the essence’ (*affirmatio essentialis*) shares in both features – the difference between the two being that essence is a metaphysical and affirmation a logical notion, which refers to thought instead of being. Geulincx even affirms that all necessity follows from the essence of things.<sup>16</sup> Thus, an affirmation of the essence is a necessary and eternal truth. As a further result, also the questions that follow from this primary question are related to the essences of things, and likewise concern necessary and eternal truths.

The problem, however, with calling the answer to the primary question – of what a *subject* is – scientific is that knowledge of the essence of the subject is not demonstrative knowledge. Affirmations of essences are principles instead of conclusions. When *scientia* is taken in the strict Aristotelian sense, to which as we will see also Geulincx

<sup>14</sup> Geulincx, *Logic* IV, Sect. 1, Ch. 1, §5, I 394: ‘Scientia enim proprie dicta, et quae ad Disciplinas spectat, non est aliud quam apta responsio ad quaestionem *Quid est?* aut ad quaestionem inde natam ...’

<sup>15</sup> See *Logic* IV, Sect. 1, Ch. 1, §4, I 393-394; *Logic* IV, Sect. 1, Ch. 2, §5, I 396; *Logic* IV, Sect. 2, Ch. 1, §4, I 423-424.

<sup>16</sup> Geulincx, *Logic* II, Sect. 1, Ch. 2, §4, I 236: ‘Necessitas autem videtur ex Essentia provenire. Affirmatio enim Essentialis, seu in qua Essentia affirmatur de suo Subjecto, semper est necessaria, et aliarum Enunciationum nulla necessaria est, nisi ex Affirmatione Essentiali sequatur.’

adheres, these answers do not belong to science at all. The same goes for the second and third question. Then again, answers to these questions are necessary for having scientific knowledge of unique properties, with which the fourth question is concerned. Indeed, although these principles do not amount to scientific knowledge, they do appear in scientific disciplines as definitions. And, knowledge of properties follows from them. In a looser sense, then, the first three questions can also be called scientific.

Again, instruments are answers to scientific questions rather than the questions themselves. Because Geulincx distinguishes four types of scientific question, there are also four kinds of instrument or answer.<sup>17</sup> The primary question – *Quid est* – is answered by a definition, the question *Quod (or Quodnam) est?* by giving an example, *Quotuplex est?* by a division, and, finally, *Cur est?* by offering a reason (*ratio*). The first three instruments are primarily concerned with terms (or concepts), whereas reason deals with assertions (*enunciations*).<sup>18</sup> It would take us too far afield to fully explain all these instruments. Instead, I offer brief descriptions of them. This will suffice to clarify Geulincx' notion of scientific knowledge.

As said, the first instrument is the definition. It explicates (*explicare*) its subject (the *definitum*) by offering its parts (the so-called *partes actuales*) one by one, thus clarifying something which was earlier – as a whole (a *totum actuale*) – confusedly apprehended.<sup>19</sup> In other words, a definition breaks up a whole into its different parts, usually by presenting the matter and the form of the defined subject (*definitum*) separately.<sup>20</sup> It is a way of clarifying something. This entails, according to Geulincx, that only those things can be defined that are not sufficiently clear to us – it is impossible to clarify what is already completely clear.<sup>21</sup>

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<sup>17</sup> See Geulincx, *Logic* IV, Sect. 1, Ch. 2, §1, §6, I 395–396.

<sup>18</sup> I have chosen to translate *enunciatio* by ‘assertion’ because I speak of ‘scientific assertions’ in Chapter 3. However, assertion here does not necessarily mean that the person uttering the statement actually believes it to be true. Nuchelmans 1988, for instance, translates *enunciatio* by ‘declarative sentence’, which indeed conveys the same meaning. Other ways to translate *enunciatio* are ‘proposition’ and ‘statement’.

<sup>19</sup> I do not want to go to deep into Geulincx’ theory of part and whole here, but only remark that he makes a distinction between actual and potential parts and wholes. The upshot of this distinction is that actual wholes are wholes in which the parts are conjunctively connected by ‘and’ (*Et*), whereas potential wholes are wholes in which the parts are disjunctively connected by ‘or’ (*Vel*). Essences are actual wholes. For example, a tree as an actual whole consists of roots *and* trunk *and* branches, whereas tree as a potential whole consists of oaks *or* birches, and so on. In other words, a potential whole is a genus (or set) which comprises its different species. See more on this in Section 2.

<sup>20</sup> Geulincx, *Logic* IV, Sect. 1, Ch. 5, §2, 402. The difference between matter and form will be explained below.

<sup>21</sup> Geulincx, *Logic* IV, Sect. 1, Ch. 6, §1, I 403: ‘*Quae satis clara sunt, definiri non debent.*’

At this point, Geulincx claims that this rule applies especially to mental acts, because our knowledge of them is intuitive.<sup>22</sup> Our mind is intimately conscious of its acts; it knows them through and through. Next he asserts that those things that are named on the basis of the operations of the mind (*quae ab hisce denominantur*) are just as clear. Examples of these are the concepts of truth and falsity and good and bad. Both acts and concepts based on them become only obscure when we use the wrong means, such as the imagination, to know them.<sup>23</sup> Instead of defining them, the only thing what may be done for these objects is giving an example, so that the attention of our mind is drawn to them.<sup>24</sup> Moreover, we also use little words – signs (*notae*) – to refer to acts of our mind, which in turn can be used for giving nominal definitions of them.<sup>25</sup> Examples of these signs are ‘is’ (*Est* or *Sunt*) – the verb – for the act of affirming (*nota affirmandi*) and ‘therefore’ (*Ergo*) for the act of inferring. Also scientific instruments are acts of the mind, which accordingly cannot be properly defined as well.<sup>26</sup> We use signs to define them, such as ‘What’ (*Quid*) for the definition and ‘Why’ (*Cur*) for reason. Moreover, Geulincx says that although in the case of those very clear things an external definition cannot be given, one can say that a more eminent definition is offered, that is, a simple and intuitive grasp of the complete essence of the thing, which cannot be expressed.

<sup>22</sup> See Geulincx, *Logic* IV, Sect. 1, Ch. 6, §2, I 403-404: ‘Hac Regula excusamur a definienda Mente ac Animo nostro, eorumque operationibus. Unde non tenemur definire, quid sit *Affirmare*, *Negare*, *Inferre*, *Supponere*, *Accipere*, *Copulare*, *Disjungere*, *Praescindere*, etc. Item *Amare*, *Odisse*, *Laetari*, *Tristari*, *Sperare*, *Timere*, etc. Quibus annumeramus ea, quae ab hisce denominantur; ut *Verum*, *Falsum*, *Bonum*, *Malum*, *Requiri*, *Sufficere*, *Sensu sequi* et *Praecedere*, *Eodem* ac *Diverso* *Sensu dicere*, etc. Haec enim omnia nobis sunt per Conscientiam, qua eorum in nobis ipsi consciitum sumus, clarissima perspectissimaque.’

<sup>23</sup> Geulincx, *Logic* IV, Sect. 1, Ch. 6, §3, I 404.

<sup>24</sup> Geulincx, *Logic* IV, Sect. 1, Ch. 6, §7, I 405.

<sup>25</sup> Geulincx, *Logic* IV, Sect. 1, Ch. 6, §4, I 404. Cf. *Logic Ann.*, I 462-464, particularly 462: ‘Nota est signum actus ut exerciti; i.e. signum quo significare actum aliquem nostrum (ut affirmationem, negationem, amorem, odium, etc.) non simpliciter (qualiter etiam est cum noem suum importatur), sed prout hic et nunc a nobis exercetur. Sic *An* est nota, et quidem interrogandi nota; significat enim actum aliquem nostrum (nempe interrogare), et non simpliciter significat illum actum, sed prout hic et nunc exercetur et a nobis agitur. Dum enim dicimus *An*, etc., non tantum significamus interrogationem, sed nos interrogare, seu interrogationem hic et nunc exercere. Nota duplex est, nempe nota *Mentis* seu *Intellectus*, et nota *Animi* seu *Voluntatis*. Actus enim omnes nostri vel ad *Intellectum* vel ad *Voluntatem* pertinent; cum igitur, illos actus exercere nos, significatum aliis volumus, signum aliquod adhibemus, quod hoc ipso, quo actum illum ut exercitum significat, induit rationem Notae.’ See on the *actus exercitus*, Nuchelmans 1983, Ch. 6, 99-105. Nuchelmans explains that *notae* are syncategorematic terms, which do not fall under any of the categories, but are signs of acts being performed at the very moment (*signum actus ut exercitum*). Traditionally, these terms are distinguished from concepts (*conceptus*), which do not refer to the actual performance of an act. Terms such as affirmation and negation are such concepts.

<sup>26</sup> Geulincx, *Logic* IV, Sect. 1, Ch. 6, §6, I 405.

Such an eminent definition is in turn defined as ‘that science, by which we know in the best way and intuitively [...] what a thing is’.<sup>27</sup>

The definition of a thing is very important, because scientific knowledge flows from it.<sup>28</sup> As a consequence, if the definition is mistaken, everything that is inferred from it is also false. This leads to dangerous errors in philosophy. Apart from not defining what is sufficiently clear, it is also crucial for a definition to state positively what a thing is (*declarare rem*), that is, to provide the true essence of that thing. On Geulincx’ view, scholastics often merely state what a thing is not.<sup>29</sup> To define the mind as an incorporeal or immaterial substance is not to provide the essence of the mind.<sup>30</sup> Incorporeity is only a unique property of the mind, not its essence. Another, closely related, point that Geulincx repeatedly mentions as a requirement for a proper definition is that something should not be defined by one of its properties.<sup>31</sup> For example, the body is often defined as a palpable thing, because it is defined on the basis of sense perception.<sup>32</sup> Of course, it is not false to say that a body is palpable, but this is no more than a property of body, not its essence. Geulincx urges that one has to define first what a thing is (*esse*), and then to infer what the thing can be (*posse*) or is capable of – that is, its properties, such as palpability. *Esse* is always prior to *posse*.

The second instrument, the example, answers the question *Quodnam sit?*<sup>33</sup> This instrument is inferred from the definition of the thing, and serves to flesh out the defined thing in order to help us focussing our attention to its concept.<sup>34</sup> Examples have to be coarse and must refer to obvious things, so that we are not distracted from considering the concept. Moreover, it is especially important to offer an example if the

<sup>27</sup> Geulincx, *Logic* IV, Sect. 1, Ch. 6, §8, I 406: ‘Definitionem Eminentem voco illam Scientiam, qua scimus optime et intuitive, ut loquuntur, quid res sit, etiamsi forte exterius non possimus ullam ejus Definitionem adferre.’

<sup>28</sup> Geulincx, *Logic* IV, Sect. 1, Ch. 3, §5, I 398: ‘Inquiunt Philosophi: *Scire est per Definitionem cognoscere*. Scire non est aliud quam, in promptu habere responcionem ad Quaestionem scientificam; omnis autem Quaestio scientifica vel est quaestio *Quid est?* ad quam respondetur per Definitionem, vel est quaestio inde nata. Itaque Definitio totum humanum scire complectitur; quidquid sciendum est, inde elicendum est. Hoc tamen non crude de Definitionibus Formalibus intelligo, sed Definitiones Eminentia etiam comprehendo ...’

<sup>29</sup> See Geulincx, *AL* I, §10, III 366.

<sup>30</sup> Geulincx, *MP* I, §3, II 219-220.

<sup>31</sup> See, for instance, Geulincx, *MV* II, Intr., II 158; *PV* I, Intr., II 370; *Disp. Phys. Isagoges* IV, 26 November 1664, §1-5, II 505; *MP* II, §8, II 261-262.

<sup>32</sup> Geulincx, *PV*, I, Prop. 14, II 386. Geulincx claims here that palpability is truly a property of body. But this is, of course, as he states in an annotation to this passage (II 456), a property relative to our senses (*per accidens et propter nos*). After all, palpability belongs, according to Geulincx, only to sense, and is thus just a mental phenomenon. Body in itself is not palpable; it is only palpable to us.

<sup>33</sup> See Geulincx, *Logic* IV, Sect. 1, Ch. 9-10, I 410-415.

<sup>34</sup> Geulincx, *Logic* IV, Sect. 1, Ch. 10, §4, I 414.

subject is so clear that it cannot be defined. For instance, it is intuitively known what an affirmation is. A plain example of it is the affirmation 'Peter is standing'.

The third instrument, division (*divisio*), gives an answer to the question *Quotuplex est?*<sup>35</sup> Through a division, the essence of a thing, as a potential whole (*totum potentiale*), is divided into its parts (*partes potentiales*).<sup>36</sup> These parts are the generic species of the subject. Living being (*animal*), for example, is divided into man and animal. This instrument functions again to clarify a term. The last instrument, reason (*ratio*), is a suitable answer to the question *Cur est?* Because only reason leads to scientific knowledge proper, it needs to be examined more fully.

#### 4.1.3 Reason (*ratio*)

Everything is now in place to give a fuller exposition of the last scientific instrument, reason (*ratio*). It is to be underscored here that reason forms the apex of Geulincx' logic. In fact, reason is its main object.<sup>37</sup> Geulincx' logic as a whole works towards the notion of reason. This is clear from three observations. First, because science is most of all concerned with providing explanations or reasons and logic functions as an instrument for science, reason must be its main object. Second, Geulincx defines logic as the science of consequences (*scientia consequentiae*), so that it is primarily concerned with providing rules for making correct deductions, which are, when applied to certain matters, scientific arguments or reasons. Finally, Geulincx also affirms explicitly that reason is the main instrument by asserting that all scientific questions are implied in the question *Cur est?*, and, accordingly, all instruments in reason.

So, the instrument of reason is nothing other than a suitable answer to the question 'Why is it?' (*Cur est?*).<sup>38</sup> But what does this mean? Is reason a function of the mind or does it rather refer to the content – an account of or argument for something? On the one hand, Geulincx claims that it is impossible to define reason (*ratio*) because it is a

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<sup>35</sup> See for the division, Geulincx, *Logic IV*, Sect. 1, Ch. 11-12, I 415-419.

<sup>36</sup> Geulincx, *Logic IV*, Sect. 1, Ch. 12, §1, I 417: 'Nam Divisio explicat Divisum per Partes Potentiales, sicut Definitio explicat Definitum per Partes Actuales.' See Section 2 for the explanation of potential whole and part.

<sup>37</sup> Geulincx, *Logic IV*, Sect. 2, Ch. 15, §3, I 448: 'Ratio continet duo Instrumenta, Exemplum et Divisionem. Cum enim responsum fuerit ad quaestionem *Quodnam?* aut *Quotuplex?* responsio subjici debet quaestioni *Cur?* alias non est Instrumentum sciendi. Itaque duo tantum sunt Instrumenta capitalia, Definitio et Ratio. Imo cum Definitio sit Eminens Ratio sui ipsius, merito quis dicat, unum tantum Instrumentum esse, nempe Rationem. Haec enim, ut vidimus, omnia reliqua Instrumenta complectitur. Haec igitur Logicae Objectum est, et ab hac *Logica* seu *Rationalis Ars nostra* dicitur.'

<sup>38</sup> Geulincx, *Logic IV*, Sect. 2, Ch. 1, §1, I 422: 'Ratio est apta responsio ad Quaestionem *Cur est?*'

mental act.<sup>39</sup> Instead of giving a definition, the mental act of reason can be verbally signified by the word ‘because’ (*quia*) – the *nota Rationis*. To be more specific, reason is the mental act by which we draw a conclusion. So, reason is a function – a type of act – of the intellect. But on the other hand, reason refers also to the contents of this act, more specifically to the logical ground of a conclusion, as we will explain below. Indeed, this content – the argument – can also be expressed on paper. In short, reason refers both to the mental act of drawing a consequence and of the contents of that consequence.

Reason can be presented in the form of a formal reasoning (*ratiocinatio*), although it is certainly not identical with such a reasoning, considering that most of our reasonings are unlike syllogisms.<sup>40</sup> Still, it is helpful to consider it as such. A formal reasoning is an argument in which the reason or logical ground (*ratio*) is placed in the antecedent (the premises) and the subject of the question in the consequent (the conclusion).<sup>41</sup> The first premise offers, then, the reason or logical ground, the second supplies the application of the logical ground, while the conclusion contains that which is thus logically grounded – the subject of the why-question or *ratum*.<sup>42</sup> For example, the question ‘Why is the body divisible?’ is answered by a reasoning in the following way: the body is extended, but now (*Atqui*)<sup>43</sup> extension is divisible, therefore (*Ergo*) the body is divisible. Thus, the subject of the question (the *ratum*) reappears in the conclusion, which is the consequent of the reasoning. The logical ground (*ratio*) is given in the major.

Geulincx holds that this form of reasoning coincides with the natural order, because that which is asserted in the antecedent is prior in nature to that which is affirmed in the consequent. In other words, the consequent – divisibility – denotes a property of extension, which is, in effect, later in nature. Since Geulincx adheres to the tenet that thought follows being, the conceptual order mirrors the natural order.

There are some requirements for a scientific answer to a why-question. Geulincx considers these requirements in separate chapters of his *Logic*. First of all, he rejects reasons that provide final causes (*finis, causa finalis*, the *Ratio-Ut*).<sup>44</sup> Final causes are not allowed in science, because they refer to contingent matters, eventually relying on the will of God, the source of contingency, instead of his intellect. For science, we need logically necessary relations instead. Likewise, the *Ratio-ne* is not allowed. Geulincx means by this arguments such as ‘I am studying, because I do not want to be ignorant’.

<sup>39</sup> Geulincx, *Ethics* I, Ch. 1, §2, III 14: ‘Quid sit Ratio, non debet dici, imo ne potest quidem. [...] Quid, inquam, sit Ratio, satis superque notum est nobis omnibus, quorum hoc insigne est, rationales esse.’ Cf. *Ethics* I Ann., Ch. 1, §2, pt. 2, III 163-164.

<sup>40</sup> Geulincx, *Logic* IV, Sect. 2, Ch. 14, §2, I 446.

<sup>41</sup> Geulincx, *Logic* IV, Sect. 2, Ch. 14, §1, I 445.

<sup>42</sup> Geulincx, *Logic* IV, Sect. 2, Ch. 1, §2, I 422.

<sup>43</sup> The verbal note ‘*Atqui*’ (but now) is according to Geulincx the *nota applicationis Rationis* or the *nota subsumpti*.

<sup>44</sup> Geulincx, *Logic* IV, Sect. 2, Ch. 2, §2-§4, I 424-425.

This is, of course, also a reason providing a final cause. The only kind of reason that does provide us with logically necessary relations is the *Ratio-Quia*, so that all proper scientific reasons are of this type. But that is not the only requirement for a proper scientific reason. *Ratio-Quia*-arguments also have to be correct (Ch. 3), and firm (*firma*) so that they produce certainty (*certitudo*) in the intellect, by which the *ratum* (or conclusion) is placed beyond doubt (*extra dubium*) (Ch. 4).<sup>45</sup> Reasons that are not firm yield only opinions or conjectures, and true philosophers shun such a type of cognition. In addition, reasons must be positive (Ch. 5), which means that they convey positively why something is the case. It has to offer the real, positive ground for something. In other words, scientific reasons should not provide arguments to the effect that something has to be the case because there are no reasons why it could be otherwise.

Further, a reason has to be internal to the subject of the question – the *ratum*, what the argument is about (Ch. 6).<sup>46</sup> Geulincx means by this that the reason follows from the *ratum*. It is, in other words, logically contained in the *ratum*; science deals with conceptual containment, as we will further see in the next section. The explanation that a body is divisible because it is extended meets this requirement because extension is implied in the notion of divisibility. The concept of divisibility is unintelligible without the concept of extension, which means that when we have adequate knowledge of divisibility, we know that it involves the concept of extension. This is not the case with external reasons, such as testimony and experience (*Experientia*). Legitimate experience is here stipulated as a proposition based on a ‘constant sense perception’ (*sensus constans*).<sup>47</sup> Even though such a proposition is not contrary to true reason (*verae Rationi non contrarius*), it does not amount to scientific knowledge because it does not provide us with necessary conceptual relations. A scientific answer to a why-question also has to be adequate (Ch. 7), which means that the answer has to be exactly in conformance with the subject.<sup>48</sup> In other words, it has to be precise.

Lastly, scientific reasons have to be a priori (Ch. 8). Geulincx contrasts the a priori reason with the a posteriori reason. This distinction does not have anything to do with experience, which is clear from the fact that Geulincx had already discussed experience when dealing with external reasons. Thus, an a posteriori reason is also internal to the *ratum*, implying that it also concerns necessary conceptual relations. The point of difference consists in the fact that the conceptual order is opposite. Whereas an a priori

<sup>45</sup> Geulincx, *Logic* IV, Sect. 2, Ch. 4, §1, I 427: ‘Bona Ratio subdistinguitur in Firmam et Infiriam. Ratio Firma est, quae Ratam ponit extra dubium, id est, certam et vere Ratam facit.’; §4, I 428: ‘Firma Ratio Certitudinem gignit; Infirma Ratio generat Opinionem.’

<sup>46</sup> Geulincx, *Logic* IV, Sect. 2, Ch. 6, §1, I 430: ‘Ratio interna est, quae sequitur ex Subjecto quaestio[n]is, seu ex Rata ...’

<sup>47</sup> Geulincx, *Logic* IV, Sect. 2, Ch. 6, §3-4, I 431-432, esp. §4, I 431: ‘Experientia est perceptio Sensus circa aliquam propositionem.’

<sup>48</sup> Geulincx, *Logic* IV, Sect. 2, Ch. 7, §1, I 432: ‘Ratio adaequata est Ratio reciproca cum Rata, id est, posita Rata ponitur Ratio, et contra.’

reason answers the why-question by offering a term that is prior in the conceptual order, such as explaining divisibility through extension, an a posteriori reason proceeds from a term that is posterior to a term that is prior in the logical order.<sup>49</sup> For instance, one can go from the property of divisibility to the concept of extension. Although a posteriori reason is certain, it does not answer a why-question, but rather the question 'Is it?' (*Quod sit?*).<sup>50</sup> Therefore, it is not reason proper. Still, it has demonstrative power and is as invincible as true (a priori) reason.<sup>51</sup> As a result, the a posteriori reason can be used in scientific disciplines. In short, the difference between a priori and a posteriori reason accords with the classic distinction between the demonstration of the reasoned fact and the demonstration of the fact, respectively. One goes from an effect – a property – to a cause, and the other from a cause to an effect. Geulincx, however, does not use the terms cause and effect because he sharply divorces logic from metaphysics, and thus excludes the metaphysical notions of cause and effect. Moreover, for Geulincx, cause and effect are highly difficult notions in metaphysics, too. Thus, he is only concerned with logical relations.

In short, the following list of requirements for scientific reason can be drawn up. A genuine scientific argument 1) is an answer to a why-question, 2) is a *Ratio-Quia*, 3) is correct, 4) is firm, 5) is adequate, 6) is positive, 7) contains a logically necessary relation, and 8) is conceptually prior to the subject of the question (*ratum*) (a priori).

Let us now compare Geulincx' account of the scientific instruments and reason with the views of Aristotelians and Descartes. Again, contemporary Aristotelian philosophers commonly distinguish the following four instruments: definition, division, syllogism and method. By method, they refer to disposition, that is, the ordering of arguments in a discipline, rather than a method of proof or invention. Geulincx' account is somewhat different. First, method as an instrument is lacking in Geulincx' logic because, in his view, disposition does not pertain to logic. This type of method has only to do with ordering arguments or objects of a scientific discipline in such a way that it can be learned optimally. It has nothing to do with the subject matter of logic, the logical consequence, and thus is not of logical concern. He argues that a treatment of method belongs rather to another discipline, the *scientia scientiarum*.<sup>52</sup> Second, he adds example as a scientific instrument, mainly because examples are important for objects that

<sup>49</sup> Geulincx, *Logic* IV, Sect. 2, Ch. 8, §1, I 434: 'Ratio-a-Priori est Ratio quae assignatur per Terminum priorem in Ordine Logico; id est, Subjectum Rationis Subjecto Ratae, aut Praedicatum Praedicato, Logice prius est.'; §2, I 434: 'Ratio-a-posteriori est quae assignatur per Terminum posteriorem in Ordine Logico.' See on the logical order of terms, *Logic* I, Sect. 2, Ch. 11, I 229-232.

<sup>50</sup> Geulincx, *Logic* IV, Sect. 2, Ch. 8, §4, I 435: 'Ratio-a-Posteriori non est proprie dicta Ratio, quia non dicit *Cur sit*, sed *Quod sit*'.

<sup>51</sup> Geulincx, *Logic* IV, Sect. 2, Ch. 8, §7, I 436: 'Quamvis autem Ratio-a-posteriori non sit proprie dicta Ratio, communicat tamen cum genuina Ratione in ista excellenti Proprietate: *Probat*, et non minus invincibiliter probat, quam vera Ratio.'

<sup>52</sup> See Geulincx, *Logic* Appendix, I 454.

cannot be properly defined. Moreover, examples are important means to learn something, that is, to acquire insight.

As for reason and scientific knowledge, Geulincx is traditional in that he holds that science is an answer to a scientific question. But there are also differences. Although Geulincx prefers the demonstration of the reasoned fact, which means that he adheres to the traditional ideal of scientific knowledge as knowledge of an effect through its cause, he calls this type of demonstration *a priori* reason because he claims that science and logic are not concerned with causes, but only with logically necessary relations. The notion of cause is a metaphysical notion, which should not be used in logic. In addition, Geulincx is utterly opposed to using final causes, a point on which he agrees with Descartes. Unlike Zabarella, Geulincx holds that demonstrations of the fact can be used in the sciences. And although the *a priori* reason is better, the *a posteriori* reason is not just a means to get to the principles. In fact, most of the arguments in both the first and last part of his *True metaphysics* are *a posteriori* arguments, proceeding, for example, from a property of God to his essence.

In comparison with Descartes, it is to be remarked first of all that, unlike Descartes, Geulincx has developed a logic, in which he discusses the traditional elements of scientific knowledge, including formal proofs. He concurs in this respect with Aristotelian philosophers. What sets him apart from Aristotelians, however, is his emphasis on the transparency of our mental acts, and thereby of fundamental components of logic, due to the fact that in his view logic is concerned with mental acts. Like Descartes, Geulincx holds that these acts cannot be properly defined because they are too clearly known. Original with Geulincx, though, is that he also considers the products of these acts, concepts such as good and evil, to belong to that class, too. The most significant agreement with Descartes is that Geulincx insists that science consists of explicating logically necessary relations. This is what happens in a scientific demonstration.

#### 4.1.4 Conclusions

As to Geulincx' conception of reason (*ratio*), it can be concluded that 'reason' is not only used to refer to a function of the mind, but also to the contents of this function, either to the argument (or reasoning) as a whole or more specifically to the logical ground on which the conclusion of that reasoning is based. This primarily concerns reason only in so far as it allows us to deduce a conclusion from premises. Geulincx uses reason also to refer to the principles – self-evident logical grounds or primitives – from which conclusions are deduced. This is the topic of Section 3. Before explaining the principles and the other elements of a scientific demonstration, however, it is necessary to further consider Geulincx' notion of logically necessary relations – the theory of logical containment.

## 4.2 Logical containment

### 4.2.1 Introduction

In the previous section, we have seen that for Geulincx the notion of logically necessary relation is a key issue with respect to scientific knowledge. In this regard, he concurs with Descartes, for whom certain and evident knowledge concerns precisely necessary connections between concepts, such as that between motion and extension. One is needed to (fully) understand the other. Unlike Descartes, however, Geulincx has elaborated the notion of necessary logical relation. He specifies these relations by his theory of logical containment. This theory is, in fact, an attempt to explain what logical necessity means. He does this by showing how logic is founded in metaphysics. Because scientific knowledge and the scientific proof is nothing but making necessary conceptual relations explicit, it is instructive to examine Geulincx' theory of logical containment in more detail here.

### 4.2.2 Logical containment and relations between identity and difference

Geulincx argues that logic is intimately dependent on metaphysics. In general, he advances the Aristotelian dictum ‘Saying follows being’ (*Dicere sequitur esse*).<sup>53</sup> This means that logical relations are analogous to relations between things. More specifically, Nuchelmans has drawn attention to a passage in the *Peripatetic metaphysics* in which Geulincx says that he has built his logic on the possible relations between identity and difference, and part and whole.<sup>54</sup> These are metaphysical notions, Geulincx says, which have analogous concepts in logic. He could not draw on a tradition supplying him with analogous, non-metaphysical terms in logic. This is why he falls back on the metaphysical terms of ‘part’ and ‘whole’, as well as ‘containment’ (*continentia*). But he still maintains that the precise notions he needs are non-metaphysical. This is why I speak of *logical* containment. Nowadays, the logical counterpart of these metaphysical terms is what is recognized as set theory, the study of collections. Although set theory is a nineteenth-century invention, it is the best way to explain Geulincx' theory of logical containment.

Again, Geulincx uses two metaphysical topics: 1) part and whole, and 2) identity and difference. As for part and whole, in the *Logic*, Geulincx defines the whole as ‘several things taken together’ and part as ‘one from several things taken together’.<sup>55</sup> Part and whole are constituted by an act of the mind to consider things in such a way. This

<sup>53</sup> See Aristotle 1984, *Categories*, Ch. 12, 14b20-22, vol. 1, 22.

<sup>54</sup> See Geulincx, *MP* II, §6, ‘De Iisdem et Diversis’, II 255-257, and, Ann. II 306. I will be rather brief in this section, because Nuchelmans 1988 has exhaustively discussed the notion of logical consequence and containment.

<sup>55</sup> Geulincx, *Logic* I, Sect. 2, Ch. 3, §1, I 208: ‘Totum est plura simul sumpta; Pars est unum ex pluribus simul sumptis.’ See for part and whole, *Logic* I, Sect. 2, Ch. 3, I 208-211; *MP* I, Intr., II 211; *MP* I, Ch. 6, 230-232, and Ann. II 309-310.

implies, most strikingly, that Geulincx insists that part and whole are not genuine aspects of reality. Rather, they are ways in which we consider reality.<sup>56</sup> Indeed, they are nothing but products of a manner of thinking by which we collect several particular things in a single whole, a mode Geulincx calls *simul-sumptio* or *totatio*. As such, things we consider as one thing – a unity – or whole need not actually be unities at all. Rather, the whole is simply the product of a comparison we make – it is relative. For example, a tree is a whole composed of roots, trunk and branches, but it is only considered a whole with respect to the roots as one of its parts. If we would consider the forest to be a whole, the tree is only a part. Part-whole relationships are thus relative to our point of view.

Whole and part are primarily metaphysical concepts, because they have regard to things (or beings), which are in part constituted by mental activity. Given the fact that Geulincx intended to purify logic from metaphysical notions, it is remarkable that he inserts a separate chapter on these concepts in his *Logic*. Because these concepts, at first sight, do not seem to concern assertions, they seem not to be objects of logic and therefore should not be treated in it if the rule that each science has to stay within its own boundaries is taken strictly – a rule to which Geulincx is strongly committed. But Geulincx accommodates the use of these metaphysical terms by arguing that the things considered as wholes and parts are also terms, which appear in affirmations.<sup>57</sup> For example, a tree is a whole with respect to the trunk and branches and in such a way considered a thing. But ‘tree’ is also a concept, which functions in assertions.

There are two ways in which we may consider things as parts and wholes, either conjunctively (*Copulative*) by using ‘and’ (*Et*), or disjunctively (*Disjunctive*) by using ‘or’ (*Vel*).<sup>58</sup> The product of the former is a composite or actual whole (*Totum Actuale*) – a conjunctively enumerated whole – and that of the latter a potential whole (*Totum Potentiale*) – a disjunctively enumerated whole. The notion of tree as a conjunction of roots *and* trunk *and* branches is an actual whole.<sup>59</sup> A potential whole is a genus

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<sup>56</sup> Geulincx, *Logic I*, Sect. 2, Ch. 3, §1, I 208-209: ‘Ex quibus etiam vides, Totum et Partem non esse in rerum natura, sed fieri ea per operationem nostrae Mensis, dum simul sumit. Plura, inquam, sunt in rerum natura et unumquodque istorum plurium; sed nec hoc rationem Partis, nec illa rationem Totius indipiscentur, nisi accedat a Mente nostra simul-sumptio istorum plurium.’ Cf. *MP*, I, Ch. 6, §1, II 230.

<sup>57</sup> Geulincx, *Logic I*, Sect. 2, Ch. 3, §1, I 209: ‘Totum autem pro Termino aliquo capere, qui sit plura simul sumpta, opportunum est in Logica; similiter et Pars pro Termino aliquo capi poterit.’

<sup>58</sup> Geulincx, *Logic I*, Sect. 2, Ch. 3, §2, I 209: ‘Quia Totum est plura, hinc numeranda veniunt ista plura. Possunt autem dupliciter enumerari: Copulative, nempe per *Et*, et Disjunctive, nempe per *Vel*. Unde Totum etiam duplex est, Actuale et Potentiale. Totum Actuale est Totum copulatum, id est, plura simul sumpta cum intercedente particula *Et* [...] Totum actuale uno nomine vocatur *Compositum*, diciturque ex Partibus suis componi [...] Totum autem Potentiale non dicitur ex suis Partibus componi, sed eas sub se comprehendere censemur ...’

<sup>59</sup> Geulincx distinguishes also between essential (*Compositum Essentialie*) and integral (*Integralie*) composites (*Logic I*, Sect. 2, Ch. 3, §3, I 209-210). The essential composite is that type of composite in which the parts relate as matter and form, such as man as a rational animal, where

containing several species, such as the species of gold *or* silver *or* iron of the genus – the potential whole – metal.<sup>60</sup>

To clarify the possible relations between parts and wholes, these notions of part and whole are combined with the concepts of identity and difference. In the chapter of the *Peripatetic metaphysics* on these notions, Geulincx discerns the following four possible relations of identity or difference between two wholes: 1) two things are completely identical; 2) they have no part in common or are completely different, which is what Geulincx calls condistinct (*condistincta*); 3) one is part of the other; 4) they have parts in common. In terms of set theory the four relations are rendered as follows: 1) identical set; 2) disjoint set, that is, the set whose intersection is empty; 3) relation of a subset and superset; 4) intersection of two sets (A and B), that is, the set whose members are common to both A and B.

At this point, Geulincx mentions that he has built his logic on these distinctions.<sup>61</sup> They are, then, the metaphysical foundations of logic. Nuchelmans has shown that the notion of logical containment (*continentia*) is derived from these metaphysical notions and distinctions. He explicates that we are dealing with part-whole and identity relations in the case of logical containment. Let us clarify this.

First of all, logic deals with the relations between terms and assertions; which concern two different types of relation. Both terms and assertions can be regarded as wholes that may be parts of other terms or assertions, respectively. This means that terms and assertions logically contain other terms and assertions. They are supersets having subsets. Because logic deals with both terms and assertions, there are two types of containment-relation in Geulincx' logic. Terms or concepts may be contained in other concepts, and assertions may be contained in other assertions. The relations between assertions are drawn out in a logical consequence.<sup>62</sup> We will first examine the logical relations between assertions – a matter of logical consequence – and then turn to relations between terms.

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animal is the matter and rational the form. An integral composite, such as the tree as a compound of roots, trunk and branches, is such that the parts are not related as matter and form.

<sup>60</sup> In an annotation to the *Peripatetic metaphysics*, Geulincx explains that the actual whole is prior, in thought, to the potential whole (II 309-310). The latter is, in fact, a mode of the former. One has to think a set of things first conjunctively and can only then think of it disjunctively.

<sup>61</sup> Geulincx, *MP* II, §6, II 256: 'Ex quibus etiam patet, quaelibet omnino pertinere ad aliquam ex his quattuor combinationibus (cui etiam fundamento Logicam nostram inaedificavimus, ut videre potes ubi in illa de Concordia et Discordia Terminorum egimus).'

<sup>62</sup> Take notice that logical consequences are always logically valid. Geulincx argues that if the consequent does not follow from the antecedent, there simply is no logical consequence. Logical consequence means precisely that the consequent follows from the antecedent.

#### 4.2.3 Assertions and logical consequence

The logical consequence, as being an act of the mind as well as its product, cannot be defined, according to Geulincx.<sup>63</sup> Instead, he offers the following example: 'I am standing, therefore (*ergo*) I can stand'.<sup>64</sup> The particle *ergo* is the sign (*character*) of a logical consequence. It denotes the mental act of drawing a consequence. As with reason (*ratio*), the logical consequence refers also to the content of the inference. In other words, both the content and the act of inferring are called 'logical consequence'.

The logical consequence consists of two elements: that which follows – the consequent (*Consequens*) or conclusion (*Conclusio*) – and that from which something follows – the antecedent (*Antecedens*).<sup>65</sup> Since both are assertions, logical consequences consist of assertions, as Geulincx already announces at the outset of the second part.<sup>66</sup> In fact, a logical consequence itself is nothing other than a composite assertion. This is why the topic of logical consequence is dealt with in the second part of Geulincx' *Logic*, which is concerned with the assertion (*enunciatio*).

Logical consequence is a matter of containment, that is, of part-whole relationships. More specifically, we are dealing with the third type of part-whole relation, that is, of supersets and subsets. Geulincx asserts explicitly that the logical consequence is analogous to containment (*Continentia*).<sup>67</sup> The antecedent logically contains the consequent as well as itself. For example, the antecedent 'Peter is Peter', a whole consisting of several parts, contains, as one of its parts, the assertion 'Peter is not Paul'. Again, it is not *actually* a matter of containment, a metaphysical notion concerning things. Rather, it is a matter of saying (*dicere*).<sup>68</sup> Expressed in logical terms, the antecedent declares the consequent.<sup>69</sup> Geulincx infers from this that the antecedent must declare that the consequent is true. He is able to draw this conclusion because he had

<sup>63</sup> Geulincx, *Logic*, II, Sect. 2, Ch. 6, §1, I 276.

<sup>64</sup> This is, of course, not a scientific assertion, since the antecedent is contingent. Still, the consequence is logically valid.

<sup>65</sup> Geulincx, *Logic*, II, Sect. 2, Ch. 6, §1, I 276: 'Ex Consequentia duo Surculi nascuntur: id quod sequitur (vocaturque *Consequens*, item *Conclusio*), et id ex quo aliquid sequitur (vocaturque *Antecedens*).'

<sup>66</sup> Geulincx, *Logic* II, Intr., I 233: 'Agitur in Logica de Enunciationibus propter Argumentationes. Argumentatio enim est quaedam Enunciatio, item partes Argumentationis, nempe Antecedens et Consequens, sunt quaedam Enunciations.'

<sup>67</sup> Geulincx, *Logic* II, Sect. 2, Ch. 6, §2, I 276: 'Consequentia Analogiam habet cum Continentia, qua quid se aut suam partem continere dicitur. Sicut Numerus ternarius continet tres unitates simul, et earum singulas, sic etiam Antecedens quodammodo continet in se suum Consequens ...'

<sup>68</sup> Geulincx, *Logic* II, Sect. 2, Ch. 6, §2-3, I 276: 'Adeo ut Consequentia sit dictio, qua una Enunciatio dicit aliam Enunciationem, seu qua una Enunciatio dicit totum hoc quod dicitur ab alia Enunciatione ...'; §3, II 276: 'Hinc patet, quod Antecedens dicatuum Consequens esse verum.'

<sup>69</sup> Geulincx, *Logic* II, Sect. 2, Ch. 6, §2, I 276: 'Continet autem se ipsam quaevis Enunciatio, se ipsam dicendo; sic et continet aliud quodcumque suum Consequens, ipsum nempe dicendo.'

already established that an assertion is always an affirmation while an affirmation claims the truth of itself.<sup>70</sup> Because the consequent is part of the antecedent, it is also affirmed in the self-affirmation. All this is, of course, only related to the necessary consequence (*consequentia necessaria*), which is in fact the only true and real consequence, according to Geulincx.<sup>71</sup> Consequently, a contingent consequence is not a (logical) consequence at all – for the antecedent does not contain the consequent in that case.

That the logical consequence is related to the concepts of part and whole becomes clear from Geulincx' definitions of the consequent and the antecedent in the *Method*.<sup>72</sup> He defines the antecedent there as 'an assertion that says that the whole of that which another assertion declares to be the case is the case'.<sup>73</sup> An antecedent is, in other words, a whole that contains the consequent in its entirety (as a whole) as one of its parts. Put differently, the consequent is a member of the set of the antecedent. The consequent in turn is defined as 'an assertion of such a nature that the whole of what it declares to be the case is said to be the case by another assertion'.<sup>74</sup> It is said to be the consequent of the latter assertion or to follow from it.

Geulincx in turn argues that every assertion is an antecedent, from which a consequent follows.<sup>75</sup> Even though there are simple *formal* assertions, meaning that the assertion as such does not contain conjunctions or disjunctions, no assertion is actually simple, because all of them affirm several things, if not formally (*dicere formaliter*), then at least by implication (*dicere consequenter*).<sup>76</sup> In fact, every assertion declares or implies infinite other assertions.<sup>77</sup> For instance, from the assertion 'Peter is Peter' follows the assertion 'There is a human named Peter'. This assertion, in turn, consists of infinite disjunctions, namely, 'Either this man is Peter or that man is Peter', and so on. But

<sup>70</sup> Geulincx, *Method*, Ch. 1, Effatum 12, II 25: 'Omnis enunciatio dicit se esse veram.'

<sup>71</sup> See Geulincx, *Logic* II, Sect. 2, Ch. 6, §5, I 277.

<sup>72</sup> See Geulincx, *Method*, Ch. 2, Defs. 1 and 2, II 26.

<sup>73</sup> Geulincx, *Method*, Ch. 2, Def. 1, II 26: 'Antecedens est enunciatio, quae dicit totum id esse, quod esse dicit alia aliqua enunciatio. Diciturque alius illius enunciationis Antecedens esse; Eamque aliam enunciationem inferre.'

<sup>74</sup> Geulincx, *Method*, Ch. 2, Def. 2, II 26-27: 'Consequens est enunciatio, cuius totum quod esse dicit, esse dicitur ab alia enunciatione. Diciturque Consequens alius illius enunciationis; Atque ex illa alia enunciatione inferri; Itemque ex illa, vel ad illam sequi dicitur.'

<sup>75</sup> Geulincx, *Method*, Ch. 2, Additamentum 1, II 28: 'Omnis enunciatio est Antecedens aliquo respectu.' 'In some respect' means that what can be considered an antecedent with respect to some assertion may be a consequent with respect to another assertion.

<sup>76</sup> Geulincx, *Logic* II, Sect. 1, Ch. 3, §2, I 237-238: 'In individuo autem non datur Enunciatio simplex, cum quaevis Enunciatio plura dicat, sive formaliter sive consequenter, sive expresse sive implicite; nam et dicit hoc quod formaliter dicit, et insuper in consequenti dicit se esse veram; et rursum quae hanc veram esse dixerit, etiam se veram esse dicit, idque in infinitum; adeo ut omnis Enunciatio dictione sit infinita, sicut Physici demonstrant, omne Corpus divisione infinitum esse.'

<sup>77</sup> Cf. Geulincx, *Logic*, II, Sect. 1, Ch. 6, §1, I 245.

formally the assertion ‘Peter is Peter’ is regarded as simple, whereas the assertion ‘Peter is Peter and Peter is white’ is formally a complex assertion.

This distinction between saying something formally (*formaliter*) and by implication (*consequenter*) is of the utmost importance, according to Geulincx. For when one commits oneself to the truth of a specific assertion, one also commits oneself to everything that follows from it. This may not be explicitly or formally (*formaliter*) the case, but it is the case implicitly or by consequence (*consequenter*). And, since Geulincx views the notion of consequence as one of logical containment, it follows that the formal assertion is an actual whole in which all its consequences are logically contained, that is, enumerated by way of conjunction.<sup>78</sup>

Geulincx holds, then, that the antecedent is a conjunctive or actual whole with respect to the consequent, which is thus an actual part of that whole.<sup>79</sup> In fact, any antecedent is nothing other than a whole consisting of a conjunction of all assertions subsumed under the general assertion. These are, then, the assertions that follow from the more general assertion. The only difference between the conjunction (in its entirety) and the formal (‘simple’) antecedent is that in the conjunction all assertions that are part of the antecedent are made fully explicit. This is precisely what Geulincx expresses by the distinction between saying implicitly (*dicere consequenter*) and saying explicitly (*dicere formaliter*). What the antecedent says merely implicitly, the conjunction – or composite – says explicitly. This means that a logical consequence makes explicit, in the consequent, what is already implicitly said by the antecedent. To show therefore that something follows from an assertion is to render explicit what was already implicitly contained in that assertion.

#### 4.2.4 Relations between terms

Whereas in the case of the logical consequence – which concerns assertions – we are dealing with an actual whole (*totum actuale*), containment of concepts is a matter of a potential whole (*totum potentiale*). A term is a disjunctive whole in which all the subordinated terms are disjunctively connected. In a true affirmation the subject term is member of the predicate term (the superset). If so, Geulincx calls the predicate a genuine predicate (*praedicatum in dignitate*). This is the case, for instance, with the assertion ‘Gold is a metal’. This means that a genuine predicate contains its subject in so

<sup>78</sup> Geulincx, *Logic II*, Sect. 1, Ch. 6, §1, I 245.

<sup>79</sup> Geulincx, *Logic II*, Sect. 2, Ch. 8, §6, I 282: ‘Hoc Quadratum [= the third square of the logical cube] analogum est cum Primo Quadrato; fundatur enim hoc Quadratum in Continentia, qua Antecedens continet suum Consequens penes Illationem seu Consequentiam, sicut Primum Quadratum fundatur in Continentia, qua Praedicatum continet se in suum Subjectum quoad Affirmationem. Praedicatum continet suum Subjectum in genere Totius Potentialis; Antecedens vero continet suam Conclusionem in genere Totius Actualis; quotquot enim in Antecedente sunt Conclusiones, continentur in illo penes *Et*, seu Copulative; Subjecta vero continentur in Praedicato penes *Vel*, seu Disjunctive.’

far as it is a disjunctively enumerated whole of which the subject is a part.<sup>80</sup> Affirming a genuine predicate of a subject leads to a true affirmation. For example, when metal is said of gold, metal is a genuine predicate because gold is actually a metal and its concept is accordingly contained in the concept of metal. And the subject may also be convertible with the predicate. Thus, 'man is man' is part of the concept of man, as being contained in its set, and so is the definition of man – if we predicate 'rational animal' of 'man', we have, in fact, given a definition, which is identical with the subject, and also contained in its set.<sup>81</sup> As a result, every assertion with a genuine predicate and subject is such that the predicate contains the subject – they are true assertions. The only kind of affirmation Geulincx is interested in are eternal truths, which means that the subject and predicate hold the proper kind of conceptual relation. This is why he can conclude that it is a property of the predicate that it somehow contains its subject.<sup>82</sup>

In a separate chapter on the logical order of terms, Geulincx explicates the hierarchical tree of concepts – the tree of subject and predicate levels.<sup>83</sup> Terms that are affirmed of each other in an affirmation can be logically prior, simultaneous, or posterior. Geulincx uses the following notions in the context of the logical order: matter, form, subject, essence and property. The notions of essence and property will be further explained in Section 4. To understand essence, however, it is necessary to grasp Geulincx' use of the Aristotelian concepts of matter and form. For him, these are not metaphysical terms but logical notions. As for form (*Forma*), Geulincx distinguishes between the accidental form (*Forma per accidens*) and the form-per-se (*Forma per se*).<sup>84</sup> The accidental form is a form that is incidental to a thing, such as the form white of a man. The form-per-se of man, on other hand, is that part of its essence – 'rational animal' – that offers the essential difference, namely, 'rational' – or extension as the form-per-se of body. Matter is the superior term (*superius*), which is qualified by the form-per-se. Thus, the matter of 'man' is 'animal'. It is a logically higher term than rational. The subject or essence in turn is constituted by the matter and form taken together, and is what is expressed in a definition. For example, body is extended being (*Ens extensum*), where extension is the form and being (*Ens*) the matter or superior term. Extension (or the form) is the inferior of being (or the matter). Another important issue is that matter and form are relative.<sup>85</sup> For example, metal is the matter of gold, but

<sup>80</sup> Geulincx, *Logic* I, Sect. 1, Ch. 2, §3, I 178: 'Subjectum dignitate est id de quo alterum, ad quod comparatur, affirmari potest affirmatione vera; Praedicatum dignitate est quod de eo, ad quod comparatur, affirmari potest affirmatione vera.'

<sup>81</sup> A subject, however, is in relation to its definition an actual whole, as we have said above. This is clear from the fact that animal and rationality are not species of man, but its matter and form.

<sup>82</sup> Geulincx, *Logic* I, Sect. 1, Ch. 2, §7, I 180: 'Ex his facile intelligitur ista Proprietas Praedicati: Praedicatum in se quodammodo continet suum Subjectum.'

<sup>83</sup> Geulincx, *Logic* I, Sect. 2, Ch. 9, 'De Ordine et Dissolutione Terminorum', I 229-232.

<sup>84</sup> Geulincx, *Logic* I, Sect. 1, Ch. 7, §2-§3, I 192-193.

<sup>85</sup> Geulincx, *Logic* I, Sect. 2, Ch. 11, §10, I 231-232.

body is the matter of metal. In other words, metal, the matter of gold, is itself composed of matter and form. Eventually, the highest concept is being (*Ens*), which is prior to all other concepts, and thus is involved in all concepts. This has wide-ranging ramifications, according to Geulincx. What this means for scientific knowledge will be explained in Chapter 9.

From this short explication of these notions it is apparent that the matter is logically prior to the subject and to the form.<sup>86</sup> The subject is constituted by matter and form and is therefore posterior to both of them. In other words, the meaning of the subject is constructed from the meanings of its matter and form, and parts are prior to the whole. The subject is a compound concept, a whole constituted by its parts. Matter is in turn the superior term of the form. The essence is identical to and thus logically simultaneous with the subject.<sup>87</sup> Finally, properties are posterior to the subject because they follow from it.<sup>88</sup>

Although the type of whole-part relationship between concepts and assertions differs, they accord in that they can be both placed in the scheme of identity and difference laid out above. Relations between individual assertions and between individual terms are logically necessary if they are either completely the same or if one is part of the other. In other words, the relation should always be that between a subset and a superset. Only in those cases, an assertion or consequence is necessary true, which is a condition for scientific knowledge. So reason always concerns the third type of identity/difference relation between part and whole. It consists, moreover, of those assertions that are eternal truths because the subject-term is conceptually part of the predicate-term.

In sum, Geulincx has elaborated the notion of logically necessary relations, which can be found in Descartes, by using his theory of containment. He offers a fully elaborated and highly technical account of it, which boils down to a version of set theory. Unlike Descartes, Geulincx combines this theory of containment with traditional Aristotelian logic, using its terms and distinctions. It is probably Descartes' influence which explains why the logical consequence has become central to Geulincx' logic, unlike contemporary logics in which the consequence was rarely discussed.<sup>89</sup>

This theory of reason is also crucial for the main theme of this study. It can now be concluded that conceptualization, and thus also scientific knowledge, includes operations of the mind. Parts and wholes are constituted by a specific acts of thought, which do not reflect reality. As a result, it is likely that the concepts used in the sciences

<sup>86</sup> See Geulincx, *Logic I*, Sect. 2, Ch. 11, §3-§6, I 230-231.

<sup>87</sup> Geulincx, *Logic I*, Sect. 2, Ch. 11, §7, I 231: '... Essentiam totalem esse simul cum suo Subjecto; quia in Affirmatione vera, in qua Subjectum ejus ponitur, nec est prior suo Subjecto, nec posterior, sed eadem et simul.'

<sup>88</sup> Geulincx, *Logic I*, Sect. 2, Ch. 11, §8, I 231.

<sup>89</sup> See Ashworth 1974.

are, at least regards their form, not completely representative of reality. This subject will be taken up in the chapters 6 to 9.

#### 4.3 The principles of scientific knowledge

In the previous two sections, it was shown what Geulincx understands by reason (*ratio*) in so far as it concerns inferences. But that is not the only notion of reason he uses. Reason can also mean the ultimate principles of knowledge, of which no further reason can be given. In other words, these assertions cannot be inferred from others. Rather, they are the ultimate grounds of all other assertions. Geulincx calls these assertions therefore 'primary notions'.

Geulincx holds then that principles are 'primary notions'. He discusses the primary notion in a separate chapter of his *Logic*.<sup>90</sup> It is defined there as a 'necessary proposition of which no reason (*Ratio*) is to be sought'.<sup>91</sup> The qualification 'necessary' is introduced to exclude contingent matters, since assertions that refer to them need no reason either – contingency depends on God's will instead of his reason, so does not admit of explanation. We are just aware of them through sense perception. Like Aristotle, Geulincx affirms that primary notions are the ultimate premises of scientific arguments, from which the conclusions derive their certainty.<sup>92</sup> Because they are the ultimate foundations of scientific reasoning, they are ungrounded. They cannot be further explained. Geulincx qualifies this a little in the *Method*. He points out that principles either have no reason apart from themselves, or, if they have a reason, it hardly differs from the *ratum*, meaning that it is immediately implied in it, and therefore not worthwhile to argue for.<sup>93</sup> From the discussion in the *Logic*, it turns out that this distinction accords with the difference between the affirmations of essences and common notions, respectively. Many common notions always follow immediately from some essence.

In his *Logic*, Geulincx classifies primary notions in three groups, only the first two of which are relevant for our discussion. The first class of primary notions are 'essential propositions' (*Propositiones essentials*), which are those propositions 'in which an

<sup>90</sup> Geulincx, *Logic* IV, Sect. 2, Ch. 13, I 444-445. Cf. *Method*, Ch. 1, II 5: 'Principium est enunciatio necessaria, cuius non est danda ratio.'

<sup>91</sup> Geulincx, *Logic* IV, Sect. 2, Ch. 13, §1, I 444: 'Prima Notio est Propositio necessaria cuius non est petenda Ratio.'

<sup>92</sup> Which is why Geulincx calls the *prima notio* also the *prima ratio*; *Logic* IV, Sect. 2, Ch. 13, §1, I 444: 'Prima Notio subinde etiam est prima Ratio, nempe quando non tantum non petenda est ejus Ratio, sed neque potest redi ulla ejus Ratio praeter ipsam; sic ista est prima Ratio.'

<sup>93</sup> Geulincx, *Method*, Ch. 1, II 5: 'Quia nimirum nullam sui Rationem habet praeter se ipsam, aut si quam habeat, illa tam parum a Rata distinguitur, ut simul cum ipsa Rata se insinuet, ac proinde non sit operae pretium eam seorsim exhibere.'

essence is predicated of a subject', such as the assertion 'body is extended'.<sup>94</sup> These are always primary notions. Thus, the first class comprises definitions of subjects. The second class comprises propositions in which the 'first property' (*prima Proprietas*) of a thing is affirmed of the subject, such as the common notion 'The true says nothing false'.<sup>95</sup> 'First property' means that there are no steps of thought (inferences) necessary to ascribe the property to the subject. Rather, it is immediately seen that the property belongs to the essence – they follow immediately from it. These assertions are called *primary* notions because if the subject cannot be defined, they are the first what can be said of it. To this category belong most of the common notions, the metaphysical and logical principles used in several disciplines.<sup>96</sup> Most common notions are, in fact, direct inferences from essences, which are so closely connected to them that they need not be proved.

Geulincx says more about principles at the outset of the *Method*. He claims there that some principles are called 'common notions' because anyone who is of sound mind sees clearly that they are true.<sup>97</sup> For this reason, common notions are known to be true without being taught or without learning – it is *immediately* seen that they are true. Only prejudices or inattentiveness may obscure them from us. That is why it is useful to use brief expositions, examples, refutations of prejudices and repetitions of common notions, so that our intellect attends to them. Another reason why they are named 'common' is that they are used in several disciplines. This goes both for metaphysical principles concerning being (*esse*), such as the principle of contradiction, and logical principles concerning saying (*dicere*), such as the assertion 'the true says nothing false'. Not all of these principles can be immediately inferred from the essence of a subject, and therefore Geulincx' conception of common notion comprises more than just first properties.

This conception of common notion explains why Geulincx thinks that logical axioms can be proved in logic.<sup>98</sup> In other sciences, these notions are considered axioms, which are intuitively known. But although most of the common notions are readily assented to, Geulincx still deems it necessary to deduce propositions in logic which are

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<sup>94</sup> Geulincx, *Logic* IV, Sect. 2, Ch. 13, §4, I 444: '... Propositiones essentiales, in quibus nempe Essentia dicitur de suo Subjecto.'

<sup>95</sup> Geulincx, *Logic* IV, Sect. 2, Ch 13, §5, I 445: '... illas Propositiones, in quibus prima Proprietas affirmatur de Subjecto Definitionem non admittente ...'

<sup>96</sup> Geulincx, *Logic* IV, Sect. 2, Ch 13, §5, I 445: 'Et tales farinae sunt plerumque Communes Notiones quae in Scientiis circumferuntur ut videre potes in Elementis Euclidis.'

<sup>97</sup> Geulincx, *Method*, Ch. 1, II 5: 'Principium vocatur etiam *Communis Notio* [...] eo quod omnes qui sana sunt mente, eam agnoscere soleant, clare videntes eam esse veram, fierique non posse quin vera sit, idque independenter ab opera docentis, independenter etiam a privato studio, quo illam ex aliis enunciationibus elicuerint.'

<sup>98</sup> See also Chapter 1.5.1.

considered axioms in other sciences.<sup>99</sup> In logic, they are theorems. That is the main point of his first inaugural address. We have seen in Chapter 1 that Geulincx notices, after the removal of the *genii*, that there are a few things left to be dealt with, namely, the principles 'taught by reason alone'.<sup>100</sup> In the 1665-edition of the first inaugural address, these principles are called common notions, and Geulincx adds that he is in particular concerned with logical axioms.

Geulincx carried out his proposals of his first inaugural address in his *Logic* of 1662 and in the *Method* of 1663. Particularly the *Method* is relevant for our purposes, given the fact that Geulincx discusses in this work the principles, definitions, and other components of scientific proofs in full detail, because he wants to show that the geometrical method, which is used in the *Method*, is so powerful because it presents the distinctive elements of a scientific demonstration separately. Geulincx argues that logic is to be taught in the geometrical way (*tenore Geometriae*) rather than the haphazard way in which it is commonly taught. It has to be developed as an exact science, just like arithmetic and geometry. For Geulincx, the mathematical disciplines form the ideal of the methodical treatment of other disciplines, because their arguments are clear, and the definitions, postulates and common notions are clearly and separately presented.<sup>101</sup> Logic has to meet the same requirement of clarity. As a result, with the exception of the principles of logic, every proposition in logic is to be demonstrated from those very principles, and all what does not follow from these principles should be removed from logic. We will now further examine Geulincx' *Method* to clarify the distinction between the two kinds of principle, affirmation of the essence and common notion.

In the *Method*, Geulincx makes a sharp distinction between general or metaphysical principles (*principia generalia*) and special or logical principles (*principia specialia*), both of which are common notions.<sup>102</sup> Principles are called special because they follow immediately from the subject matter of logic. The special principles (*principia specialia*) of the *Method* are thus logical principles. Geulincx thus does not hold that they are called 'special' because those principles cannot be used outside logic. Logic, in its entirety, stands in service to the other sciences. This differs slightly from Aristotle's explication of the term special principle. For Aristotle, special principles are confined to

<sup>99</sup> It is unclear whether also the metaphysical notions need to be demonstrated in metaphysics. Geulincx does not discuss this.

<sup>100</sup> See Geulincx, *Oratio I*, I 41-42: '... paucula supersunt, quae sola Ratio dictat Principia ...'; cf. Chapter 1.5.1.

<sup>101</sup> See Geulincx, *Ethics I Ann.*, Ch. 2, Sect. 1, §1, pt. 11, III 177. An axiomatic elaboration of logic was already demanded by Galenus (see Beth 1948, 29; Scholtz 1931, 36-37). Geulincx was the first to have carried this out, in his *Method* of 1663 (see Beth 1948, 42-43).

<sup>102</sup> Geulincx, *Method*, Ch. 1, II 6: 'Principia Generalia spectant ad Metaphysicam. Metaphysica enim sola praecedit Logicam inter scientias, quamvis nec sine Logica tradi possit. Ideo ante Definitiones posui ista Principia. Definitiones enim, quas adducam, Logicae sunt propriae, et in Logica quodammodo, cum haec Principia Generalia sint ante Logicam.'

one discipline, studying some domain of beings. When Geulincx would have followed Aristotle, the logical principles should be used in logic alone. But contrary to Aristotle, Geulincx thinks that special principles may be used in other disciplines as well. They are only special to logic because they 'are born from the object of logic and its mode of consideration'.<sup>103</sup> The principles of logic are concerned with saying (*dicere*), since the proper object of logic is the logical consequence, whereas metaphysical principles are related to being (*ens*).

Again, it was already shown that logic depends on metaphysics. The general, metaphysical principles are needed for logic because logic is grounded in metaphysics. This means on the one hand that metaphysical principles (or axioms) are used in the arguments in logic and on the other hand that the logical principles are analogous to them. As said, Geulincx holds on to the Aristotelian tenet that saying (*dicere*) follows being (*esse*).<sup>104</sup> That is why most logical principles have some analogy with metaphysical principles.<sup>105</sup> For example, the first special principle of logic, 'Saying is always saying something' (*Dicens aliquid dicit*), is the logical counterpart of the first metaphysical principle, 'There is something' (*Aliquid est*). In view of the fact that metaphysics is concerned with the nature of being (*natura Entis*) and logic with saying (*dicere*), it is obvious that metaphysical principles concern things (*res*) and logical principles assertions.

Because metaphysics precedes logic, Geulincx offers first the metaphysical principles in his *Method*. The first metaphysical principle is 'There is something' (*Aliquid est*), which is followed by the principle 'There are many things, and without end', leading, with intermediate steps, to the sixth principle, a classic formulation of the principle of contradiction, 'It is impossible that the same thing is and is not at the same time' (*Impossibile est, idem simul esse et non esse*). The order in which these principles are presented is not arbitrary, according to Geulincx. Apparently, the relations between the principles are such that one follows on the other, and in a sense needs the prior principle. For example, Geulincx says of the third principle that it presupposes the second one, and the fourth is considered to cohere (*cohaeret*) with the third and to

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<sup>103</sup> Geulincx, *Method*, Ch. 1, II 11-12: 'Sic voco [principia specialia], non quod eorum nullus usus sit in aliis Disciplinis (Logica enim, adeoque Principiis Logicis utuntur omnes scientiae), sed quod ex Objecto Logices et ejus modo considerandi nascantur; sicut Principia Generalia seu Metaphysica nascuntur ex natura Entis, quod est Objectum Metaphysics.'

<sup>104</sup> Geulincx, *Method*, Ch. 1, II 13: '... *Dicere sequitur Esse*, ideoque cum quid diversum est in *Esse*, eadem diversitas derivatur ad *Dicere*.'

<sup>105</sup> Geulincx makes the following comment on the second special principle: 'Hoc Principium analogiam habet cum Principio Generali tertio (sicut Principium speciale primum analogiam habet cum Principio Generali primo) ...' (*Method*, Ch. 1, II 12).

constitute as it were a unity (*quasi unum constituit*) with it.<sup>106</sup> The order between these principles, however, is not deductive; there is no demonstration of one principle from another. So the relations between them remain unclear, the more so because Geulincx has not written an elaborated ontology in which he proofs or discusses these principles.

It is not needed to list all principles of the *Method* here. In brief, apart from the ontological principles dealing with properties of things in general, such as the principle of contradiction, all metaphysical principles concern either identity and difference or part and whole.<sup>107</sup> In the preceding section, we have seen that these two metaphysical topics are precisely the point where metaphysics and logic intersect. But what about the status of the special logical principles, used to infer the theorems of logic? The special principles of logic are logical assertions that cannot be proved in logic, such as 'Saying is always saying something'. As said, they are analogous to metaphysical principles. It is unclear whether they are discussed in metaphysics or another science which is concerned with the principles. Geulincx simply does not bring this up.

Again, apart from common notions which follow immediately from some essence, there are also principles of the essences of things. In the *Method*, these principles are presented by definitions.<sup>108</sup> For example, Geulincx defines assertion (*enunciatio*), truth, and falsity in the first chapter. Although these are mental acts (or somehow based on mental acts) and can therefore not be properly defined, they are still defined in the *Method*. Geulincx acknowledges this in his commentary on the definition of affirmation.<sup>109</sup> What he in fact does is giving nominal definitions in order to focus the mind on their ideas. These principles belong to the subject matter of logic – the logical consequence – and are therefore the subjects of scientific demonstrations. Every chapter of the *Method* contains definitions of the topic of the chapter.

To conclude, Geulincx' account of the principles coincides largely with that of the general Aristotelian position. First, like the Aristotelians, Geulincx considers the principles to be the ultimate foundations for scientific knowledge. Moreover, he also divides them into axioms and definitions (the affirmations of the essence). Hypotheses are not considered here. Although Geulincx uses the category of postulates in his *Method*, which are, for him, also assumptions, he clarifies that they are not true hypotheses. Indeed, purely rational sciences, such as logic, do not have hypotheses, on

<sup>106</sup> Geulincx, *Method*, Ch. 1, II 7: 'Hoc Principium clare supponit secundum.' This remark is followed by an explanation of why the principle 'Everything is what it is' (*Quidlibet est quod est*) needs the principle of multiplicity.

<sup>107</sup> See for the principles of things in general, apart from the seven general principles of the first chapter: Ch. 2, Pr. 1. The following principles concern identity and difference: Ch. 3, Pr. 1 and 2; Ch. 7, Pr. 2. And, finally, the following principles are related to part and whole: Ch. 2, Pr. 2 ; Ch. 7, Pr. 1, 3 and 4. There are, then, in total fourteen metaphysical principles needed for logic.

<sup>108</sup> See for Geulincx' comments on definitions, *Method*, Ch. 1, II 9-10.

<sup>109</sup> See Geulincx, *Method*, Ch. 6, Def. 1, II 70: 'Affirmatio est dictio, quae dicit Hoc est illud, v. g. haec dictio: *A est B*.'

Geulincx' view. But this is an issue we will confront later. Second, as with the Aristotelians, the essences of things are known through *intelligentia*, as will be shown in Chapter 6. Further, it is apparent that both the definitions and the common notions are more intelligible than the universal properties of things, because the latter follow from the essences. The causes of or rather reasons – the principles – for the properties are contained in the essence of the thing, namely, its form. Third, Geulincx also recognizes the difference between metaphysical (*principia essendi*) and logical principles (*principia cognoscendi*). Unlike Descartes, he sharply distinguishes metaphysics from logic.

#### 4.4 Essences and properties

In the preceding subsection, it was shown that a subset of the principles comprises the essences of things. These are definitions or affirmations of the essence. In order to further explain the notion of affirmation of the essence, it is necessary to discuss Geulincx' treatment of the predicables. In his *Logic*, Geulincx introduces the traditional set of predicables (*praedicabilia*) of Porphyrius, with this difference that he takes *genus* and *species* together as *superius*.<sup>110</sup> According to Geulincx, it is unnecessary to distinguish genus and species in logic. In his view, this is not even a logical but a metaphysical distinction. For definitions, it suffices to offer the *superius* and the essential difference. As we have seen, the essential difference (*differentia*) is the form-per-se, which is the logical equivalent of the scholastic notion of substantial form. Geulincx explains that the form is crucial for the definition, and is often very difficult to discover. For that reason, it is difficult to acquire knowledge, because 'knowing something scientifically means knowing by definition' (*scire enim est per Definitionem cognoscere*).<sup>111</sup> Apart from the form of the *definitum*, a proper definition needs also the matter (*materia*) of the thing. This is provided by the superior term (*superius*). Together with the essential difference (or form) the matter constitutes the subject as a whole.<sup>112</sup> Thus, something is always defined by giving the matter and form of the thing (the *definitum*) separately. For instance, being (*ens*) is the superior term (or matter) of body in general and extension the essential difference (or form-per-se). Together they constitute the extended being (*Ens extensum*) or body. Body is in turn the matter or superior term of, say, metal. It is important to underscore that, for Geulincx, the essence in logic is a concept. It is not a metaphysical term. The same goes for the properties of a subject, to which we turn now.

<sup>110</sup> Geulincx, *Logic I*, Sect. 1, Ch. 7, I 192-195. The traditional predicables are genus, species, essential or specific difference, property and accident.

<sup>111</sup> Geulincx, *Logic I*, Sect. 1, Ch. 7, §3, I 193: 'Atque inde difficultas Definiendi; Differentia enim ingreditur Definitionem tanquam pars ejus praecipua; ex difficultate Definiendi difficultas sciendi; scire enim est per Definitionem cognoscere.'

<sup>112</sup> Geulincx, *Logic I*, Sect. 1, Ch. 7, §4, I 194: 'Superius est Materia, quae juncta cum Differentia constituit suum Subjectum.'

The other two predicables are the unique property (*proprietas*) and the accident. Geulincx defines the unique property as an *accidens* that follows from the essence of a thing.<sup>113</sup> Examples of properties Geulincx mentions are divisibility and palpability of the body. The essential difference (the form) of the body is extension, which is accordingly the source – or principle – from which those properties follow.<sup>114</sup> This means, in terms of logical containment, that the properties mentioned are contained in or implied by the concept of extension. Further, also from the matter of the body, being (*Ens*), flow other properties, such as conceivability, meaning that body is a possible object of our understanding – it can be understood. Geulincx insists at this point that unique properties do not constitute the essence of body, even though they may seem so to us. For example, palpability is not the essence of body. Neither are properties *in* the body, nor are they a part of the body, but they simply follow from it.<sup>115</sup>

Properties are sharply separated from accidents in a strict sense, which neither follow from an essence nor are related to science.<sup>116</sup> Accidents are purely contingent items, which depend on the will of God alone. This becomes clear from the fact that an accident is not logically contained in the subject of which it is affirmed.<sup>117</sup> As a result, an accident is not a genuine predicate, indeed not a predicate at all. The major difference Geulincx emphasizes between the accident and the other three predicables is that accidents involve an indication of time – they are temporal assertions – while the others are affirmed without any reference to time, as being atemporal assertions (*extra tempus*). This is why the second are necessary and eternal truths when predicated of their subject.<sup>118</sup> This is impossible in the case of accidents. Because assertions concerning

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<sup>113</sup> Geulincx, *Logic I*, Sect. 1, Ch. 7, §5, I 194: ‘Proprietas est Accidens quod sequitur ex essentia ...’

<sup>114</sup> See Geulincx, *Logic I*, Ch. 8, §6, I 198-199.

<sup>115</sup> Geulincx, *Logic I*, Sect. 1, Ch. 7, §5, I 195: ‘... *Corpus* esse quid anterius istis Praedicatis, et per consequens ista Praedicata non esse in *Corpo*, sed ad *Corpus*. Prius est enim esse quam posse (quia nihil nihil potest); igitur prius est esse quam posse dividi, aut posse palpari. Atqui non sufficit esse ens, ut dividi vel palpari possit (cum multa sint entia, quae nec dividi nec palpari queant); debet ergo esse Certum ens (nempe *Ens extensum*) ad hoc ut dividi vel palpari possit; ideoque illud *Certum ens*, (nempe *Ens Extensum*, seu *Corpus*), prius est quam *Divibile* vel *Palpabile*; adeoque illa non sunt in *Corpo* tamquam Subjecto; cum Praedicatum in Subjecto vel sit ipsum Subjectum vel pars ejus. Subjectum nec se ipso prius est, et multo minus sua parte prius est.’

<sup>116</sup> Geulincx, *Logic I*, Sect. 1, Ch. 7, §6, I 195: ‘Accidens stricte dictum est Accidens quod non sequitur ex essentia sui Subjecti ...’ Cf. Geulincx, *AL I*, §53, III 397: ‘*Essentia* est attributum necessarium et primum; *proprietas*, necessarium et secundum. *Accidens* est attributum non necessarium sed contingens et secundum.’ Geulincx uses here the Cartesian term primary attribute for essence.

<sup>117</sup> Cf. Geulincx, *Logic I*, Sect. 1, Ch. 5, §7, I 188-189.

<sup>118</sup> See Geulincx, *Logic I*, Sect. 1, Ch. 8, §1, I 195-196.

accidents always involve an indication of time, they are not predicates, but merely analogous to them (*analogum Praedicatum*).<sup>119</sup>

In the *Peripatetic metaphysics*, Geulincx explains the distinction between essence and unique property by referring to reason (*ratio*). A primary attribute, which is the Cartesian term for essence, does not have a prior reason (*ratio*), which means that it cannot be explained by another attribute of the same subject – it is a principle and primitive. Unique properties, by contrast, can be explained by a reason, that is, they can be explained through a property preceding it in the natural and logical order. For instance, to be extended constitutes the essence of body and to be divisible is a unique property flowing from that essence. By contrast, accidents do not follow from it and thus cannot be explained – to be divided here and now, for example, is an accident and plainly contingent. The essence of a thing can also be referred to by the term *quidditas*, because the essence concerns what the thing is, so that a suitable answer to the question ‘What is it?’ can only consist in offering the essence of the thing in a definition.<sup>120</sup> Accordingly, true science (*veram scientiam*) starts always with the essence or primary attribute of the thing, because scientific knowledge of properties can proceed only from knowledge of the primary attribute or essence. The essence is the ultimate ground of the properties. This notion of the essence is what Geulincx calls an ‘idea’ at this point.<sup>121</sup> The idea provides us with knowledge of the essence of a thing, such as extension as the essence of the body, thought as the essence of the mind, and the essence of the sphere as a certain figure.<sup>122</sup> An idea is the basis for proofs (*demonstrationes*) of properties, as for example the proof that body is infinitely extended and therefore divisible.

In sum, knowledge of accidents is completely opposite to scientific knowledge, so must be removed from logic, considering that logic is primarily a tool for science.<sup>123</sup> By contrast, the superior term and essential difference are related to the scientific instrument of definition and, with respect to the inferior terms, also the instruments of example and division. Division consists in offering the subset – the inferior terms – of a superset. Finally, properties are related to the reasons (*rationes*), given the fact that science consists in inferring properties from a primary attribute (or essence) or from other properties. Science indeed consists in nothing other than reasoning from primary (essences) to secondary attributes (properties).

But what kinds of items are properties? And are properties always real attributes of the subject and thereby of external reality or can they also be constituted by us? A

<sup>119</sup> See Geulincx, *Logic I*, Sect. 1, Ch. 8, §3, I 196.

<sup>120</sup> See Geulincx, *MP*, II §8, II 262.

<sup>121</sup> See for a fuller explanation of idea in Geulincx, Chapter 6.

<sup>122</sup> Geulincx, *MP* II §8, II 263: ‘Sic idea corporis consistit in extensione, idea mentis (spiritus, dicunt Scholae) consistit in cogitatione, idea globi consistit in certa figura, etc.’ Although Geulincx ascribes this view of idea to Platonists, so does not appear to hold it himself, I will argue in Chapter 6.3.2 that he does subscribe to it.

<sup>123</sup> See Geulincx, *Logic I*, Sect. 1, Ch. 8, §7, I 199.

satisfactory answer to this question must wait until Chapter 8. At this point, it needs to be underscored that some properties are real aspects of external objects while others are not.<sup>124</sup> In his commentary on Descartes' *Principles*, Geulincx calls the former internal and the latter external 'attributes'. He means by the latter external denominations, such as the property of being palpable. Internal properties of a thing are modes, such as the modes of motion and rest. They are unique properties of a thing if they are expressed 'potentially' (*potentialiter*), that is, if they indicate what the thing can be. For example, it is a property of a body that it is mobile. Given the fact that Geulincx recognizes extrinsic denominations as unique properties, it can be said that Geulincx, like Burgersdijk, claims that there are relative properties. It is important to mention here that the highest genus – or the most superior term – is being (*ens*). From this term follow properties such as conceivability and truth. Geulincx argues that 'being' is nothing other than a mode or logical form of thinking by which we grasp external objects. This implies that there are even many properties which are relative to ourselves, in the sense that they are constructed by our intellect, and therefore do not pertain to the object in itself. In this respect, it is useful to look somewhat closer at the types of properties Geulincx distinguishes in his *Logic*.

Geulincx devotes a separate chapter of the *Logic* to a classification of the kinds of property.<sup>125</sup> He discerns there four types, although he admits that there may be others. First, properties can be negative (*Proprietas Negativa*). This class includes what the essence of a thing precludes or in other words whatever the thing necessarily is not. From the affirmation of the essence of a thing flow an infinite number of negations declaring what the essence is not. For example, from the proposition 'this is a stone' follow infinite negative properties, such as 'this is not a metal' and 'this is not a tree'.<sup>126</sup> Negative properties are of use in scientific disciplines, because positive properties can be inferred from them. For example, it is a property of the body that it is impenetrable by other bodies. In turn, the positive property that a body is palpable can be inferred from this negative property. The second kind of property is the 'absolute power' (*Potentia Absoluta*): 'The power flows always from the essence of its subject, and is posterior to it, since being (*Esse*) precedes being capable (*Posse*)'.<sup>127</sup> An absolute power is thus

<sup>124</sup> Geulincx, *AL* I, §59, III 398-399: 'Accidens duplex est: internum (quod est modus sui subjecti; ut motus aut quies in corporis) et externum (quod etiam extrinseca denominatio in Scholis appellatur; ut *palpari*, respectu corporis duri, *permeari*, respectu corporis fluidi). Fiuntque accidentia proprietates dum potentialiter exprimuntur; ut *mobile* est proprietas corporis, *palpabile* est proprietas corporis duri, *permeabile*, fluidi. Ex quo patet, etiam inter proprietates alias internas esse, alias quodammodo externas.'

<sup>125</sup> Geulincx, *Logic* I, Sect. 1, Ch. 9: 'De Speciebus Proprietatum.', I 199-202. Cf. Aristotle 1984, *Topics* I.5, 102a18-30, vol. 1, 170, and *Topics* V, vol. 1, 216-235.

<sup>126</sup> Geulincx, *Logic* I, Sect. 1, Ch. 9, §1, I 199-200.

<sup>127</sup> Geulincx, *Logic* I, Sect. 1, Ch. 9, §2, I 200: 'Potentia enim semper profluit ex Essentia sui Subjecti, atque illo posterior est, cum prius sit Esse quam Posse.'

something a thing can be because of its essence, and is therefore a unique property of the thing. From the actual being of a thing follow a number of things of which it is capable. Extension, for instance, is capable of being divided or can be divided, so divisibility is a property of extension. The third type of property comprises analogy (*Analogia*), proportion (*Proportio*) and resemblance (*Similitudo*). From the essence of thing follow infinite properties of this type as well. For instance, the property 'removing a predicate from a subject' is an analogy of the property of negating – both say that something is denied of a subject. Often the words *veluti* and *quasi* are used to modify the copula if the property is of this type. So the assertion 'A negation overturns as it were (*quasi*) the affirmation' gives an analogy of negation. The fourth kind of property comprises relations, considerations and conditions (*Relatio*, *Respectus*, *Habituudo*), flowing from the essence of the subject – a 'relative predicate' (*Praedicatum Relativum*).<sup>128</sup> Geulincx offers the example that an affirmation is always an affirmation of something, which is a relative property of the affirmation.

Now that the distinction between unique property, accident and essence is clarified, it is possible to further specify Geulincx' notion of scientific knowledge. Contingent matters do not belong to science, because they neither have a reason (*ratio*) nor are principles (primary notions).<sup>129</sup> This results from the fact that those things are not dependent on God's intellect but on his will, and, moreover, because they involve motion and time. Although they cannot be known a priori through reason, contingent things can be known a posteriori by sense perception (*sensum*), experience (*experientiam*), or trust (*fidem*). Science, however, is a purely a priori affair, with the exception that it may involve, in the case of physics, hypotheses, which although a priori uncertain are a posteriori certain.<sup>130</sup> This is explained below.

In sum, the scientific process of reasoning starts with a definition of an essence and then deduces unique properties (*proprietates*) from that essence. In turn, other properties can be deduced from the property proved, and so on. In other words, science starts from self-evident and necessarily true propositions, which cannot be proved, and leads by deduction to unique necessary propositions, namely, conclusions that follow from self-evident truths. These conclusions are unique properties of the essence or

<sup>128</sup> Geulincx, *Logic* I, Sect. 1, Ch. 9, §4, 201.

<sup>129</sup> Geulincx, *Logic* IV, Sect. 1, Ch. 1, §5, I 394: 'Ex quo jam clare intelligitur illud Axioma Philosophorum: *Contingentium non est Scientia*. Scientia enim proprie dicta, et quae ad Disciplinas spectat, non est aliud quam apta responsio ad quaestionem *Quid est?* aut ad quaestionem inde natam: jam autem nec ad quaestionem *Quid est?* per Contingentem propositionem responderi potest, nec ex responsione ad quaestionem *Quid est?* Contingens propositio sequi potest.'

<sup>130</sup> Geulincx, *Disp. Phys.* V, 'Physical hypotheses', 3 December 1664, §8, II 512: 'Contingens esse dubium, a priori procedentibus; qui est processus philosophicus. Ideoque nobis etiam a priori procedentibus, motus existentia tantum supponenda est, quantumvis illam a posteriori sciamus.', and § 19, II 514.

subject to which they belong. As a result, proper scientific knowledge consists of extra-temporal or eternal truths. Geulincx argues that these truths ultimately depend upon divine thought.

#### 4.5 The subject matter of the sciences

Although it was not discussed in the previous chapter, it can be said here that Descartes does not offer an account of the establishment of the subject matter of the disciplines. To be sure, he does classify the disciplines, but he does not explain on what basis they are divided. By contrast, Aristotelians determine the subject matter of the theoretical disciplines on the basis of the abstractness of the beings with which they are concerned. In this section, I examine if and, if so, in what way Geulincx establishes the subject matter of a discipline.

To start with, it is to be underscored that Geulincx' philosophy is systematically ordered – it is a system.<sup>131</sup> By system I mean that the various disciplines are strictly ordered and held together, not just by a similar method (their form), but primarily by the fact that they are grounded in a foundational discipline which provides them with their subject matter and proper principles.<sup>132</sup> Moreover, the disciplines cannot be developed properly without this foundational discipline. In the case of Geulincx, this foundational discipline is metaphysics. For example, in his view, ethics cannot proceed without having knowledge of metaphysics. Unfortunately, however, he does not elaborate this notion of a system. This is a result of the fact that, in his view, the question of the subject matter belongs to a separate discipline, the science of the sciences, which was never written. Still, there are some places in his works where he briefly discusses the relations between the disciplines and the subject matters of the sciences. I will not relate all his comments here, but instead discuss only the introduction to the *True metaphysics*.<sup>133</sup>

At the outset of the introduction to the *True metaphysics*, Geulincx offers a definition of metaphysics and also discusses its relation to the other disciplines. Here we find Geulincx' most developed account of the systematic unity of philosophy, as well as the subject matters of the principal scientific disciplines. All scientific disciplines together form a unitary system that is grounded in metaphysics, the most fundamental science. At this point, Geulincx describes metaphysics as a discipline 'comprising first science (*prima scientia*) and the other sciences connected with it in a continuous and

<sup>131</sup> Cf. Rousset 1999, 7.

<sup>132</sup> See on the notion of a system of philosophy in the seventeenth century, Ritschl 1906, Von der Stein 1970, Strub 1998, and Catana 2008

<sup>133</sup> There are other points at which Geulincx discusses the 'encyclopaedia' of philosophy: *Oratio I* 1653-ed, I 41-42; *Oratio I* 1665-ed, I 41-43; *Ethics*, dedicatory epistle, III 3-4; Dutch edition of the *Ethics* of 1667, Geulincx 1986, 77-78, 139. See De Vleeschauwer 1964b about the several alterations Geulincx has made to the order of the disciplines during his career.

uninterrupted bond (*cohaerentium*).<sup>134</sup> By the *prima scientia*, he means the *cogito*, with which his metaphysics begins – which is the classic dictum ‘Cogito, ergo sum’.<sup>135</sup> By the other sciences (*scientiae*), he accordingly does not refer to other disciplines, but to all propositions known with certainty within metaphysics, every one of which is also explicitly named a *scientia* and is typographically distinguished from commentaries on these scientific assertions. These commentaries are, by contrast, not scientific assertions proper, although they do provide the arguments to either clarify or proof them. Thus, *scientia* here does not mean a discipline as a whole, but refers rather to individual scientific assertions. All these scientific assertions of the *True metaphysics* are either strictly deduced, directly from the primary science (the *cogito*) or indirectly through other scientific assertions, or are related to it in some other way – which means, for instance, that a scientific assertion is analogous to another assertion. He indicates both types of relation as having continuity (*perpetuitatem*) with the primary science.<sup>136</sup> Because all scientific assertions of metaphysics have this continuity with the first science, metaphysics in its entirety is sometimes called *prima Scientia*.

At this point, it needs to be underscored that Geulincx' *True metaphysics* is not ontology or general metaphysics, which is concerned with being in general and its properties. Instead, it is mainly concerned with what can be found in Descartes' *Meditations*: the mind, body, and God. In the 1665-edition of the first inaugural address, Geulincx mentions what the task of metaphysics is, namely, the ‘apodictic’ presentation of the essence of mind and body and their properties (*Proprietates*). In other words, this concerns the Cartesian notion of metaphysics, according to which the subject matter of metaphysics is not being in general (*ens quatenus ens*), but rather the three particular entities mentioned.<sup>137</sup> Ontology, by contrast, is dealt with by Geulincx in his *Peripatetic metaphysics*, a further discussion of which is postponed till Chapter 9. Here, it must be emphasized that Geulincx considers the *Peripatetic metaphysics* to be part of his metaphysics.<sup>138</sup> Its purpose, then, is not just refuting contemporary Aristotelian metaphysics. However, the *Peripatetic metaphysics* does not amount to a comprehensive and systematic presentation of ontology, providing us with the ontological principles

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<sup>134</sup> Geulincx, *MV Intr.*, Sect. 1, §1, II 139: ‘Metaphysica est primae scientiae, et aliarum cum ea perpetuo nexus et sine interruptione cohaerentium, complexio.’

<sup>135</sup> Geulincx, *MV I*, Sc. 1, II 147: ‘Prima Scientia. Cogito, ergo sum.’

<sup>136</sup> Geulincx, *MV Intr.*, Sect. 1, §2, II 139: ‘Constat igitur scientia prima et aliis quibusdam; nempe talibus quae cum prima scientia perpetuitatem habent. Et propter hanc perpetuitatem aliarum scientiarum cum prima, quae ad Metaphysicam requiruntur, ipsa integra Metaphysica nonnunquam etiam *prima Scientia* vocari solet.’

<sup>137</sup> In the 1665-edition of his first inaugural address, Geulincx describes it as follows: ‘Tribus his, Logicae, Geometriae, Arithmeticae, Metaphysicam subnectant, sed probe repurgatam, Mensis et Corporis essentiam ac Proprietates apodictice perhibentem.’ (*Oratio I* 1665-ed, I 42)

<sup>138</sup> See *Ethics I Ann.*, Ch. 2, Sect. 1, §3, pt. 13, III 197.

needed for other sciences, such as logic. Moreover, Geulincx leaves it completely unclear how the *True metaphysics* and the *Peripatetic metaphysics* are related to one another.

As for the other disciplines, Geulincx notices that there are two ways in which the continuity (*perpetuitas*) with the primary science can be taken away (*tollitur*), namely, either by an excursion (*excursus*) or by a mixed science (*miscellam*). An excursion in metaphysics occurs, according to Geulincx, ‘when a fair number of things are collected concerning a certain property (*affectionem*), at which we have arrived from the primary science through an uninterrupted bond without an explicit regard to other [metaphysical] properties, or without a similar excursion that had been established before we applied ourselves to this property.’<sup>139</sup> Even though this is a difficult sentence, it is clear that the particular property is the subject matter of the discipline. Geulincx in turn distinguishes the following three or perhaps four excursions in metaphysics: geometry, which is an excursion in figures (*in figuris*); arithmetic, an excursion in numbers (*in numero*); logic, an excursion in consequences (*in consequentias*); and perhaps (*fortassis*) also ethics, an excursion in morals (*in mores*). In the main text, Geulincx explains that geometry needs the notion of three dimensions, which it receives from metaphysics.<sup>140</sup> Further, as we have seen in Chapter 2, ethics is grounded in the moral counterpart of the metaphysical principle of action and the analysis of the human condition, which it also takes from metaphysics.<sup>141</sup> Finally, in what way logic is related to metaphysics has been briefly considered in Section 2. Although an excursion does not belong within the complex of metaphysics, it does have a similar purity and clarity, and everything which is contained in these excursions pertains to ‘rigid and strict science’ (*scientiam rigide et stricte*). This means that not only metaphysics, mathematics and logic, but perhaps also ethics is a pure science, consisting only of necessary assertions or eternal truths. These disciplines are completely free from contingent items and hypotheses.

So, Geulincx is somewhat unclear about the status of ethics. Given the fact that his ethics consists of a purely a priori deduction of the principles of action, it is not evident why he hesitates about the status of ethics. The introduction to the sixth treatise of his *Ethics* may clarify this.<sup>142</sup> He explains in it that the sixth part of the *Ethics* can be more properly called ethics than the preceding parts, because it deals with practise (*practicam*) rather than theory (*ad Theoriam*) and metaphysical speculation (*Metaphysicam speculationem*). This sixth treatise, by contrast, discusses prudence (*prudentia*), that is, the application of the ethical duties to concrete situations. Consequently, the first five

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<sup>139</sup> Geulincx, *MV* Intr., Sect. 1, II 139: ‘Excursus sit in Metaphysica, cum circa affectionem aliquam, ad quam a prima Scientia perpetuo filo deventum est, complura aggregantur, sine expresso respectu ad alia, seu sine simili decursu, qui institutus fuerat antequam ad hanc affectionem appelleretur.’

<sup>140</sup> Geulincx, *MV* II, Sc. 7, II 170-171.

<sup>141</sup> See Chapter 2.1.4. Geulincx, *MV* I, Sc. 11, II 155.

<sup>142</sup> Geulincx, *Ethics* VI, Intr., III 140.

parts of the *Ethics* concern theory and speculation, and consist of purely rational arguments. As a result, a part of ethics is an excursion from metaphysics and another part is not.

Apart from excursions, Geulincx acknowledges also the existence of mixed disciplines.<sup>143</sup> Such disciplines are called mixed because they are composed of both purely rational assertions – eternal truths – and hypotheses (or suppositions). Some things in these disciplines are known scientifically, while others are impossible to know in that way. This is why these disciplines have less continuity with metaphysics – with prime science – than the excursions. Geulincx refers with mixed disciplines particularly to physics.<sup>144</sup> He holds that physics is not a purely rational affair, dealing only with things that are absolutely certain, but physics needs hypotheses – which may, however, be confirmed by sense experience.<sup>145</sup> But that is precisely the point, sense perception is not reason, and thus does not yield scientific knowledge. Other disciplines, such as theology, medicine, and law, are even further removed from metaphysics, because they also mix authority (*auctoritas*) and practice (*experimenta scientiis*) with scientific knowledge. It is even questionable whether they are scientific disciplines. Geulincx refrains, however, from elaborating on these things at this point, because this topic should be dealt with in a treatise on the encyclopaedia (*Encyclopaediam*) or the science of sciences (*scientia de Scientiis*).<sup>146</sup> At any rate, from this discussion it is sufficiently clear that metaphysics supplies the subject matters of other scientific disciplines.

So, philosophy comprises the traditional disciplines of logic, metaphysics, mathematics, physics and ethics, which were also taught as philosophical disciplines at

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<sup>143</sup> Geulincx, *MV Intr.*, Sect. 1, §6, II 139: ‘Per miscellam perpetuitas illa quae ad Metaphysicam requiritur, adhuc magis interrupitur; quando nempe cum scientiis hypotheses assumuntur, adeoque sit miscella quaedam eorum quae scimus, ac eorum quae ignoramus, et tantum esse supponimus.’

<sup>144</sup> Geulincx, *MV Intr. Ann.*, Sect. 1, §6, II 266: ‘Quo spectat Physica.’ Physics in turn has also excursions, such as astronomy; see *PF II*, §8, II 330: ‘Astrologia ergo excursus est in Physica, et velut rivum quidem ex isto fluvio deductus, cuius proinde ostium praeternavigantes pergamus in nostra physiologia.’

<sup>145</sup> See more on this in Section 6.2.

<sup>146</sup> See more on this in Geulincx, *Logic Ann.*, I 454-459, particularly I 454: ‘Methodum tractare non concernit Logicum, sed aliam aliquam Scientiam, secundam a Logica, anonymam hactenus, quam circumloquendo, vocare possemus *Scientiam de Scientiis*. In qua de Notioribus, de Simplicioribus, Facilioribus, de Progressu mentis in cognitione rerum, de Gradibus per quos incedit, et offendiculis ac remoris, aliisque similibus multis tractandum, antequam ratio Methodi legitime constet.’ The notion of a science of sciences can already be found in Peter of Spain’s *Summulae logicales*, the popular medieval textbook on logic. Peter of Spain 1981, 2: ‘Dialectica est ars artium, scientia scientiarum, ad omnium methodorum principia viam habens. Sola enim Dialectica disputat de principiis omnium aliarum scientiarum.’

universities.<sup>147</sup> The major difference between Geulincx and most of the other philosophers is that he considers ethics to be a theoretical discipline, and thus a science in the strict sense, dealing with necessary and natural things. Moreover, he does not allow for hypotheses in pure sciences.

How then is the subject matter of a discipline determined? Aristotelians argue that a specific scientific discipline is concerned with a specific type of beings. Given the fact that the *True metaphysics* is not concerned with explaining the notion of being (*ens*) and the classification of the types of being, Geulincx does not establish the subject matter of a discipline by a determination of being. Instead, he says that sciences are concerned with a particular property of mind or body, such as number in the case of body and consequences with respect to the mind. As the classification of things in mind and body is Cartesian, one can conclude that Geulincx' view is decisively influenced by Cartesianism. As a result, he does not determine the subject matter of scientific disciplines on the basis of the degree of abstraction. But what about ontology? Geulincx does not mention this discipline in the introduction to his *True metaphysics*, nor explains elsewhere how it is related to metaphysics. In contemporary books on metaphysics, especially in the part on ontology the classification of the subject matters of the disciplines, so of the disciplines themselves, was discussed.<sup>148</sup> Due to the fact that Geulincx neither elaborated his ontology nor explained the relation between ontology and the true metaphysics, it is unclear how he thought about this matter. In any case, in his logic and ontology, he attempts to combine Cartesianism with contemporary Aristotelian thoughts and so might have established the classification of disciplines by giving specific determinations of being (*ens*) that concur with Descartes' division of things in minds and bodies.

Geulincx also follows that tradition on other points, one of which is particularly important for the topic of this section. He emphasizes that a proper determination of the subject matter of a science is very important. In his view, a scientific discipline ought to be strictly confined within the bounds of its subject matter or the domain of beings it studies.<sup>149</sup> If not, the science as a whole becomes distorted. In this regard, he focused

<sup>147</sup> Often mathematics was considered not to be a part of philosophy, the other four disciplines, however, are generally regarded as philosophical disciplines. At Leiden University, philosophy indeed consisted of the four disciplines of logic, physics, metaphysics, and ethics. Which is why Burgersdijk composed textbooks on them alone. Also Eustace of St. Paul's *Summa philosophica quadripartita* comprises these four disciplines.

<sup>148</sup> See on this, Wundt 1939, Leinsle 1985, and Lohr 1988.

<sup>149</sup> The requirement that a scientific discipline has to stick to its subject matter was emphasized by Peter Ramus. Ramus adds three requirement or laws for being a proper science: the law of truth (*lex veritatis*), the law of justice (*lex justitiae*), and the law of wisdom (*lex sapientiae*). These laws go back to Aristotle's *Posterior analytics* I.4, 73a21-74a3 (Aristotle 1984, vol. 1, 118). The second law, the *lex justitiae*, regulates the subject matter proper to each disciplines. It rules that each *ars* or science has its own aim, which functions as a principle to determine what is proper to the *ars*,

particularly on logic. Because of its importance for the subject of this section in particular and of this study in general, I finish this section by discussing his remarks on the subject matter of logic.

Geulincx' logic is titled a *Restituted [...] logic* (*Logica [...] restituta*) because he wants to underscore that his logic is freed from all accretions.<sup>150</sup> This is also emphasized by him in his second inaugural address of 1662. In both these texts, he argues in particular that all metaphysical terms should be removed from logic. This task of purifying logic is carried out by duly considering the true subject matter of logic: the logical consequence (*consequentia*).<sup>151</sup> This is Geulincx' central point: only what belongs to the nature of the logical consequence pertains to logic, such as the antecedent and the conclusion, the assertion (*enunciatio*), the affirmation (*affirmatio*), and the terms, as well as their properties. Because the logical consequence and all things related to it are purely logical items, metaphysical matters have no place in logic. Indeed, for Geulincx, logic deals only with concepts, assertions (*enunciatio*) and arguments rather than with beings and all that concerns them. These logical items are the subjects of scientific assertions of which logic consists. These items are, in fact, logical forms of thought.<sup>152</sup> These forms, such as the assertion, logical consequence, as well as the instruments, are actually operations of the intellect, according to Geulincx – they are mental acts. The objects of logic, therefore, are not external things, but acts of the human intellect by which things are apprehended, as well as concepts based on those acts, such as that of truth. That logic is concerned with acts of the intellect is indeed borne out by Geulincx' claim that the

thus defining its proper limits. In turn, the rule says that everything which lies beyond these strict limits should not be dealt with in the respective *ars*. See on this, Hotson 2007, 44-46; Schmidt-Biggemann 1983, 47-48.

<sup>150</sup> See on Geulincx' logic, Nuchelmans 1988 and Nuchelmans 1983, Ch. 6; Dürr 1939-40; Dürr 1965; Kneale and Kneale 1962, 314-315; Risse 1964-70, vol. 2, 80-92. See for the theory of consequence in the seventeenth century, Ashworth 1973a and Ashworth 1973b. See Geulincx, *Logic*, pref., I 171-172. Cf. Geulincx' objections to contemporary logic in *Logic III*, Sect. 3, Ch. 8, §8, I 384-386.

<sup>151</sup> Geulincx, *Logic*, pref., I 171-172: 'Quod facile vidissent, si Naturam *Objecti* sui [of logic] v.g. Consequentiae sedulo contemplantes, tantum inde sumpsissent, quantum illa suppeditabat, et ex his sumptis, rursum quantum illa suppeditabant, et porro; studiose semper carentes, ne quid corraderent alieni. Vidissent se tali *Abstractionis* et *seclusionis* semita (quam solam et unicam insistunt *Scientiae*) a *Consequentialia* quidem ad *Antecedens* et *Conclusionem*, et ab his ad *Enunciationem* et *Contradictoriam*, indeque ad *Affirmationem* et *Terminos*, *Terminorum Concordiam Discordiamque*, aliaque passim a nobis in hoc Libello proposita, posse devenire; sed laudatam illam et arctam Semitam nunquam eos ad *Causas*, ad *Effecta*, *Subjecta*, similiaque, quae Metaphysicae tantum considerationis sunt, ducturam fuisse.' Cf. *Logic Ann.*, I 459-461; *Logic IV*, Sect. 2, Ch. 15, §3, III 448.

<sup>152</sup> Logic is a treatise on those mental acts that are related to truth and falsity. The science of logic consists of demonstrating properties from these acts. Cf. Nuchelmans 1983, Ch. 6; De Vleeschauwer 1941 and De Vleeschauwer 1953.

affirmation (*affirmatio*) is the foundation or root (*radix*) of logic. Logic is grounded in the act of affirmation, which is the first and primary act of the intellect. Moreover, it is an act of which we possess intimate knowledge, so that it need not be defined, just like all other mental acts.<sup>153</sup> Because of its clarity, it is also impossible to define the act of affirmation. But most importantly, it should not be defined in logic because it is the first thing in logic (*Primum in Logica*), one of its principles. The affirmation is, in fact, the primary principle of logic. Geulincx claims that all what can be found in logic is deduced from this principle in the following quotation:

The Root of Logic is the Affirmation. For whatever is dealt with in Logic is deduced (*deducitur*) from it in a continuous and uninterrupted series (*continua et non interrupta serie*) up to the very fruits of our art, which are called the *Instruments of Knowing (Instrumenta Sciendi)*.<sup>154</sup>

It is, however, unclear how deduction should be taken here. It does not seem to be the case that everything in logic is a property of the affirmation, in the strict sense of property discussed in the preceding chapter. For example, subject and predicate are not properties but rather components of an affirmation, so that they are not inferred from the affirmation by means of a strict deduction. Still, it is unequivocally clear that they are involved in the concept of affirmation.

So, Geulincx has been quite clear about the subject matter and objects of logic. Unfortunately, he has not elaborated his views of the subject matter of the other disciplines. This is a result of the fact that he rejects a discussion of the subject matter in the discipline itself.<sup>155</sup> Instead, knowledge of the subject matter is presupposed for a discipline. He claims that such a discussion belongs either to metaphysics or to a separate scientific discipline on the sciences. In any case, we can conclude that the subjects of scientific demonstrations are ideas that may be expressed in definitions. Knowledge of them is not acquired by a demonstration, but they are known intuitively. Properties are proved to pertain to these subjects. In short, Geulincx account of the subject shows major similarities with the Aristotelian theory. Perhaps the view of philosophy as a systematic unity has been adopted from Descartes. A discussion of this topic, however, would take too much space, and is unnecessary for the question of this study.

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<sup>153</sup> See Geulincx, *Logic I*, Ch. 1, §2, I 175, and *Logic Ann.*, I 455-456.

<sup>154</sup> Geulincx, *Logic I*, Ch. 1, §1, I 175: ‘Radix Logices est Affirmatio. Quidquid enim in Logica tradendum est, ex ea deducitur continua et non interrupta serie usque ad ipsos Artis nostrae fructus, quod vocant Instrumenta Sciendi.’

<sup>155</sup> See Geulincx, *Logic I Ann.*, Sect. 1, Ch. 1, §1, I 455.

## 4.6 Two examples: Physics and ethics

### 4.6.1 Introduction

In the preceding sections, Geulincx' account of scientific knowledge is presented without showing how he actually applies it to his own philosophy. This is, however, valuable for clarifying his notion of science. It is unnecessary to discuss all four philosophical disciplines, metaphysics, logic, physics and ethics. Because the order of presentation used in Geulincx' metaphysics is not limited to the synthetic order of presentation – going from principles to effects – and because the subject matter of logic is rather difficult to grasp, only natural philosophy and ethics are treated in this section.

### 4.6.2 Physics

Again, physics is not a pure science because it needs hypotheses – it is a mixed discipline. Hypotheses are needed because physics is concerned with contingent matters, such as the existence and amount of motion.<sup>156</sup> Also the phenomena to be explained in physics are contingent, in so far as they depend on God's will. As a consequence, they cannot be demonstrated solely from metaphysical theorems.<sup>157</sup> Even so, physics needs metaphysics.

Indeed, one can say that a part of physics is metaphysical and accordingly does not involve hypotheses. This metaphysical physics is presented in the second part of the *True metaphysics*, and is, furthermore, repeated in the first three treatises of Geulincx' *True physics*. Geulincx says that he has repeated this metaphysical part both for reasons of convenience – people need not again read the metaphysics – and in order to quell the prejudices by which we ascribe sensible species – qualitative perceptions – to things in themselves.<sup>158</sup> This metaphysical part, however, does not belong to physics proper, because physics is concerned with phenomena. Metaphysical physics consists of the notion of body in general – the extended being – and its properties, and also of an explanation of movement and rest, as well as of their properties. These metaphysical items are necessary for true explanations of phenomena. Physics proper cannot do without them.<sup>159</sup>

Hypotheses are, as we have seen, existence-claims regarding contingent matters. Unlike the items of the metaphysical part of physics, the existence, amount and

<sup>156</sup> See about Geulincx' physics, Gronau 1911.

<sup>157</sup> Geulincx, *PV* IV, II 422: 'Non possunt autem phaenomena ista ex solis Metaphysicae theorematisbus (Proprietatibus supra a nobis allegatis) sufficienter demonstrari; nam phaenomena absolute contingentia sunt, Metaphysicae autem theorematata sunt necessaria; jam vero ex necessario contingens non sequitur, ut demonstratur in Logica nostra [...] Necessum igitur est, ultra theorematata quae supra attulimus alias aliquas propositiones (quas Hypotheses vocamus) ad phaenomena explicanda afferre.'

<sup>158</sup> See Geulincx, *PV*, Intr., II 369.

<sup>159</sup> See Geulincx, *PVI* Ann., Prop. 4, II 454.

constancy of motion are contingent. They are not in any sense necessary and thus neither belong to metaphysics nor can be deduced from metaphysical principles – for metaphysics deals only with necessary things, and contingent things cannot follow from necessary things. Rather than depending on the intellect of God, Geulincx argues, the existence of motion relies on his will, and is therefore contingent, so it can be inferred neither from the essence or concept of motion nor from God's nature. Hence, physics requires hypotheses in which, among other things, the existence of motion and the conservation of motion are assumed.<sup>160</sup> Consequently, both the hypotheses and the inferences that rely on them cannot be part of metaphysics. Let us now consider how Geulincx proceeds in the first three treatises in which he summarizes the metaphysical part of physics, and then look at physics proper.

These metaphysical treatises are concerned with body, motion and rest, respectively. The first treatise starts with the following definition: 'body is what is extended' (*Corpus est quid extensum*). Geulincx expresses by this definition the idea of body in general – its essence. The qualification 'in general' means that what he deals with are not particular bodies, which make up the phenomenal world. Rather, body in general is the metaphysical foundation for this world. It is the infinitely extended being. After introducing this definition, Geulincx proceeds with deducing unique properties from this concept of body. These properties are assertions which he also calls metaphysical theorems. They in turn function as principles for physics proper.

Geulincx deduces fifteen properties – or theorems – from the concept of body. It is unnecessary to treat all of them. It is most important to show how the deduction proceeds. The first property of body is 'space is body in general'.<sup>161</sup> Geulincx says that this is clear from the definition of body, and offers the following syllogism as a proof: body is what is extended and space is extended, therefore space is body. The notion of extension, the essential difference or form of body, functions as the principle by which it is proved that space is body in general. The minor of this syllogism – space is extended – is, according to Geulincx, self-evident (*per se manifestum*). The second property, 'body is infinitely extended in every direction', follows from the first property.<sup>162</sup> That space is infinite in every direction is a common notion, in Geulincx' view, so that it is readily proved from the first property that body is also infinite in every direction. The third property, 'a vacuum is impossible', follows from the second property, which is clear from the fact that since the body is infinitely extended, there is no place for a vacuum.

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<sup>160</sup> See for the hypotheses of physics, *PV* IV, II 422-427; *Disp. Phys.* V, 'Physical hypotheses', 3 December 1664, II 510-515. Geulincx argues against Descartes' proof for the laws of movement, based on God's immutability, in *AL* II, §36, III 445-446. Although the existence of movement and the rules of movement are certain a posteriori, by experience, they cannot be demonstrated a priori, because they depend on a will and are thus contingent; see *AL* II, §38, III 446-447.

<sup>161</sup> See Geulincx, *PV* I, Prop. 1, II 371-372.

<sup>162</sup> See Geulincx, *PV* I, Prop. 2, II 372.

For other properties the transition is needed from body in general to particular bodies. The fourth property is that ‘body is divisible’. According to Geulincx, this only applies to particular bodies. Body in general is not divisible at all, but is a unity and completely simple.<sup>163</sup> Still, particular bodies belong, in a sense, to body in general – they follow from it – and their properties are thus also properties of body in general. Geulincx needs this turn to particular bodies to explain other properties that are necessary for physics. For example, the fact that particular bodies have three dimensions (Property 5), and that they always have three dimensions (Property 6), of which it is possible, though, to abstract one from the other by an act of abstraction of our intellect (Property 7), leads to the conclusion that separate dimensions are infinitely divisible (Property 8).<sup>164</sup>

It is most important to note here that properties need not rely on the preceding property for their proof. For example, Geulincx infers the twelfth property, asserting that a body cannot be more or less corporeal, immediately from the definition of body.<sup>165</sup> As a consequence, the order of the properties does not seem necessary. At least, Geulincx does not indicate why they are ordered as they are.

Having knowledge of what a particular body is is also necessary for understanding motion. In the second treatise of the *True physics*, Geulincx defines motion as ‘the conjunction of neighbourhood and distance of two things’, by which he means particular bodies.<sup>166</sup> From this definition, Geulincx deduces sixteen properties. The first is that motion is always mutual.<sup>167</sup> It cannot be said that only one of the bodies moves – that is simply a way in which we consider things, which does not reflect reality. Geulincx infers this theorem immediately from the definition of motion. Next he infers the laws of movement, such as ‘the beginning of motion is determined in a straight line’ (Property 2) and ‘bodies tend to move in a straight line’ (Property 3), and then follow the properties of circular movement (Property 4 to 6), and so on. The proofs of many of these properties rely not only on the definition and other properties of motion, but often also on properties of body in general. Geulincx explicitly refers to them. The same goes for the third treatise on rest. Geulincx defines rest as ‘a permanent proximity’, which is, of course, also mutual.<sup>168</sup> Rest depends on motion, and requires time, just like motion. Then, he infers sixteen properties from rest. I will not discuss these properties, but rather turn to the last two treatises of the *True physics*, which are concerned with physics proper.

The fifth treatise treats of what Geulincx calls the great world (*mundus magnus*). He means by this the general phenomena of the world, such as the planets, day and night,

<sup>163</sup> See Geulincx, *PV I*, Prop. 4, 374.

<sup>164</sup> Geulincx' theory of abstraction will be discussed in detail in Chapter 8.

<sup>165</sup> Geulincx, *PV I*, Prop. 12, II 383: ‘*Idem corpus non potest modo majus, modo minus esse.*’

<sup>166</sup> Geulincx, *PV II*, Intr., 389: ‘*Motus est conjunctio viciniae atque distantiae ejusdem ad idem.*’

<sup>167</sup> Geulincx, *PV II*, Prop. 1, 390.

<sup>168</sup> See Geulincx, *PV III*, Intr., 408: ‘*Quies est vicinitas permanens.*’

and light. It is not clear how this treatise is structured, and it seems to be unfinished. The sixth treatise, on the small world (*microcosmus*), is particularly concerned with the human body and its relation to, and effects on, the mind, such as sense perception. This part of physics is relatively unelaborated as well. Presumably for this reason, it is unclear how most explanations are deduced from the metaphysical principles and the hypotheses. Only in a few sections of the fifth treatise Geulincx offers explanations in which he refers to the first four parts of the *True physics*. The manner in which he explains the phenomena does make it clear that he intends to give the same type of explanations as in the metaphysical parts, namely, by offering explanations relying on principles. For example, this is the way in which he infers the vortex.<sup>169</sup>

In sum, physics is based on a combination of metaphysical notions, principles, and hypotheses. Those are necessary to explain sensory phenomena (*phaenomena*), which is the objective of physics.<sup>170</sup> That is, the task of physics is explaining the appearances of the senses through their *true causes*, which therefore cannot be those phenomena themselves.<sup>171</sup> Phenomena or appearances (*apparentia*) are ‘parts of the world, in so far as it is perceived through the senses’. These are the things we experience through sense perception, which have to be explained according to the general framework for natural philosophy provided by metaphysics, in combination with the hypotheses. This means that phenomena have to be explained by matter in motion, and that the qualitative aspects of the appearances should not be taken into account, for these are not true features of the world apart from our perception.<sup>172</sup> As a result, physics deals with things as they are in themselves<sup>173</sup>, with the modifications of body in general, that is, with matter in motion, resulting in particular bodies, which are also modes of extension.<sup>174</sup>

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<sup>169</sup> See Geulincx, *PV V*, §2, II 430.

<sup>170</sup> Geulincx, *PV IV*, II 424: ‘... patebit ex iis quae Tractatu 5. et 6. dicemus, in quibus Tractatibus Hypotheses Physicas et Theoremata Metaphysica ad phaenomena applicabimus.’

<sup>171</sup> Geulincx, *PV IV*, Intr., II 422: ‘Phaenomena seu apparentiae sunt partes hujus mundi quatenus incurrit in sensus nostros (ut Sol, Luna, horum ortus obitusque, Terra, Aqua, etc. quatenus sensum afficiunt). Haec phaenomena explicare, in causas suas referre, et cum ratione sensus conciliare, Physici proprius labor est.’ This is one of the rare places where Geulincx speaks about causes.

<sup>172</sup> This is explicitly confirmed by Geulincx in the introduction to the fifth treatise of the *PV V*, II 428. The objective world is not invested with sensible species.

<sup>173</sup> Even so, we will see in the chapters 7 to 9 that because part and whole are not objective features of reality, also explanations in physics are relative to intellectual acts of understanding.

<sup>174</sup> Geulincx, *PV*, Intr., II 368: ‘Mundus est corpus in motu; non quod hic mundus quatenus sub sensus nostros subjicitur praecise sit corpus in motu et non aliud; sed quatenus ille in se est et independens a nostris sensibus, eatenus nihil aliud est quam corpus cum certo motu, seu certa quantitate motus ...’ Cf. *Disp. Phys. Isagoges I*, 11 July 1663, §1, II 489. Cf. Geulincx, *PV Ann.*, II 454: ‘Physicus non indiget consideratione corporis, sed partium corporis; seu ad Physicam non pertinet considerare corpus universale, sed tantum corpora particularia. Physicus nempe

Thus, movement as such does not belong to the phenomena, but is a principle or cause through which the phenomena are to be explained.<sup>175</sup>

Physics thus needs the metaphysical part of physics, since knowledge about the body in general (or extension) and the ideas of movement and rest are crucial in order to attain certainty in physics. Only by deploying the metaphysical physics, one is capable of knowing with absolute certainty that the world consists only of body in motion and nothing else. Metaphysical principles, however, are not only a necessary condition for removing prejudices and anticipations by which we ascribe secondary qualities to the world, but the metaphysical theorems – properties of body, motion and rest – are also actually to be used for proofs in physics. As a result, a deductive approach is necessary in physics. In physics, properties are deduced either from the essences of things, which are known through ideas and expressed in definitions, or from other properties, which may well be metaphysical theorems – metaphysical principles of explanation for physics.<sup>176</sup>

#### 4.6.3 Ethics

Ethics forms another, still better, example for clarifying Geulincx' view of science – unlike his physics, the first treatise of Geulincx' *Ethics* is published by himself, and thus complete. It is remarkable that Geulincx considers ethics to be a proper science because ethics was commonly treated, as with Zabarella and Burgersdijk, as a practical discipline, which does not proceed from principles to effects, and discusses, moreover, contingent things, depending on the human will. However, this is not Geulincx' view of ethics. Instead, he starts the preface to his *Ethics* with asserting that a philosopher has to obtain the thing from nature (*Rem a Natura*).<sup>177</sup> Ethics is thus concerned with natural things, by which Geulincx does not mean physical but necessary things, known through reason alone. That this is not just a casual remark, but that 'nature' has to be taken strictly here is apparent from what follows. Geulincx claims that the cardinal virtues are 'inseparable properties of virtue' (*Proprietates inseparabiles a Virtute*), which is why, if one is truly virtuous, it is necessary that one has all four cardinal virtues. Again, he insists that he has taken all these things from *nature*, instead of revelation, for which reason they also

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considerat mundum seu corpus in motu; jam autem tantum particularia corpora sunt quae dividuntur et moventur.' Cf. Gronau 1911, 7.

<sup>175</sup> Geulincx, *PV* IV, Hypoth. 1, II 424: 'Etiamsi nempe motus sensum quodammodo incurrat, habemus tamen antecedenter in mente clarissimam ejus distinctissimamque ideam, nempe adesse et abesse; secus atque contingit in sole, aqua, rosa, etc. quae mere sunt inter phaenomena apparentiasque sensuum.'

<sup>176</sup> Geulincx, *AL* II §16, III 434: 'Ex quo obiter hoc vide, quam praepostere philosophentur quamque invertant omnia, qui non ex idea, sed ex sensu et experientiis philosophemata sua deducunt.'

<sup>177</sup> Geulincx, *Ethics*, pref., III 6: 'Hic est Libellus de Virtutibus Cardinalibus. Nomen a vulgo sumpsi (sic decet), Rem a Natura (nam et hoc Philosophum decebat) mutuatus sum.'

have to be treated naturally (*naturaliter*).<sup>178</sup> This is why he continues with explaining why revelation does not play any part in ethics. Ethics is purely rational and a priori.

In the first chapter of the *Ethics*, Geulincx intends to provide a proper definition of virtue.<sup>179</sup> Because virtue is the subject matter of ethics, this definition is the foundation for everything that follows, just like the concept of body in general forms the basis of the metaphysical physics. Geulincx defines virtue as 'the unique love of right reason'.<sup>180</sup> He means by love here 'a firm resolution of doing that which right reason has declared to be done'.<sup>181</sup> A firm resolution means the ultimate intention of our will. In other words, it constitutes the eventual objective of all our actions. On Geulincx' view, this notion of love is self-evident, as it is an act of our mind of which we are intimately conscious.<sup>182</sup> In fact, our knowledge of love is so clear that it cannot be defined.

It is from this notion of virtue that the cardinal virtues, which are unique properties of virtue, have to be deduced. Geulincx asserts that the cardinal virtues 'flow proximately and immediately from virtue, and do not involve any particular external circumstance'.<sup>183</sup> Virtue has four such properties: diligence (*Diligentia*), obedience (*Obedientia*), justice (*Justitia*), and humility (*Humilitas*). Geulincx grounds this in the fact that reason (*ratio*) has the following four properties (*attributa*): it is a precept (*dictamen*), a law (*lex*), a rule (*regula*), and a burden (*onus*).<sup>184</sup> Every cardinal virtue corresponds to one of these properties, in the order mentioned; as the order of the properties is not arbitrary but logical, also the cardinal virtues follow in the same order. Thus, unlike the order of the properties of body, Geulincx considers the order of these properties of virtue to be important. He repeatedly insists that they really follow on each other in this sequence. His discussion of diligence starts therefore with noticing that diligence is the first cardinal virtue that arises from virtue. He also offers an argument for this, namely, that nobody can duly love reason without listening (*auscultatio*), that is, properly attending, to reason – which is also the definition of diligence.<sup>185</sup> And

<sup>178</sup> Geulincx, *Ethics*, pref., III 6-7: 'Sicut autem has res (quod dicebam) a Natura accipio, sic et naturaliter eas accipio ac trago.'

<sup>179</sup> Geulincx, *Ethics* I, Ch. 1, III 9: 'Ethica versatur circa Virtutem.'

<sup>180</sup> Geulincx, *Ethics* I, Ch. 1, III 9: 'Virtus est rectae Rationis Amor unicus.'

<sup>181</sup> Geulincx, *Ethics* I, Ch. 1, §1.2, III 10: '... firmum propositum faciendi, quod Recta Ratio faciendum esse decreverit.'

<sup>182</sup> See Geulincx, *Ethics* I Ann., Ch. 1, §1, pt. 1, III 154.

<sup>183</sup> Geulincx, *Ethics* I, Ch. 2, III 17: 'Virtutes Carinales sunt Proprietates Virtutis, quae proxim et immediate ab illa diminant, et ad nullam externam circumstantiam speciatim referuntur.' In his annotations (*Ethics* I Ann., pref., III 153), Geulincx says that cardinal virtues are 'tales virtutes, quae necessario concurrunt ad omne Virtutis exercitium; ita ut nullum esse possit opus bene et ex Ratione gestum, quod aliqua earum destitutum sit.'

<sup>184</sup> Geulincx, *Ethics* I Ann., Ch. 2, Sect. 1, §1, pt. 3, III 174: 'Ratio habet quatuor haec attributa. Primo *dictamen* est, secundo *lex*; tertio *regula*; quarto *onus* ...'

<sup>185</sup> Geulincx, *Ethics* I, Ch. 2, Sect. 1, §1.1, III 18: 'Et in ista mentis ad Rationem attentione, auscultatione defixa et alta, Diligentiam repono.'

listening goes before obedience, the second cardinal virtue. At the beginning of Geulincx' remarks on each cardinal virtue he defends why they follow in this order, while he also adds comments in his annotations in which he either gives additional arguments or further qualifies them. Because it is not needed to extensively discuss these arguments for understanding the general order of Geulincx' theory of virtue, we proceed immediately to the order of items within the treatment of each separate cardinal virtue.

Geulincx' first treatise of his *Ethics*, on the cardinal virtues, is indeed very consistently and systematically ordered. Of every cardinal virtue, Geulincx offers first a definition, next explains it by giving an example, and then proceeds to arguing for its place in the order of cardinal virtues. He thereafter divides the virtue into two parts (the instrument of division), and next provides an aid (*adminiculum*) for helping us to adhere to the virtue. He concludes with discussing the fruit of the virtue – which is a reward that necessarily follows from it.<sup>186</sup> In order to clarify this and to get an impression of the way in which Geulincx proceeds in his ethics, I briefly describe the four cardinal virtues: diligence, obedience, justice, and humility.

Diligence consists of the parts aversion and conversion (*Aversio et Conversio*), which means that the mind abhors external and sensible things, and that the mind turns into itself (*intra se ipsam*).<sup>187</sup> The aid for attending to reason consists in contemplating and repeating the things reason teaches us.<sup>188</sup> Finally, the fruit of diligence is wisdom (*sapientia*), which is nothing but a proper insight into what reason says, and is otherwise called, because we are dealing here with moral things, prudence (*prudentia*).<sup>189</sup> He explains that this fruit follows ‘without doubt naturally from an eager listening to reason’.<sup>190</sup> The virtue of obedience (*Obedientia*) follows on diligence because listening or attending to reason necessarily precedes being obedient to what reason prescribes. One has to be prudent for that. But although diligence and prudence are necessary preconditions for obedience, it still follows immediately from the nature of virtue itself.<sup>191</sup> In this respect, it is contrasted with prudence, which follows remotely from

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<sup>186</sup> See on the fruits or rewards of the capital virtues, Geulincx, *Ethics* I Ann., Ch. 2, pt. 1, III 173-174. The major difference between cardinal virtues and the rewards are that the cardinal virtues flow, as being properties, proximately (*proxime*) from virtue, whereas the rewards follow only remotely (*remote*) from virtue, through the properties as means – they are, in fact, properties of the cardinal virtues.

<sup>187</sup> Geulincx, *Ethics* I, Ch. 2, Sect. 1, §1.2, III 18.

<sup>188</sup> Geulincx, *Ethics* I, Ch. 2, Sect. 1, §1.3, III 18-19.

<sup>189</sup> Geulincx, *Ethics* I, Ch. 2, Sect. 1, §1.4, III 19-20.

<sup>190</sup> Geulincx, *Ethics* I, Ch. 2, Sect. 1, §1.4, III 19: ‘Nam Sapientia non est aliud quam recta perceptio ejus quod recta Ratio dixerat; haec autem sine dubio naturaliter provenit ex studiosa Rationis auscultatione.’

<sup>191</sup> Geulincx, *Ethics* I, Ch. 2, Sect. 1, §2.1, III 21: ‘Etiamsi autem Obedientia nascatur ex Virtute post Diligentiam, imo etiam post Prudentiam, tamen proxime nascitur ex Virtute (Virtute enim seu Amore Rationis, agitur ad exsequendum quod Ratio praecipit, quisquis rite obediens est); secus atque contingit in Prudentia, quae ex Virtute quidem nascitur, sed remote, nempe mediante

virtue, namely, through diligence from which it follows proximately. This is why Geulincx calls the cardinal virtues of diligence and obedience daughters of virtue and prudence a granddaughter. Likewise, the fruit of freedom (*Libertas*) follows from obedience. The third daughter of virtue is justice (*Justitia*) – which is doing *exactly* what is prescribed. Justice presupposes action, and therefore follows on obedience.<sup>192</sup> Its fruit is satisfaction. Finally, humility is the last cardinal virtue. Geulincx uses quite some space for explaining it, particularly for inferring the prescriptions of reason from it.

Geulincx regards humility as the apex of the cardinal virtues, meaning that virtue is still undeveloped (*rudis*) without humility.<sup>193</sup> Indeed, in his annotations, Geulincx even calls humility the root of ethics (*Radix Ethices*).<sup>194</sup> Even more strikingly, he asserts that the essence of the first three cardinal virtues is incomplete without humility.<sup>195</sup> For example, diligence without humility is not genuine diligence but *vanitas*. Geulincx defines humility as ‘contempt for oneself out of love for God and reason’.<sup>196</sup> This contempt of oneself means that one does not care about or work for oneself, but that one rather does everything out of love for reason. Again, Geulincx emphasizes that humility follows proximately from virtue, which is clear since virtue – love of reason – leads one to disregard oneself and to regard only reason. It has also two parts: *Inspectio sui* and *Despectio sui*. The former means that one has a proper understanding of the human condition – which is acquired by metaphysics. Consequently, ethics is deeply connected to metaphysics, and cannot do without it. The *Despectio sui* consists of abandoning oneself, caring only for what reason prescribes.

Geulincx can now proceed to deduce the prescriptions (*Obligationes*) of reason. He therefore needs the highest rational principle (*summum principium*) in ethics. That is, the principle ‘wherein you have no power, therein you should not will’ (*ubi nihil vales, ibi nihil velis*) or, put differently, ‘do nothing in vain’ (*nihil frustra faciendum est*), a

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Diligentia. Ita ut Diligentia et Obedientia filiae sint Virtutis, haec natu minor, illa major; Sapientia vero atque Prudentia sunt neptes Virtutis, quia ex Diligentia nascuntur proxime, non autem proxime ex Virtute.’

<sup>192</sup> Geulincx, *Ethics I*, Ch. 2, Sect. 1, §3.1, III 24-25: ‘Tertia filia Virtutis est Justitia, quae est praecisio ejus quod nimis, et ejus quod minus est, ab actionibus illis, quas Obedientia praestat. Oritur etiam proxime ex Virtute, praesertim ob illam particulam *unicus* repartam in definitione Virtutis; qui enim unice amat Rationem, non plus minusve faciet aut mittet, quam Ratio faciendum vel mittendum esse decreverit. Nascitur Justitia post Obedientiam; nam Justitia actionem aliquam supponit, a qua (nam hoc eusce munus est) excessum pariter et defectum resecet; actionem autem illam edit Obedientia.’

<sup>193</sup> See also Geulincx, *Ethics I* Ann., pref., pt. 2, III 153: ‘... Principem inter Virtutes Cardinales, *Humilitatem*.’

<sup>194</sup> Geulincx, *Ethics I* Ann., Ch. 1, §1, pt. 23, III 161-162.

<sup>195</sup> Geulincx, *Ethics I* Ann., Ch. 2, Sect. 2, §12, pt. 18, III 266-267.

<sup>196</sup> Geulincx, *Ethics I*, Ch. 2, Sect. 2, §1.1, III 28: ‘Humilitas est contemptio sui pre Amore Dei ac Rationis ...’

principle which is, according to Geulincx, self-evidently known.<sup>197</sup> It is the practical counterpart of the main principle of metaphysics, as we have seen in Chapter 2.<sup>198</sup> Geulincx makes it clear that all prescriptions in ethics follow from this primary principle of ethics combined with the analysis of the human condition in the *inspectio sui* to which this principle is applied. This is already pointed out at the outset of the first prescription.<sup>199</sup> Also the order of the (seven) obligations is not arbitrary. In his annotations, Geulincx explains extensively how one follows from the other.<sup>200</sup>

In sum, a global analysis of the first treatise of the *Ethics* has clarified Geulincx' notion of scientific knowledge. It is apparent that he has applied his theory of science to ethics, dealing with it like any other theoretical science. Although we have not examined specific arguments, it is amply clear that Geulincx proceeds in his theory of virtue from a definition of the essence of virtue to more specific cardinal virtues, which are unique properties of virtue. These properties lead in turn to other properties, such as the fruits of a specific cardinal virtue. What Geulincx is concerned with is, again, logical relations between concepts, such as that between obedience and freedom. The moral principles of action are, moreover, properties of the virtue of humility.

#### 4.7 Conclusions

The question of this chapter is how Geulincx' theory of scientific knowledge is specifically related to Aristotle's and Descartes' account. First of all, it is conclusively shown that Geulincx' account stems primarily from the Aristotelian tradition. Consequently, it is confirmed that there are philosophical strands in Geulincx' thought other than Cartesianism. Geulincx' *Logic*, in which he expounds the theory of scientific knowledge, is relatively free from Descartes' influence, with the exception of Geulincx' emphasis on the intuitive knowledge of mental acts and probably also his theory of logical containment. Even so, most of the components of Geulincx' notion of scientific knowledge come from Aristotelianism. Unlike Descartes, he has a comprehensive theory of the *formal* demonstration, distinguishes the classic components of a demonstration, claims that knowledge of the principles is not *scientia*, and asserts that scientific knowledge is specifically concerned with the question of why a unique property belongs to a subject. Unlike Aristotelians, however, he claims that scientific knowledge only deals with logical relations; the notion of causal knowledge does not play any role at all.

<sup>197</sup> Geulincx, *Ethics I Ann.*, Ch. 1, §2, pt. 3, III 164: ‘... quod est exemplum Rationis Ethicae, imo vel summum Ethices principium, ex quo facile sequuntur omnes et singulae obligationes, quae utramque paginam in Ethica faciunt ...’

<sup>198</sup> See Chapter 2.1.4.

<sup>199</sup> See also Geulincx, *Ethics I*, Ch. 1, §2, pt. 3, III 164.

<sup>200</sup> Geulincx summarizes the deduction in an annotation, *Ethics I Ann.*, Ch. 1, §2, pt. 3, III 164. See also, Geulincx, *Ethics I Ann.*, Ch. 2, Sect. 2, §5, pt. 21, III 232-233; *Ethics I Ann.*, Ch. 2, Sect. 2, §9, pt. 6, III 249-250; *Ethics I Ann.*, Ch. 2, Sect. 2, §10, pt. 1, III 251-252.

The items with which science is concerned are concepts, both of subjects and properties. To determine the epistemic status of scientific knowledge, it is necessary to know what role the human intellect plays in the formation of concepts. The following chapters are concerned with that issue.

PART III – THE THEORY OF COGNITION:  
THE FORMATION OF CONCEPTS



## CHAPTER FIVE

# DESCARTES' WAYS OF IDEAS: REPRESENTATION, SENSORY COGNITION, AND THE IMAGINATION

### Introduction

Geulinckx frequently uses the term ‘idea’ to explain the quintessence of his philosophy. However, it is not evident what he means by this. Since he is a Cartesian philosopher, one would expect that ‘idea’ in this quotation stands for Descartes’ notion of idea, which is quite original with Descartes. But on the other hand, ever since Plato the term idea has had a long history in which it is used in a sense substantially different from that of Descartes.<sup>1</sup> Geulinckx may well have used one of the older meanings of idea, or may have read that meaning into Descartes. Still, for the moment, it is justifiable to take as our starting-point that Geulinckx draws on Descartes’ theory of ideas.

Hence, this chapter is concerned with Descartes’ theory of ideas, whereas the next chapter presents Geulinckx’ view of ideas. However, Descartes’ theory of ideas is probably one of the most confusing parts of his philosophy. It is certainly a part that has resulted in a large number of articles and several books.<sup>2</sup> Undoubtedly, this is an outcome of the fact that Descartes did not sufficiently elaborate his theory of ideas. Not only has he left many critical questions unanswered, but his remarks are often also rather short and obscure as well as difficult to match with one another.

Only one thing is beyond doubt, namely, that *idea* is closely related to *representation* in Descartes. Indeed, being a representation is the mark of the idea. But this observation does not clarify much. It leaves many questions unanswered, such as,

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<sup>1</sup> A discussion of ideas in a Platonic sense of exemplars is postponed until the next chapter, because it does not come to the fore in Descartes’ account of ideas.

<sup>2</sup> There is a vast amount of literature on this subject and much disagreement about specific details of Descartes’ account of ideas. Good surveys of Descartes’ theory of ideas offer Ashworth 1972, Chappell 1986, Jolley 1990, Chapter 2, and Nuchelmans 1983, Chapter 2. See also Kenny 1968, who raises many issues concerning Descartes’ notion of idea, the most significant of which are inconsistencies resulting from Descartes’ lack of properly distinguishing ideas as pictures from ideas as concepts and ideas as acts from ideas as objects. According to Kenny, Descartes is simply confused about these distinctions himself. Jolley 1990 distinguishes three basic notions of idea in Descartes: 1) idea as object; 2) idea as mental act; 3) (innate) ideas as dispositions.

most importantly, the following: it is unclear, first, *what* exactly Descartes understands by representation or rather what he considers to be the essential features of representation; second, *how* ideas are able to represent things; third, *where* ideas are to be located; and, finally, *what* kinds of thought are representations and are thus properly ideas.<sup>3</sup>

In this chapter, I focus on the last question concerning the extension of ‘idea’. More specifically, the issue is whether Descartes believes that sensory perceptions are ideas in the proper sense of the term. Although it is indisputable that he uses the word ‘idea’ for sensory cognitions, that does not necessarily entail that they are ideas in a narrower sense, in which case an idea conveys accurate knowledge of (features of) extra-mental things. To be able to answer the question about the extension of idea satisfactorily, it is required, above all, to examine Descartes’ conception of representation, as that is the mark of the idea.

Before discussing Descartes’ notion of representation and extension of idea, two divergent views of idea in his works are treated: first his notion of corporeal idea in Section 1, appearing mostly in writings prior to the *Discourse*, then the notion of a mental idea in Section 2. These notions are discussed at some length because it will be argued that there is more continuity in meaning of both conceptions of idea than is commonly assumed, and that this bears on his account of representation and extension of idea as well. Indeed, I will argue that Descartes’ later conception of mental idea is modelled on his earlier notion of corporeal idea. Subsequently, Section 3 contains a thorough discussion of the notion of representation. Having done that, everything is in place to answer the central question of this chapter in Section 4: Are, in Descartes’ view, sensory perceptions ideas in a strict sense? In other words, are they representations of extra-mental objects providing accurate knowledge of things? Finally, in the conclusions the findings of this chapter are summarized in such a way that Geulincx’ account of ideas can be conveniently compared to that of Descartes.

## 5.1 The early notion of idea: Corporeal ideas

### 5.1.1 Introduction

It is worthwhile to consider the various contexts in which Descartes uses the term ‘idea’ in order to determine what meaning the term has in each context. From such an investigation, it turns out that from the *Discourse* onwards Descartes gives to ‘idea’ another meaning than in previous writings, with the notable exception of the *Passions of the soul* (1649). In writings prior to the *Discourse*, the term idea does not only refer to cognitions of the mind, but also to images (*imagines*) in the corporeal imagination, a specific section of the brain.<sup>4</sup> It immediately raises the question of how the notion of

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<sup>3</sup> See Watson 1995, 2, for a host of questions on the notion of idea.

<sup>4</sup> In the secondary literature this is often overlooked. Exceptions are, among others, Clarke 2003, Chapter 2, and Michael and Michael 1989 who refer to more literature in which corporeal ideas

idea as a corporeal image is related to his later conception of idea as an exclusively mental item.<sup>5</sup> Before this issue can be dealt with satisfactorily, some of the passages of Descartes' writings prior to the *Discourse* must be analysed so as to obtain knowledge of the distinctive features of corporeal ideas.

### 5.1.2 Corporeal ideas in the Rules

Corporeal ideas appear for the first time in Rule 12 of the *Rules for the direction of the mind* (1628).<sup>6</sup> This rule is in part concerned with examining the faculties (*facultates*) of intellect, imagination, sense perception, and memory, in order to assess what they may contribute to obtain scientific knowledge (*scientia*). I shall give an outline of Descartes' explanation of sense perception and imagination while at the same time discussing some of his remarks on explanatory method. Both disclose significant features of idea.

In Rule 12, Descartes first gives an explanation of sense perception. He considers the outer senses to be completely passive, and that is why he compares them to wax on

are discussed (see p. 32 for the list of references). Also Costa 1983 emphasizes this reading of the notion of idea, and claims that Descartes uses it in his later writings for ideas of the imagination.

<sup>5</sup> This is even more pressing considering that Descartes often contrasts his notion of idea with one philosophers like Hobbes and Gassendi employ, who equate ideas with corporeal images – and so, seemingly, use precisely Descartes' own earlier view of idea. See for Gassendi's conception of idea, Michael and Michael 1989, 40-44. For Gassendi, 'idea' is a synonym of phantasm, a corporeal image. In addition, Descartes never openly discusses the difference in meaning of his two conceptions of idea, though he must have been aware of his apparently inconsistent use of the term idea. There is, however, one exception in that Descartes remarks in the Second Replies that the 'images (*imagines*) depicted in some part of the brain' (*in parte aliqua cerebri depictae*) – the corporeal imagination – are called 'ideas' only in so far as they give form (*informant*) to the mind itself, when it is directed towards that part of the brain' (AT VII 160-161, CSM II 113). But properly speaking, ideas are just 'that form of any given thought (*cujuslibet cogitationis formam illam*), immediate perception of which makes me aware of the thought' (AT VII 160, CSM II 113). In other words, it is true that ideas are just mental items, but corporeal images can secondarily, or in a derivative sense, be called ideas as well. But this explanation for calling corporeal images ideas does not appear in Descartes' earlier writings. This passage nevertheless testifies to his awareness of the difference in meaning between his earlier and later conception of idea.

<sup>6</sup> Prior to Rule 12, the term 'idea' occurs only once in the *Rules*. In Rule 4, he speaks about grasping 'true ideas of philosophy and mathematics' (AT X 376: '... Philosophiae etiam & Matheseos veras ideas agnoverint ...', CSM I 18). Because these 'true ideas' are connected in this passage to 'certain primary seeds of truth naturally implanted in human minds', idea here does not seem to agree with its sense in Rule 12. But it is probably not used in a technical sense in Rule 4, and may still refer to corporeal images there. In the correspondence, Descartes at times uses 'idea' in a sense in which it stands for corporeal impressions or images. See his letter to Mersenne of 20 November 1629, where Descartes speaks of 'simple ideas in the human imagination' (AT I 81, CSMK 13). In another letter to Mersenne of 18 March 1630, he mentions 'ideas in our memory' (AT I 133-134, CSMK 20). The contexts of both quotations make it sufficiently clear that he refers to the corporeal imagination and the corporeal memory, respectively.

which a shape is impressed by a seal.<sup>7</sup> Descartes uses then a mechanical metaphor, taken from Aristotle's *De anima*, for explaining the physiological process of sense perception. But contrary to Aristotle's application of this model, Descartes insists that sense perception really is a mechanical process completely similar to the wax-example – the analogy should be interpreted literally.<sup>8</sup> Just like the result of an impression by a seal is a shape (*figura*) in or an alteration of the shape of the wax, the external senses receive a shape from the object perceived.

Shape in turn is also the fundamental notion to explain all kinds of sense perception. For Descartes continues by stating that this explanatory model does not only account for the perception of objects 'as being hard or rough', nor just for the tactile sense in general, which includes perceptions like warm and cold, but he expands it to every external sense. They all involve receiving a shape (*recipere figuram*) or rather a modification of the shape of the senses. Admittedly, also motion is fundamental as the additional component of every mechanical explanation – the means of impressing a shape in the sense organs is motion. But most relevant for our purposes is the notion of shape as such, not only because it is the most fundamental concept of Descartes' mechanical explanation in the *Rules*, but also because it is central to his early conception of idea.

Before further elaborating on shape, more needs to be learned about Descartes' use of the mechanical model. Although in the next paragraph of the *Rules* he calls this mechanical explanation a supposition (*suppositio*), he immediately adds some comments to support the legitimacy of offering mathematico-mechanical explanations in matters of physiology.<sup>9</sup> This was needed because physiology was considered part of

<sup>7</sup> 'Shape' is the translation of the Latin term *figura*, which can also be translated as 'form' or 'figure'. Cottingham has chosen for 'shape', although he, inconsistently, does not translate the French *figure*, which occurs in the *Treatise on man* and *The world*, by 'shape'. I will consistently stick to shape because shape is a more natural term to refer to the form of a body than 'figure', and because I refrain from using 'form' since it is also a philosophical term that often refers to specific theories. I will only use 'form' when *forma* or *forme* is used in the original Latin or French text. The comparison of the wax and the seal stems from Aristotle's *De anima* II.12, 424a17-20 (Aristotle 1984, vol. 1, 674). Thus, shape replaces Aristotle's notion of form (*eidos*) in this passage, to which Descartes in turn gives a completely mechanical meaning. The major difference is that Aristotle does not consider this metaphor to be literally true, but just uses it to point out that the form of the object is received without its matter.

<sup>8</sup> Descartes, *Rules XII*, AT X 412: 'Neque hoc per analogiam dici putandum est; sed plane eodem modo concipiendum, figuram externam corporis sentientis realiter mutari ab objecto, sicut illa, quae est in superficie cereae, mutatur a sigillo.', CSM I 40.

<sup>9</sup> Descartes means by supposition (*suppositio*) that the explanation is hypothetical. In other words, we cannot be absolutely certain that the model fits reality. There may be other causes at work than the one he sets forth here. But because the explanation offered is adequate to account for sense perception, it should be accepted according to Descartes. Moreover, in his view explanatory concepts such as shape are completely clear and distinct, contrary to the notions scholastics use in

physics by Aristotle and the scholastics. On their view, physics should not be dealt with in a mathematical manner, because mathematics abstracts from the true nature of the object of physics (the natural body). Connected to this nature are other types of change than local movement, as well as non-mathematical properties like warmth. In other words, for Aristotelians, the essences of physical objects are non-mathematical.<sup>10</sup> So, a mathematico-mechanical model would not allow us to explain the object of physics adequately, which is exactly what genuine science has to do.

Descartes attempts here to rebut this objection in advance. Because of its importance for a proper understanding of Descartes' early conception of idea, I quote his argument in full and then make some comments on it:

This is a most helpful way of conceiving these matters, since nothing is more readily perceptible by the senses than shape, for it can be touched as well as seen. Moreover, the consequences of this supposition are no more false than those of any other. This is demonstrated by the fact that the concept of shape is so simple and common that it is involved in everything perceptible by the senses.<sup>11</sup>

Thus, Descartes' argument for the transparency of shape to the understanding is based on the fact that shape is both a 'common sensible' and a 'simple notion'.<sup>12</sup> Common sensible means that shape can be perceived by more than one sense, in this case sight and touch. That is why it can be readily perceived. Further, the term simple notion refers to the fact that the concept of shape cannot be analyzed into simpler notions. As a result, it is completely clear and transparent, and therefore eminently suitable for figuring in scientific explanations. In other words, it is a very exact notion.

their explanations, such as warmth and coldness or substantial form. See on the mathematico-mechanical explanations the comments of Costabel and Marion in Descartes 1977, 225-231.

<sup>10</sup> See DesChene 1996, Chapter 3 and 7, but especially §4.3 about figure, pp. 109-120; Marion 2000.

<sup>11</sup> Descartes, *Rules XII*, AT X 413: 'Atque haec omnia ita concipere multum juvat, cum nihil facilius sub sensum cadat quam figura: tangitur enim & videtur. Nihil autem falsum ex hac suppositione magis quam ex alia quavis sequi, demonstratur ex eo, quod tam communis & simplex sit figurae conceptus, ut involvatur in omni sensibili.', CSM I 40.

<sup>12</sup> See for common sensibles, Wolf-Devine 1993, 12. This notion goes back to Aristotle's *De anima* II.6, where he describes them as follows: 'Common sensibles are movement, rest, number, figure, magnitude; these are not special to any one sense, but are common to all. There are at any rate certain kinds of movement which are perceptible both by touch and by sight.' (418a16-19, Aristotle 1984, vol. 1, 665); cf. Aristotle 1984, *De anima* III.1, 424b22-425b11, vol. 1, 675. Proper sensibles, by contrast, are perceived by just one sense. Examples of these are sound and colour. According to Aristotle, all common sensibles depend on movement: '... for all these we perceive by movement, e.g. magnitude by movement, and therefore also figure (for figure is a species of magnitude), what is at rest by the absence of movement: number is perceived by the negation of continuity, and by the special sensibles ...' (*De anima* III.1, 425a14-29, Aristotle 1984, vol. 1, 676).

The term ‘common’ in the last sentence of the quotation does not stand for common sensible. Instead, it indicates that everything that can be perceived by sense perception (‘everything perceptible’) is corporeal, and thus consists of extension, while extension necessarily involves having a certain shape, as Descartes makes clear in Rule 12.<sup>13</sup> In other words, Descartes says that shape is involved in all types of sense perception, because sense perception is a corporeal process, and that the concept of matter implies that of extension and thereby also shape. It is therefore impossible that sense perception would not include shape. A further conclusion is that, unlike its occurrence in the first sentence, shape refers here to a property that every material object has. That is to say, Descartes shifts from considering shape as an object of cognition to shape as a material property. Although Descartes does not elaborate on this point here, this interpretation agrees with comments he makes further on when he discusses simple natures.<sup>14</sup>

Finally, in this dense and allusive paragraph, Descartes also makes another point that underscores the pivotal importance of the notion of shape for scientific knowledge, namely, that all those aspects of sense perception that cannot be reduced to shape, like colours, can be expressed in terms of shape. This re-expression allows one to make comparisons between qualitative components of sense perception. For our purposes, it is unnecessary to explain Descartes’ procedure extensively. In brief, he states that all one has to do is simply to establish a fixed relation between a specific shape and a particular colour. That allows one to use them in equations, thus yielding exact knowledge. Because colour is one of the most difficult non-geometrical features of bodies to be explained mathematically, Descartes thinks that he is now entitled to draw the conclusion that shape can be used to represent all aspects of bodies, thus allowing us to have scientific knowledge of qualitative properties of bodies as well.<sup>15</sup> In short, shape is Descartes’ central explanatory concept for things perceptible by the senses, that is, for physical objects.

As a result, Descartes’ account of sense perception shows, according to himself, the success of the notion of shape as an explanatory concept in physics. But he also acknowledges that there is a crucial limitation to mathematico-mechanical explanations. Although the reduction of perceptions to shapes makes it possible to have scientific knowledge of sense perception, it does not guarantee that one has complete knowledge of all aspects of sense perception in particular or of bodies in general. Thus, it does not meet the requirements for an Aristotelian scientific explanation. In other words, the explanations Descartes has in mind yield no more than abstract knowledge in which the essence of the thing studied remains unknown. Descartes makes it abundantly clear that the method of the *Rules* does not guarantee that one has comprehensive knowledge of

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<sup>13</sup> Cf. Descartes, *Rules* XII, AT X 425, CSM I 38.

<sup>14</sup> See Descartes, *Rules* XII, AT X 418-419, CSM I 44-45.

<sup>15</sup> This, however, is still abstract scientific knowledge in that it does not explain what the qualitative properties of bodies actually are.

things.<sup>16</sup> It is precisely this aspect of the method that guarantees its success, as it allows him to consider only those features of objects of which the mind has adequate concepts, such as shape, while leaving out all features that cannot be known so clearly.

To sum up our findings thus far, Descartes' points concerning shape in Rule 12 are that it is perceived by several senses and therefore clear; that it is a simple notion, which therefore is completely known; and finally that it is involved in every type of sense perception because of its corporeal nature. All this confirms the value, exactness and legitimacy of using the mathematico-mechanical model for an account of sense perception. Which in turn suggests that it can be used in physics generally, given the fact that all physical objects are corporeal. It is clear from the above that the notion of shape stands at the centre of this explanatory model.

But there is still one further conclusion to be drawn from this discussion. Namely, that the notion of shape has two different, though related, meanings. On the one hand, shape is a simple notion and as such an aspect of thought. But on the other hand, it is a physical property. Because idea is identical with shape, the notion of idea takes on a corresponding ambiguity. This means both that the corporeal idea is a shape in the sense of a physical property, a certain form impressed in the brain, and that this material idea 'contains' a shape that is an object of perception of the mind, which thus needs to have some independence of the material configuration by which this object-shape is constituted. Let us now continue our reading of Rule 12 to clarify this point.

After having dealt with the external senses, Descartes goes on to discuss the common sense (*sensus communis*), the internal sense which processes and co-ordinates the shapes received by the external senses<sup>17</sup>, and next the imagination (*phantasia*), which receives its shapes from the common sense. At this point, the term idea appears for the first time in this rule. I quote the passage in full:

Thirdly, the 'common' sense functions like a seal fashioning (*formandas*) in the phantasy or imagination, as if in wax, the same shapes or ideas (*figuras vel ideas*) which come, pure and without body (*puras & sine corpore*), from the external senses. The phantasy is a genuine part of the body, and is large enough to allow different parts of it to take on many

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<sup>16</sup> See, for example, Descartes, *Rules* XIV 441: 'Ex quibus facile concluditur, non parum profuturum, si transferamus illa, quae de magnitudinibus in genere dici intelligemus, ad illam magnitudinis speciem, quae omnium facilime et distinctissime in imaginatione nostra pingetur: hanc vero esse extensionem realem corporis abstractam ab omni alio, quam quod sit figurata ...', CSM I 21. Moreover, in the *Rules*, Descartes insists repeatedly that all knowledge consists of comparisons between things on simple natures, and that these natures are simple relative to our intellect.

<sup>17</sup> See about the common sense, Aristotle 1984, *De anima*, III.1, 425a14-27, vol. 1, 676.

different shapes and, generally, to retain them for some time; in which case it is to be identified with what is called 'memory'.<sup>18</sup>

It is first to be noted that idea is an equivalent of shape (*figura*). There are a few other remarks to be made on this passage. First, although it is the same shape which is transmitted from one corporeal faculty to another, such as from the common sense to the imagination, that does not entail that some sort of entity is carried from one faculty to another, as in the Aristotelian account. Descartes repeatedly insists that no such entity is necessary.<sup>19</sup> As with the example of the seal and the wax, there is no third entity involved in processing shapes. A shape, in this sense, is not a material entity at all, but just a pattern or structure (*puras & sine corpore*), which is as it were engraved in some material, such as the back of an eye or a part of the brain. Second, this process is completely passive from the perspective of the receiver of the shape, the imagination or memory, whereas the common sense plays an active role as the intermediary between the external senses and the imagination – Descartes' explanatory method remains consistently mechanical.<sup>20</sup> Finally, the term idea is here applied to any shape, both to those in the external sense organs and those in the other faculties, although Descartes introduces the term only when he discusses the imagination. But he nowhere restricts ideas to the imagination.

After discussing the way in which the imagination can move the body, Descartes turns to the mind. He emphasizes that 'the power (*vim*) through which we know things in the strict sense is purely spiritual (*pure spiritualem*)', and thus distinct from the body.<sup>21</sup> This immaterial intellect can apply itself either to the common sense, in which case it has sense perception, or to the corporeal imagination, from which it can also 'receive shapes'.<sup>22</sup> The mind can also form new ideas in the corporeal imagination itself, in which case it is active, whereas the mind is otherwise passive.

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<sup>18</sup> Descartes, *Rules XII*, AT X 414: 'Tertio, concipiendum est, sensum communem fungi etiam vice sigilli ad easdem figuras vel ideas, a sensibus externis puras & sine corpore venientes, in phantasia vel imaginatione veluti in cera formandas; atque hanc phantasiam esse veram partem corporis, & tantae magnitudinis, ut diversae ejus portiones plures figuras ab invicem distinctas induere possint, illasque diutius soleant retinere: tuncque eadem est quae memoria appellatur.', CSM I 41-42.

<sup>19</sup> He thereby rejects the theory of intentional species, which Descartes seems to consider part of the standard scholastic account of perception. I will return to this topic below.

<sup>20</sup> Descartes breaks here again with the Aristotelian tradition, which considers these faculties as powers, which are actively involved in bringing about sense perception.

<sup>21</sup> Descartes, *Rules XII*, AT X 415: '... concipiendum est, vim illam, per quam res proprie cognoscimus, esse pure spiritualem, atque a toto corpore non minus distinctam, quam sit sanguis ab osse, vel manus ab oculo ...', CSM I 42.

<sup>22</sup> Descartes, *Rules XII*, AT X 415-416: '...quae vel accipit figuras a sensu communi simul cum phantasia, vel ad illas quae in memoria servantur se applicat, vel novas format, a quibus

More significantly, however, is the fact that the mind is capable of receiving shapes or ideas. Since the mind is 'purely spiritual', it does not have any similarity with the body, and therefore seems to have no means whatsoever to communicate with it. Although Descartes does not raise this issue in the *Rules*, his notion of idea as a shape may in part be considered a solution to this problem. As we have said, he emphatically rejects a view of shape as some sort of entity that is transferred from one faculty to another. His notion of idea as shape (*figura*) in the sense of a pattern or structure, which can be completely identical despite the difference of material in which it is expressed, may well be in part a solution to the problem of explaining how mind and body can conceive the same thing. Although the bearers of the shape clearly differ in material, the shapes themselves match or are structurally isomorphic. In other words, they have identical structural features, and that allows one to resemble the other, even though they are expressed in media differing in essence such as matter and thought.

Why does Descartes use the term 'idea' as synonymous with 'shape'? This question is extremely difficult to answer, because the text does not provide any clue whatsoever. It may be suggested that the solution has to be sought along the following lines: Descartes uses idea either in a sense in which it occurred in ordinary language or as a technical term to refer to or replace a current notion of idea. The first suggestion is unlikely.<sup>23</sup> It is indisputable that the *Rules* were not written for a general public, but that it is a highly technical treatise containing many specific philosophical terms, to which idea certainly belongs. There is, then, no reason why Descartes should be considered using common parlance in employing 'idea'. As for the second option, Marion has proposed that Descartes largely responds to Aristotle's *De anima* in the *Rules*. More specifically, Marion considers *idea* to be Descartes' equivalent of the Greek *eidos*.<sup>24</sup> By equating *idea* (*eidos*) with shape, Descartes largely strips *eidos* from its meaning in Aristotle, which is closely related to qualitative features of sense perception, and is by

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imaginatio ita occupatur, ut saepe simul non sufficiat ad ideas a sensu communi accipiendas [...] cum modo ideas in phantasia novas format ...', CSM I 42.

<sup>23</sup> Some effort has been made in comparing Descartes' notion of idea with more or less contemporary sources. See particularly Michael and Michael 1989, who refer to contemporary non-philosophical writings in which idea (or *idée*) is used to denote an image, plan or general notion in the human mind. Apart from that, they also cite some philosophical works in which idea is used as a synonym of image, phantasm, *species*, *simulacra*, and so on, which are all placed in the brain. Thus, the meaning of idea as a corporeal image was already current at the time. This means that Descartes may simply be drawing on a philosophical tradition after all. But still, the argument of the main text holds. Cf. Ariew and Grene 1995, 88-89.

<sup>24</sup> See Marion 2000, 116-131. Marion meticulously compares phrases and terms from the *Rules* with Aristotle's *De anima* to corroborate his point that Descartes draws on, and is in discussion with, Aristotle in the *Rules*. In addition, Marion refers in his commentary on the *Rules* (Descartes 1977, 232) to Suarez, who already identified *figura* and *forma*, the common Latin translation for *eidos*.

implication far removed from a mechanical account of sense perception.<sup>25</sup> This reading of idea is close to the interpretation of Descartes' texts on ideas that is offered here.

Whatever the reason of Descartes' idiosyncratic use of idea in the *Rules*, one thing is certain: it differs widely from his later use of idea. In the *Rules*, he does not even use idea to refer to mental items.<sup>26</sup> Instead, idea refers exclusively to corporeal shapes.<sup>27</sup>

In sum, the following conclusions can be drawn on the basis of a close reading of the *Rules*. First, 'idea' is used only for corporeal shapes, which are involved in all types of perceptual cognition, namely, sense perception, imagination and memory. Second, ideas emerge in the context of mechanical explanations as a synonym of the Aristotelian *eidos*. Descartes thereby replaces the Aristotelian notion of form with the notion of shape. Third, ideas are matter-independent and rather to be seen as patterns or structures than separate entities – this feature of ideas allows the immaterial mind to get in touch with material beings. Finally, the conception of idea as shape is basic to an adequate explanation of sense perception, because shape is a notion that is completely transparent to the intellect.

We may now turn to other texts prior to the *Discourse* in which the notion of a corporeal idea appears as well. Our discussion of these texts can be much shorter than that of the *Rules* because we have discussed most relevant features of the earlier notion of idea already in this subsection.

### 5.1.3 The early notion of idea in later works

It is striking that on the very first page of *The world* (1633) Descartes already speaks of 'the ideas we have in our mind'.<sup>28</sup> This marks a major difference with the *Rules*, but need not entail that everything is in place for his later notion of idea as a mental item. First, his early conception of idea as a corporeal shape in the imagination occurs in the same

<sup>25</sup> Aristotle 1984, *De anima* II.12, 424a17-24, vol. 1, 674: 'Generally, about all perception, we can say that a sense is what has the power of receiving into itself the sensible forms of things without the matter, in the way in which a piece of wax takes on the impress of a signet-ring without the iron or gold; what produces the impression is a signet of bronze or gold, but not *qua* bronze or gold: in a similar way the sense is affected by what is coloured or flavoured or sounding not in so far as each is what it is, but in so far as they it is of such and such a sort and according to its form.'

<sup>26</sup> Although there is a passage in Rule 14 in which it could actually be the case that Descartes uses 'idea' to refer to a thought, it cannot be ruled out that this passage can also be explained as referring to a corporeal idea. Descartes mentions that one should not expect that someone who is blind from birth could obtain 'true ideas of colours' by force of argument (AT X 438, CSM I 56-57). In the following paragraph, idea is indisputably used to refer to corporeal items. It is there equal to 'image' (AT X 439, CSM I 57). Then again, because Descartes speaks of 'corporeal ideas' (*idea corporea*, Rule XIV, AT X 443, CSM I 59) he seems to suggest that there are also incorporeal ideas. However, in all other passages, it is indisputable that Descartes confines 'idea' to corporeal ideas.

<sup>27</sup> Cf. Armogathe 1990, who argues that Descartes uses 'idea' to specify *figura* in the *Rules*.

<sup>28</sup> Descartes, *The world*, Ch. 1, AT XI 3: '... les idées que nous avons en nostre pensée ...', CSM I 81.

text. Second, there is no trace of Descartes holding a conception of idea that includes non-perceptual thoughts. So it could still be the case that Descartes restricts ideas to sensory cognitions, which somehow depend on corporeal shapes in the imagination. On the other hand, an idea, in so far as it concerns the mind, is no longer limited to shape anymore, but now includes also non-geometrical features like colours.<sup>29</sup> As a result, even though there is some continuity with the *Rules*, there is a shift of meaning in the notion of idea.

By contrast, the *Treatise of man* provides conclusive evidence that Descartes now considers 'idea' to refer primarily to mental ideas, and just secondarily to corporeal ideas.<sup>30</sup> To be sure, most occurrences of idea in this book concern corporeal ideas – naturally so, because ideas are discussed from a physiological perspective to which this writing is limited.<sup>31</sup> But even for corporeal ideas, he makes some changes with respect to the *Rules* – changes which result from his emphasis on idea as a mental item. When elaborating on shape, Descartes limits corporeal ideas to the shapes imprinted on the pineal gland, whilst expressly excluding the shapes impressed on the external senses.<sup>32</sup> His reason for limiting the extension of corporeal idea is that the mind attends only to the pineal gland. Something is called a corporeal idea only because it is the object of the mind's attention rather than its being representational. This suggests that 'idea' primarily refers to thoughts and only secondarily to corporeal ideas, so that the latter acquires the name 'idea' from the former. Even so, corporeal ideas are shapes for Descartes; in connection with them he uses image (*image*) and form (*forme*), terms that will later be associated with idea.<sup>33</sup>

The fourth part of the *Discourse*, in which Descartes provides an overview of his metaphysics, differs greatly from the previous accounts in that idea now refers to thoughts in the mind only. In it, Descartes does not mention corporeal ideas at all. Moreover, for the first time, Descartes also speaks of ideas that do not depend on the body. For example, he discusses the ideas of God, 'put into him' (AT VI 34, CSM I 128),

<sup>29</sup> In the second chapter of *The world*, Descartes adds the ideas of tickling and pain, as well as heat, AT XI 10, CSM I 84.

<sup>30</sup> See Descartes, *Treatise on man*, AT XI 151.

<sup>31</sup> The part of the *Treatise on man* in which Descartes intended to describe the 'rational soul' is lacking.

<sup>32</sup> Descartes, *Treatise on man*, AT XI 176-177: 'Or, entre ces figures, ce ne sont pas celles qui s'impriment dans les organes des sens extérieurs, ou dans la superficie intérieure du cerveau, mais seulement celles qui se tracent dans les esprits sur la superficie de la glande H, où est le siège de l'imagination, et du sens commun, qui doivent être prises pour les idées, c'est-à-dire pour les formes ou images que l'âme raisonnable considérera immédiatement, lorsqu'étant unie à cette machine elle imaginera ou sentira quelque objet.', CSM I 106.

<sup>33</sup> Also in the *Rules*, Descartes uses 'species' – a synonym of form – and 'image' (*imago*) as synonyms of idea. See, for example, Rule XIV, AT X 440, CSM I 58, and Rule XIV, AT X 443, CSM I 59. *Imago* would become Descartes' standard term to refer to impressions in the corporeal imagination in later works.

and of God's perfections (AT VI 35, CSM I 128). But he still retains the notion of perceptual ideas, so that he has not abandoned his earlier view that idea also includes sensory cognitions either.<sup>34</sup> What is more, although the fourth part of the *Discourse* leaves out corporeal ideas, this former meaning of idea crops up in the fifth part in a passage in which Descartes summarizes the *Treatise on man*.<sup>35</sup>

By contrast, in the *Meditations* (1641) and other later writings, it appears as if corporeal ideas have completely vanished, or rather are superseded by a new conception of idea. At least, so much becomes clear from most of the secondary literature.

However, even those who insist on Descartes' use of corporeal ideas in writings prior to the *Discourse* usually overlook the fact that in the *Passions of the soul* (1649) idea as a shape in the brain crops up again.<sup>36</sup> Indeed, this is even the only meaning of idea occurring in this writing.<sup>37</sup> The context in which all instances of idea appear is that of an account of how the animal spirits strengthen impressions or *ideas* in the brain, in virtue of which the mind is compelled to attend to them, and whereupon it forms thoughts of these impressions.<sup>38</sup> Indeed, at several points in the *Passions* Descartes explicitly uses the term impression as an equivalent of idea. By using 'idea' in this sense, Descartes seems to return to his position at the time of the *Rules*, while now using 'perception' (*perceptions*) or 'cognition' (*connaissances*) to refer to representations in the mind.<sup>39</sup> In the *Passions*, 'idea' is nowhere used for mental items. This suggests that the parts of the *Passions* in which 'idea' occurs are written from the perspective of physiology, and are thus to be seen as a continuation of the *Treatise on man*, so that Descartes has simply taken over the technical vocabulary he employs there. And understandably so, for in so far as passions depend on bodily processes, they belong to physiology.

#### 5.1.4 Conclusions

We are now in a position to draw the following conclusions. First of all, a corporeal idea consists in a shape; such an idea is the object of the mind when it has sensory cognition.

<sup>34</sup> See Descartes, *Discourse* IV, AT VI 35: 'Puis, outre cela, j'avais des idées de plusieurs choses sensibles et corporelles: car, quoique je supposasse que je rêvais, et que tout ce que je voyais ou imaginais était faux, je ne pouvais nier toutefois que les idées n'en fussent véritablement en ma pensée ...', CSM I 128.

<sup>35</sup> See Descartes, *Discourse* V, AT VI 55, CSM I 139.

<sup>36</sup> Descartes uses idea also as a synonym for shape in his *Conversation with Burman*, AT V 162, CSMK 344, and the *Search for truth*, AT X 507-508, CSM II 406.

<sup>37</sup> See Descartes, *Passions*, II §75, AT XI 384, CSM I 355; II §106, AT XI 407, CSM I 365; II §120, AT XI 417, CSM I 370; II §136, AT XI 429, CSM I 376; III §149, AT XI 444, CSM I 383.

<sup>38</sup> See Descartes, *Passions*, II §75, AT XI 384, CSM I 355.

<sup>39</sup> See particularly *Passions* I §17 in which Descartes makes a distinction between the actions and passions of the soul, the latter of which are 'perceptions or modes of knowledge' (*perceptions ou connaissances*) (AT XI 342, CSM I 335).

Most importantly, Descartes uses idea to refer to corporeal shapes prior to using it to refer to thoughts. It is only in writings after the *Rules* that mental sensory cognitions are called ‘ideas’ as well. Moreover, from that time onwards those cognitions also include qualitative sensations. Second, in the *Rules* the notion of idea emerges in the context of mechanical explanations. Together with shape, it replaces the Aristotelian notion of form (*eidos*, or in Latin *forma*). Third, after the *Rules* Descartes’ conception of idea shifts from emphasizing the corporeal idea to giving primacy to the mental idea. At the same time, corporeal ideas are confined to shapes in the corporeal imagination (or, physiologically speaking, the pineal gland). Fourth, although corporeal ideas are expressed by matter, they are also objects of perception and as such patterns that can be expressed in various ways, namely, mentally or materially. Finally, it is only after the *Discourse* that idea is also employed for non-perceptual thoughts.

This re-evokes the question of the points on which the meaning of idea as a non-perceptual thought agrees with idea as a corporeal shape. A glance at the contexts in which ‘idea’ appears leads me to think that these conceptions of idea largely converge in that Descartes regards them all as representations. If so, a representation can be both an intentional mental state and a representational corporeal shape. In the next sections of this chapter, it remains to be seen whether this is in fact Descartes’ position. However, before examining the notion of representation, we have to become better acquainted with Descartes’ later conception of idea. The next section addresses that issue.

## 5.2 Descartes’ later notion of idea as a mental item

### 5.2.1 Introduction

The first time the term ‘idea’ occurs in the *Meditations* is in the third meditation. I quote this passage in full:

Yet I previously accepted as wholly certain and evident many things which I afterwards realized were doubtful. What were these? The earth, sky, stars, and everything else that I apprehended with the senses. But what was it about them that I perceived clearly? Just that the ideas, or thoughts, of such things appeared before my mind.<sup>40</sup>

So, Descartes clearly uses idea here for sense perceptions. There is no reason to think of concepts<sup>41</sup> or propositions about the earth, the sky, and so forth, all of which are formed by the understanding. On the contrary, we are dealing here with sensory apprehensions of objects, which, although usually having concomitant judgements, are not

<sup>40</sup> Descartes, *Meditations* III, AT VII 35: ‘Verumtamen multa prius ut omnino certa & manifesta admisi, quae tamen postea dubia esse deprehendi. Qualia ergo ista fuere? Nempe terra, coelum, sydera, & caetera omnia quae sensibus usurpabam. Quid autem de illis clare percipiebam? Nempe ipsas talium rerum ideas, sive cogitationes, menti meae obversari.’, CSM II 24.

<sup>41</sup> ‘Concept’ is used here in its modern sense. In the seventeenth century the term *conceptus* could also have a broader meaning. See footnote 62.

propositional as such. Apparently, Descartes' notion of idea in the *Meditations* is still broad enough to comprise sensory cognitions, unsurprisingly so since he formerly used the term to refer to images in the brains, as well as to perceptions of these images. But at other points in the third meditation, he rather uses idea to refer to concepts and propositions as well as other non-perceptual thoughts like ideas of mental acts and God.

But Descartes nowhere clarifies in which perceptual thoughts and pure concepts differ or agree. For all of them, he uses the same term idea, and treats them as similar in some respects. It seems then that a concept and a sensory cognition differ only in degree rather than being utterly different items. At any rate, it is not at all clear what exactly an idea is, a concept or an image, except that Descartes uses it for thoughts in general – ideas are mental items.<sup>42</sup>

Virtually all discussions in the literature concern this later notion of idea as a mental item. Apart from our brief discussion above, the fact that numerous articles have been written on this subject indicates that Descartes' later conception of idea is problematical. It suggests that it is vague and imprecise, at the least as regards Descartes' presentation of idea. In this section, I confirm that by reflecting on the way in which Descartes discusses 'idea' in his later writings.

### 5.2.2 *The extension of Descartes' notion of mental idea*

Let us first consider what Descartes understands by thought, as it is generally agreed that ideas are thoughts. Thought is his most comprehensive notion as regards the mind. The mind is itself thought (*cogitatio*) – its essential property is to think – and its states are thoughts (*cognitiones* or *modi cogitandi*) as well. But then we are dealing with particular thoughts, having a determinate form, and if the thought is intentional, a particular object. Descartes defines thought in the Second Set of Replies:

*Thought.* I use this term to include everything that is within us in such a way that we are immediately aware of it. Thus all operations of the will, the intellect, the imagination and the senses are thoughts.<sup>43</sup>

So, thoughts are simply everything of which we are immediately aware, thus including sensory perception. Besides, this definition of thought makes it clear that it refers primarily to mental acts, for thoughts (*cognitiones*) are specified as operations of the mind. In addition, at another point Descartes makes it clear that those acts are 'modes of thinking' (*façon de penser, modus cogitandi*) abstracted from a specific content, by which

<sup>42</sup> Cf. Watson 1995, who claims that Descartes conflates image and concept.

<sup>43</sup> Descartes, Replies II, AT VII 160: 'Cogitationis nomine complector illud omne quod sic in nobis est, ut ejus immediate consciī simus. Ita omnes voluntatis, intellectus, imaginationis & sensuum operationes sunt cognitiones.', CSM II 113. Descartes offers another definition of thought in the *Principles*, I §9, AT VIIa 7: 'Cogitationis nomine, intelligo illa omnia, quae nobis consciis in nobis fiunt, quatenus eorum in nobis conscientia est. Atque ita non modo intelligere, velle, imaginari, sed etiam sentire, idem est hic quod cogitare.', CSM I 195.

we understand, imagine or perceive something.<sup>44</sup> In other words, in so far as they are mental acts, thoughts are considered as having no content. As a result, if Descartes uses idea as an equivalent of these mental acts, even being a representation is not the mark of ideas, which was our stipulation of idea in the introduction of this chapter. Admittedly, ideas could still be limited to those acts of the mind that contain representations, but at times Descartes explicitly uses the term idea for all kinds of acts of thinking, so that even non-representational acts like volitions are ideas.<sup>45</sup> Consequently, the notion of idea would be as broad as that of thought.

Moreover, Descartes' notion of idea is also very wide as regards the contents of thought. Several times Descartes explicitly argues for a broad use of idea, usually in contexts in which he deals with objections of other philosophers, like Hobbes and Gassendi, who deny the possibility of having ideas of immaterial objects, which is based on their view that ideas are literally images. Descartes, by contrast, holds that we also have ideas of immaterial objects, as of God and the soul, because ideas need not be pictorial. Indeed, ideas can also be concepts that neither consist of nor even depend on images. Accordingly, Descartes remarks to Gassendi, 'I extend it [idea] to cover any object of thought (*omne quod cogitatur*)'.<sup>46</sup> This entails that 'idea' applies to contents of widely diverging mental states, such as concepts, (rational) intuitions, inferences, sense perceptions, sensations like pain, imaginings and perhaps even emotions. Descartes makes the same point more explicitly in his response to Hobbes by saying that he takes 'the word 'idea' to refer to whatever is immediately perceived by the mind'.<sup>47</sup> Moreover, a little later Descartes remarks that he uses 'the term "idea" to apply to what is established by reasoning as well as anything else that is perceived in any manner whatsoever'.<sup>48</sup> So, it is indisputable that Descartes uses the term idea for contents of thoughts in a remarkably broad sense.

On the other hand, in the third meditation Descartes presents the following narrower definition of idea, which defines, according to him, the proper use of the term:

<sup>44</sup> Descartes, *Correspondence*, to Mersenne, end of May 1637, AT I 366: '... car vouloir, entendre, imaginer, sentir, &c., ne sont que des diverses façons de penser, qui appartiennent toutes à l'âme.', CSMK 56.

<sup>45</sup> See also, Descartes, *Correspondence*, to Mersenne, 16 June 1641, AT III 383: '... par le mot *Idea*, j'entends tout ce qui peut estre en nostre pensée ...', CSMK 183. Cf. Third Replies, AT VII 181, CSM II 127.

<sup>46</sup> Descartes, Replies V, AT VII 366: '... tu [= Gassendi] nomen ideae ad solas imagines in phantasia depictas restringis, ego vero ad id omne quod cogitatur, extendo.', CSM II 253.

<sup>47</sup> Descartes, Replies III, AT VII 181: '... nomen ideae sumere pro omni eo quod immediate a mente percipitur ...', CSM II 127.

<sup>48</sup> Descartes, Third Replies, AT VII 185: 'Notavi saepius me nominare ideam, id ipsum quod ratione evincitur, ut & alia quae quolibet modo percipiuntur.', CSM II 130. Cf. *Correspondence*, July 1641 to Mersenne, AT III 392-393: '... j'appelle généralement du nom d'idée tout ce qui est dans notre esprit, lorsque nous concevons une chose, de quelque manière que nous la concevions.', CSMK 185.

Some of my thoughts are as it were the images of things [*tanquam rerum imagines*], and it is only in those cases that the term 'idea' is strictly appropriate – for example, when I think of a man, or a chimera, or the sky, or an angel, or God.<sup>49</sup>

In this quotation, the term idea refers only to what is 'as it were an image of a thing', by which Descartes clearly means that only thoughts that represent something are ideas. What he understands by representation is made clearer in the next phrase, in which he calls an idea a likeness (*similitudo*). Apparently, Descartes thinks that some sort of similarity must hold between an idea and its object. In this context, he does not specify in what respects an idea has to resemble its object, but it may provisionally be concluded that bare intentionality, that is, just *being of* something, is not enough to qualify as an idea; *similitudo* is too strong a term to allow for this interpretation. The issue of resemblance will be further dealt with in the following section.

Add to this the fact that Descartes explicitly excludes common notions from the class of ideas, such as the principle 'nothing does not have properties', the causal likeness principle, and eternal truths.<sup>50</sup> His reason for so doing is that those thoughts do not refer to objects that can exist, but to abstract general truths, which although they apply to existing objects, do not designate things.

As a result, Descartes restricts idea, in its narrow and proper sense, to thoughts that have representational content. But still, the term idea may comprise both the acts and the contents of such thoughts. However, there are other definitions that expressly exclude acts of thinking. That is precisely why Descartes emphasizes the distinction between the content and the act of thought.<sup>51</sup> Let us reflect on some passages in which Descartes unequivocally restricts idea to the content of thoughts.

### 5.2.3 *The strict notion of mental idea as representational content*

In his replies to the first objections to the *Meditations*, Descartes gives another definition of idea in the strict sense as 'the thing which is thought of in so far as it has

<sup>49</sup> Descartes, *Meditations* III, AT VII 37: 'Quaedam ex his tanquam rerum imagines sunt, quibus solis proprie convenit ideae nomen: ut cum hominem, vel Chimaeram, vel Coelum, vel Angelum, vel Deum cogito.', CSM II 25.

<sup>50</sup> See Descartes, *Conversation with Burman*, AT V 154: 'Aliae etiam dantur ideae notionum communium, quae non sunt ideae rerum proprie; sed tum idea latius sumitur.', CSMK 338. Common notion are innate: see *Correspondence*, to Hyperaspistes, August 1641, AT III 424: 'Nec minus tamen in se habet ideas Dei, sui & earum omnium veritatum, quae per se notae esse dicuntur ...', CSMK 190.

<sup>51</sup> Descartes considers the distinction between the idea as act and as representational content vital for his project. That is why Descartes inserted a discussion of this distinction in the preface to the *Meditations*, AT VII 8: 'Sed respondeo hic subesse aequivocationem in voce ideae: sumi enim potest vel materialiter, pro operatione intellectus [...] vel objective, pro re per istam operationem repraesentata ...', CSM II 7.

objective being in the intellect'.<sup>52</sup> Since the term *objective* is largely synonymous with our notion ‘subjective’, objective being of a thing means the type of being an object has in our understanding. Subsequently, objective being (*esse objective*) is specified as ‘being in the intellect in the way in which objects are normally there’.<sup>53</sup> This is still a vague way of speaking; nor does Descartes’ example clarify much. He gives the example of a cognition by which the sun is known. He says that the sun is objectively in the intellect in that case; thereby contrasting it with the way in which the sun exists formally, that is as a material object, outside the mind.

This leaves us with the question of what it means to be objectively in the intellect. *Esse objective* is a scholastic term concerning the conceptual content of a thought.<sup>54</sup> Descartes’ remarks fit in nicely with this meaning. Consequently, we are dealing here with the representational content of thoughts alone. In this regard, this definition of idea is already stricter than the one of the third meditation. But some scholars have made the notion of idea even narrower by connecting objective being to the scholastic account of having the nature of the object in the intellect.<sup>55</sup> This would mean that idea, strictly speaking, applies only to cases in which the mind apprehends the essence (*quidditas*) of a thing, to whatever degree of comprehension.<sup>56</sup> If so, this would limit ideas to intellectual apprehensions of things or concepts in the modern sense. But it is not certain whether this can be concluded from this passage. First and foremost, Descartes nowhere claims that explicitly. In the *Meditations*, by contrast, he claims that the notion someone has of the sun as a rather small globe is an idea, while that person certainly does not apprehend the essence of the sun.<sup>57</sup> And even though Descartes continues that the idea astronomers have constructed of the sun ‘by their reasoning’ is more accurate, it is clear that they do not hold a concept of the essence of the sun either.<sup>58</sup> Rather than limiting ideas to essences, Descartes appears to apply the term idea to all thoughts somehow intentional. If so, he has not imposed such severe restrictions

<sup>52</sup> Descartes, Replies I, AT VII 102: ‘... ideam esse ipsam rem cogitatum, quatenus est objective in intellectu ...’, CSM I 74.

<sup>53</sup> Descartes, Replies I, AT VII 102: ‘... esse objective non aliud significat quam esse in intellectu eo modo quo objecta in illo esse solent.’, CSM I 74.

<sup>54</sup> See, for example, Cronin 1966, 78, where he presents Suarez’ view of objective being.

<sup>55</sup> See, for instance, Normore 1986. Although it is clear that ‘objective being’ (*esse objective*) is a scholastic term, which Descartes probably adopted from Suarez, one is not entitled to ascribe complex scholastic theories accompanied with that term to Descartes. His use of this technical term is far too haphazard for that. More generally, although Descartes often uses scholastic terminology, one should not attribute any theory to him that he does not sufficiently set out himself. There is quite some literature on the relation between Descartes and scholasticism based on the premise that Descartes was deeply influenced by scholasticism; see, for instance, the attempts of Secada 2000 and Alanen 2003.

<sup>56</sup> See Chapter 7.1 for a discussion of the scholastic theory of cognition.

<sup>57</sup> See Descartes, *Meditations* III, AT VII 39, CSM II 27.

<sup>58</sup> See Descartes, *Correspondence*, to Mersenne, 16 June 1641, AT III 383, CSMK 183.

on representation that it requires that the thought has to grasp its object's essence. If he would have done so, this idea of the sun would certainly drop out from the class of ideas.

Rather than building on scholastic theories of cognition, Descartes uses objective being just to make a distinction between the idea as an act of the mind and the representational content of that act. This allows him to divorce the cause of the act from that of the content. Indeed, he does not meddle with more sophisticated theories and issues scholastic philosophers have developed around this notion, but simply adopts it for very specific purposes, namely, for his causal argument for the existence of God.

The same goes for the notion of form (*forma*), which stands out in the definition of idea in the Second Replies.<sup>59</sup> Some scholars use this term as well for establishing a connection between Descartes' theory of ideas and scholastic theories of cognition, given the fact that in scholastic theories of cognition 'form' denotes the essence or nature of an object.<sup>60</sup> I will quote this definition in full and next deal with comments Descartes adds to it:

*Idea.* I understand this term to mean the form of any given thought, immediate perception of which makes me aware of that thought.<sup>61</sup>

Although Descartes uses form sometimes to denote the idea as a mental act, it is here employed for the representational content, as is evident from his commentary on this definition. This commentary consists of two parts. First, he points out that an idea is the meaning in our mind that a word signifies when we understand (*intelligendo*) what we are saying. So the idea is a non-linguistic meaning of a word, or, in other words, the concept to which a word refers. But at this point, Descartes does not consider what requirements must be met for being a concept. Although in its modern sense concept normally refers to intellectual cognition, this is not necessarily the case in the seventeenth century.<sup>62</sup> Because Descartes does not point out whether sensory images in

<sup>59</sup> This is not the first occurrence of the term form in association with idea. We have seen already that Descartes uses it for corporeal ideas, together with the terms image and shape. See also, *Correspondence*, to [Vatier], 22 February 1638, AT I 560-561: '...nos idées ne pouvant recevoir leurs formes ni leur être que de quelques objets extérieurs, ou de nous-mêmes, ne peuvent représenter aucune réalité ou perfection, qui ne soit en ces objets, ou bien en nous, & semblables ...', CSMK 86. Also in later letters, impressions in the imagination are called forms, see *Correspondence*, to Mersenne, 21 April 1641, AT III 361: '*Formae sive species corporeae, quae esse debent in cerebro ut quid imaginemur, non sunt cogitationes; sed operatio mentis imaginantis, sive ad istas species se convertentis, est cogitatio.*', CSMK 180.

<sup>60</sup> See Wells 1993.

<sup>61</sup> Descartes, Replies II, AT VII 160: '*Ideae nomine intelligo cuiuslibet cogitationis formam illam, per cuius immediatam perceptionem ipsius ejusdem cogitationis conscientia sum ...*', CSM II 113.

<sup>62</sup> To be sure, also scholastics hold that the term concept (*conceptus, intentio* or *notio*) refers primarily to intellectual cognition, and then particularly to the mental word (the *verbum mentis* or expressed species) – see more about the scholastic theory of cognition in Section 7.1. Nonetheless, they also apply it to impressed species, both intelligible and sensible species or phantasms

the mind qualify as concepts, this is a moot point in his case. However, the second part of his remarks gives us a clue to his answer. In it, he denies that images in the corporeal imagination are ideas, although they are called ideas ‘in so far as they give form to the mind itself, when it is directed towards that part of the brain’.<sup>63</sup> Literally, the Latin reads that those images inform (*informant*) the mind when it applies itself to the corporeal imagination. Since Descartes deals here with sensory cognition, it may be concluded that Descartes uses ‘form’ here in a meaning that differs markedly from the scholastic account, according to which forms are not sensory but purely intelligible entities when entering the intellect.<sup>64</sup> For Descartes, by contrast, in having a form there need not be knowledge of the essence of the object.

This may also suggest a more general interpretation for Descartes’ conception of the form of a thought. It may well be that he does not allude to scholastic theories at all in using ‘form’, but is simply holding on to his former use of idea as a shape.<sup>65</sup> Form, then, would not so much indicate the essence of a thing rather than that some ‘substance’, such as a part of the brain or the mind, has taken on a certain structure, pattern or shape, on account of which it represents something. This reading has the advantage that it allows us to notice a continuity between Descartes’ writings before and after the *Discourse*. If this interpretation holds, Descartes’ notion of idea, and, in connection with it, that of representation, would not have changed substantially, with the exception that some features of the corporeal idea are transferred to the mind – his earlier notion of idea as (corporeal) shape functions, then, as a model for his later notion of idea as a mental item.

On the other hand, contrary to what the previous account may suggest, at some points Descartes does use idea for knowledge of essences of things, and at other places seems even to identify idea with that type of knowledge. However, when Descartes uses idea for knowledge of essences, we are dealing specifically with innate ideas, ‘such as the idea of God, mind, body, triangle, and in general all those which represent true, immutable and eternal essences’.<sup>66</sup> The fifth meditation is particularly devoted to that type of ideas. Let us have a quick look at the following central passage on ideas of essences:

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(Goclenius 1964, 429), the latter of which is identical with sensory cognition. See for more on *conceptus*, Goclenius 1964, 427-430, and Chauvin 1692, entry ‘Conceptus’.

<sup>63</sup> Descartes, Replies II, AT VII 161: ‘... sed tantum quatenus mentem ipsam in illam cerebri partem conversam informant.’, CSM II 113.

<sup>64</sup> See for the scholastic notion of form, Chapter 7.1.

<sup>65</sup> Also Clarke 2003, 63-64, thinks that *forma* is identical with *figura*.

<sup>66</sup> Descartes, *Correspondence*, to Mersenne, 16 June 1641, AT III 383: ‘...aliae [= ideas] innatae, ut *Idea Dei, Mentis, Corporis, Trianguli, & generaliter omnes quae aliquas Essentias Veras, Immutabiles & Aeternas representant.*’, CSMK 183.

[...] I find countless ideas of things which even though they may not exist anywhere outside me still cannot be called nothing; for although in a sense they can be thought of at will, they are not my invention but have their own true and immutable natures.<sup>67</sup>

Descartes continues that properties of the objects can be demonstrated from those ideas. The possibility of deducing these properties confirms, in turn, that we are dealing with an idea of a true nature. Other terms used for nature are essence (*essentia*) and form (*forma*). Here, then, form does refer to the essence of a thing. In short, Descartes uses idea to refer to innate knowledge of essences of things.

Better still, at some places idea is even used exclusively for knowledge of essences. This can be gathered, for example, from the following quotation of the Fifth Replies: ‘An idea represents the essence of a thing, and if anything is added to or taken away from the essence, then the idea automatically becomes an idea of something else’.<sup>68</sup> Here an idea is simply identified with knowledge of essences. However, that stands in marked contrast to many other passages in which ‘idea’ has a much broader meaning.

#### 5.2.4 Conclusions

From this short survey of some definitions of idea in this section and the way in which Descartes uses this term to refer to corporeal shapes in the previous one, it is to be concluded that he uses the term ‘idea’ in a remarkably broad and thus unspecific sense. He employs it both for the cognitive content and for the mental act which expresses this content. But in a strict sense, idea refers just to the representational content of thoughts. Still, these contents of thought comprise a broad variety of items, encompassing both sensory and intellectual cognitions. In any case, it is beyond doubt that Descartes does not restrict idea in its proper sense to cognitions of the essences of things only. We have seen that in using the notion of form, he probably refers to a structure or pattern rather than adopting a scholastic theory in which form stands for the nature of the thing cognized. And, it is that structural feature that is the main point on which corporeal and mental ideas correspond. In other words, it is very likely that Descartes has modelled his notion of mental idea on that of his earlier notion of corporeal idea.

To bring this point home, this section is concluded by listing the categories for which Descartes uses the term idea in his later writings, in so far as idea refers to mental

<sup>67</sup> Descartes, *Meditations* V, AT VII 64: ‘...invenio apud me innumeratas ideas quarumdam rerum, quae, etiam si extra me fortasse nullibi existant, non tamen dici possunt nihil esse; & quamvis a me quodammodo ad arbitrium cogitentur, non tamen a me finguntur, sed suas habent veras et immutabiles naturas.’, CSM II 44.

<sup>68</sup> Descartes, Replies V, AT VII 371: ‘Idea enim repraesentat rei essentiam, cui si quid addatur, aut detrahatur, protinus sit alterius rei idea ...’, CSM II 256. Also in the following passages idea refers exclusively to knowledge of essences: *Correspondence*, to Gibieuf, 19 January 1642, AT III 474, CSMK 201-202; to Mersenne, 26 April 1643, AT III 648-649, CSMK 216; to (Arnauld), 29 July 1648, AT V 222, CSMK 358.

items. Roughly, eight types of items for the mental idea can be distinguished: 1) mental acts, or in Cartesian terms the idea in so far as it is a mere mode of thinking; 2) the content of perceptions of bodily states, encompassing sensation, sense perception and imagination; 3) (innate) notions of the essences of things, such as the idea of God or a triangle; 4) intuitions of mental acts; 5) (inferred) conceptions of properties of things, such as the Pythagorean theorem or God's unity; 6) invented or constructed notions; 7) universals; 8) propositions; and finally, 9) reasonings.

It is a matter of dispute whether all these types of thought are actually representational. Naturally, the first kind of ideas has to be discarded, because it concerns thoughts precisely in so far as they are not representations. But it remains to be seen whether the other categories are actually representational, and then in particular the second category of sensory perceptions – the key question of this chapter. In the next section, I will therefore discuss Descartes' conception of representation.

### 5.3 Representation and resemblance

#### 5.3.1 *Introduction*

From the previous sections it became apparent that representation is of pivotal interest for the notion of idea. The issue, then, is what representation precisely is for Descartes. In other words, what requirements should be met for something to be a representation, and in turn are these requirements similar for all kinds of ideas in Descartes? More specifically, is some resemblance between a cognition and its object necessary for being a representation of that object? In this section, I discuss first some distinctions as to the different kinds of representation which are frequently mentioned in the literature. Next the case will be made that resemblance is a necessary condition for representation in Descartes.

#### 5.3.2 *Two notions of representation: Resemblance representation and referential representation*

Roughly, two notions of representation are usually ascribed to Descartes, namely, representation in a broader and narrower sense. Representation in the broad sense means that an idea refers to an object, but need not resemble it in any way. It may, among other things, be a sign that designates an object. But, as we all know, a word does not resemble the object it represents at all. By contrast, in a more strict sense representation always involves some resemblance to its object. This is not to say, however, that an idea has to be an image resembling its object in a lifelike way. It may concern a form of apprehension that does not involve a pictorial image at all, as in having an abstract concept that somehow pictures its object.<sup>69</sup>

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<sup>69</sup> Most famously, this is the case with Wittgenstein's picture-theory.

As said, these two notions of representation have been applied to Descartes in the secondary literature. Wilson, for example, makes the same distinction by speaking of representation in the sense of merely having an object and (re)presenting something to the mind, ‘as if exhibiting something to it’, for which she appeals to Descartes’ use of the term *exhibere* in the *Meditations*.<sup>70</sup> She explains the latter notion as ‘making cognitively accessible to’. In a later article, the same distinction is referred to by using the division between representing referentially and representing presentationally.<sup>71</sup> According to Wilson, every idea holds both types of representation, but for some ideas, which are dubbed ‘materially false’ by Descartes, the two are disconnected.<sup>72</sup> In that case, the idea refers to one particular object but presents another, or even nothing at all. In what follows, I will refer to these two notions of representation by the terms resemblance representation and referential representation.

Both types of representation have various subtypes. For example, Watson discerns three kinds of resemblance representation: substantive, qualitative and structural

<sup>70</sup> Wilson 1978, 102-103.

<sup>71</sup> See Wilson 1990.

<sup>72</sup> Other terms to refer to Wilson’s distinction between kinds of representations are representation by resemblance or by signs. For example, Nelson 1996 distinguishes between reality-representation and sign-representation. The former means that clear and distinct ideas represent the reality of the object to which they refer. The latter notion is defined as ‘what we ‘refer’ them to as causing them’. He underscores that sign-representation involves a judgement of our mind, because the idea in itself does not clearly present its cause. Thereafter, he connects the objective being of ideas with sign-representation in order to disconnect it from objective reality. An idea may accordingly have objective being without having objective reality. This allows him to argue that material falsity, which will be discussed in the next section, involves some kind of judgement. What goes wrong in case of materially false ideas is that they reality-represent sensory cognitions as modes of the mind, whereas the mind gives them sign-representations of external objects. I disagree with his interpretation of objective being, so that, in my view, his argument fails completely. Field 1993 draws a distinction somewhat divergent from that of Wilson (see particularly Field 1993, 311). He also holds that there are two types of representation to be found in Descartes’ *Meditations*. On the one hand, a form of representation according to which ideas represent natures, in which case representation concerns only the possible existence of the object rather than its actual existence. He characterises this kind of representation by stating that it is both non-relational and essential representation, either of which applies to clear and distinct ideas only. On the other hand, he discerns a completely different kind of representation concerning the actual existence of an object. This type of representation is relational, because it requires a relation between the idea and an externally existing object. He calls the first type ‘objective representation’, and the second ‘formal representation’. Take note that this is not the same distinction as that of Wilson, because intentionality does not require that the object to which the idea refers really has to exist: there is no conclusive reason why the object cannot be a real entity while having no actual existence. Nonetheless, Field’s distinction between representing the existence and essence of an object, to which it in fact amounts, may have some relevance for Descartes’ theory of ideas.

resemblance.<sup>73</sup> Substantive resemblance means that two things are alike in matter; qualitative resemblance that they have the same quality, like for example, the colour red; structural resemblance that there is some sort of isomorphism. Watson considers some form of resemblance to be a necessary condition for representation, arguing that, even though Descartes denies it, he still relies on it in the end.<sup>74</sup>

Some medieval philosophers, on the other hand, also allow for referential representation. Recently, King has brought the medieval notions of mental representation under four headings.<sup>75</sup> He lists: resemblance representation, representation by signs, 'conformality' and a causal account of representation. Conformity means that the mind holds the form – the nature – of the object, and causal representation means that the mental representation is caused by the represented item and precisely for that reason represents it. These four notions of representation were combined in various ways by medieval philosophers.

As to Descartes, above we have already argued against conformality as a feasible interpretation of his notion of idea. Still, it remains to be seen whether he uses the other types of representation. More specifically, in the remainder of this section will be discussed whether, on Descartes' view, resemblance representation is required for a cognition to qualify as an idea. This will allow us to determine in the next section whether sensory cognitions are ideas in the strict sense. In order to answer the question of whether resemblance representation is necessary, I examine the term 'image' (*imago*) in relation to 'resemble' and 'resemblance' (*esse similis, similitudo*).

### 5.3.3 Ideas as 'images' or 'likenesses'

In subsection 5.2.2, it was already noted that by using image (*imago*) in the third meditation's definition of idea – as thoughts that are 'as it were' (*tanquam*) images – Descartes probably intends to convey that resemblance representation is central to his notion of idea. In the paragraph in which this definition occurs, this is further confirmed by the fact that he marks off ideas from other thoughts, such as acts of the will, by calling them 'likenesses' (*similitudines*). Descartes asserts that although acts of the will presuppose an idea, they are 'something more than the likeness (*similitudinem*) of that thing [= the object of thought]'.<sup>76</sup> Consequently, ideas are likenesses (*similitudines*) of things, and, since being a likeness involves resemblance, ideas must resemble their objects in some respects.

In using the term *imago*, Descartes probably has in mind a picture that represents an object. If so, the qualification 'as it were' (*tanquam*) does not mean that ideas do not

<sup>73</sup> Watson 1995, 14-15. Also King 1997 discerns these kinds of resemblance representation. He refers to a Wittgensteinian picture-theory for structural resemblance.

<sup>74</sup> Watson 1995, xiii and 19.

<sup>75</sup> See King 2007, 81.

<sup>76</sup> Descartes, *Meditations* III, AT VII 37: '...aliquid etiam amplius quam istius rei similitudinem cogitatione complector ...', CSM I 26.

resemble, but that ideas need not literally be pictures. This interpretation of *tanquam* agrees with Descartes' remarks in the Second Replies, where he restricts the term *imago*, without the qualification 'as it were', to images in the corporeal imagination.<sup>77</sup> These corporeal images are, in fact, what Descartes usually refers to when he uses 'imago'. Within the *Meditations* themselves, *tanquam* seems to be used primarily to prevent a reading which would restrict ideas to the imagination, that is, to the mental faculty by which we contemplate images in the brains. By using *tanquam*, then, Descartes does not mean to convey that ideas do not resemble their objects, but that they are neither corporeal shapes nor necessarily sensory cognitions. As a result, instead of downplaying the correspondence between an idea and its object, *tanquam* thus interpreted specifically affirms that 'image' stands for resemblance, because that is the only feature on which the crude notion of image and the 'as it were images' correspond.

This interpretation of 'as it were image' (*tanquam imago*) is corroborated by Descartes' use of the term 'image' throughout his writings. Just like 'form' (*forma*), 'image' (*imago*) is used in the context of both corporeal shapes and mental ideas. Indeed, Descartes sometimes even identifies form and image, as we have noticed in the preceding section. Given our argument above, both corporeal and incorporeal 'images' must resemble their objects. Let us see whether that is borne out by the texts.

That corporeal images resemble their objects becomes clear from the *Dioptrics* (1637) and the *Passions of the soul* (1649). The fourth discourse of the *Dioptrics*, which is concerned with 'the senses in general', sets off with the claim that the mind has sense perception because it is present in the common sense, that is, the specific section of the brain where images of objects can be found. Before further elaborating on that issue, Descartes rejects the scholastic theory of the intentional species, described by him as 'certain images transmitted by objects to the brain'.<sup>78</sup> However, he does not reject the existence of images altogether, claiming instead that their nature is different from the scholastic species. It turns out from what follows that Descartes assumes that the scholastics consider the species to resemble their objects in every respect, also in so far as qualitative properties are concerned – their images, then, would be lifelike pictures

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<sup>77</sup> Descartes, Replies II, AT VII 160–161: 'Atque ita non solas imagines in phantasia depictas ideas voco; imo ipsas hic nullo modo voco ideas, quatenus sunt in phantasia corporea, hoc est in parte aliqua cerebri depictae, sed tantum quatenus mentem ipsam in illam cerebri partem conversam informant.', CSM II 113. Cf. Replies III, AT VII 181, CSM II 127; Replies V, AT VII 366, CSM II 253.

<sup>78</sup> Descartes, *Dioptrics* IV, AT VI 112: 'Il faut, outre cela, prendre garde à ne pas supposer que, pour sentir, l'âme ait besoin de contempler quelques images qui soient envoyées par les objets jusqu'au cerveau, ainsi que font communément nos Philosophes; ou, du moins, il faut concevoir la nature de ces images tout autrement qu'ils ne font.', CSM I 165. See more on the species theory in Chapter 7.1.

(photos so to speak).<sup>79</sup> But on such a feature, Descartes argues, there is no way to conceive either how objects can form such images or how these images can be received by the senses. Still, Descartes does argue that his images resemble their objects, but only to a limited extent. Admittedly, he does mention that images can just be signs, and as such may be likened to words that do not resemble their objects at all. But from the discourse that follows it turns out that the sign-relation only holds for qualitative sensations – for example, the image of grass in the brains is not green, but our perception of it is. Indeed, Descartes continues by claiming that an image has to resemble its object in some respects, arguing only that they cannot resemble them completely.<sup>80</sup> Thus, Descartes diverges from the scholastic account of the intentional species, as he interprets it, only in that he rejects a *complete* similarity between image and object, especially as regards their qualitative features.

Alternatively, he compares his kind of images with engravings that represent to us forests, towns, people, and so on. They do this only by means of shape (*figure*), although that shape occasions us to think of very different qualities, like the greenness of the trees, and so forth. Likewise, the mind has sensory cognitions, such as colours or sounds, that do not resemble the images in the brain, which consist wholly in motion. Although this is the gist of Descartes' argument in this discourse, it is of more interest to us that he maintains that corporeal images are to resemble their objects in some respects. That is indeed the central issue of the following discourse of the *Dioptrics* in which Descartes explains that the images of objects that are formed on the back of the eye represent their objects by resemblance. Which is expressly said in the following quotation from this discourse: ‘... when this picture thus passes to the inside of our head, it still bears some resemblance to the objects from which it proceeds’.<sup>81</sup> We may conclude then that Descartes considers resemblance as fundamental to his notion of a corporeal image.

The same is clear from a discussion on images in Descartes' *Passions of the soul*. In the first part of the *Passions*, Descartes outlines his physiological account of the formation of images on the pineal gland, where the mind perceives them. He emphasizes that the images flowing from the various senses are combined there into a single image.<sup>82</sup> In article 35, Descartes explains that as follows:

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<sup>79</sup> Descartes, *Dioptrics* IV, AT VI 112: ‘... ils ne considèrent en elles autre chose, sinon qu’elles doivent avoir de la ressemblance avec les objets qu’elles représentent ...’, CSM I 165.

<sup>80</sup> Descartes, *Dioptrics* IV, AT VI 113: ‘... mais qu’il suffit qu’elles leur ressemblent en peu de choses; & souvent même, que leur perfection dépend de ce qu’elles ne leur ressemblent pas tant qu’elles pourraient faire.’, CSM I 165.

<sup>81</sup> Descartes, *Dioptrics* VI, AT VI 130: ‘Or, encore que cette peinture, en passant ainsi jusqu’au dedans de notre tête, retienne toujours quelque chose de la ressemblance des objets dont elle procède ...’, CSM I 167.

<sup>82</sup> See Descartes, *Passions* I §31-§35, AT XI 351-356, CSM I 340-342. This account draws on Descartes' more developed physiology of sensation in the *Treatise on man* and the *Dioptrics*.

Thus, for example, if we see some animal approaching us, the light reflected from its body forms two images, one in each of the eyes; and these images form two others, by means of the optic nerves, on the internal surface of the brain facing its cavities. Then, by means of the spirits that fill these cavities, the images radiate towards the little gland which the spirits surround: the movement forming each point of one of the images tends toward the same point on the gland as the movement forming the corresponding point of the other image, which represents the same part of the animal. In this way, the two images in the brain form only one image on the gland, which acts directly upon the soul and makes it see the shape of the animal.<sup>83</sup>

Of crucial importance is what this passage teaches us about resemblance. It says that images consist of movement, and that the corresponding points of these two images come together at the same points in the gland, thereby forming a single image. These points 'represent the same part of the animal' (*représente la même partie de cet animal*), which is the object of both images. The last sentence makes clear what the representation consists of, namely, the outward shape (*figure*) of the animal. By an image in the pineal gland which resembles this outward shape, the soul can see the shape of the animal itself. Thus, Descartes claims that images are resemblances of objects by presenting to us their shapes.

Also references to images as mental items bear out that images involve resemblance. In the *Meditations*, this issue is addressed in the third meditation only, so I confine myself to that part.<sup>84</sup> Apart from appearing in the definition of idea, with which we have already dealt, 'image' occurs a few times in that meditation. Most tellingly, idea is

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<sup>83</sup> Descartes, *Passions* I §35, AT XI 355-356: 'Ainsi, par exemple, si nous voyons quelque animal venir vers nous, la lumière réfléchie de son corps en peint deux images, une en chacun de nos yeux, et ces deux images en forment deux autres, par l'entremise des nerfs optiques, dans la superficie intérieure du cerveau qui regarde ses concavités; puis de là, par l'entremise des esprits dont ses cavités sont remplies, ces images rayonnent en telle sorte vers la petite glande que ces esprits environnent, que le mouvement qui compose chaque point de l'une des images tend vers le même point de la glande vers lequel tend le mouvement qui forme le point de l'autre image, lequel représente la même partie de cet animal, au moyen de quoi les deux images qui sont dans le cerveau n'en composent qu'une seule sur la glande, qui, agissant immédiatement contre l'âme, lui fait voir la figure de cet animal.', CSM I 341-342.

<sup>84</sup> In other meditations 'image' does occur, but not in contexts where the aspect of representation is relevant, with the exception of the fifth meditation, where Descartes says that the innate idea of God is 'an image of a true and immutable nature' (AT VII 68, CSM II 47). 'Image' here clearly means a non-pictorial representation of the essence of God. Whether the idea of God involves some resemblance to God is not explicitly pointed out here, but should be affirmed, because one cannot know the essence of something without some similarity between the cognition and what is known. As a result, image must include resemblance.

identified with image.<sup>85</sup> The French translation of the *Meditations* (1647) confirms that this involves resemblance by identifying ‘image’ and ‘painting’ (*tableau*).<sup>86</sup>

In addition, one of Descartes’ clearest expressions that ‘image’ involves resemblance is to be found in the *Conversation with Burman*. Burman raises the question whether Descartes is correct by basing his notion of man’s image of God on the causal likeness principle.<sup>87</sup> Descartes replies that the effect has to resemble its cause to some extent, so man must bear some resemblance to his Maker. This is true of all God’s creations, even though the extent to which they resemble God varies widely. Accordingly, a stone is made after the image of God, too, but resembles him only faintly or remotely, in contrast to the human mind.

As for me, on the other hand, God’s creation has endowed me with a greater number of attributes, and so his image is in me to a greater extent. I am not, however, taking ‘image’ here in the ordinary sense of an effigy or picture of something, but in the broader sense of something having some resemblance (*similitudinem*) to something else.<sup>88</sup>

Thus, even though Descartes does not use image in a crude sense of a lifelike picture, he does claim that there must be some resemblance. As such, the human mind is an image or likeness of God. And when this is applied to ideas as images, it means that an idea resembles its object to some extent. As a result, Descartes’ use of ‘image’ provides strong reasons to believe that Descartes endorses a resemblance relation between idea and object.

Lastly, we have several times noticed that the notion of likeness (*similitudo*) or being alike (*esse similis*) is identical with image.<sup>89</sup> The discussion in this subsection makes it clear that being a likeness need not involve complete resemblance. This is apparent from Descartes’ use of likeness and image for expressing that man is made after the image of God, which we have mentioned in the preceding paragraph. Of course, man is not

<sup>85</sup> Descartes, *Meditations* IV, AT VII 40: ‘... ideas sive imagines ...’, CSM II 26.

<sup>86</sup> This becomes also clear from the French translation of the *Meditations*, authorized by Descartes, in which it is emphasized that ideas are images. See, for instance, the third meditation, AT IXa 31: ‘...mais, les considérant comme des images, dont les unes représentent une chose et les autres une autre ...’ A little further, images are identified with pictures (*des tableaux*).

<sup>87</sup> Descartes, *Conversation with Burman*, AT V 156: ‘Nam axioma est commune et verum: *effectus similis est causae*. Jam autem Deus mei causa est, ego ejus effectus, ergo ei similis.’, CSM II 339-340.

<sup>88</sup> Descartes, *Conversation with Burman*, AT V 156: ‘Habent etiam illa [= the stone] imaginem Dei et similitudinem, sed valde remotam et exiguum et confusam; ego autem, qui ex creatione Dei plura habeo, magis ejus imaginem habeo. Non sumo autem hic imaginem ut vulgo sumitur, pro eo scilicet quod ad aliud effigiatum est et depictum, sed latius pro eo quod similitudinem cum alio habet, et ideo eas voces adhibui in *Meditationibus*, quia passim in Scriptura ad imaginem Dei conditi dicimus.’, CSMK 340.

<sup>89</sup> Descartes, *Correspondence*, to Regius, June 1642, AT III 567: ‘...sed illam quae fit certa arte ad rerum similitudines repraesentandas ...’, CSMK 214.

completely similar to God given the insurmountable gulf between the finite and the infinite, but rather resembles him just in some respects, such as in having an intellect and a will. This similarity holds even though their intellects differ greatly. Some similarity holds then between God and man, so that one may conclude that a resemblance relation obtains. But in the end the human mind bears only a faint resemblance to God, albeit one that is clear enough to ensure both *that* God is man's creator and *that* God has an intellect and a will. This may likewise apply to the relation between ideas and their objects. If I am allowed to use the example of the painting once again, it is clear that paintings do not resemble the objects they represent by being completely alike. Indeed, it is often even clearer to recognize what is represented if the picture is not very detailed, but just consists of a sketch of a few lines. In that case, the perceiver knows at once to which the painting refers, whereas that may be more difficult to determine when he is distracted by too much detail. So, resemblance is not necessarily a matter of complete similarity, but only involves correspondence to some extent, or rather representing a few aspects of the object intended – and that need not be its essence.

#### 5.3.4 Conclusions

In sum, the examination of the notions of image (*imago*) and likeness (*similitudo*) confirms that Descartes uses these terms specifically to underscore that an idea holds a resemblance relation to its object. This holds for both corporeal images and mental ideas. This confirms that an idea in the strict sense, as a representation, has to resemble its object to some extent. Since also corporeal images resemble their objects, that seems also hold for the mental perceptions of those images – sensory perceptions. In the final section of this chapter, it is examined whether sensory cognitions indeed resemble their objects, and are thus ideas in a strict sense.

### 5.4 Idea and imagination

#### 5.4.1 Introduction

In this final section, I return to the main question of this chapter: Are, for Descartes, sensory cognitions ideas in the strict sense? The findings of the previous sections seem to allow an affirmative answer. Still, it is less straightforward than one would prefer. This results from the fact that Descartes' statements on sensory cognitions are ambiguous. At the same time, there is a further complication in that Descartes makes a distinction between cognitions of primary and secondary qualities.

Let us start by looking at this problem from a slightly different angle, that of the two 'faculties' of cognition, imagination and pure understanding. The former comprises all kinds of sensory cognition, whereas the latter embraces all non-perceptual cognitions. Accordingly, in the sixth meditation and elsewhere Descartes sharply divorces the imagination from the pure understanding. They comprise two very different types of

cognition. For both of these types he uses the term idea, and he considers both to be representations, too. But is the meaning of idea and representation identical? In other words, the question is whether Descartes maintains, at its core, still two notions of idea that are fundamentally different. But if this is the case, why did Descartes bring these two kinds of cognition under the same heading of idea?

Given what we have seen in previous sections, the likely answer is that he considers both to be representations. The question is, then, whether we are dealing with the same type of representation. More specifically, what type of representation concerns the imagination? Do sensory cognitions also resemble their object or do they represent them otherwise? If the latter is the case, sensory cognitions are not ideas in a strict, but in a loose sense. The difference between idea in a strict and a loose sense would then be that the former concerns, as we have shown in the previous section, resemblance representation, whereas in the case of sensory cognitions some type of referential representation holds.<sup>90</sup> However, we have seen in the previous section that the resemblance relation is basic to Descartes' conception of idea, and also that sensory cognitions seem to resemble their objects. In short, there is confusion about the representational status of sensory cognitions – the imagination.

So, in this section it remains to be seen whether sensory cognitions represent external items by resemblance in Descartes. It will be argued that that is in fact the case. Before this argument is made, some light is shed on Descartes' conception of the imagination. Then, it is argued that both the application of the criterion of truth to sensory cognitions and the notion of material falsity confirm that sensory cognitions resemble external items. Finally, it is considered whether Descartes has changed his opinion on this in the *Principles*, particularly with respect to perceptions of secondary qualities – the qualitative sensations.

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<sup>90</sup> This is an interpretation that some scholars advocate. See, for instance, Watson 1987, who thinks that Descartes' sensory perceptions are non-representational. At the same time, Watson showed in a later book (Watson 1995) that although Descartes denies that sensory cognitions resemble their objects, this is actually the case in Descartes, see pp. 29-30. Alanen 1994, 246-247, thinks that sensations are caused by and evoke some mind-independent things. But it is impossible to read off from those sensations what they point to or signify. They indicate something, but have no specific content, and thus do not present, objectively, a fully or uniquely specified particular, contrary to clear and distinct ideas. In other words, sensory ideas contain just vague referential representations. Nonetheless, they are relevant as signs for pragmatic purposes. Finally, Simmons 1999 discerns three strands of thought in Descartes as to qualitative sensations: 1) sensations do not represent anything extra-mental, but are mere sensations; 2) sensations at least appear or purport to represent things in extra-mental corporeal reality; 3) sensations really represent, but not by means of resemblance. As with Alanen, he emphasizes the pragmatic purposes of sensations.

#### 5.4.2 *The imagination*

In the sixth meditation, Descartes defines the imagination as ‘the application of the cognitive faculty to a body which is intimately present to it’.<sup>91</sup> The imagination is thus entirely dependent on the body (by which Descartes means one’s own body). That is confirmed by the following description of the difference between the pure understanding and the imagination in the same meditation:

So the difference between this mode of thinking [i.e. the imagination] and pure understanding may simply be this: when the mind understands, it in some way turns towards itself and inspects one of the ideas in itself; but when it imagines, it turns towards the body and looks at something in the body which conforms to an idea understood by the mind or perceived by the senses.<sup>92</sup>

This means that when a thought is formed by the mental imagination, the mind perceives something corresponding to it in the corporeal imagination, namely, images. In comparison to ideas of the pure understanding, the distinctive mark of the ideas of the imagination concerns the involvement of images (*imagines*)<sup>93</sup>, a term Descartes usually associates with shapes in the corporeal imagination. These images are *species* to which the mind applies itself but which are not received as such in the mind, since thinking cannot involve material forms.<sup>94</sup> By contrast, as the pure understanding excludes images altogether, the only items left are innate ideas and intuitions of mental acts.<sup>95</sup> Because some things cannot be clearly imagined but still be clearly and distinctly

<sup>91</sup> Descartes, *Meditations VI*, AT VII 71-72: ‘... nam attentius consideranti quidnam sit imaginatio, nihil aliud esse appetit quam quaedam applicatio facultatis cognoscitivae ad corpus ipsi intime praesens, ac proinde existens.’, CSM II 50.

<sup>92</sup> Descartes, *Meditations VI*, AT VII 73: ‘... adeo ut hic modus cogitandi in eo tantum a pura intellectione differat, quod mens, dum intelligit, se ad seipsam quodammodo convertat, respiciatque aliquam ex ideis quae illi ipsi insunt; dum autem imaginatur, se convertat ad corpus, et aliquid in eo ideae vel a se intellectae vel sensu perceptae conforme intueatur.’, CSM II 51.

<sup>93</sup> Descartes, *Correspondence*, to Mersenne, July 1641, AT III 395: ‘... tout ce que nous concevons sans image est une idée du pur esprit, & que tout ce que nous concevons avec image en est une de l’imagination.’, CSMK 186.

<sup>94</sup> Descartes, *Replies V*, AT VII 387, CSM II 265. That is why Descartes says in the *Notes on a certain programme* that ‘there is nothing in our ideas which is not innate to the mind or the faculty of thinking’ (AT VIIIb 358-359, CSM I 304). He continues that ‘neither the motions [in our mind] nor the shapes (*figurae*) arising from them are conceived by us exactly as they occur in the sense organs ...’, for which he refers to the *Dioptrics*. From that he concludes that the ideas of both primary and secondary qualities must be innate in us.

<sup>95</sup> That intuitions of mental acts are to be attributed to the pure understanding is clear from *Replies V*, AT VII 358-359: ‘... ut cum inter dormiendum advertimus nos somniare, opus quidem est imaginationis quod somniemus, sed quod nos somniare advertamus, opus est solius intellectus.’, CSM I 248.

understood, we are dealing here with two entirely different types of cognition – that is, types of mental act.<sup>96</sup>

This opposition between imagination and pure understanding comes along with a rather negative evaluation of the imagination in so far as it concerns scientific knowledge. First of all, Descartes frequently warns against trying to understand immaterial things, like the mind and God, by the imagination.<sup>97</sup> He insists that the imagination hinders when cognizing non-perceptual things.<sup>98</sup> As a result, the mind can effectively use the pure understanding, and thus engage successfully in metaphysics, only when the imagination is not very active. Yet, although the imagination cannot play a part in metaphysics, it may still be useful in physics given the fact that physical objects can be imagined. But sometimes Descartes even insists that the imagination is not to be used in physics.<sup>99</sup> Admittedly, in a letter to Elizabeth, Descartes does note that 'body (i.e. extension, shapes and motions) can likewise [i.e. as the soul] be known by the intellect alone, but much better by the intellect aided by the imagination ...'<sup>100</sup> But this does not undo the many remarks underscoring the pernicious influence of the imagination. In short, especially in his later writings Descartes emphasises the negative aspects of the imagination.

But this assessment of the imagination stands in sharp contrast with the positive way in which it is evaluated in the writings prior to the *Discourse*, especially the *Rules*.<sup>101</sup> Although Descartes restricts the use of the imagination to corporeal objects in these writings, it is of crucial importance to obtaining knowledge of material objects.<sup>102</sup> Indeed, in the *Rules* the imagination even protects against misleading abstractions.<sup>103</sup> In addition, the imagination plays a crucial part in *The world*, too.<sup>104</sup>

In sum, Descartes sets the imagination and the pure understanding frequently against each other. The former is largely held responsible for providing the occasion for error, whereas the latter is the source for scientific knowledge. But this theme is a

<sup>96</sup> See Descartes, Replies V, AT VII 385: '... ex quo patet vires intelligendi & imaginandi non differre tantum secundum magis & minus, sed ut duos modos operandi plane diversos.', CSM II 264.

<sup>97</sup> See Descartes, *Discourse* IV, AT VI 37, CSM I 129.

<sup>98</sup> See Descartes, Replies V, AT VII 358-359, CSM II 248; *Discourse*, AT VI 37, CSM I 129.

<sup>99</sup> Descartes, *Correspondence*, to Mersenne, July 1641, AT III 395, CSMK 186; *Conversation with Burman*, AT V 177, CSMK 352.

<sup>100</sup> Descartes, *Correspondence*, to Elizabeth, 28 June 1643, AT III 691, CSMK 227.

<sup>101</sup> See on this Sepper 1996, who thinks that Descartes became more and more convinced of the harmful influence of the imagination after his metaphysical turn of 1630. Also Clarke 2003, 81-93, emphasises the positive use of the imagination in the *Rules*, where the imagination functions as a necessary condition for having clear and distinct ideas of physical objects.

<sup>102</sup> See especially, Descartes, *Rules* XII, AT X 416-417, CSM I 43; *Rules* XIV, AT X 440-44446, CSM I 58-61.

<sup>103</sup> See on this, Clarke 2003, 174-175.

<sup>104</sup> Descartes, *The world*, Ch. 6, AT XI 31-36, CSM I 90-92.

novelty in Descartes and becomes only more pronounced from the *Discourse* onwards. Before that time, the imagination is mostly considered positive and even viewed as a necessary aid for gaining scientific knowledge in physics.

#### *5.4.3 The representational status of sensory cognitions*

As a result, Descartes' later view that the imagination does not provide us with scientific knowledge suggests that sensory cognitions do not resemble external objects. From two examples, however, it becomes evident that Descartes is, at the least, unclear on the cognitive status of sensory cognitions. First, by speaking of confused as well as clear and distinct imaginings he unequivocally applies the criterion of truth to perceptual cognitions. Because these criteria are linked to resemblance representation, (some) imaginings must be capable of resembling their objects. Second, the notion of material falsity affirms more specifically that this is not restricted to perceptions of primary qualities but also comprises those of secondary qualities. I will elaborate on these two points in this subsection.

If the interpretation of 'idea' developed in the preceding section is correct, it could be said that Descartes uses the model of a picture for explaining the representational character of ideas – or, which amounts to the same, the shape-model of his early notion of idea. A picture represents its object by resembling it. The representation is clearer for the perceiver if the image resembles its object, or rather some outstanding features of it, to a greater degree. If so, it distinguishes its object properly from others.<sup>105</sup> Conversely, a picture represents something dimly if it does not clearly present its distinctive features, so that the perceiver may mistake it for something else. One may provisionally suggest at this point that this picture-model has been of decisive influence on Descartes' criterion of truth, clarity and distinctness. Both are taken from visual perception, and thus apply above all to images.

The ultimate test, then, to determine whether Descartes holds a pictorial conception of idea, involving some resemblance of the idea with its object, and whether also imaginings are included in its scope is provided by the criterion of truth. If, first, all types of thought are (un)clear and/or (in)distinct, so are proper objects for the truth criterion, and, second, clarity and distinctness are specifically attributed to the representational content of thoughts, then it may well be that the distinction between sensory and purely intellectual cognitions is not so sharp after all. It is indisputable that the second condition holds since the acts of thought have no relation to truth.<sup>106</sup> So the criterion of truth is applicable to contents only.

<sup>105</sup> Of course, Descartes says that something can be clear and yet not distinct. I have not taken this into account in my example, precisely because this is a major problem with this distinction.

<sup>106</sup> Still, the truth criteria are sometimes ascribed to the act of perception. Then again, even in those cases these features may be attributed to the content as well. See, for instance, Descartes, First Replies (AT VII 117-118, CSM II 84), where Descartes speaks of 'a clear and distinct operation'. Cf. Ashworth 1972, 95

The first condition, on the other hand, is a moot point. For example, some scholars have suggested that simple ideas are not proper objects for clarity and distinctness, because to make sense of these criteria it is necessary to introduce a ‘judgement-relation’ between ideas.<sup>107</sup> Only if a perception is referred to something else, it may become either clear and distinct or not. If this interpretation holds true, then the truth criterion does not apply to imaginings as such, for they do not amount to a judgement. Although most scholars refrain from expressly using the term ‘judgement’ in this context, because it refers to acts of the will in Descartes, they still think that only complex ideas which include such an ‘evaluation’ of other ideas can be clear and distinct. In short, according to these interpreters, the criterion of truth applies neither to sensory perceptions nor to intellectual ideas that are simple. Instead, the criteria only apply only to those ideas that involve evaluations of other ideas, such as affirming their resemblance to external objects – for instance, referring the perception of the redness of the apple to the apple itself. The judgement of the will would then be nothing but to consciously assent to that evaluation. A consequence of this interpretation of the truth criteria is that clarity and distinctness are not linked to the idea as some sort of picture. Indeed, one is not allowed to say that an idea in itself is clear and distinct if the idea depicts its object accurately. However, Descartes nowhere says that his criterion of truth is only applicable to complex ideas. Let us see, then, whether the ‘judgement-interpretation’ is borne out by the texts.

We have to consider first Descartes’ definitions of clarity and distinctness in the *Principles*.<sup>108</sup> The clarity of a perception is defined as being ‘present and accessible to the attentive mind’, and distinctness as a perception that is ‘so sharply separated from all other perceptions that it contains within itself only what is clear’.<sup>109</sup> The latter definition entails that clarity is a necessary condition for distinctness. If something is not perceived clearly, it is indistinct. According to Descartes, this cannot be reversed, because it is possible to perceive something clearly but not distinctly. For that reason, these two properties are separable and should be distinguished. In the next article of the *Principles*, he clarifies this with the example of the sensation of pain.<sup>110</sup> Although we may have a

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<sup>107</sup> See, for instance, Gewirth 1942.

<sup>108</sup> See on Descartes’ truth criterion, Gewirth 1942 and Ashworth 1972.

<sup>109</sup> Descartes, *Principia I* §45, AT VIIIa 22: ‘Clara voco illam, quae menti attendenti praesens & aperta est: sicut ea clare a nobis videri dicimus, quae, oculo intuenti praesentia, satis fortiter & aperte illum movent. Distinctam autem illam, quae, cum clara sit, ab omnibus aliis ita se juncta est & praecisa, ut nihil plane aliud, quam quod clarum est, in se contineat.’, CSM I 207-208. Descartes also defines the truth criteria in the *Rules*. See *Rules III*, AT X 368, CSM I 14, and *Rules IX*, AT X 401, CSM I 33.

<sup>110</sup> Descartes, *Principia I* §46, AT VIIIa 22: ‘Ita, dum quis magnum aliquem sentit dolorem, clarissima quidem in eo est ista perceptio doloris, sed non semper est distincta; vulgo enim homines illam confundunt cum obscuru suo judicio de natura ejus, quod putant esse in parte

very clear perception of pain, it is indistinct when the pain is ascribed to some part of the body. By combining the sensation of pain with a judgement about the location of its origin the thought is rendered confused. But if we only consider the sensation of pain without having a concomitant judgement, we are dealing with a perception that is both clear and distinct. That is why all sensations are clear and distinct provided that we do not add a judgement concerning their origins outside the mind.

This example is, naturally, the *locus classicus* for interpreters who insist that the truth criterion concerns judgements rather than ideas per se. But on a closer reading, this need not be the case. The judgement-interpretation is odd if one takes into account that Descartes makes such a sharp distinction between perceptions of the intellect and judgements of the will in article 32 of the *Principles*. Assuming that the judgement-interpretation is correct, however, sensory components of complex ideas involving a judgement are as such clear and distinct, and remain so as long as we refrain from making a judgement concerning the origin of these sensations, or simply ascribe them to the mind in which they inhere.<sup>111</sup> Confusion, then, would occur only when a judgement concerning the origin of these perceptions is made, or when they are considered to resemble some quality of an external object. If so, these two articles appear to corroborate an interpretation of the truth criterion that attributes it primarily to judgements.

However, this interpretation of the truth criterion does not agree with the line of argument Descartes pursues in what follows. In the article following the one discussed, he maintains that in infancy we perceived many things clearly but not distinctly without mentioning at that point judgements at all.<sup>112</sup> Only in the next sentence, he refers to judgements, but these are based on those very ideas that are possibly clear but indistinct. In other words, the judgement follows on the confused perception instead of causing the confusion. Both clarity and confusion are unequivocally attributed to the initial perceptions themselves rather than to the judgements about these perceptions.<sup>113</sup> This makes sense on the picture or shape model of idea.<sup>114</sup>

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dolente simile sensui doloris, quem solum clare percipiunt. Atque ita potest esse clara perceptio, quae non sit distincta; non autem ulla distincta, nisi sit clara.', CSM I 208.

<sup>111</sup> Cf. Descartes, Second Replies, AT VII 145, CSM II 104.

<sup>112</sup> Descartes, *Principles* I §47, AT VIIIa 22: 'Et quidem in prima aetate mens ita corpori fuit immersa, ut quamvis multa clare, nihil tamen unquam distincte percepit; cumque tunc nihilominus de multis judicarit, hinc multa hausimus praejudicia, quae a plerisque nunquam postea deponuntur.', CSM I 208.

<sup>113</sup> Gewirth 1942, however, ignores this completely. He clarifies the truth criteria by making a distinction between what is perceived immediately ('directly perceived') and the *interpretation* of the content of the perception (p. 258). In my view, it would have been clearer if he simply made a distinction between ideas as some sort of intuitions, which holds at the least for both sense perceptions and simple ideas, and ideas involving a judgement. A sensation of pain is an intuition instead of a judgement, because it does not involve an affirmation, and cannot in itself be true or false, since only judgements have a truth-value. Gewirth is of the opinion that clarity and

This interpretation of the truth criteria is confirmed by the fact that Descartes attributes distinctness specifically to corporeal ideas in the *Rules*. Rule 12 is concerned with the possibility of expanding scientific knowledge by using corporeal faculties of cognition. In it, Descartes insists that the imagination is of great help in forming distinct intellectual intuitions of corporeal things.<sup>115</sup> In order to achieve this, ‘the idea of that thing must be formed as distinctly as possible in the imagination’.<sup>116</sup> He continues by discussing simple natures, such as shape, extension and motion, which are clear and distinct (*perspicua & distincta*), because they cannot be divided into simpler notions. Although Descartes refers here probably first of all to intellectual notions, shape and motion can be distinctly imagined as well, as is apparent from his remarks about shape (*figura*) a few pages before. In these comments, which we have already discussed extensively in subsection 5.1.2, it is said that ‘nothing is more conceivable by the senses than shape, for it can be touched as well as seen’.<sup>117</sup> As we have seen, this means that shape is one of the common sensibles.<sup>118</sup> The reason why the imagination is so helpful in

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distinctness are properties of the relation between the interpretation and the direct perception. If the content of the direct perception corresponds to the interpretation (a relation of ‘equality’), the idea is clear and distinct (p. 260). Consequently, the truth criteria apply only to judgements about perceptions, and are thus only attributed to the idea as a judgement. Gewirth states that he rather uses interpretative content than judgement because Descartes attributes judgement to the will. He means accordingly by a judgement in this context a proposition rather than the act of assent. A complex idea can then be a proposition or inference. His point is in turn that it is impossible to misinterpret simple ideas, such as extension, movement or doubt, because in that case the direct perception and the interpretation always coincide (p. 268).

<sup>114</sup> The confusion, however, may also result from the fact that in childhood the mind had so many bodily impressions that it necessarily conflates them. But how this leads to the particular prejudice by which we ascribe pain to a part of our body is unclear.

<sup>115</sup> See Descartes, *Rules XII*, AT X 416-417, CSM I 43.

<sup>116</sup> Descartes, *Rules XII*, AT X 416-417: ‘Si vero intellectus examinandum aliquid sibi proponat, quod referri possit ad corpus, ejus idea, quam distinctissime poterit, in imaginatione est formanda; ad quod commodius praestandum, res ipsa quam haec idea repraesentabit, sensibus externis est exhibenda.’, CSM I 43.

<sup>117</sup> Descartes, *Rules XII*, AT X 413: ‘Atque haec omnia ita concipere multum juvat, cum nihil facilius sub sensum cadat quam figura: tangitur enim et videtur.’

<sup>118</sup> Descartes uses the same argument in the fourth part of the *Principles*, article 200, AT VIIa 323-324, CSM I 286, where he says that he has ‘not employed any principle which was not accepted by Aristotle and all other philosophers of every age’. The principles he refers to are those of natural philosophy, and always involve ‘shapes, motions and sizes of bodies’. With this, he refers to the classic account of the common sensibles. He continues that facts, such as that ‘when bodies collide bigger bodies are divided into many smaller ones and change shapes’, can ‘also be distinctly imagined and understood’. Immediately after that, Descartes contrasts them with characteristics ‘like colour, sound and the rest, each of which is perceived not by several senses but by one alone’. He finally remarks that ‘the images of them which we have in our thought are always confused,

intuiting bodies is that it is a means by which some aspects of a body, for instance its shape, can be represented distinctly, which is in turn an indispensable aid for obtaining scientific knowledge (*scientia*) of bodies. As a result, clarity and distinctness are not only features of pure intuitions, but also of corporeal ideas, allowing us to represent bodies in such a way that we may accurately discern some of their properties.

One may suggest, then, that Descartes has taken a feature of pictures, applying it both to sensory and intellectual cognitions. This is also confirmed by his use of the truth criterion in Rule 14, as well as by other early writings.<sup>119</sup> At this point, I only refer to the *Dioptrics* (1637) where the term distinct occurs time and again to denote a feature of visual perceptions.<sup>120</sup>

Thus, the imagination can provide us with clear and distinct (sensory) perceptions. Indeed, in both the *Rules* and *The world*, Descartes emphasizes the fact that something can be distinctly imagined as long as its geometrical properties – the primary qualities – are considered, that is, all features that have something to do with quantity or extension, such as shape, motion, and position.<sup>121</sup> This entails that although the imagination may be a source for confused thoughts, it can also be used to form distinct thoughts. A case in point is found in the sixth chapter of *The world* where Descartes uses the imagination to invent a new world. He closes the chapter with the remark that this invented world can be real, because God can create everything that is *distinctly imagined*.<sup>122</sup> Moreover, not only Descartes' earlier writings exhibit this feature, but it is also supported by the *Meditations*. Descartes says in the fifth meditation that quantity 'is something I distinctly imagine'.<sup>123</sup> In the next sentence, he adds size, shape, position and local motion. These are again the common sensibles mentioned above. In addition, in the sixth meditation Descartes speaks of the 'distinct idea of corporeal nature which I find

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and we do not know what they really are'. Again, the simple fact that those sensations are not common sensibles is enough to explain why our perception of them is confused.

<sup>119</sup> In keeping with what we have said in the previous section about how the imagination is to be used, Descartes claims in Rule 14 that a problem should be rephrased in terms of real extension of bodies, and should be 'pictured in our imagination entirely by means of bare shapes (*nudas figuræ imaginationi*)' (AT X 438, CSM I 56).

<sup>120</sup> See Descartes, *Dioptrics*, AT VI 107-108, 117, 123-124, 126-127, 133-134, 145, 163-164.

<sup>121</sup> See Descartes, *The world*, Ch. 5, AT XI 25-27, CSM I 91-92.

<sup>122</sup> Descartes, *The world*, Ch. 6, AT XI 36: 'Si j'y mettais la moindre chose qui fut obscure, il se pourrait faire que, parmi cette obscurité, il y aurait quelque répugnance cachée, dont je ne me serais pas aperçu, et ainsi que, sans y penser, je supposerais une chose impossible; au lieu que, pouvant distinctement imaginer tout ce que j'y mets, il est certain qu'encore qu'il n'y eût rien de tel dans l'ancien monde, Dieu le peut toutefois créer dans un nouveau: car il est certain qu'il peut créer toutes les choses que nous pouvons imaginer.', CSM I 92.

<sup>123</sup> Descartes, *Meditations* V, AT VII 63: 'Nempe distinrete imaginor quantitatem ...', CSM II 44.

in my imagination'.<sup>124</sup> Again, thereafter he marks off the geometrical features of the imagination from secondary qualities, which are not distinctly but confusedly perceived.<sup>125</sup> Also the *Principles* confirms this. In it, Descartes says that everything we clearly perceive refers first of all to the pure intellect and its innate notions. But a few sentences later, he adds that 'if we notice anything here that is clear and distinct [...] we will easily recognize – whatever the thing in question – which are the aspects that may be regarded as true'.<sup>126</sup> We may thus conclude that in so far as primary qualities are concerned Descartes holds that they can be clearly and distinctly imagined.

#### 5.4.4 Qualitative sensations

But as has been noticed, all this concerns only primary qualities. What about the remaining sensory states – generally called perceptions of secondary qualities or qualitative sensations? Descartes deals with these perceptions when discussing material falsity.<sup>127</sup> This notion can only be found in the *Meditations* and the Fourth Replies.<sup>128</sup> Unlike falsity proper, which is confined to judgements of the will, material falsity concerns only the representational content of ideas. In other words, this type of falsity does not concern a judgement or a reference of the idea to external objects, but rather the perception of secondary qualities as such.<sup>129</sup> The issue is whether what is perceived – for example, red – can exist as a thing or quality of a thing.<sup>130</sup> In other words, whether perceptions of secondary qualities represent real natures.

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<sup>124</sup> Descartes, *Meditations* VI, AT VII 73: '... nondum tamen video ea ea naturae corporeae idea distincta, quam in imaginatione mea invenio, ullum sumi posse argumentum, quod necessario concludat aliquod corpus existere.', CSM II 51.

<sup>125</sup> Descartes, *Meditations* VI, AT VII 74, CSM II 51. Cf. the wax-example in *Meditations* II, AT VII 43, CSM II 30.

<sup>126</sup> Descartes, *Principles* I §30, AT VIIIa 17: 'Atque si advertamus quid in sensibus, quid in vigilia, quidve in somno clarum sit ac distinctum, illudque ab eo quod confusum est et obscurum distinguamus, facile quid in qualibet re pro vero habendum sit agnoscemos.', CSM I 203.

<sup>127</sup> Descartes introduces material falsity in the third meditation in the context of secondary qualities. As to ideas of corporeal things, he distinguishes between things which are perceived clearly and distinctly and the rest, which are thought of 'only in a very confused and obscure way' (AT VII 43, CSM I 30). Of the former he mentions size, extension, shape, position and motion, whereas examples of the latter are light, colours, sounds, smells, tastes, warm and cold and the other tactile qualities. In other words, Descartes makes a distinction between primary and secondary qualities.

<sup>128</sup> See Descartes, *Meditations* III, AT VII 43, CSM II 30, and Replies IV, AT VII 232-235, CSM II 162-164. He also discusses this topic in the *Conversation with Burman*, AT V 152, CSMK 337. There is quite some literature on material falsity. See in particular, Wells 1984, Wilson 1990, Beyssade 1992, Field 1993, Alanen 1994, and Kaufman 2000.

<sup>129</sup> Many scholars hold that material falsity applies to all ideas of secondary qualities. See for instance, Beyssade 1992, 9, and Field 1993, 399.

<sup>130</sup> Cf. Descartes, *Conversation with Burman*, AT V 152, CSMK 337.

Descartes states that material falsity occurs ‘in ideas, when they represent non-things as things’. It concerns all ideas that are so obscure and confused that it cannot be determined whether they are true or false.<sup>131</sup> If they are false, then those ideas actually ‘represent non-things as things’, and therefore lack objective reality.<sup>132</sup> Descartes uses the example of coldness to elucidate this. We cannot be sure whether coldness is a real quality of a thing or merely the absence of heat, a privation. Although the idea of

<sup>131</sup> Descartes, *Meditations* III, AT VII 43-44, CSM II 30.

<sup>132</sup> This is the interpretation of Wilson 1978, 111. Wilson thinks that sensations lack objective reality but are nonetheless representational because the mind itself adds the representation. The same point is made by Normore 1986, who also distinguishes between having objective reality and being representational. He clarifies this distinction by using the terms intension and extension. Materially false ideas have extension, but lack intension on Normore’s view. This means that they do not hold information about their object or convey a meaning, but do refer to or represent an object by being causally connected to it. A variant of this interpretation is proposed by Alanen 1994, who argues that materially false ideas are actually complex ideas. Contrary to Wilson, however, she claims that materially false ideas have objective reality, albeit the amount of it is very slight. Her point is that they contain unnoticed judgements. Indeed, ideas come to the mind as beliefs, which means that sensation never occurs without interpretation. As this seems to run counter to Descartes’ theory of judgement, she tries to reconcile it by distinguishing between entertaining beliefs and accepting them, or claiming them to be true – which amounts to a judgement proper. The distinction between a judgement and idea is, in her view, simply less clear-cut than the fourth meditation suggests. See also Alanen 2003, 43-44, 149-164. The same kind of explanation has been put forward by Wells 1984, Bolton 1986, Field 1993, and Nelson 1996. Wells 1984 calls materially falsity pseudo-representation. He argues (pp. 47-48) that pseudo-representation only occurs in reflexive ideas. He states that the direct idea of a sensation, which concerns just the material aspect of an idea, ‘lacks manifest representational character’. Thus, material falsity can only occur with ‘secondary’ ideas, which form the objective content of a sense perception. Wells tries to support his argument by referring to scholastics such as Suarez and Eustace of St. Paul. As a result, his position is also that material falsity can only occur with judgements, which he states explicitly on page 34. Bolton 1986 claims that materially false ideas only *seem* to exhibit something positive, but *actually* exhibit a non-entity. As being obscure, those ideas give opportunity to misjudge them within a context of ill-considered assumptions. Owing to these background beliefs, we think that ideas always represent something, while that need not be the case. Bolton, however, does affirm that sensations referentially-represent by being signs, which she supports by referring to the sixth meditation. Also the solution of Field 1993 amounts to smuggling in a judgement. On his view, materially false ideas are not sensations, but ideas about or interpretations of sensations by which sensations are referred to external objects. Lastly, Nelson 1996 thinks that sensory ideas become materially false by involving wrong judgements, for which he appeals to the *Principles* in which, as we have seen, Descartes maintains that sensory ideas are as such clear and distinct. The problem with all these solutions, however, is that they lack textual support in Descartes. Descartes speaks just about simple sensory cognitions, like the perception of coldness. There is not a single remark to be found suggesting otherwise. A more traditional interpretation has been put forward by Hoffman 1996, who unequivocally attributes objective being and reality to confused ideas.

coldness itself does not allow us to conclude this, we are inclined to jump to the conclusion that coldness really is a quality of external things because the perception of coldness is still an idea and thus represents its content as something real and positive (*idea quae mihi illud tanquam reale quid & positivum reprezentat*). So, the idea of coldness gives ample occasion for a false judgement, by referring the idea to something it (perhaps) is not, and deserves therefore the epithet materially false idea. If those ideas do not represent, then they are just perceptions of the mind, and have no objective reality at all.

In sum, three things need to be emphasized here. First, Descartes says nowhere that materially false ideas do not represent, but just mentions it as a possibility. Second, even if they would not represent anything Descartes keeps calling them ideas because they at least purport to represent. Finally, because of the obscurity of secondary qualities they can readily be referred to something that they do not represent.

Descartes' account of material falsity poses quite some interpretative problems, which is reflected by the literature on this topic. For example, Kaufman takes issue with view that materially false ideas lack objective reality. In his view, if ideas have no objective reality, they are not ideas at all.<sup>133</sup> He tries to solve this difficulty by arguing that material falseness simply means that the objective reality of an idea cannot be assessed. In response to Kaufman, Field has proposed another solution to this problem. In his view, one has to make a distinction between objective being and objective reality.<sup>134</sup> A thought is an idea when it possesses objective being, which means that it represents something, but need not have objective reality. This entails that every idea has by definition a referent, but that it may lack a corresponding reality beyond our own consciousness. What goes wrong with some ideas of secondary qualities is that items that are merely mental states are attributed to material objects. According to Descartes, the imperfection of our own nature causes the objective being of those ideas, since our nature refers those ideas to external objects. The problem with Field's interpretation is, of course, that it again seems as if materially false items are judgements, while Descartes explicitly denies that.

However this may be, the discussion of material falsity makes it clear that Descartes does not categorically deny that qualitative perceptions are representational in the *Meditations*. It seems rather that he was not entirely decided as to their cognitive status. This suggests again that his conception of idea is vague. It can now be concluded that it is likely that perceptions of both primary and secondary qualities may qualify as an idea

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<sup>133</sup> See his extensive argument in Kaufman 2000.

<sup>134</sup> This is also Wilson's solution to this problem, see especially Wilson 1978, 111. Wilson thinks that sensations lack objective reality but are nevertheless representational because the mind itself adds the representation. A variant of this interpretation has been proposed by Alanen 1994. She thinks that materially false ideas are complex ideas involving unnoticed judgements. See also Alanen 2003, 43-44, 149-164.

in the strict sense. In any case, the former is certainly included, whereas Descartes is indecisive about the latter.

Wilson claims that Descartes dismissed the notion of material falseness after Arnauld's criticism, and even that Descartes has put aside the entire notion of an idea as necessarily representational thereafter.<sup>135</sup> According to her, this can be gathered from Descartes' discussion of idea in the *Principles*. Let us therefore have a closer look at that text.

#### *5.4.5 Descartes' alternative account of qualitative perceptions in the Principles*

From the notion of material falsity in the *Meditations*, it is apparent that Descartes, at the least, hesitates about the representational status of qualitative sensations. On the one hand, perceptions of secondary qualities are called ideas, and should thus be representations, but on the other hand he is rather vague on whether they really represent anything outside the mind. By contrast, in the *Principles* Descartes makes it explicit that secondary qualities do not represent anything, while still calling them ideas. This could indicate either that he changed his mind on the notion of idea in that he no longer considers representation to be the distinctive mark of ideas, or that his notion of representation is different from that of the *Meditations*. In the previous section, we have shown that resemblance representation lies at the core of Descartes' conception of idea in the *Meditations*, as well as that the only other type of representation that is applicable to Descartes is referential representation. It would thus seem natural to suppose that if Descartes retains that an idea is a representation, it refers referentially in the case of sensations. Let us have a closer look at the relevant passages in the *Principles* to see what Descartes' stance on this issue is.

Descartes is concerned with the representational status of sensory cognition in the articles 66 to 70 of the first book of the *Principles*. In article 66, Descartes affirms that we often make wrong judgements about sense perceptions. Namely, we consider features of external objects to resemble (*similes*) our sense perceptions, like when we think that the external object is similar to our perception of colour (*plane similem ideae illi coloris*). He clarifies this, in turn, in article 68 by asserting that we are 'wholly ignorant [...] of what we are seeing'.<sup>136</sup> One cannot know what the nature of colour is outside the mind in external objects. This is the starting-point for article 69 in which Descartes distinguishes sharply between primary and secondary qualities. He says there that 'We know size,

<sup>135</sup> See Wilson 1978, 104-107. Wilson argues that Descartes dropped the view that an idea has to be representational after Arnauld's critique of material falsity. She changes her opinion, however, in Wilson 1990 by making a distinction between representing representationally and referentially.

<sup>136</sup> Descartes, *Principles I* §68, AT VIIIa 33: 'Etsi enim, minus attendendo, sibi facile persuadet se nonnullam ejus habere notitiam, ex eo quod supponat esse quid simile sensui illi coloris aut doloris, quem apud se experitur: si tamen examinet quidnam sit, quod iste sensus coloris vel doloris, tanquam in corpore colorato vel in parte dolente existens, repraesentet, omnino advertet se id ignorare.', CSM I 217.

shape and so forth in quite a different way from the way in which we know colours, pains and the like'.<sup>137</sup> Descartes had already concluded that primary qualities are real features of bodies, and that we conceive clearly and distinctly that they are real natures. By contrast, although qualitative perceptions indicate that there is an object, we are ignorant of what it means that the object is, for example, coloured. He expands on this in the article that follows by saying that 'we cannot find any intelligible resemblance between the colour which we suppose to be in objects and that which we experience in our sensation'.<sup>138</sup> Because we have at the same time perceptions of primary qualities that are understood to be in external objects, we conflate them with other perceptions. Still, one might argue that although Descartes denies that we can understand what qualitative perceptions are outside our mind, this may simply result from an inherent limitation of our intelligence. But this option is undercut by a remark in article 71. Descartes says there unequivocally that 'sensations [...] do not represent anything located outside our thought'.<sup>139</sup>

From this discussion, it is clear that Descartes insists that our perceptions of secondary qualities do not resemble features of external objects, while primary qualities do. This is indeed a sharp break with the notion of material falsity of the *Meditations*, where Descartes does not draw this conclusion. In the *Principles*, Descartes explains that qualitative perceptions, at the most, indicate that an object is present, and that the object has some feature, of whose nature we are completely ignorant, that causes the qualitative sensation in our mind.<sup>140</sup> We can conclude, then, that if one wants to say that qualitative perceptions are representational in Descartes, they represent referentially.

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<sup>137</sup> Descartes, *Principles* I §69, AT VIIIa 33-34: 'Praesertim si consideret, se longe alio modo cognoscere, quidnam sit in viso corpore magnitudo, vel figura, vel motus (saltem localis: Philosophi enim, alios quosdam motus a locali diversos effingendo, naturam ejus sibi minus intelligibilem reddiderunt), vel situs, vel duratio, vel numerus, & similia, quae in corporibus clare percipi jam dictum est: quam quid in eodem corpore sit color, vel dolor, vel odor, vel sapor, vel quid aliud ex iis, quae ad sensus dixi esse referenda.', CSM I 217.

<sup>138</sup> Descartes, *Principles* I §70, AT VIIIa 34: 'Cum vero putamus nos percipere colores in objectis, etsi revera nesciamus quidnam sit, quod tunc nomine coloris appellamus, nec ullam similitudinem intelligere possimus, inter colorem quem supponimus esse in objectis, & illum quem experimur esse in sensu ...', CSM I 218.

<sup>139</sup> Descartes, *Principles* I §71, AT VIIIa 35: '... sensus [...] quae nihil extra cognitionem positum repraesentant.', CSM I 219.

<sup>140</sup> That Descartes distinguishes between the judgement that external objects resemble our sensory cognitions and the judgement that our sensory are caused by them is clear from the *Meditations*. This can be gathered from the following quotation: 'Ac denique, quamvis a rebus a me diversis procederent, non inde sequitur illas rebus istis similes esse debere' (*Meditations* III, AT VII 39). Also from other places in that meditation it is apparent that Descartes uses 'to be conform' (*esse conformes*) or 'similar' (*esse similes*) to express the first kind of judgement, while using 'proceeding from' (*procedere*) for denoting the second kind of judgement. Accordingly, the former judgement

But what about sensory cognitions of primary qualities? Are our perceptions of them clear and distinct? Or are they known only by reason? Descartes' remarks on that issue are rather confusing. In article 30, he claims that everything which is clear and distinct *in the senses*, whether we are awake or dreaming, is true, for which he refers to the *Meditations*.<sup>141</sup> It is impossible to not apply this remark to sensory perceptions per se. Why should Descartes have intellectual concepts in mind here? On the other hand, he says in article 73 that 'there is nothing whose true nature we perceive by the senses alone'.<sup>142</sup> A full discussion of this topic would take us too far afield. But these brief remarks make it clear that even Descartes' utterances about the cognitive status of sensory perceptions of primary qualities are fraught with difficulties. At any rate, this allows us to conclude that his conception of idea remains vague even in the *Principles*.

#### 5.4.6 Conclusions

From section 3, it follows that if sensory cognitions are ideas in a strict sense, they have to resemble their objects to some extent – resemblance representation is central to the strict notion of idea. But if they do, the opposition between imagination and reason would be far less radical than Descartes suggests at some points. Emphasizing the opposition between these two faculties of cognition, however, is a relatively late feature of Descartes' philosophy. In his earlier works the imagination is thought to be indispensable for the sciences, with the exception of metaphysics. Although in later writings Descartes is more negative on the imagination, sensory cognitions are called ideas, and, as we may now gather from the above discussion, he considers them ideas in a strict sense.

In other words, sensory cognitions represent by resembling their objects. This can be decisively concluded from Descartes' application of the truth criterion to sensory perceptions. Moreover, Descartes' notion of material falsity confirms that this even holds for qualitative perceptions. Nevertheless, he hesitates as to the representational status of qualitative perceptions in the *Meditations*, while being unequivocally clear that sensory cognitions of primary qualities resemble external objects. In the *Principles*, by contrast, he seems to have changed his mind on the status of qualitative perceptions. In that writing, they represent only referentially. In short, Descartes' attitude towards sensory cognition becomes more and more negative, which leads to the exclusion of qualitative sensations from the class of ideas. But in the *Meditations* he inclines to regard all sensory cognitions as representing by resemblance.

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is related to a resemblance notion of representation, whereas the latter has to do with a causal account of intentionality.

<sup>141</sup> Descartes, *Principles I* §30, AT VIIIa 17, CSM I 203.

<sup>142</sup> Descartes, *Principles I* §73, AT VIIIa 37: 'Et quia revera nullam rem, qualis ipsa est, sensu solo percipimus ...', CSM I 220.

### 5.5 Conclusions

This chapter was concerned with the issue of the extension of Descartes' notion of idea, and more specifically with the question of whether sensory cognitions are ideas proper. This question can now be answered in the affirmative.

We have seen that Descartes uses the term 'idea' in a remarkably broad and as a result vague sense. Above all, he uses two different notions of idea. In his early works, idea is primarily used for corporeal shapes. This does not imply that ideas are confined to one medium, for Descartes holds that ideas are in essence patterns or structures by which we can cognize something. This enables Descartes to adapt his early notion of corporeal idea to his later notion of idea as a mental item. Indeed, this later notion is modelled on his earlier notion of idea as a shape. He uses, then, a picture-model for concepts – thereby conflating image and concept.

This model explains why Descartes considers sensory cognitions to be ideas. Although Descartes uses the term idea, in his later works, for virtually any thought, in the strict sense an idea is a representation. We have argued that his notion of representation involves resemblance – it is based on a picture-model. Thus, to qualify as an idea proper, thoughts must both be about a thing and resemble it to some extent. Most likely, Descartes thought about this type of representation as some sort structural likenesses between idea and object. On such a feature, the notion of idea can still include a wide range of items, such as intuitions of mental acts, concepts of external things, properties of them, reasonings, and conclusions. It is this broad notion that allows Descartes to use idea, in a strict sense as a representation, for sensory cognitions, too. In Section 5.4, it was shown that he indeed applies the notion of resemblance representation to sensory cognitions, perceptions of both primary and secondary qualities, although Descartes seems to hesitate about the latter. Only after the *Meditations*, qualitative sensations are expressly excluded from being ideas proper. Still, sensory cognitions of primary qualities resemble their objects. This implies that there is not a fundamental opposition between reason and imagination, but that they differ in degree only.

There is, however, a much stricter notion of idea, as innate concepts of natures of things, present in Descartes as well. At some places, he identifies idea with such a concept. These ideas are opposite to imaginings, and conform more to a dualist model of reason and imagination. In other words, there are in fact two theories of ideas in Descartes, which are not properly connected.

In the next chapter, it shall be examined how Geulincx' view of idea is related to that of Descartes, and what he does with the fundamental tensions in Descartes' theory of ideas.



## CHAPTER SIX

# GEULINCX' THEORY OF IDEAS AND THE CLASSIFICATIONS OF COGNITIONS

### Introduction

In the previous chapter, it was shown that Descartes' notion of idea is broad and ambiguous. This was discovered to result from the fact that his notion of idea is modelled on that of corporeal shapes. In other words, Descartes' uses a picture-model for idea, in the sense that ideas resemble their objects by being somehow structurally alike. Because this likeness relation may be rather vague, in some of his works even qualitative sensations are considered ideas. On closer scrutiny, then, Descartes' alleged sharp distinction between imagination and pure reason was discovered not to be so clear-cut after all. As a consequence, Descartes' notion of ideas contains a fundamental difficulty for adherents of his philosophy – they have to make sense of his notion of idea somehow.<sup>1</sup>

On the other hand, the ambiguity of Descartes' notion of 'idea' also allowed followers to accommodate his theory of ideas to their own preoccupations. They could adapt it to other conceptions of idea current in the philosophical tradition of the day. The main alternative to Descartes' notion of idea is offered by Goclenius in his philosophical dictionary (1613). Let us consider the following definition of idea:

IDEA: means species or form, or the external reason of the thing (which is outside the thing, from Augustine 1. 83. qq. quest. 46<sup>2</sup>, and therefore distinct from the thing itself). Nor is it the form of the thing, but one of the four causes. Its description is general or particular. In general an idea is the form or exemplar of the thing at which the workman looks when he makes that which he is aiming at in his mind. Seneca Epist. 66<sup>3</sup>, like a painter has an exemplar in his mind of the image that he can or wishes to paint. In particular or more specifically, it is the eternal and immutable form (*forma*) or reason

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<sup>1</sup> The best-known example of this is the Malebranche-Arnauld debate. See on this, Jolley 1990, Nadler 1989 and 1992.

<sup>2</sup> See Augustine 1845, *Eighty-three diverse questions*, q. 46: 'On ideas', cols. 29-31; see for an English translation, Augustine 1974, 61-62.

<sup>3</sup> Goclenius probably refers to Ep. 65, see Seneca 1917, Ep. 65, §7, vol. 1, 448.

(*ratio*) of the thing in God's mind, which he regards when producing the thing. This pertains solely to God.<sup>4</sup>

Thus, Goclenius claims that ideas are exemplars or archetypes. That is, an idea is the model according to which something is made. This can be either a design an architect has in his mind or the concepts God possesses of the things he wants to create. He says, moreover, that these ideas are the formal *causes* of the thing. They are not the thing itself, or rather its internal form or essence, but an external design or model on which the thing is based. Goclenius in turn clarifies this as follows:

What an idea is. 1. An idea is the architectonic reason (that is, according to which it is fabricated) in the mind of the maker. It is accordingly a relative being (*Ens respectivum*), that is, the essence of an idea consists in its being a relation to something else, or to be referred to something else, that is, being the exemplar or archetype of another thing. 2. The principal idea, as also the highest exemplar, is sometimes taken for a self-subsisting thing, as when the idea of the World is said to be sempiternal, by which the sempiternal and immutable wisdom and reason of God is understood, whereby God has made the world, that is to say, God himself. The Platonists call this the noumenal World, that is the intelligible world, which is very far removed from our eyes; to which they oppose the sensible world in which we live.<sup>5</sup>

This quotation provides, then, a further elucidation of the two types of ideas distinguished in the former quotation. In a wider sense, ideas are all designs or models of a thing in any mind. But in a narrow sense, an idea is identical with the intelligible world, according to which the actual world is created, a type of 'maker's knowledge' only found in God – the creator of the world. Indeed, the intelligible world is God's reason.

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<sup>4</sup> Goclenius 1964, 208: 'IDEA: Significat speciem seu formam, seu rationem rei externam (quae extra rem est) ex. Aug. l. 83. qq. quaest. 46. Itaque a re ipsa distincta. Nec est forma rei, sed una ex quatuor causis. Eius descriptio est generalis vel specialis. Generatim idea est forma seu exemplar rei, ad quod respiciens opifex, efficit id, quod animo destinarat. Seneca Epist. 66. ut pictor habet imaginis eius, quam potest, vel vult pingere, in mente exemplar. Speciatim, seu peculiariter est forma, seu ratio rei, in mente divina, aeterna & immutabilis, quam intuens simile quid efficit. Haec soli Deo convenit.'

<sup>5</sup> Goclenius 1964, 209: 'Quid Idea. 1. Idea est ratio architectatrix (id est secundum quam fit fabricatio) in mente artificis. Est igitur Ens respectivum, id est essentia ideae consistere in relatione ad aliud, seu referri ad aliud, hoc est esse exemplar alterius, seu archetypum. Vocabatur & idea prima & exemplar primum & *archetupon* exemplar. 2. Idea prima, ut & exemplar primum, interdum accipitur pro re per se subsistente, ut cum idea Mundi didicitur sempiterna, ubi Dei sapientia ratioque sempiterna, ac incommutabilis, qua Deus mundum fecit, intelligitur, id est ipse Deus. Platonici vocant Mundum *nouton* id est, intelligibilem, a nostris oculis remotissimum: cui opponunt sensibilem, quem nos incolumis.'

This meaning of ‘idea’ as model or exemplar, either in the mind of an architect or in God, is widespread in the Middle Ages, the Renaissance and the seventeenth century.<sup>6</sup> This is undoubtedly a consequence of the major influence of Augustine, and thereby of Platonism, on Christian philosophers. By comparison, on Descartes’ view, ideas are images or copies of external objects – they are ectypes instead of archetypes.<sup>7</sup> On his view, things should not conform to ideas as norms, but ideas should conform to things instead.

As was noted at the outset of Chapter 5, the notion of idea is central to Geulincx’ philosophy. The question arises, then, whether his conception of idea is of a Cartesian or a Platonic-Augustinian sort. The key issue of this chapter is therefore whether Geulincx follows Descartes in taking ideas to be primarily copies of objects or takes over the traditional Platonic conception of idea as a model, which is, moreover, far more limited in extension than Descartes’ notion of idea.

I start this chapter with a close reading of Geulincx’ third inaugural address, because it is precisely devoted to the issue at hand. The findings of this first section suggest that a discussion of Geulincx’ classifications of cognitions is relevant. From this section arises the question of whether cognizing an idea always involves having complete knowledge of the essence of a thing. To answer this question, Section 3 consists of an exposition of Geulincx’ use of idea in his metaphysical writings. In Section 4, I discuss the notion of idea in Geulincx’ commentary on Descartes’ *Principles*. This requires a separate section, because there are indications that Geulincx works with another conception of idea when commenting on Descartes. The chapter concludes with an answer to the key question,

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<sup>6</sup> See about the notion of idea among scholastics in the seventeenth century, Ariew and Grene 1995. Cf. Aquinas 1964, *Summa theologiae*, q. 15, ‘On ideas’, art. 1, 63, 65: ‘... *Idea enim graece, latine forma* dicitur: unde per Ideas intelliguntur formae aliarum rerum, praeter ipsas res existentes. Forma autem alicuius rei praeter ipsam existens, ad duo esse potest: vel ut sit exemplar eius cuius dicitur forma; vel ut sit principium cognitionis ipsius, secundum quod formae cognoscibilium dicuntur esse in cognoscente. Et quantum ad utrumque necesse est ponere Ideas. [...] necesse est quod in mente divina sit forma, ad cuius similitudinem mundus est factus; et in hoc consistit ratio Ideae.’; q. 15, art. 3, 70: ‘... cum Ideae a Platone ponerentur principia cognitionis rerum et generationis ipsarum, ad utrumque se habet Idea ut in mente divina ponitur. Et secundum quidem quod est principium factionis rerum, exemplar dici potest; et ad practicam cognitionem pertinet; secundum autem quod principium cognoscitivum est, proprie dicitur ratio; et potest etiam ad speculativam scientiam pertinere. Secundum ergo quod exemplar est, secundum hoc se habet ad omnia quae a Deo fiunt secundum aliquod tempus. Secundum vero quod principium cognoscitivum est, se habet ad omnia quae cognoscuntur a Deo, etiam si nullo tempore fiant; et ad omnia quae cognoscuntur a Deo secundum propriam rationem, et secundum quod cognoscuntur ab ipso per modum speculationis.’ In this question, Aquinas appeals continuously to Augustine’s *quaestio* 46 to make his case for ideas in the divine intellect. See for an extensive account of the sources of Aquinas’ notion of idea, Boland 1996.

<sup>7</sup> Cf. Ariew and Grene 1995, 105.

and thereby also with a comparison between Geulincx' and Descartes' conception of idea.

## 6.1 The opposition of imagination and idea: Geulincx' inaugural address of 1665

### 6.1.1 Introduction

In previous chapters, we have seen that Geulincx' inaugural addresses of 1652 and 1662 are programmatic. Given the fact that his conception of philosophy deviated sharply from what was usual at universities, they also include a fundamental critique of the foundations of ordinary philosophy. This is also true of the third inaugural address, held on the occasion of his appointment as an extraordinary professor in logic in 1665.

This oration is titled 'About keeping away the contempt caused by familiarity with the best things, especially with respect to the disciplines'.<sup>8</sup> The key terms of this oration are summed up in this title, namely, contempt, familiarity (*familiaritas*), and best things. By the best things Geulincx means adequate knowledge that we can readily access – in fact, we are completely familiar with it. This intimacy leads, according to Geulincx, to contempt for that knowledge – it is too easily acquired to be valued highly. His point is in turn that this type of knowledge concerns ideas, which are simple and form the basis for the sciences. In other words, there is contempt of ideas in the philosophical disciplines because our access to them is too easy and because they are too simple. In addition to explaining where this contempt stems from, the basic thrust of the oration is pointing out the consequences of sensory cognition for the sciences, that is, the influence of the imagination. Unlike ideas, sensory cognitions are very complex and new, and therefore not subject to contempt. But in Geulincx' view, they do not provide adequate knowledge, and are therefore unfit for the sciences.

Accordingly, the address is largely devoted to making a radical distinction between ideas on the one hand and sensory cognitions on the other. Geulincx' main point is that ideas are the source of scientific knowledge, whereas sensory cognitions disturb the process of acquiring adequate knowledge when the mind takes notice of them, and will even cause grave errors when the imagination is considered a legitimate basis for scientific knowledge. Geulincx argues that the mind is prone to do just that, and is even inclined to avert from its ideas – that is, it turns away from the ideas of reason to concentrate on the imaginings of the body.

What has caused this inclination? Geulincx initially explains it by 'the power of familiarity, use and custom' (*familiaritatis, usus, consuetudinisque vis*).<sup>9</sup> But in the final paragraph of his oration, he uncovers a deeper cause, namely, the disorder of the mind

<sup>8</sup> Geulincx, *Oratio III*, 9 November 1665, II 125-136, title on p. 125: 'De abarcendo contemptu, quem familiaritas rebus optimis, et praesertim ad disciplinas spectantibus conciliavit.'

<sup>9</sup> Geulincx, *Oratio III*, II 125. We have encountered these terms when discussing Geulincx' first inaugural address of 1652, see Chapter 1.5. Geulincx, however, employs them here in completely different meanings.

arising from its connection to the body. The body has such a strong influence on the mind that the mind turns from its inner self – reason – to bodily perceptions – the imagination. Let us have a closer look at this address to find out what Geulincx precisely means by ideas and the imagination, and what their respective roles are in the sciences. I first summarize the address, and then draw some conclusions.

### 6.1.2 *The address of 1665*

The oration sets off with an observation on the influence of unusual events in everyday life, in order to point out a common psychological feature which is also apparent in the sciences, namely, that familiarity leads to contempt. In ordinary life unusual things are rated higher than things encountered on a daily basis. For example, because a comet is seen rarely, it is duly considered. People reflect even on the consequences its appearance may have for their lives. By contrast, they take no notice of the sun, despite the fact that they receive many benefits from it. All Geulincx' other examples are also to the effect that familiar things are considered unimportant, and are hence ignored. But what concerns him most is that the same phenomenon can be observed in the sciences. And by this detour, he has reached the main point of all his inaugural addresses again: the dreadful state of philosophy, as well as the causes of its decay.

Familiarity has caused this situation in the following way. Philosophers are so ‘insulted’ by familiarity that ‘this Familiarity has cast out all clear thoughts’ (*clara cogitationes*) in them, that is, ‘it has stripped their minds of all true ideas of things’.<sup>10</sup> Geulincx points out that this means that ideas, which always designate things ‘distinctly’ (*diserte*) to the mind, have become worthless to them. They consider them too obvious, readily known and familiar. As a result, philosophers who do observe ideas and try to develop their theories from them are regarded as unsubtle and not novel enough. Instead of contemplating ideas, most philosophers turn from ‘the things themselves to the shadows of things’ (*a rebus ad rerum umbras*), and thereby from ideas (*Ideas*) to ‘refined imaginations’ (*graciles Imaginationes*). Indeed, those who are able to render the images as fine as possible, those who explain God, our minds and even nothing (*nihil*) as if they were ‘very thin vapour (*fumi rarissimi*), winds, or air’, those are considered subtle and shrewd. They are seen as having a particularly sharp understanding of these things.

As a result, sensory cognitions are mistaken for ideas. Philosophers ‘regard a corporeal image that appears before the soul as an idea of God or the mind’.<sup>11</sup> Simply by trying to make the image as fine as possible, they suppose that the image can be

<sup>10</sup> Geulincx, *Oratio III*, II 128: ‘Omnis iis claras cogitationes excusit Familiaritas; veris omnibus rerum ideis mentes eorum excoriavit et deglupsit.’

<sup>11</sup> Geulincx, *Oratio III*, II 129: ‘Nullam haec apud eam inire possunt gratiam aut familiaritatem. Hinc etiam illius Sectae Philosophi in commentationibus suis multi et inepti ad multam impudentiam, veluti in Tantali horto, magno spiritu et aviditate, loquentia multa captant fugaces suas cogitationes; Imaginem aliquam corpoream animo suo obversantem pro Dei vel Mentis Idea ducunt.’

successfully referred to incorporeal objects. But on Geulincx' view, they can never form a genuine idea of the mind or God in this way.<sup>12</sup> Indeed, a *phantasm*, that is, a mental image arising from the body, differs completely from an idea. Accordingly, it is also impossible to unite cognitions that are so dissimilar. Yet, familiarity with ideas has led us to prefer phantasms, and conflate them with ideas, thus forming contradictory notions.

But what does it mean that we are familiar with ideas rather than phantasms? Our experience seems to suggest otherwise. The first thoughts with which we are acquainted appear to be sensory perceptions. They certainly seem to be prior to metaphysical notions like concepts of God and the soul. Geulincx, however, denies this explicitly. He says unequivocally that ideas and notions (*notiones*) are 'easily known, familiar, and as it were born in our house'.<sup>13</sup> They are 'prior to phantasms, as well as purer and more certain'. To illustrate this, Geulincx shows in a few words how we acquire knowledge of ourselves and God. Knowledge of ourselves is obtained most easily, since everyone necessarily knows the acts of his own mind – which are purely intellectual cognitions since acts of the mind are immaterial. In turn, it is also apparent that we have thoughts that do not depend on ourselves, from which can be inferred – via some steps – that there is an infinite mind that has given us these.<sup>14</sup> It is thus clear that immaterial things are very easily known, at least as long as our ideas of them are not obscured by phantasms.

Even though phantasms are an obstacle to reason, Geulincx rejects the idea that one should free the mind from phantasms. That is also impossible for that matter – whether we like it or not, as long as we are connected to our body, we necessarily have sensory perceptions. Indeed, the mind should not even try to remove them – they only get attention in so doing, thus averting the mind from reason. Geulincx' rule is that sensory cognitions should never guide our reason while we are philosophizing. Geulincx' alternative for dealing with sensory perceptions is provided by the following quotation:

... to submit the mind so much in the contemplation and embrace of the Idea that it does not allow those images to intervene, and keeps them at a distance of that meeting where the mind devises the true and indubitable offspring of the Idea, namely, the Sciences, the Arts, and the Disciplines.<sup>15</sup>

<sup>12</sup> Geulincx, *Oratio III*, II 129: '... numquam tamen ex illo Mentis aut Numinis Ideam cudent.'

<sup>13</sup> Geulincx, *Oratio III*, II 130: 'Principio, harum rerum admodum faciles, familiares, et veluti domi nostrae natae Notiones et Ideae sunt, omnibus Imaginibus et Phantasmatibus priores, puriores, et certiores.'

<sup>14</sup> Geulincx, *Oratio III*, II 130: 'Quam clare etiam mihi conscient sum, et me, et meas a me non esse cogitationes!'

<sup>15</sup> Geulincx, *Oratio III*, II 130-131: '... sed ita mentem in Ideae contemplationem ac amplexum submittit, ut Imagines illas interponere se non sinat, easque procul habeat ab hoc congressu, quo Mens concipiat veram ac indubitatem Ideae sobolem, Scientias, Artes, atque Disciplinas.'

From this quotation, it is very clear that Geulincx thinks that every true science is purely rational, consisting of inferences from ideas only. As a result, the imagination is not allowed to play any part in philosophy, but is seen as an obstacle. Accordingly, in the entire address one cannot find a single positive remark on the role of the imagination in the sciences. Rather, it is replete with arguments pointing out the negative influence of the imagination on philosophy – it is the source of scientific errors. These errors can be evaded by not giving attention to sensory cognitions.

This is in line with Geulincx' previous orations, which, as we have seen, also dwell extensively on errors in the sciences. Again, Geulincx particularly rejects scholastic philosophy for being based on phantasms, which is unequivocally clear from the fact that he calls the scholastic adage ‘the intellect ought to contemplate phantasms’ a ‘depraved dogma’.<sup>16</sup> Geulincx continues by explaining that when the mind is ‘indulgent to, prostitutes itself to, or subjects itself to its appearances (*spectris*) and phantasms’ or allows itself to be filled with them, it inevitably gives birth to bastards. He means by this that the sciences are corrupted if the mind does not attend exclusively to ideas, but takes into consideration phantasms as well. He calls this an adultery that leads to the subversion of the entire encyclopaedia of the sciences. In that case, science is no longer a purely rational affair, strictly confined to inferences from ideas, so that its offspring is impure – consisting of a blend of ideas and phantasms.<sup>17</sup>

However, one might suggest that this criticism is confined to metaphysics, since Geulincx' examples thus far concern only spiritual things, namely, the mind and God. To be sure, metaphysics is Geulincx' main concern in this oration. It is largely devoted to showing that immaterial things cannot be known with the help of the imagination, and that if one tries to do so, false notions will inevitably be the result. But a little further, he does deal with corporeal things by asserting that ideas are not restricted to immaterial objects, like the mind, its acts and God. He states this as follows:

In fact, we perceive by the mind not only God, the mind, or the operations of the mind, such as affirmation, negation, love, hate, and the remainder of that kind, but also that with which the understanding (*Intelligentia*) deals as pure, clear, and hidden as a result of the secret understanding of magnitude and shape, and that which the imagination (*Phantasia*) meanwhile delineates (*adumbrat*) as something provided with some mass and as circumscribed by precise lines. Which things are so diverse and so opposed to each other that there cannot even be imagined a greater distance and difference between anything.<sup>18</sup>

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<sup>16</sup> Geulincx, *Oratio III*, II 131: ‘... juxta scholasticum illud et corruptissimum dogma: *Oportet intelligentem Phantasmata contemplari ...*’

<sup>17</sup> Geulincx, *Oratio III*, II 131: ‘Sed Idea et Phantasma non solum ex causa ista, verum etiam ingenio ac indole (quod jam ante innuimus) tantopere dissident inter se atque dissentient, ut ad societatem aliquam vel concordiam revocari nulla ratione possint.’

<sup>18</sup> Geulincx, *Oratio III*, II 131: ‘Cum enim Deum, Mentem, aut Mentis operationes, ut Affirmationem, Negationem, Amorem, Odium, caeteraque id genus mente percipimus; tum id

So not only immaterial things are known by the pure understanding (*Intelligentia*), providing us with ideas, but also material things can only be adequately conceived by ideas. Although Geulincx acknowledges that the imagination provides us with notions of bodies, he emphasizes the fact that images present just the outward and gross shapes of those bodies – they are inadequate notions. An image of a body and an idea of it are utterly different things. This entails that the imagination is not to be used in physics, but that, like every other science, physics should rely on ideas only.

Indeed, it is the task of the pure understanding (*Intelligentia*) to check and correct the imagination and so to reduce the trust we place in it – it is a higher faculty of cognition than the imagination, and prior to it in every respect. The imagination is corrected by showing that ‘the object is often free from any species’.<sup>19</sup> By species, Geulincx means the sensory forms of thinking, such as qualitative sensations like colours, or, more generally speaking, any image whatsoever.

Contrary to the imagination, the pure intellect does not contemplate species, forms or images, but ideas alone. In other words, ideas are not forms of thinking but *objects* of the understanding. These object-ideas are ‘continually present, intimately attached to the mind and innate, and, moreover, by use and custom very familiar since a long time’.<sup>20</sup> Their origin must be God, since they can come neither from external things nor from ourselves. The former is impossible because external objects can only affect our external senses. These objects cannot supply us with their essential and accidental forms – by means of species – of themselves as in the Aristotelian theory of cognition, and still less with pure ideas.<sup>21</sup> Nor could we have invented ideas of external objects ourselves, because every time we pay attention to ideas we are unable to regard them as new, but see immediately that they have always been present as our ‘intimate companions’. Thus, the mind recognizes that ideas are closely connected with us by a very strict necessity.<sup>22</sup> This is, according to Geulincx, the reason why Plato has developed his doctrine of the

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quod Intelligentia purum, liquidum, et a magnitudinis ac figurae collusione secretum attingit, quodque interea Phantasia mole aliqua praeditum et lineamentis circumscripsum adumbrat, tam diversa sunt inter se atque contraria, ut majus inter res alias intervallum ac discrimen ne cogitatione quidem fangi possit.’

<sup>19</sup> Geulincx, *Oratio III*, II 132: ‘Oportet igitur in Mente superiore aliquam vim et facultatem (quam Intelligentiam vocare possumus) agnoscere, quae Imaginationi moderetur, eam castiget, ejusque apud nos ita fidem ac auctoritatem elevet, ut clarissime demonstret, Objectum omnis saepe speciei expers esse, etiam cum maxime speciem ei, qualem sensibus externis haurire solemus, penicillus Imaginationis asperserat.’

<sup>20</sup> Geulincx, *Oratio III*, II 132: ‘Proinde vis ea Mentis, quae Intelligentia vocatur, non speciem, non formam, non Imaginem aliquam (quod Phantasiae proprium est) contemplatur, sed Ideam, praesentem jugiter, intime sibi affixam et congenitam, atque adeo usu et consuetudine longe familiarissimam.’

<sup>21</sup> Geulincx, *Oratio III*, II 132: ‘... puras illas ac intaminatas Spiritum Ideas ...’ See for the scholastic theory of cognition, Chapter 7.1.

<sup>22</sup> Geulincx, *Oratio III*, II 132: ‘... ac proinde arctissima necessitudine copulatas agnoscit ...’

recollection of ideas.<sup>23</sup> He does not say he agrees with Plato, and elsewhere gives hints, which deviate from Plato's account, as to his view of the origin of ideas.<sup>24</sup>

We may conclude from this that Geulincx considers ideas and sensory perceptions, or reason and imagination, as completely different items. The origins of these cognitions differ vastly, as well as their cognitive value.

In spite of this, there is something in the human mind that leads it to conflate its ideas with imaginings. It is certainly odd that despite the fact that the mind is endowed with readily accessible ideas, it turns to the imagination to form concepts of immaterial things. But why then is the mind inclined to pursue this course? As we have seen, in the first instance Geulincx knows of only one cause, namely, familiarity (*familiaritas*).<sup>25</sup> The mind is so accustomed (*consuetudo*) to its ideas and uses them so often that it becomes completely familiar with them. But at the same time, owing to the intimate connection of mind and body, the senses overwhelm the mind; an abundance of phantasms comes to the mind so that the mind continually perceives many new things, such as thousands of different colours, scents and movements. Unlike ideas, all of them are constantly new, thereby forcefully diverting the attention of the mind from its ideas to phantasms. The mind then even comes to despise its ideas. It rather pursues and attends to the new sensory perceptions. In other words, the mind no longer reflects on itself and its ideas, but turns to external sources instead. It turns away from itself towards the body.

This makes it clear that familiarity as such is not the cause of this phenomenon, but rather the mind's disorder arising from its connection to the body. Geulincx emphasizes that familiarity is rather the 'nurse or benign propagator of friendship, the sciences and all virtues' – the sciences are grounded in the familiar, namely, in ideas. But the mind does not remain faithful to it, owing to the intrusion of images. Indeed, the human mind is 'disordered, wandering, and capricious'.

A number of things can be gathered from this oration. Three remarks are to be made on Geulincx' conception of idea, and three others on the relation between imagination and reason (or ideas). As to his notion of idea, first, Geulincx restricts the term idea unequivocally to what is perceived by the pure intellect, for which he uses the traditional term *intelligentia* – the Latin equivalent of the Greek *nous*. This undoubtedly refers to the faculty by which principles of the sciences are known intuitively, since that is the first thing contemporary philosophers would think of when hearing the term.<sup>26</sup> In other words, ideas are *objects* of the pure intellect, and these objects are the principles of the sciences. Second, ideas are readily accessible, not only the ideas of the operations of our mind but also those of extra-mental entities like God and the body. Third, ideas are

<sup>23</sup> Geulincx, *Oratio III*, II 132.

<sup>24</sup> This is discussed below in Section 6.3.3.

<sup>25</sup> Geulincx, *Oratio III*, II 134-135: 'Horum vero tot malorum una causa est Familiaritas: videmus quanta Menti nostrae cum Ido suo consuetudo, quantus usus esset; fruebatur jam ab ortu suo hujusce sponsi sui jucundissimo conspectu, honestissimo convictu, suavissimo complexu.'

<sup>26</sup> See more about *intelligentia* in Chapter 3.1.2/3.2.2-3.2.3 and in the next section of this chapter.

concepts of *things* as they are in reality, but need not come from those things themselves. As to corporeal entities, it is even impossible that they are the source of their ideas. Geulincx points out that bodies can act on the external senses only, and that these impressions only give rise to phantasms in the mind, which are not ideas – they just present outward shapes of bodies in an unclear fashion. So if we do have ideas of corporeal things, they must come from another source, namely, the pure intellect. We do not only have ideas, then, of immaterial things but also of corporeal things, whereas the imagination provides us with neither.

As for Geulincx' account of the imagination, first, the imagination should not be used in the sciences at all, in which we want to acquire adequate knowledge. The right way to conduct science is to obtain the idea of a thing and then to infer everything possible from it, according to the procedures explained in Chapter 4. But, second, although the presence of imaginings in the mind hinders the contemplation of ideas, nevertheless their presence as such does not inevitably lead to error. Only if imaginations are regarded, by a wrong judgement of the will, as sources of knowledge, the mind inevitably falls into error. Finally, in accordance with this adherence to a strict separation of sensory cognitions and ideas, reason and the imagination are firmly set in opposition to each other. Geulincx' emphasis of the strong antagonism between mind and body confirms this fundamental opposition. In the end, all errors in the sciences are a consequence of the human condition, that is, to the connection of mind and body.

This oration has made it clear above all that according to Geulincx sensory cognition and intellectual apprehensions are completely different. They are two separate classes of cognitions. But Geulincx does not consider this dichotomy to be exhaustive. That is why in the next section Geulincx' classification of cognitions is further explored.

## 6.2 Geulincx' classifications of cognitions

### 6.2.1 Introduction

Apart from the basic division of cognitions into sensory cognitions and ideas, Geulincx also offers a more refined classification which consists of four classes. Geulincx, in fact, offers two different classifications of kinds of cognition in his writings. One is presented in his commentary on Descartes' *Principles* and the other in the *True metaphysics*. Both are relevant to an understanding of Geulincx' notion of idea, and show an intriguing difference in perspective. In this section, I examine first the short account in the commentary and then the larger account in the *True metaphysics*.

### 6.2.2 The first classification: The fundamental opposition between ideas and species

The first enumeration of cognitions appears in Geulincx' comments on Descartes' *Principles* I §13. In it, Descartes gives an enumeration of the thoughts the mind experiences in itself, namely, *ideas* of things, *common notions* (*notiones communes*),

from which it composes *proofs* (*demonstrationes*).<sup>27</sup> He clarifies this by giving the example of deducing the Pythagorean theorem from the concept of a triangle. Common notions are necessary to demonstrate properties, such as the Pythagorean theorem, from ideas. The point of this article of the *Principles* is not to clarify types of cognition but to show that demonstrations cannot be doubted as long as the mind attends to them. But the mind cannot always focus its attention to the proofs, so doubt may crop up again.<sup>28</sup> Only after God's existence is demonstrated, doubt can be removed completely. In other words, this article deals with the possibility of doubting clear and distinct ideas. This also suggests that Descartes takes idea here in a strict sense of a clear and distinct cognition of the essence of a thing. Which entails that neither common notions nor proofs figure as ideas here.

Apparently, that is also how Geulincx takes 'idea', which he in turn divorces from other kinds of thought. He states that the mind is not a *tabula rasa*, but is marked 'by infinite signs' (*infinitis notis insignitam*), which he classifies in the following four categories: ideas, species, common notions and conclusions (*conclusiones*).<sup>29</sup> The most striking thing is that, unlike Descartes, Geulincx makes a distinction between idea and *species*. He emphasizes that ideas *represent* (*repraesentent*) things, whereas species are just modes of thinking (*modi cogitandi*).<sup>30</sup> This means that, although species are thoughts – acts of thinking – they do not represent anything outside the mind. In other words, they are nothing but thoughts.

Geulincx also distinguishes ideas sharply from conclusions (*conclusiones*) – which concern properties of things – and common notions. This becomes even more clear a little further on, where he states that 'the idea of a thing shows us what a thing is (*quid sit res*)'.<sup>31</sup> An idea is thus always related to the essence of a thing. By contrast, properties

<sup>27</sup> Descartes, *Principles* §13, VIIa 9: '... primo quidem invenit apud se multarum rerum ideas [...] Invenit etiam communes quasdam notiones, & ex his varias demonstrationes componit, ad quas quamdiu attendit, omnino sibi persuadet esse veras.', CSM I 197.

<sup>28</sup> Descartes' point is that the will is forced to assent to these proofs as long as they are clearly and distinctly conceived. If not, the mind may certainly remember that they were once conceived clearly and distinctly, but if that is combined with doubt about the validity of the truth criteria, there is room for doubting the proof. Only an argument for the existence of God takes away any reason for doubt in the truth criteria.

<sup>29</sup> Geulincx, *AL* I, §13, III 368: 'Mens enim, quae in praecedenti serie se ipsam, suam essentiam existentiamque invenerat, jam seipsam ulterius inspiciens deprehendit, se non esse tabulam rasam, sed infinitis notis insignitam, quae referri possunt ad quatuor capita, nempe 1. ideas, 2. species, 3. communes notiones, 4. conclusiones. Ideae et species in eo differunt, quod ideae quidem rem aliquam repraesentent, species tantum modum aliquem cogitandi; unde Deus in intellectu, et corpus, etc. sunt ideae, albedo, sonus, etc. in sensibus sunt species.'

<sup>30</sup> See about modes of thinking, Chapter 5.2.2.

<sup>31</sup> Geulincx, *AL* I, §22, III 378: 'Idea rei ostendit nobis quid sit res; conclusiones quas inde deducimus, ostendunt nobis, quaenam et qualisnam sit res. *Quaenam* refertur ad attributa rei; *qualisnam* ad qualitates.'

of things are deduced from the idea of a thing, that is, they are conclusions from it.<sup>32</sup> Geulincx uses Descartes' example of the Pythagorean theorem to clarify the differences between an idea and a conclusion. The *idea* of a triangle, which we can express by defining it as 'three straight lines in a flat plane comprising a space' (*tres lineae rectae in plano spatium complexae*), shows us *what (quid)* a triangle is. If we infer from that idea that the sum of its three angles is equal to two right angles, we reach a conclusion that shows us a property of a triangle. Geulincx uses the terms *quaenam*, *qualisnam* and *quisnam* to refer to properties.<sup>33</sup> Likewise, the idea of God, expressed in a definition as 'the most perfect being' (*Ens summe perfectum*), shows us *what* God is, whereas when we infer from that idea that God is omniscient or omnipotent, these conclusions concern properties or show *qualisnam* or *quisnam* God is. In addition, common notions are innate, just like ideas, but, unlike them, do not represent things.<sup>34</sup>

As a result, the classification in Geulincx' commentary on the *Principles* consists of an interpretation of Descartes' distinctions between types of thought, while at the same time using it to make a quite different point. Unlike Descartes, Geulincx is not interested in metaphysical doubt, but uses the classification primarily to emphasize the basic division of thoughts in species and ideas. Except for the term 'species', however, Geulincx takes over Descartes' terminology.

#### 6.2.3 *The classification of the True metaphysics*

The part of the *True metaphysics* in which Geulincx offers the second classification is concerned with natural theology. One of the properties Geulincx demonstrates of God is his wisdom (*sapientia*). In his comments on this attribute, Geulincx states that God's knowledge consists exclusively of wisdom, which means that he knows things only as they are in themselves (*ut in se sunt*).<sup>35</sup>

Geulincx uses the analogy of sense perception to elucidate the differences between wisdom and other kinds of cognition. He compares having wisdom to tasting a thing. Tasting varies widely in quality from other types of sense perception, namely, in the intimacy of acquaintance with the object sensed. For example, the distance to an object is greater when seeing, hearing or smelling things than when touching them. But the most intimate knowledge of an object is acquired by taste, through which 'we penetrate the innermost recesses of a thing'.<sup>36</sup> *Sapientia* – which, Geulincx emphasizes, is derived from *sapere* (to taste) – is like tasting, with the difference that it concerns an intellectual

<sup>32</sup> As is clear from Chapter 4.4, also the conclusion as a whole can be considered a property of the subject.

<sup>33</sup> These three terms have slightly different meanings, but these differences are irrelevant for our purposes. It is only important to know that they refer to properties.

<sup>34</sup> See on common notions, Chapter 4.3.

<sup>35</sup> Geulincx, *MV* III, Sc. 6, II 192: 'Sapiens est qui capit et intelligit rem ut est in se.'

<sup>36</sup> Geulincx, *MV* III, Sc. 6, II 192: '... gustu tandem intima rei gustatae penitus pervadimus ...' Cf. *Ethics Ann.* I, Ch. 2, Sect. 1, §1, pt. 15, III 178-179.

apprehension of an object. Wisdom is to taste a thing intellectually, that is, in a definition, ‘a profound and penetrating understanding of a thing combined with the greatest intellectual pleasure (*delectatione*)’.<sup>37</sup>

Geulincx marks off wisdom from the three other types of cognition: sense perception, experience, and learning.<sup>38</sup> He offers descriptions for each of them. The first kind of cognition, sense perception, is described as ‘the perception of the senses (*perceptio sensuum*), which concerns least the thing as it is in itself, but merely shows us, in so far as we are human beings, what can be useful or otherwise’.<sup>39</sup> Sense perception, then, just indicates what is to the advantage or disadvantage of our body. That the world in itself does not correspond to our sense perceptions is quite irrelevant from that perspective. Sense perception does not teach us anything about the essence of things, nor does it convey accurate knowledge for a rational conception of properties of things. In other words, it is philosophically speaking useless, whereas it is valuable for practical affairs.

#### 6.2.4 *The second kind of knowledge: Experience*

Geulincx distinguishes sense perception from experience (*experiencia*). Unlike sense perception, experience has its value for philosophy. Although it neither ‘penetrates the thing’ nor possesses either evidence (*evidentia*) or clarity (*claritate*), experience is certain (*certa*).<sup>40</sup> This means that experience allows us to know with certainty that some things are factual. It makes us *conscious* (*conscius*) of the fact that something is the case. For example, experience gives certain knowledge of the fact that God made us human beings – we know for certain that our mind is connected to a body and, through an inference, that God alone could make this happen.<sup>41</sup> But this type of knowledge has its narrow limits. Knowledge of the human condition as a fact is certain, but we are utterly ignorant of *how* (*quomodo* or the *modus*) God realizes the connection of mind and body. In other words, we have no explanation for the known fact. Hence, Geulincx calls experience obscure, inevident (*inevidens*), and knowledge that does not penetrate the thing (*rem non penetrans*). In other words, by experience it is known *that* something is

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<sup>37</sup> Geulincx, *MV III*, Sc. 6, II 192: ‘... sic sapientia (quae a gustatu nomen accepit) est profunda aliqua penetransque cognitione rei conjuncta cum summa animi delectatione.’

<sup>38</sup> Geulincx, *MV III*, Sc. 6, II 192-193. Geulincx elaborates on this in an annotation, see II 291-292.

<sup>39</sup> Geulincx, *MV III*, Sc. 6, II 192: ‘... perceptio sensuum, quae minime rem ipsam attingit, sed tantum illa nobis, in quantum homines sumus, quid commodi vel incommodi afferre possit, demonstrat.’

<sup>40</sup> Geulincx, *MV III*, Sc. 6, II 192: ‘Secundo cognitio certa etiam, sed rem non penetrans, seu sine evidentia, seu sine claritate ...’

<sup>41</sup> Geulincx, *MV III*, Sc. 6, II 192: ‘... (ut cognitio qua videmus Deum nos homines fecisse; etiamsi enim certa sit, cum tamen modum ignoremus et utique ignorare cogamur, obscura est, invidens, et rem non penetrans).’

the case but not know *how* it is brought about – in other words, we are ignorant of the essence of the thing.<sup>42</sup>

Accordingly, Geulincx makes a distinction between certainty (*certitudo*) and evidence (*evidentia*). This distinction was common among scholastics.<sup>43</sup> According to them, certainty means the firmness with which the mind adheres to a proposition, whereas evidence involves that the ‘intellect comes to rest in what is known’ (*quietationem intellectus in re cognita*). Evidence is attained either by having the adequate reason for a proposition through a deduction or by immediately seeing the relation between the subject and the predicate of a proposition. In the latter case, the proposition is self-evident. When this is applied to Geulincx’ definition of experience, it is clear that the mind has to affirm the known fact – for example, the proposition that the mind is connected to a body – but that it can neither deduce it from the essence of a thing nor intuit it as a self-evident proposition. As a result, experience is not science, because we have no adequate explanation of the fact.

Even though experience does not amount to science, Geulincx considers it indispensable for philosophy. For example, some knowledge of the human condition, which is known by experience, is absolutely necessary for Geulincx’ philosophy. Indeed, both his metaphysics and ethics rely extensively on it. This is clear from an extensive argument in the *True metaphysics* by which he intends to prove that it is God who produces sensory perceptions and emotions in the mind through the medium of the body.<sup>44</sup>

Experience does not entail that what is known can never be scientifically known by human beings. Geulincx has another term for that type of knowledge: *ineffability* (*ineffabilitas*). Ineffability is one of the central notions of Geulincx’ philosophy.<sup>45</sup> As

<sup>42</sup> ‘Thing’ may here mean either the essence of an external object or one of its properties. It has been shown in Chapter 3 that in the Aristotelian tradition giving a proof of why a property belongs to some subject is tantamount to explaining the essence of that property.

<sup>43</sup> See Signoriello 1931, 69.

<sup>44</sup> See also, Geulincx, PV V, Intr., II 428-429. It is, according to Geulincx, certain by experience (*experiencia*) that a disturbance in the body is sufficient to prompt a sense perception (*sensum*) or *species* in the mind.

<sup>45</sup> Ineffability is a term that is generally used to refer to God’s incomprehensibility, which means that God’s essence cannot be known by our intellect: we cannot know *what* he is. It is a term that frequently occurs in Augustine’s writings, see Fitzgerald 1999, 579. Descartes mentions *ineffabilitas* only once, in a letter to Mersenne of 21 January 1641 (AT III 284, CSMK 169). But it occurs there just in a quotation of Augustine that Mersenne had brought up. So, *ineffabilitas* is not a central term of Descartes’ philosophy. For Geulincx, on the other hand, ineffability is of the utmost importance for ethics as well as religion. In ethics, one of the main properties of virtue, humility (*humilitas*), is dependent on ineffability (see particularly, *Disputatio de virtute*, §13, III 280). Meditating on the way (*modus*) in which mind and body are connected leads to admiration (*admiratio*) and astonishment (*stuporem*) with respect to such a miracle, which has been brought about by God. Both God’s essence and works are ineffable (*Ethics* Ann. I, Ch. 2, Sect. 2, §2, pt. 29,

becomes clear from Geulincx' definitions of ineffability, it is closely related to experience. In the *Ethics*, ineffability is defined as follows: '... something is ineffable when we understand that it is (*esse*), without the mind being able to understand how it is or how it came to be'.<sup>46</sup> Similarly, Geulincx explains in the *True metaphysics* that what is ineffable can be thought of in so far as it is, for otherwise it could not be thought (*non cogitabile*), or was unintelligible (*non intelligibile*), and therefore would be nothing (*nihil*) – then it would be contradictory. Even though the ineffable can be thought, we are unable to understand the way (*modus*) in which it is or how it is made (*quomodo fiat*).<sup>47</sup>

There seem to be many examples of this type of knowledge in everyday life. For instance, a clockmaker knows how to make a clock, whereas a customer knows that clocks exist without knowing how they are made. This example, however, provides also another feature of ineffability. The simple fact that some people do not know how to make clocks does not render clocks ineffable. Geulincx therefore stipulates that ineffability includes the awareness that the mind can *never* know how the object comes about. This condition holds, for example, for knowledge of both the human condition and God, who brings this condition about. Accordingly, both the human condition and God are ineffable.<sup>48</sup>

Some scholars claimed that Geulincx' theory of ineffability reveals some sort of (vague) mysticism.<sup>49</sup> But our discussion has shown that it is perfectly understandable. Geulincx simply points out the restrictions of human understanding by this concept.

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III 215; MV III, Sc. 3, II 188). All this leads to awe and veneration of God, and thus to religion. See for that, Geulincx' discussion of piety in *Ethics* II, §9, III 81-83. A little further, he states that 'religion depends on the opinion that we form of God and his ineffability' (*Ethics* II, §12, III 87).

<sup>46</sup> Geulincx, *Ethics* II, §9, III 83: '*Ineffabile enim est, quod esse quidem intelligitur, sed quomodo sit fiatque, intelligi ab humana mente non potest ...*' Cf. *Ethics* Ann. I, Ch. 2, Sect. 2, §2, pt. 29-30, III 214-215.

<sup>47</sup> See Geulincx, *MV* III, Sc. 3 Ann., III 287: '*Ineffabile est, quod esse quidem intelligi potest, quomodo autem sit intelligi non potest; unde ineffabile respicit modum rei, non autem substantiam.*'

<sup>48</sup> Geulincx, *Ethics* I, Ch. 2, Sect. 2, §2, pt. 10, III 35: '... modum tamen, quo haec praestat, nec intelligo, et intelligo intelligere me nunquam possum. Ineptissimus autem essem, si, quia modus rei mihi ignotus est, rem ipsam inficiari vellem ...' Furthermore, by intimate consciousness (*experimento mihi et intima conscientia notissimum est*) we also know that eyes are required for seeing, as Geulincx puts forward in *Ethics* I, Ch. 2, Sect. 2, §2, III 34. Again, we do not know how our eyes are precisely related to the perceptions of the mind.

<sup>49</sup> Geulincx' notion of *ineffabilitas* has led some scholars to characterize his philosophy as mystical. De Vleeschauwer has emphasized this for first time in his article 'Arnold Geulincx, der Vertreter germanischen Geistes in der flämischen Philosophie' (1942a), in which he contrasts Geulincx' German-mystical thought with French rationalism. Also other scholars emphasize Geulincx' mysticism. See, for example, Schmitz 1944.

The fact that experience concerns only knowledge—that is the reason why it is not science (*scientia*), according to Geulincx. For science, it is necessary to have knowledge-how – a rational explanation. From our discussion, it is apparent that knowledge-how means that one knows how the thing is made (*quomodo fiat*) – its way of being (*modus*). This is nothing but an expression of Geulincx' fundamental principle of knowledge: 'What one does not know how to do, one does not do' (*Quod nescis quomodo fiat, id non facis*). This type of knowledge may concern either the essence of the object or one of its properties.

#### *6.2.5 The third kind of knowledge: Abstract scientific knowledge or doctrine (doctrina)*

Geulincx defines the third kind of cognition as 'science (*scientia*) or cognition with evidence, but which does not go beyond the surface (*haeret in cortice*) and does not penetrate the thing'.<sup>50</sup> Although it does not necessarily follow from this definition that he uses the term *scientia* as a synonym of this type of knowledge, it is likely that we should read it in such a way. To be sure, Geulincx sometimes uses the term *scientia* also for wisdom and even for experience. But, as we have seen in Chapter 3, it was not uncommon at the time to use *scientia* in a wider or stricter sense.<sup>51</sup> In its strictest and proper sense, *scientia* was certain and evident cognition of a proposition through a demonstrative argument – discursive knowledge.

It is very likely that Geulincx confines *scientia*, in its proper sense, to the third kind of knowledge. To start with, because evidence (*evidentia*) is required for having scientific knowledge, we can preclude experience from *scientia*. Add to this that, as we have seen above, evidence may concern either conclusions of demonstrative arguments or principles, which are known through intelligence (*intelligentia*). So, in the latter case, we are not dealing with *scientia* but *intelligentia*. This offers us a suggestion for identifying *scientia* with the third kind of knowledge. In Geulincx' days, the term *scientia*, in its proper sense, was confined to arguments, whereas *intelligentia* was used exclusively for knowledge of principles, along with *sapientia*, as we have seen in Chapter 3.<sup>52</sup> Indeed, traditionally *sapientia* is sharply distinguished from *scientia*. For example, in his scholastic dictionary, Signoriello presents the traditional Thomist definition of *scientia* as 'certain and evident cognition of a thing by its proper cause'.<sup>53</sup> *Sapientia*, on

<sup>50</sup> Geulincx, MV III, Sc. 6, II 192: 'Tertio etiam scientia seu cognitio cum evidentiā, sed quae haeret in cortice et rem non penetrat (v.g. scientia qua cognoscimus et scimus res, prout substant operationibus intellectus nostri, seu modis illis ac externis denominationibus, quas ab intellectu nostro ejusque operationibus mutuantur; ut qua scimus aliquid esse pulchrum, bonum, jucundum, clarum, etc.).'

<sup>51</sup> See Chapter 3.2.1, 3.2.3.

<sup>52</sup> See Chapter 3.1.2.

<sup>53</sup> Signoriello simply provides us with the traditional Thomist definitions, which were also common in the seventeenth century, as we have seen in Chapter 3. Signoriello 1931, 369: '... cognitio certa, et evidens rei per propriam causam.'

the other hand, concerns the ‘knowledge of the highest things’, that is, those things that are removed very far from the senses, ‘by the deepest causes and most universal principles’.<sup>54</sup> These universal or first principles of things give to other sciences (*scientiae*) their evidence. Associated with the distinction between *scientia* and *sapientia* is that of understanding (*intelligere*, *intellectus*) and reasoning (*ratiocinari*, *ratio*) or scientifically knowing (*scire*).<sup>55</sup> The former is intuitive, while the latter is discursive. By *intelligere* the intelligible truth is apprehended immediately, whereas *ratiocinari* proceeds from one intellection to the other in order to know the intelligible truth. The latter is defined as ‘a flow from the principles to the conclusions’. These distinctions also figure in contemporary sources with similar meanings.<sup>56</sup> All of them confirm that *scientia* is to be separated from *intelligentia* and *sapientia*. Given that Geulincx’ regards *doctrina* as discursive, while as we will see below *sapientia* is intuitive, *doctrina* appears to be identical with the traditional notion of *scientia* (which was also presented in Chapter 3). Finally, that Geulincx uses *scientia* as a technical term referring to the third kind of knowledge is also supported by an annotation to his *True metaphysics* in which he says that the first part of this work, about knowledge of oneself (*autologia*), is concerned with *conscientia* and the second part, which contains physics, consists of *scientia* – and this part consists precisely of deductions of properties from an idea, as was amply shown in Chapter 3.<sup>57</sup> As a result, in line with contemporary definitions of scientific knowledge, it is very likely that Geulincx considers *scientia* in its proper sense to refer exclusively to the third kind of knowledge.

Given the principle of knowledge, which says that we have knowledge only if we know how the object is made (*quomodo fiat*), the object of scientific knowledge should be constituted by an act of thought. Because human beings cannot produce anything outside the mind, only mental acts and their products are suitable objects of scientific knowledge. This entails that the objects of scientific knowledge cannot be the essences of external objects. Also the qualification applied to the third kind of knowledge rules this out. It can also be said that Geulincx excludes by this qualification that the third kind of knowledge concerns knowledge of things as they are in themselves. Instead, it concerns the properties of things only. If all scientific knowledge is of this type, then science does

<sup>54</sup> Signoriello 1931, 369: ‘*Sapientiae* autem illud proprium est, quod sit cognitio rerum altissimarum, hoc est quae a sensibus valde remotae sunt, per altissimas causas et universalissima principia; quia prima rerum principia expendit, et ab illa ceterae scientiae suorum principiorum confirmationem, et evidentiam mutuantur ...’

<sup>55</sup> See Signoriello 1931, 196.

<sup>56</sup> See on this, Chapter 3.1/3.2. Cf. Chauvin 1692, entry ‘Intelligentia’: ‘Intelligentia est assensus propter solam evidentiam datus: sic judico totum esse majus sua parte.’ It is commonly called a ‘habitus mentis intellectualis, qui versatur circa prima principia, seu circa principia per se nota, cum theoretica, tum practica; cujusmodi sunt, totum est majus sua parte; Deum cole, &c.’

<sup>57</sup> Geulincx, *MV II Ann.*, Intr., II 271: ‘In hac secunda parte non quaeritur conscientia sed scientia.’

not concern the essences of things at all, but just some outward properties, which are, however, known to be (relative) aspects of those things. It is abstract *scientific* knowledge, that is, knowledge of reality as it appears to us. Let us clarify this point a little.

The point becomes clearer from a discussion of Geulincx' comments on the definition of the third kind of knowledge. In one of these comments, he calls this kind of knowledge 'doctrine' (*doctrina*)<sup>58</sup>, the term by which we shall refer to this type of knowledge in what follows. What he intends to convey by this term is that this type of knowledge teaches us something new.<sup>59</sup> Admittedly, he also says that experience sometimes involves learning, such as when we learn by experience that God moves the body. But because the way in which God does this is ineffable, experience does not amount to adequate explanations, and thus falls short of learning proper. Perhaps this is also the reason why Geulincx does not call wisdom learning – it also does not consist of rational explanations or inferences, but just of intuitions of essences of things. This is confirmed by the fact that Geulincx categorically affirms that, properly speaking, doctrine, and thus learning, concerns only the third type of knowledge.<sup>60</sup>

Geulincx adds that *doctrina* amounts to clear, albeit 'abstract', knowledge of things. That is, he claims that doctrine always concerns knowledge which is qualified by the ways in which we consider things. This is apparent from the following quotation:

For example, we know clearly how (*quomodo*) acclivity and declivity differ, high and deep, what (*quaenam*) beings are, and what (*quaenam*) modes of being are, genera and species, and so on; these and similar things we do not only clearly know as regards their existence, but also as regards how they come about (*modum*). But in fact neither being nor mode of being pertain to things in themselves to which they are added; therefore, by these sciences we are indeed learned (*docti*), but not yet wise (*sapientes*), as long as we are not concerned with the thing as it is in itself.<sup>61</sup>

In subsection 6.2.2, we have seen that Geulincx uses *quaenam* to refer to properties of things. Accordingly, doctrine concerns properties. In this quotation, it is said that we know *how* these properties come about, that is, we know their *modus*. In other words, *doctrina* concerns knowledge-how, which requires that the essence of the thing known –

<sup>58</sup> Geulincx, *MV III*, Sc. 6 Ann., II 291.

<sup>59</sup> See on the terms *doctrina* and *disciplina*, Kelley 1997.

<sup>60</sup> Geulincx, *MV III*, Sc. 6 Ann., II 291: 'Tandem in tertio gradu proprie consistit doctrina; in quo clare cognoscimus res, non quidem secundum se, sed secundum extrinsecas denominationes, quas habent a considerationibus nostris.'

<sup>61</sup> Geulincx, *MV III*, Sc. 6 Ann., II 291: 'V.g. clare cognoscimus, quomodo differant acclive et decline, altum et profundum, quaenam sint entia, et quaenam sint modi entis, genera, species, etc.; haec et similia non tantem clare cognoscimus quoad substantiam, sed etiam quoad modum. Sed vero nec ipsa nec modus eorum quicquam pertinent ad res ipsas in se, quibus adhibentur; itaque his similibus scientiis docti quidem simus, sed nondum sapientes, quamdui rem ipsam ut est in se non attingimus.'

the property – is fully known. Doctrine teaches us, then, how those properties come about, or what their essence is. This quotation makes it also clear that these properties are relative to the cognizer, and thus do not apply to the external object known as such; that is, as they are outside the mind. In short, doctrine comprises scientific explanations of these relative properties.

Geulincx specifies doctrine in the main text as knowledge that either is relative to our forms of conceiving or involves external denominations (*denominationes externae*), which are formed by operations of our intellect (*operationibus nostri intellectus*). These two components of doctrine are not (always) the same. The former means that we necessarily have to employ our forms of conceiving objects when apprehending them, whereas the latter includes that we often invent (or construct) concepts for interpreting reality. Examples of the latter are the notions of good and bad, qualifications that on Geulincx' view are not real properties of things, but just concepts by which we consider them. Doctrine is, then, always relative to acts of thinking or involves products of the intellect. This means that also the properties through which external objects are conceived are always relative – they involve a relation to the knower. For example, when we say that an apple is green, the greenness is a relative property of the apple, since the apple in itself is not green: it is only green *to us*. In other words, green is an external denomination. Accordingly, Geulincx insists that the acts of thinking should not be considered as actually pertaining to the things to which they are applied – that is, the cognized objects.

In spite of the cognitive limits of doctrine, it is not only certain and clear but also evident (*evidentia*). This means that we know adequately how these properties come about – their essence is fully known. And that is possible because these properties are constructed by ourselves. So, in a sense we know our own mental activity (and its products) by doctrine, in relation to some external object. As a further result, if science consists mostly or even exclusively in this type of knowledge, it is in its entirety abstract knowledge.

Given the central question of this chapter, it is most important to notice here that there really is an external object known in the case of doctrine, to which the relative properties are attributed. This entails that doctrine involves a representation, and therefore an idea. But the idea which represents the essence of an external thing cannot be known as such, but has to be mediated by some form of thinking (or a product of thought), for otherwise doctrine would amount to wisdom.

#### *6.2.6 Comprehensive knowledge of reality: Theoretical wisdom (*sapientia*)*

Wisdom (*sapientia*) is especially important to Geulincx. He repeatedly returns to this kind of knowledge. Having wisdom distinguishes true philosophers from other humans. It consists precisely in having true knowledge of reality, that is, knowing external beings as they are in themselves (*res ut in se sunt*). In other words, one might say that *sapientia* is god-like or maker's knowledge.

Geulincx defines wisdom as ‘that *scientia* which shows the thing stripped and abstracted from all our modes of thinking and denominations’.<sup>62</sup> So, wisdom means that the external object is known as it is in itself. The same (external) object may be known as with doctrine, but it is known in a different way. But it can also be said that wisdom and doctrine have different objects. Doctrine is concerned with properties of things, which are forms of thinking and external denominations, whereas wisdom has another specific object: the external thing’s essence.<sup>63</sup> Geulincx strikingly adds that only the creator of the object seems to possess this type of knowledge. Let us look closer at the passage in which he explains this:

Finally, that science which presents the thing stripped and abstracted from all our modes of thinking and denominations; this is properly named wisdom, which nobody seems to have but who will produce (*effecerit*) that thing; of such kind is our consciousness (*conscientia*) of love, hatred, affirmation, negation, and of the remaining acts in us, because we ourselves exercise (*exerceamus*) and produce (*efficiamus*) them.<sup>64</sup>

Thus, strictly speaking human wisdom is limited to those objects which we can produce ourselves. This entails that we know how (*quomodo/modus*) the object can be produced. And, since humans can produce nothing outside their own mind, it is limited to mental acts. Consequently, knowledge of other things amounts to doctrine at most. This entails that even our ideas of God and the body do not amount to wisdom proper. Nor are they known by experience, so that only doctrine remains for them. Which would mean that all our knowledge of physics and natural theology is abstract, that is, of reality as it appears to us. In other words, we apprehend all objects other than mental acts through the first three kinds of cognition; and in so far as we have scientific knowledge of them, it is doctrine – abstract adequate knowledge of relative properties. This stands in marked contrast with the way in which we are conscious of mental acts. For example,

<sup>62</sup> Geulincx, *MV* III, Sc. 6, II 192: ‘... scientia illa, quae rem nude et abstractam ab omnibus modis cogitationum nostrarum denominationibusque proponit.’

<sup>63</sup> Geulincx starts his introduction to the *Peripatetic metaphysics* with the same observation, *MP* Intr., §1, II 199: ‘Vera Sapientia considerat res ut sunt in se, abstracte a modis nostrarum cogitationum, quibus circa illas versari solemus, itemque a denominationibus externis, et vocibus nostris ac nominibus, quibus eas appellare solemus.’

<sup>64</sup> Geulincx, *MV* III, Sc. 6, II 192-193: ‘Tandem est scientia illa, quae rem nude et abstractam ab omnibus modis cogitationum nostrarum denominationibusque proponit; haec vero sapientia est, quam nemo videtur habere nisi qui rem illum effecerit; talis est conscientia nostra amoris, odii, affirmationis, negationis, caeterarumque actionum, eo quod, ipsi eas exerceamus et efficiamus.’ Compare this with other remarks of Geulincx on wisdom. Geulincx, *Ethics* Ann. I, Ch. 2, Sect. 1, §1, pt. 23, III 181: ‘Tota ratio sapientiae, ut jam saepe inculcatum est, consistit in perceptione rationis ...’ It is identical with grasping reason: *Ethics* Ann. I, Ch. 2, Sect. 1, §1, pt. 15-16, III 178-179.

Geulincx says in his *Ethics* that it is very well known to us *what* love is.<sup>65</sup> And the same goes for all our thoughts (*cogitationes nostras*), the intellect (*intellectum*), the senses (*sensum*), the will (*voluntatem*) and the affects of the soul (*animi affectus*). These are not properties of the mind but modes (*modi*), that is, particular states of thinking. All these are perfectly known to us through self-reflexive consciousness, because all of them involve acts of our mind and are thus, in so far as they are acts, produced by ourselves.

By limiting wisdom to mental acts, Geulincx implicitly claims that it is intuitive knowledge. For in the case of knowledge of one's mental acts, we are dealing with reflexive knowledge, which is necessarily intuitive.<sup>66</sup> Although Geulincx does not mention that intuitiveness is a feature of wisdom, it is apparent that all cognitions of mental acts are intuitive – undoubtedly so, considering that he insists that they cannot be defined because of their complete clarity.<sup>67</sup> In this respect, wisdom concurs with experience: both are intuitive. They differ, though, in that experience concerns knowledge-that, whereas wisdom involves knowledge-how, or rather concerns knowledge of the essence of a thing. Finally, the features of wisdom that mark it off from doctrine consist, then, of both its immediateness and its peculiar object, that is, it consists of intuitions of the essences of things.

As a result, because wisdom is limited to our mental acts, we are not wise as to external reality. Although this is correct, this is not the only conclusion Geulincx draws. For him, wisdom consists in apprehending reason. By apprehending reason, we learn, according to Geulincx, that some perceptions belong to external things, whereas others belong just to ourselves.<sup>68</sup> In other words, wisdom teaches us to separate species from

<sup>65</sup> Geulincx, *Ethics* Ann. I, Ch. 1, §1, pt. 1, III 154: 'Cum enim aliquando amemus ipsi, ignorare certe non possumus, quid sit amare. Et is generatim obtinet in iis omnibus, quae ad cogitationes nostras, ad intellectum, atque sensum, voluntatem item, et animi affectus pertinent; haec enim omnia nobis, ut dixi, per conscientiam notissima sunt, nec possunt unquam definitione aliqua declarari.'

<sup>66</sup> It is intuitive rather than being mediated by either intermediate species, whether sensible or intelligible species, or external denominations See Geulincx, *MP* Intr., §1, II 199-200. The species-theory and intuitive knowledge will be further discussed in Chapter 7 and 8.

<sup>67</sup> Cf. Geulincx, *Logic* IV, Sect. 1, Ch. 6, I 403-406. Geulincx discusses in this chapter the first rule of definition, which is that 'what is sufficiently clear, ought not be defined' (*Quae satis clara sunt, definiri non debant*). In this chapter, he only offers examples of mental acts as things that cannot be defined. They are known by 'that Science (*Scientia*) by which we know (*scimus*) in the best way and intuitively (*optime et intuitive*), as is generally said, what the thing is' (II 406). Likewise, it is impossible to define how consideration and cognition are distinct (*MV* II, Sc. 8, II 68), what affirmation and negation are (*Logic* I, Sect. 1, Ch. 1, §2, I 175), or what abstraction and praescision are (*PVI*, Prop. 7, II 377), all of which are mental acts. See on this, Chapter 4.1.2.

<sup>68</sup> Geulincx, *AL* I, §71, III 412: 'Tertius denique status in eo consistit, quod delectu habito, quasdam perceptiones nostras referamus ad res extra nos positas, quasdam referamus ad nos ipsos nostramque apparentiam. [...] Et ad hunc quidem statum ipsa etiam humana sapientia pertinet. Cum enim juste decreverimus, et istas quidem perceptiones, quae nobis debentur, nobis

ideas. This is precisely that in which human wisdom consists, in Geulincx' view. He clarifies this point at the beginning of his introduction to the *Peripatetic metaphysics*. He starts there with the observation that 'true wisdom considers things as they are in themselves (*ut sunt in se*)', and in turn explains that wisdom removes sensible species or images from the things that fall under the senses in physics, and from intelligible species in metaphysics, that is, the logical forms of thinking.<sup>69</sup> As a result, it seems as if wisdom in both physics and metaphysics is very well possible, and that we can comprehensively know both types of reality. But Geulincx does not mean that. Rather, as he explains in an annotation on this passage, wisdom shows, negatively, that things as such are not as we conceive them. He says literally at this point that 'we cannot consider things as they are in themselves', which teaches us how imperfect we are.<sup>70</sup> In short, human wisdom consists in nothing other than properly distinguishing cognitions – in our judgements about reality – while being aware of the limits of our cognitive capacities as to external reality. That is, human wisdom means making correct judgements.

This discussion of the kinds of cognition is very important to Geulincx' notion of idea. In an annotation, he remarks that both doctrine and wisdom always involve ideas, contrary to the first two classes of cognition.<sup>71</sup> This does not seem to square well with the fact that doctrine concerns properties rather than ideas. Ideas are related to essences of things alone. On the other hand, we have also seen that Geulincx thinks that doctrine necessarily involves ideas, as representations of the objects known. This, however, does not mean that in those cases the knowledge of the essence is of such a quality that the mind knows how to produce the object. That is expressly limited to wisdom. This is why

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reservaverimus (scilicet species nostras), eas vero, quae referenda sunt ad res extra nos positas, ad eas retulerimus (scilicet ideas nostras), tunc vero sapientes erimus; sed si quid in his turbemus (quod facile propter superiores nostros status contingit), erimus quidem in statu discretionis, sed non in statu sapientiae; et ecce hic discrimin vulgi et verorum Philosophorum.'

<sup>69</sup> Geulincx, *MP I*, Intr., §1, II 199: 'Vera Sapientia considerat res ut sunt in se ...'

<sup>70</sup> Geulincx, *MP Ann. I*, Intr., §1, II 300-301: 'Nos non debemus res considerare prout sunt sensibiles (id est, sub certa specie incurront in sensum); neque ut sunt intelligibiles (id est, sub certo modo a nobis cogitantur). Sed ut sunt in se, non possumus eas considerare; unde videmus magnam nostram imperfectionem. Hoc unum igitur restat nobis faciendum (quod et possumus et debemus facere), ut judicio mentis, quotiescumque rem aliquam sub modo aliquo cogitationis nostrae apprehendimus (quod euidem semper facimus, nec possumus aliter dum homines sumus), semper hoc teneamus, rem non esse ita in se, ut apprehenditur a nobis. Etiamsi nos semper phasmate sensus et intellectus ipsis rebus tribuamus; tamen est aliiquid divinum in nobis, quod semper dicit nobis, non esse sic; et in hoc unico consistit nostra, quatenus homines sumus, sapientia.'

<sup>71</sup> Geulincx, *MV III*, Sc. 6 Ann., II 291-292: 'Duae ergo priores classes cognitionum saepe sunt sine idea, sed vel cum specie (ut sit in sensu), vel cum conscientia (ut saepe contingit in secunda classe); doctrina vero et sapientia ad ideas referuntur.'

Geulincx adds that an idea is only known by wisdom.<sup>72</sup> For that reason, he re-defines wisdom as ‘a cognition by an idea, or a cognition by which something is known in its idea’.

#### 6.2.7 Conclusions

From the discussion of the four kinds of knowledge, it has become clear that Geulincx confines scientific knowledge within specific boundaries. In the *True metaphysics*, wisdom, the highest form of human knowledge, is explicitly restricted to knowledge of our own mental acts, as well as the insight that our ways of apprehending things do not correspond to external reality. Consequently, most scientific knowledge is no more than learning (*doctrina*), the third kind of knowledge, while certainly all scientific knowledge of extra-mental items belongs to this type of knowledge. As to external reality, our wisdom consists, as a result, predominantly in our being aware of the fact that science is limited to our perspective on the world, and therefore does not concern reality per se.

As for Geulincx’ notion of idea, it is first to be noticed that strictly speaking ideas provide us with the intimate essences of things, and are therefore the proper objects of wisdom. For that reason, doctrine does not appear to involve ideas. But that is not entirely true. In a sense, doctrine always concerns representations of external objects, and thus also has to involve ideas somehow. What Geulincx means by this is a key question for the remainder of this chapter.

### 6.3 Geulincx’ notion of idea

#### 6.3.1 Introduction

Our discussion of the inaugural address of 1665 made it abundantly clear that Geulincx uses the term ‘idea’ idiosyncratically. Unlike Descartes, he distinguishes ideas sharply from thoughts of the imagination. It is clear from our discussion above that ideas are pure thoughts – free from any sensory content – and that they are somehow related to the essences of things. But even though this notion of idea is very strict, some questions are left on the table. The question of how Geulincx’ notion of idea is exactly related to representation needs to be answered since that was discovered to be central to Descartes’ notion of idea.

Apart from the issue of representation, a difficult question arises from the previous section that needs to be discussed here. That section was closed with the remark that Geulincx connects idea with both doctrine and wisdom, but especially applies it to the latter kind of knowledge. Because wisdom concerns intuitive knowledge of essences, that is not strange. But still, he does not categorically deny that doctrine is related to ideas as well. What could he possibly mean by this? This is the central question of this

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<sup>72</sup> Geulincx, *MV III*, Sc. 6 Ann., II 292: ‘Proprie tamen sapientia huc tantum spectat, nam doctrina versatur adhuc in considerationibus nostris. Unde sapientiam recte definies: cognitionem per ideam, seu cognitionem, qua aliquid cognoscitur in idea sua.’

section. In order to answer it, I explore Geulincx' metaphysical and physical writings. This will show how he actually uses the notion of idea in his philosophy.

### 6.3.2 Ideas as concepts of essences

With the exception of the preface, the term idea does not occur in Geulincx' *Logic* (1662), and only incidentally in the *Method* (1663).<sup>73</sup> It is more frequent in his disputations and writings on physics and metaphysics, while it appears a few times in his *Ethics* as well. But the most extensive discussion is to be found, apart from the oration of 1665, in his commentary on Descartes' *Principles*. Naturally so, because Descartes deals there with the notion of idea, while Geulincx rarely omits any part of the *Principles* in his comprehensive commentary. However, because in commenting on Descartes' *Principles* he adopts many distinctions that do not appear in other writings, it is expedient to tell them apart. Therefore, a discussion of the commentary is postponed until the next section. Because Geulincx does not offer a separate discussion on idea in his other writings, we have to gather his view from several points in his corpus.

First, I investigate the way 'idea' is used in the *True metaphysics*, since it is clear from our discussion on Descartes that the term idea occurs mainly in metaphysical and epistemological contexts in his works. For that reason, it is to be expected that Geulincx would use 'idea' in the very same contexts. Most strikingly, however, in his metaphysics Geulincx uses the term idea far less frequently than Descartes. He employs only the terms 'thought' (*cogitatio*) and 'mode of thinking' (*modus cogitandi*) to refer to cognitions of whatever kind. In the passages where it does occur, 'idea' never has such a wide scope that it includes all thoughts. So, the broader notion of idea, which, as we have seen, appears often in Descartes, is completely missing in the *True metaphysics*. It seems simply to have been replaced by *cogitatio* or *modus cogitandi* altogether. Let us see how Geulincx actually uses 'idea' in his metaphysics.

In the first part of the *True metaphysics*, which is concerned with knowledge of the self, the term idea appears for the first and only time in the last *scientia*, which is concerned with the separation of mind and body. When the mind is separated from the body, the mind no longer has thoughts depending on the body – a type of cognition for which Geulincx uses here the term (sensible) species – but only thoughts for which no body is needed.<sup>74</sup> These thoughts are either ideas or desires. So unlike sensible cognition, ideas and desires do not depend on the mind's connection with the body.

In the second part of the *True metaphysics*, which is concerned with body and movement, the term idea does not occur at all. By contrast, in the third part, on natural

<sup>73</sup> In the preface to Geulincx' *Logic*, the term idea is used to refer to both common notions and the principles of logic, I 170.

<sup>74</sup> Geulincx, *MV* I, Sc. 13, II 157: '... quo casu clare intelligo omnibus illis speciebus aspectus, auditus, caeterorumque meorum sensuum, imo ipsius memoriae (nam haec non minus a corpore pendet quam quilibet sensus) exuendum esse, nullamque in me remansuram cogitationem nisi quae ad concupiscentias et ideas pertinet.'

theology, Geulincx offers an introduction in which he explains why he does not start this part with an idea of God. In view of the importance of this passage for understanding Geulincx' notion of idea, I quote it in full:

We do not carry out this treatise [= third part of the *True metaphysics*] by proceeding from a definition, and by descending from the idea of God to his properties (as we have done in the preceding treatise, which was concerned with the body), but rather *a posteriori*; if only to establish a connection between this science and what was taught in the first part, and to descend gradually from the knowledge of ourselves to the knowledge of God. For in that way Metaphysics will be more firmly connected and will be preserved a better continuity between the Sciences, which as we said at the beginning of this treatise belongs to its method (*rationem*). In this way it will also be easier to convince the impious, who have this easy habit of disowning the idea of God, claiming either that they do not have it or that they do not know whether they did not invent it themselves in their own fancy, or were deceived by others into believing it ...<sup>75</sup>

A few points may be noted in this quotation. First, 'definition' appears to be equivalent with 'idea'. What Geulincx intends to convey is that to provide a definition of something is to express its idea, which gives access to the essence of a thing. Second, it is possible to deduce the properties of a thing from its definition or idea. This is the *a priori* method – a method Geulincx does neither use in the first part of the *True metaphysics* on knowledge of oneself (*autologia*) nor in this part on natural theology. In fact, the *a priori* method is used in the second part on physics, as well as in his *Ethics*, as we have already seen in Chapter 4.<sup>76</sup> Thus, the second part of the *True metaphysics* would start with a definition or idea of the body. This is indeed the case, since Geulincx does not commence, as in the first part, with a *scientia*, which is accordingly (here) a technical term not referring to an idea but rather to a property of a thing. Instead, Geulincx starts his physics with the following definition of body: 'The body is what is Extended'.<sup>77</sup> This definition is *not* introduced as a *scientia*, and in his comments on it, Geulincx tells us that everyone possesses this notion of the *essence* of the body.<sup>78</sup> This definition is, then,

<sup>75</sup> Geulincx, *MV III*, II 186: 'Non exsequemur hunc tractatum procedendo ex definitione, et ex idea Dei ad ejus proprietates descendendo (sicut id praecedenti tract., qui de corpore est, praestitimus), sed potius a posteriori; eo quod juvet hanc scientiam connectere cum ea quae traditur parte prima, et gradatim a cognitione nostrum descendere ad cognitionem Dei. Sic enim magis concatenata erit Metaphysica, meliusque illa perpetuitas Scientiarum servabitur, quam initio hujus tractatus ad rationem ejus pertinere dicebamus. Sic etiam facilius convincentur impii, qui facile solent illam ideam Dei dissimulare, et dicere vel illam se non habere, vel nescire se an aliquando illam pro libidine sua non finixerint, vel ex aliorum imposturis hauserint ...'

<sup>76</sup> See Chapter 4.6.

<sup>77</sup> Geulincx, *MV II*, Intr., II 158: '*Corpus est quid Extensem.*'

<sup>78</sup> Geulincx, *MV II*, Intr., II 158: '... sed et extensionem illam primam esse in corpore, atque ante illam nihil in corpore, quod ad naturam ejus pertineat, cogitari posse, certissimum est.' In other words, extension is the primary property (or attribute) of the body, and that is the same as its

an expression of the idea of the body, and that idea is, in effect, intimately connected to the essence of a thing. Finally, it also becomes clear from this quotation that everyone has an idea of God, even though some people categorically deny this. Since an idea is connected with the possibility of providing a definition, at least when the object is not so clearly known that it cannot be defined, it is, in principle, also possible to give a definition of God – and Geulincx offers one in his annotations.<sup>79</sup> In short, the use of idea in the *True metaphysics* confirms that ideas are representations of the essences of things.

Most other remarks on idea in Geulincx' metaphysical writings can be found in the annotations. The first remark concerns Geulincx' claim that we lack an idea of moving our body by our will. This entails that we do not understand (*intelligere*) it, for 'whenever we want to understand (*intelligere*) something, we must consult Ideas'.<sup>80</sup> He continues by stating that only ideas allow us to establish the nature of something. This example, naturally, concerns the human condition again – namely, that part of it that concerns the action of the mind on the body. We have already noticed that this is ineffable according to Geulincx, which means that we lack an idea of *how* this can be brought about. As a result, ideas concern the essence of something, and that involves knowing how it can be produced. Which would mean that ideas are even restricted to wisdom – and should thus be taken in a very narrow sense.

But the basic problem of this section crops up here anew. Having ideas of the body and God does not allow us to produce them; we are completely ignorant of *how* they come about, too. At the same time, Geulincx tells us that we have knowledge of their essences, and can even express them in a definition, and in turn deduce properties from these concepts – which is exactly what happens in the second part of the *True metaphysics* which is concerned with (metaphysical, *a priori*) physics. The problem becomes even clearer when considering the idea of movement. Geulincx argues that the mind possesses a general idea of movement.<sup>81</sup> But still, that idea does not enable us to produce movement. These ideas, then, must differ in quality – at least, when cognized

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essence. This becomes completely clear when we analyse the notion we have of the body. Geulincx affirms this interpretation in his commentary on the introduction (II 271). He says there that what is sought for is the essence of the body instead of a property, which follows from the essence. The essence is in turn specified as the same as the primary property of the body. Cf. *MV III*, Sc. 8 Ann., II 297.

<sup>79</sup> Geulincx, *MV III* Ann., Sc. 10, II 299-300: 'Haec est idea seu definitio Dei, prout in Scholis jamdiu docetur, scilicet *ens a se*; non male. [...] In illo *a se* non est adhuc notio seu idea, sed aliquid ex idea sequens; melius itaque Deus diceretur esse res simpliciter, vel mens simpliciter, ut Anaxagoras optime dixit olim.'

<sup>80</sup> Geulincx, *MV I* Ann., Sc. 10, II 270: 'Quoties volumus aliquid intelligere, debemus consulere Ideas. Ubi nullam ideam videmus, ibi non debemus statuere naturam. Ubi autem nihil est in natura, ibi totum est institutionis et arbitrii. Hic autem nulla est idea, quomodo corpus in animam agat et vice versa.'

<sup>81</sup> See, for example, Geulincx, *PV IV*, Hypoth. 1, II 424: '... nempe motum habere in mente nostra claram admodum ac distinctam notionem seu ideam sibi respondentem.'

by the human mind – from ideas that allow us to produce their objects, and so cannot amount to wisdom. Let us see whether other comments of the *True metaphysics* offer any clue on how this problem may be solved.

In the main text of the *True metaphysics*, Geulincx introduces the scholastic distinction between a primary and a secondary notion (*notio prima* and *secunda*), in order to clarify what kind of notion we actually have of the unity of mind and body. He says that the notion we possess of this unity is not a primary but a secondary notion. When commenting on this distinction, Geulincx claims that a primary notion has ‘an idea corresponding to it’ (*ideam sibi respondentem*), and that, conversely, a secondary one has not.<sup>82</sup> He explains that the concept of the unity of mind and body is not a primary notion, so does not refer to an independent reality, but is just a secondary notion allowing us to talk about the relation between mind and body.<sup>83</sup> Properly speaking, however, mind and body are not united at all. We lack an idea of this unity, thus making it impossible to explain or understand this phenomenon.

Geulincx’ comparison of idea with the scholastic term primary notion (*notio prima*) allows us to get a more precise understanding of idea. In his *Lexicon philosophicum* (1613), Goclenius defines the term *intentio*, which is a synonym of *notio*<sup>84</sup>, as ‘an act of the mind by which it tends to an object’. He calls this act a formal intention (*intentio formalis*), although the term intention can also be used improperly for the object of such an act, in which case it is called an objective intention (*intentio objectiva*).<sup>85</sup> In addition,

<sup>82</sup> Geulincx, *MV Sc. 10 Ann.*, II 271: ‘Non esse primam notionem est non habere ideam sibi respondentem.’

<sup>83</sup> Geulincx, *MV I*, Sc. 10, II 154-155: ‘Sed meminerint, unionem non esse primam notionem, sed secundam; partes enim corporis, quae inter se unitae dicuntur, non nisi quiete uniuntur, adeo ut prima notio ibi sit quies, non unio. Inter mentem vero et corpus deberent simili pacto notionem primam respondentem unioni, quae tantum secunda notio est, allegare.’

<sup>84</sup> See for this, Chauvin 1692, entries ‘Notio’, ‘Intentio’ and ‘Conceptus’. Unlike intention, *conceptus* is primarily used for the representational content of the act.

<sup>85</sup> Goclenius 1964, 253: ‘Intentio proprie dicta; actus mentis, quo tendit in obiectum, intentio formalis; improprie dicta; obiectum in quod.’ Signoriello 1931, 198-199, explains that the *intentio* in so far as it concerns the intellect itself is held either for the act of the intellect in itself, and is then called the *intentio* or *conceptus formalis* because the form inheres in the intellect, or for the thing that is conceived by a cognition, in which case it is called an *intentio* or *conceptus objectivus* because it is that which is presented to the mind to cognize. The *intentio*, both formal and objective, can be either primary (*prima*) or secondary (*secunda*). The *intentio prima objectiva* is the concept that presents a thing as it is as such, such as the concept of man in so far as it represents the *esse hominis*. An *intentio secunda objectiva*, on the other hand, is a concept that represents a thing by the manner in which it is known by the intellect, such as the concept of man in so far as it can be considered *universaliter* as a certain species. Also Chauvin 1692, entry ‘Intentio’, presents the various distinction as to *intentio*. He defines the various kinds of intentions as follows: ‘*Intentio formalis prima* est actio intellectus, qua recte & absque ulla reflexione fertur in obiectum cognoscendum, sicque primo tendit; ut, cognitio hominis. *Intentio vero formalis*

*intentio* can be divided into the primary and secondary intention (*intentio prima* and *secunda*). A primary intention is ‘a direct act of the intellect, that is, by which it directly perceives its object’.<sup>86</sup> A secondary intention is a reflexive act of the intellect, so does not have as its object something outside the mind.<sup>87</sup> It accounts for the self reflexive aspect of thought, but it may also have as its object a being of reason (*ens rationis*). The latter means that its object does not exist outside the mind, but is formed by the intellect itself. It is a mental construct.

If we are allowed to apply Goclenius’ account of intention to Geulinckx’ remarks, the primary notion is a cognitive act directed at an object which involves an idea of that object – it has an ‘idea corresponding to it’ (*ideam sibi respondentem*). In the case of a secondary notion, on the other hand, the mind has its own product, a being of reason (*ens rationis*), as the immediate object of cognition, such as our notion of the unity of mind and body. It is most important to notice here that Geulinckx thinks that a primary notion is not identical with an idea. This need not necessarily be interpreted in such a way that the idea is the immediate object of a primary notion, an act of the intellect – in scholastic terms an objective notion or concept. It depends on how one interprets the phrase ‘an idea corresponding to it’. But there is much to say for that interpretation. Particularly from our discussion of Geulinckx’ 1665-address, it has become clear that the pure intellect (*intelligentia*) has an idea as its object. If that picture holds for all ideas (of external objects), then the immediate object of the intellect actually is the idea as an objective concept.

In any case, ideas are notions of the essences of things. Also in his *Peripatetic metaphysics*, Geulinckx links the notion of idea to that of essence. Essence is defined there as a ‘predicate that is both necessary and primary’.<sup>88</sup> He means by these qualifications that essences neither concern contingent matters nor are properties that can be predicated of other concepts – in Cartesian terms it would then be a secondary attribute

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*secunda*, est actio intellectus se supra primam suam cognitionem reflectentis; ut, postquam per primam intentionem cognovi hominem est animal, per reflexionem hominem voco subjectum, animal praedicatum.’; ‘Intentio objectiva prima, est objectum, in quod primario & directe tendit intellect; ut, *homo*. Intentio secunda objectiva, est denominatio resultans in objecto, ex reflexa mentis intentione, seu secunda formalis; ut, *esse speciem, genus, &c.*’ The same distinctions apply to ‘concept’ (*conceptus*), with the difference that Chauvin emphasizes the notion of representation more for concepts. He defines the formal concept (*conceptus formalis*) as the ‘immediata & actualis cuiusque rei intellectui propositae repraesentatio, and that is why the *forma intellectus* is the *verbum mentis*. The *conceptus objectivus* is everything what is represented by a formal concept.

<sup>86</sup> Goclenius 1964, 253: ‘Prima intentio formalis est actus intellectus directus, id est, quo obiectum suum percipit directe.’

<sup>87</sup> Goclenius 1964, 253: ‘Secunda intentio formalis est actus intellectus reflexus, id est quo aliquid per reflexionem cognoscimus.’

<sup>88</sup> Geulinckx, *MP* II §8, II 261: ‘Essentia est praedicatum necessarium et primum. Primum est cuius non datur ratio per aliud pertinens ad idem subjectum; necessarium vero est, quod affirmari quidem de subjecto suo potest, negari minime.’

(*attributum secundum*), whereas Descartes equates the essence of a thing with a primary attribute. The point is that, unlike properties, there can be given no reason for an essence. A little further, Geulincx calls the essence a *quidditas*. Geulincx considers this the most suitable term for it, since the essence concerns *what (quid)* the thing is. He goes on with a discussion of the conception of idea of 'the Platonists and true philosophers'. These philosophers have identified essence with idea. Geulincx then remarks that this use of the term essence is narrower than that of the scholastics.<sup>89</sup> But he does not dissociate himself from this use of 'idea'.<sup>90</sup> On the contrary, he immediately offers examples from his own philosophy, such as that the idea of body consists in extension, the idea of the mind in thinking, and the idea of a sphere in a certain figure. From those ideas it is possible to infer properties (*proprietates*). As a result, Geulincx basically adheres to a Platonic notion of idea, and connects idea very closely with the essence or *quidditas* of a thing.

In sum, Geulincx connects the notion of idea with knowledge of the essences of things, and thereby to definitions. Knowledge of the essence of a thing allows us to deduce the properties of that thing, and so to have scientific knowledge of them. Further, ideas are not acts of thinking, but rather objects of those acts. This leads to the question of where ideas are located and how we can have access to them. A discussion of these points is helpful to answer the question of what it means that doctrine involves ideas.

### 6.3.3 *The location of ideas*

Since for Geulincx ideas are not identical with the acts of thinking, the question emerges of where ideas are to be located. Although we have not discussed Descartes' view on this issue, it can be remarked here that he does not say much more about it than that ideas of natures are innate. Geulincx is much clearer about this issue. We have already noticed that he sometimes refers approvingly to Plato's theory of recollection, while at the same time dissociating himself from it. De Vleeschauwer interpreted Geulincx' position as a type of illumination theory, which he in turn contrasts with Malebranche's notion of *vision en Dieu* – which means that the human mind has direct access to ideas in God's mind.<sup>91</sup> But it is a moot point whether this is actually Geulincx' position. Establishing this requires a close reading of the relevant texts, and De Vleeschauwer does not provide that. For that reason, we will consider the relevant passages more closely.

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<sup>89</sup> Geulincx, *MP* II §8, II 263: 'Apud Platonicos et veros Philosophos essentia passim vocatur Idea; et qui quidem hoc nomine usi sunt, arctius se ipsos ad contemplationem verae essentiae restrinxerunt, quam qui nomine illo scholastico, egregiam licet admonitionem continente, usi fuerunt.'

<sup>90</sup> This, however, does not entail that Geulincx identifies the essence with the idea. What concerns him here is that ideas give access to the essences of things as being their exemplars.

<sup>91</sup> De Vleeschauwer 1953b, 248.

Like Descartes, Geulincx speaks several times of the innateness of ideas, by which it seems as if ideas are somehow contained in the mind itself.<sup>92</sup> Yet, this position is difficult to accommodate with his metaphysics, since Geulincx denies the existence of both an intellectual memory and mental dispositions.<sup>93</sup>

Geulincx' alternative account of the location of ideas is given in part three of the *True metaphysics*. Geulincx says there that God is the father of mankind because he brings about the mind-body connection, which makes us human. By contrast, our biological father just forms the occasion for this to happen. In his annotation on this, Geulincx applies this also to the process of learning.<sup>94</sup> Just as our biological fathers are not fathers in a strict sense, also our teachers (*magister*) are not properly speaking our true teachers. Teachers can only stimulate their pupils to contemplate innate ideas and notions. But it is God who causes us to have this knowledge.

There are two respects in which it can be said that God provides us with knowledge. First, words, writings and other corporeal signs are ill-suited means for learning. As being material things, they first have to be brought into the mind by God. Second, these mental signs are a mere occasion for us to recall the ideas once perceived, and which have been with us ever since.<sup>95</sup> There is no necessary connection between mental signs and ideas, as mental signs are just imaginings. Again, the only thing a mental sign can do is to provide an occasion for paying attention to reason. But Geulincx insists that even listening to reason is not sufficient for actually conceiving ideas. Rather, attention only provides an occasion for God to grant us that.<sup>96</sup> Consequently, there is a separate act of God's will needed for contemplating ideas. This confirms that ideas are not *in* our mind. If that would be the case, a special act of God's will to bring about knowledge would be redundant – indeed, in that case listening to reason would not essentially differ from contemplating ideas. As a result, this account does not lay out a strong theory of innateness, but seems rather to be a traditional Augustinian theory of illumination, which means that God illuminates our understanding whenever we

<sup>92</sup> See for instance, Geulincx, *PF* II §2, II 319: ‘... estque haec tam clara animis nostris indita motus notio, ut nemo illam, simulatque proposita fuerit, non agnoscat.’; *PV* IV §1, II 424: ‘... habemus tamen antecedenter in mente clarissimam ejus distinctissimamque ideam ...’

<sup>93</sup> Rather, Geulincx considers both memory and dispositions to be exclusive features of our body. Geulincx, *MV* III, Sc. 1, II 186-187.

<sup>94</sup> Geulincx, *MV* III Ann., Sc. 1, II 285-286.

<sup>95</sup> Cf. Geulincx' annotation to his *Ethics* (Ann. I, Ch. 2, Sect. 1, §1, pt. 7, III 176), in which he states that we are well aware that reason is within us and always has been there, which is clear from the principles of reason, usually called common notions (*communes notiones*) and ideas (*ideae*). Although we recognize that they have been awakened in us by a teacher, at the same time we discern very clearly that he did not impart them to us but merely reminded (*moneri*) us of them, so that we in fact turned our mind to what we already had within ourselves.

<sup>96</sup> Geulincx, *MV* III Ann., Sc. 1, II 286: ‘... cumque hac auscultatio iterum de se prorsus inidonea sit, valeatque tantum aliquid ex decreto divino ...’

successfully know something. This passage, then, appears to support De Vleeschauwer's view. But we have to see whether this view is corroborated by other comments.

A little later in the third part, Geulincx indeed offers another account of where to locate ideas. He states that 'all ideas and eternal truths, as, for example, two and three are five, are in God's mind, not in ours'.<sup>97</sup> This is still compatible with an illumination theory. But he continues by saying that we therefore consider those ideas *in God* (*in Deo*), which entails that we are contemplating God himself (*et si ipsum Deum*). These statements agree more with a perception of ideas in God's mind itself, as is the case with Malebranche's theory of vision in God.

In any case, Geulincx emphasises the fact that ideas are not in our mind. In the commentary on Descartes' *Principles*, Geulincx responds to Descartes' claim that 'eternal truths dwell in our minds' (*quae in mente nostra sedem habet*).<sup>98</sup> He explicitly denies that eternal truths reside in *our* mind, for which he gives the following argument. The very fact that eternal truths are eternal and that truths are thoughts entails that eternal truths must be in an eternal mind.<sup>99</sup> Moreover, those truths cannot belong to our mind in so far as we are limited or created, because we understand very clearly that those truths are always the same and necessary, whether or not our mind would exist. Those truths are understood to be before any limitation, and can therefore belong only to an unlimited mind. We have something in common with that mind (*cum illa mente communionem habemus*), because God belongs to our nature – the essence of both God's and our mind is thought. We only differ from God in so far as we are limited and imperfect.

As a result, it is difficult to decisively answer the question of whether Geulincx holds a theory of illumination or of immediate perception of ideas in God. It is more important, however, to notice that this discussion gives us a clue to the answer of the question of this section. Having access to ideas in the mind of God through our pure intellect probably does not amount to having such a comprehensive knowledge of an object that we can produce it – that is, it does not involve such a kind of knowledge that we know the essence of a thing intimately. Still, access to God's ideas is required to obtain – relative – knowledge of external objects. By consulting God's ideas, we do not obtain wisdom, even though we may learn something about the essence of external objects in such a way. Geulincx' point may rather be that our access to these ideas

<sup>97</sup> Geulincx, *MV III Ann.*, Sc. 2, II 287: 'Ideae omnes et veritates aeternae, ut e.g. duo et tria sunt quinque, etc., sunt in mente divina, non in nostra; cum itaque nos consideramus ideas istas, consideramus eas in Deo, et sic ipsum Deum ...'

<sup>98</sup> Descartes, *Principles I* §49, AT VIII 23, CSM I 209.

<sup>99</sup> Geulincx, *AL I*, §22, III 380: 'Hae veritates sicut aeternae sunt, non nisi in aeterna mente residere possunt; nostra autem mens non est aeterna, igitur in alia mente sunt, nam extra mentem veritates sententiaeque esse non possunt. Quod nos illas attingamus, inde est, quia cum illa mente communionem habemus, et tantum quatenus limitati imperfectique ab illa differimus.' Cf. *AL I*, §49, III 396; *AL IV*, §189, III 518.

inevitably results in doctrine, because these ideas are immediately grasped by our logical forms of thinking, and are thus placed in our conceptual framework for understanding reality. If so, we have knowledge by ideas in the loose sense that we do have access to the ‘model’ on which something is made, by communicating with God’s intellect through reason, but still do not know the thing as it is as such.

#### 6.3.4 Conclusions

The use of idea in Geulincx’ works makes it clear that we know the essence of a thing by grasping an idea. This is why he makes such a sharp distinction between an idea – as the concept of a thing – and a species. The idea is the model on which a thing is made and enables the holder of the idea to produce the object outside the mind. Geulincx concludes from this that only God has the ideas of external objects. Yet, the human intellect has access to these ideas in God’s mind – either by an act of illumination by God’s will or by a direct vision of ideas in God’s mind. Although our apprehension of ideas in God’s mind allows us to have some knowledge of these external objects, allowing us to understand them to some extent, it does not amount to wisdom, because for having wisdom it is required to have such an intimate knowledge of the thing as to be capable of producing it – and that certainly is not the case with our apprehension of ideas of external things. Moreover, although we have cognition of the essence of a thing by knowing its idea, we do not know the object as it is *per se* – it is still veiled from us by our forms of cognition. Accordingly, human wisdom consists merely in the awareness of these limitations. But at the same time, our access to ideas allows us to have scientific knowledge of reality; this is a kind of knowledge, however, that involves relative properties of things. But because it is still knowledge of external things, the apprehension of ideas – in or by God – is required for having it – they are the principles of science, and thus the necessary precondition for understanding objects.

### 6.4 Idea, imagination and representation

#### 6.4.1 Introduction

Geulincx’ use of idea in his commentary on Descartes’ *Principles* is discussed in a separate section because Geulincx may use ‘idea’ in another meaning in this text than in other writings. At the time, commentaries on Descartes are often simply clarifications of the text for a group of students in order to clarify the author’s meaning. Although Geulincx’ remarks in the commentary often follow closely Descartes’ text, they are nevertheless sometimes fairly original. The question is, then, whether the notion of idea used here is the same as that of his other works, in which he develops his own philosophy.

Central to Geulincx’ account of idea in the commentary is the notion of representation. He contrasts ideas with sensory cognitions, which do not represent. Considering the distinctions as to representation of Chapter 5, the question for

Geulincx' notion of representation, and thereby for idea, is whether an idea resembles its object.

#### *6.4.2 Geulincx' notion of idea in his commentary on Descartes' Principles*

The first time we meet the term 'idea' in Geulincx' commentary, in article 13 of the first part, it is already contrasted with sensible species. The feature on which they differ is that of representation. An idea represents a thing (*rem aliquam repraesentent*), whereas a species does not.<sup>100</sup> Indeed, colours and other sensible qualities are nothing but appearances (*apparentiam*), according to Geulincx. When objects are named after these qualities, such as calling a tulip red, the external objects are merely externally denominated.<sup>101</sup> Geulincx explicitly asserts that all qualitative sensations, like colours and warmth, 'are only in the senses and not in things, of which they are external denominations'.<sup>102</sup> In other words, species and external denominations can only be found in our mind.

Geulincx specifies a species, in turn, as a 'mere mode of thinking' (*tantum modum aliquem cogitandi*) – a thought. Modes of thinking as such are non-representational – they may contain a representation but do not represent themselves. This means that species are only acts of thinking, which of themselves do not resemble anything outside the mind – they are only ways in which we may or may not grasp an object. By considering sensory cognitions to be only modes of thinking, Geulincx appears to have parted company with Descartes already. We have seen in the preceding chapter that Descartes is ambiguous about whether sensory perceptions represent in the *Meditations*. Then again, in the *Principles* Descartes excludes qualitative perceptions from being representations, although he hesitates about the representational status of perceptions of primary qualities.

The article of the *Principles* that follows is concerned with the idea of God. This forms the occasion for Geulincx to start a more general discussion about ideas. He quotes Descartes' definition of idea as 'the thing in so far as it exists objectively in the intellect',<sup>103</sup> and next clarifies it by comparing it to a painting. When, for example,

<sup>100</sup> Geulincx, *AL I*, §13, III 368: 'Ideae et species in eo differunt, quod ideae quidem rem aliquam repraesentent, species tantum modum aliquem cogitandi; unde Deus in intellectu, et corpus, etc. sunt ideae, albedo, sonus, etc. in sensibus sunt species.' The point of difference between species and ideas is that ideas concern things (*quae referuntur ad res*), whereas species merely relate to our modes of thinking (*referuntur ad modos cognitionum nostrarum*). Cf. Geulincx, *AL I*, §16, III 372: '... nempe non tantum ideas (quae referuntur ad res), sed etiam species (qua referuntur ad modos cognitionum nostrarum) habemus in nobis; et quidem species necessarias sine idea seu re repraesentata objecta necessaria.'

<sup>101</sup> Geulincx, *AL I*, §69, III 410.

<sup>102</sup> Geulincx, *AL I*, §57, III 398: 'Ut color, calor, et reliquae patibiles qualitates (hae enim sunt in sensu et non in rebus, quas extrinsecus denominant) ...'

<sup>103</sup> Geulincx, *AL I*, §14, III 369: 'Ideam definit Cartesius: rem quatenus objective est in intellectu.'

Caesar is depicted in a painting, the idea of that picture is Caesar in so far as he is represented by that painting, whereas the strokes of the painting are similar to the thought by which Caesar is represented.<sup>104</sup> Consequently, the idea and the thought (*cognitio*) differ in that one contains the other. The idea is the representation and the thought serves as the vehicle for that representation.

This explanation of idea, as contained in an act of thinking (a species), is difficult to accommodate with our explanation of ideas in the previous section. Here the representation does not appear to be the object of an act of thought that is located in God, but aspects of those thoughts. It seems to be much closer to Descartes' account of ideas.<sup>105</sup> Then again, it is precisely in this work where Geulincx makes it explicit that ideas – as well as common notions and eternal truths – are located in the mind of God (*in Deo*). At any rate, his description of idea closely follows Descartes.

There is, however, a point on which Geulincx strongly deviates from Descartes. Ideas represent only things that can exist, so that having the idea of a thing allows one to conclude with certainty that such a thing can exist. As we have seen, Descartes restricts these features to clear and distinct ideas only. As a result, Geulincx simply uses the term idea as identical with distinct ideas. He claims, accordingly, that 'possible existence is contained in every idea'.<sup>106</sup> This means that we conceive realities by ideas, for otherwise we would apprehend nothing (*nihil*).<sup>107</sup> It can be concluded from this that when we grasp something, the act by which we grasp it involves an idea or representation. This entails that every representation involves possible existence. In other words, only real things can be represented. Otherwise, there would be no representation, and consequently no idea.

Conversely, concepts that do not refer to possible things are not ideas. This means that only contradictory concepts are non-representational. This is, according to Geulincx, limited to compound concepts – composed by ourselves. Forming

<sup>104</sup> Geulincx, *AL I*, §14, III 369: 'Per similitudinem picturae fiet nobis familiarior ista cogitatio; res enim depicta, puta Caesar, quatenus est in ista pictura sua (quodammodo enim res picta in pictura sua esse intelligitur), eatenus Caesar est idea quasi istius picturae. Et sicut distinguimus inter maculas illas, quae tabulae per penicillum adpersae sunt, quibus Caesar repraesentatur, et inter ipsum Caesarem, ut ibi repraesentatum; sic etiam distinguimus inter cognitiones nostras et ideas.' Geulincx further elaborates on the distinction between a mere thought (*modus cogitandi*) and a representation in article 17, where Descartes introduces the terms objective perfection and formal and eminent reality. His comments, however, amount to little more than a rehearsal of Descartes' position.

<sup>105</sup> Cf. for a similar interpretation of Descartes' theory of ideas, Chappell 1986.

<sup>106</sup> Geulincx, *AL I*, §14, III 369: 'In omnibus ideis continetur existentia possibilis; quicquid enim mente percipimus, hoc non est nihil; hoc ipso autem quo est, aliquid esse etiam seu exsistere posse.'

<sup>107</sup> Geulincx, *AL I*, §15, III 371: 'Chimaerica vocantur in Scholis impossibilia illa, mons sine valle, circulus sine area, etc. Haec omnia nihil sunt, et *impossibile* ac *nihil* idem sunt; *nihil* autem nulla est idea, nulla enim affectio quae per ideam attingi possit.' Cf. *AL I*, §30, III 389.

contradictory concepts can only be done by combining ideas that are incompatible. Geulincx mentions as an example the combination of stone and necessary existence. This is not to say that all concepts composed by ourselves fail to represent. To the contrary, Geulincx argues that even if the idea of God had been composed, which it is not, it would still be the idea of a true thing (*veri Entis idea*). And would thus be a valid ground for proving God's existence. Moreover, it certainly is possible to make up true ideas of realities (*rem veram, et quae esse possit*) – which have an essence – that do not exist, have never existed, nor will ever exist, such as the concepts of a Pegasus, which consists of the combination of the ideas of wings and a horse. All properties that are, in turn, inferred from those ideas really do pertain to them. Rather, failing to perceive an idea means to think a contradictory thought, like that of a mountain without a valley or a circle without a surface.<sup>108</sup> Those are called chimerical ideas in the schools, and denote impossible things (*impossibilia illa*). As a consequence, those thoughts are not to be put on a par with invented ideas, but are simply nothing, since being impossible (*impossibile*) and nothing (*nihil*) coincide.<sup>109</sup> In this case, 'nothing' does not refer to the thought as a mental act, for in so far as it is a mere thought it is certainly something, but to its representational content instead. Thoughts of impossible things simply are not representations, and, as a consequence, should not be called ideas. To be a representation is the mark of the idea. As a consequence, considering species to be ideas, that is, representations, results in contradictory concepts, which do not represent.

As a result, Geulincx' appears to use the term idea here in a broader sense than in his metaphysical works. For example, a concept of a Pegasus does not seem to qualify as an idea in the narrower sense, because it does not provide adequate knowledge of the essences of these 'things'.<sup>110</sup> In the broader sense, an idea is simply the content of a thought referring to an extra mental thing or state of affairs. Moreover, in Geulincx' commentary, ideas are not themselves exemplars or models for external objects, as in his other works, but are formed on the basis of truly existing exemplars, that is, the real things they represent. He accordingly emphasizes that there 'cannot be an idea without

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<sup>108</sup> Geulincx, *AL I*, §15, III 371.

<sup>109</sup> Geulincx, *AL I*, §15, III 371: 'Haec omnia nihil sunt, et *impossibile* ac *nihil* idem sunt; *nihil* autem nulla est idea, nulla enim affectio quae per ideam attingi possit.'

<sup>110</sup> Geulincx calls them simple ideas, because we have not made up these ideas ourselves. See *AL I*, §18, II 374: '... simplices [ideas] tamen [...] non possunt non a rebus exsistentibus jam, aut quae olim existiterunt, ac memoriae mandatae sunt, desumptae esse. V.g. pergastrus nusquam est aut fuit; esto, saltem partes ejus (nempe equus et aliae) sunt alicubi. Aut si ne haec quidem alicubi esse fingantur aut fuisse; certe partes partium, ex quibus idea illa ultimo constat, et quas nos certo ordine aggregavimus, alicubi esse vel fuisse debent; quomodo enim exemplar alias nobis esse possent ad formandam ideam?'

an archetype or exemplar'.<sup>111</sup> This is a view he has adopted from Descartes, who mentions that God is the archetype and efficient cause of our idea of him. Geulincx' use of 'idea' agrees, then, more with the way in which Descartes normally uses the term. Ideas are simply all intellectual concepts, to which words refer. But this does not match easily Geulincx' account of 'idea' as a completely clear and distinct concept. Let us therefore consider Geulincx' interpretation of Descartes' truth criteria.

#### 6.4.3 *The truth criteria*

We have noticed that Descartes holds that the representational content of an idea is closely related to the truth criteria, clarity and distinctness. Like Descartes, Geulincx refers clarity and distinctness to ideas, and claims, moreover, that both come in degrees. He says that the idea of an infinite mind is more clear and distinct than ideas of things lower on the ontological scale.<sup>112</sup> He explains this difference by the fact that ideas of 'very great things' fill the mind more fully, and thereby prevent us from having many other cognitions in the mind at the same time, which would lead to confusion.<sup>113</sup> That is why, for instance, our idea of extension in general is much clearer than that of any particular body.

Unlike Descartes, however, Geulincx argues that strictly speaking clarity and distinctness are one and the same thing.<sup>114</sup> He explains that what is clear but indistinct cannot be completely clear, although certainly a part of the cognition is actually clear. This would be equal to calling a stick that is partially bent a straight stick. Likewise, something has to be entirely clear when it is to be called clear. Accordingly, a cognition that is clear has also to be distinct. Geulincx thinks that Descartes is merely speaking according to ordinary speech (*vulgariter*) in distinguishing clear from distinct. He argues that Descartes wants to prevent that people would think that what they usually consider a clear cognition suffices for a certain and indubitable judgement.

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<sup>111</sup> Geulincx, *AL* I, §18, II 374: 'Probavit hoc articulo, Deum esse, eo quod ipse sit causa efficiens ideae suae in nobis; jam probat etiam ex eo quod sit causa exemplaris ejusdem ideae; non potest enim esse idea sine Archetypo, seu sine exemplari.'

<sup>112</sup> Geulincx, *AL* I, §19, III 376: 'Certum est, quod idea comprehensiva caeteris paribus perfectior sit, clarior ac distinctior, quam idea apprehensiva. Apprehensio tamen rerum admodum magnarum, et praecipue infinitarum, quando nonnihil ad comprehensionem accedit, distinctior clariorque est, quam idea etiam comprehensiva parvarum rerum.'

<sup>113</sup> Geulincx, *AL* I, §19, III 376: 'Confusio cogitationum nostrarum provenit ex eo, quod plures simul ideas mente nostra attingamus [...] Si igitur res admodum magna sit, magnopere etiam implet idea ejus intellectum nostrum, nec sinit illum ad alias ideas attendere, et sic aufert bonam partem, periculum confusionis.'

<sup>114</sup> Geulincx, *AL* I, §45, III 395: '... rigorose et philosophice loquendo *clara* et *distincta* cognitio idem sint.'

For similar reasons, Geulincx argues that obscurity and confusedness are identical. Both are not even features of cognitions per se, but just external denominations.<sup>115</sup> That is, we call cognitions obscure only because our judgement about them is mistaken. Thoughts as such are never confused, but rather very clear. They become so only if the will refers them to something they do not represent. Then, we call the cognition itself confused, albeit in itself it is the same as before. It is the mistaken judgement that turns it into something not clear and distinct. For example, as long as the perception of pain is not referred to anything outside the mind, the perception is very clear. But as soon as the will refers it to some part of the body as its seat or cause, it becomes confused or rather consists of a combination of clear and obscure elements. Such a thought has to be a mix of the obscure and the clear, because it still has some clarity. If the thought lacked all clarity, it would not exist at all – there would nothing to be known. By considering confusion to be a feature of judgement rather than the cognition per se, Geulincx concurs with many Descartes-scholars who also attribute it to judgements, as we have noticed in the preceding chapter. But we have also noticed that this interpretation of the truth criteria is not actually supported by the texts of Descartes. Geulincx, however, has a solution to this problem by stating that Descartes simply speaks in an imprecise way here.

This interpretation of the truth criteria is intimately connected with the notion of representation. Geulincx argues that in so far as something is confusedly grasped, the thought does not represent at all.<sup>116</sup> He offers the example of a painting of a forest to explain this conception of representation. It is clear that the painting represents a forest as well as trees, but it represents the leafs more dimly, and the veins of the leafs very confusedly. Geulincx' point is that it is very easy for the will to refer the painting to a forest or trees, but more difficult to refer it to the branches and leaves, while it requires great effort of the will to refer it to the veins. The last simply are not represented by the painting. According to Geulincx' interpretation of truth criteria, this is not a confused representation, but no representation at all. Accordingly, the painting becomes confused only when one judges that it represents x or y, whereas in fact it does not represent either x or y. As a further result, Geulincx holds that representation involves resemblance – he uses here the picture-model of representation. Consequently, if the painting contains elements which do resemble reality, it is to that extent non-

<sup>115</sup> Geulincx, *AL I*, §35, III 391: 'Et notandum est, obscuritatem cognitionis non pertinere ad ipsam cognitionem, sed tantum esse determinationem externam, ei a relatione voluntatis nostrae superadditam.'; III 392: 'Fiunt enim obscurae, non relatione intrinseca et essentiali, sed externa, et quidem a voluntate nostra dependente, cum illa refert cognitionem ad id, quod ipsa revera non attingit. Ex quo etiam patet, in omni obscuritate quodammodo errorem aliquem esse.' See also Geulincx, *AL I*, §46, III 395: '... obscuritatem omnem referandam esse ad voluntatem, et tantum esse extrinsecam denominationem [...] dum ad cognitionem et intellectum refertur.'

<sup>116</sup> Geulincx, *AL I*, §35, III 391: '... sed bene notandum est, id quod obscure tantum et confuse apprehenditur seu repraesentatur, revera et proprie loquendo non repraesentari.'

representational – these elements do not represent at all. We may conclude from this that Geulincx holds that representation involves resemblance.

Geulincx claims that cognitions can be readily referred to objects by the will because they have a natural relation to them – the more clearly something is represented, the more easily the will makes an affirmative judgement.<sup>117</sup> All clear and distinct cognitions have such a natural relation, on account of which the will can refer them easily to their objects. This is the basis for Geulincx' argument that every science (*scientia*) has an ‘incredible easiness’, of which we are intimately conscious. The more clear a perception is, the more readily we can refer it to reality.

Conversely, if cognitions are not clear and distinct, it is much more difficult to refer them to reality – which is a good thing. However, this does not prevent us always from referring some of these cognitions with a remarkable ease to external objects. This happens because we have a habit (*habitus*) or custom (*consuetudinem*) causing a readiness in the will. That habit arises when we have once referred a cognition that does not contain a natural relation (*ad quod ipsa naturaliter non refertur*) to a particular object, and thereafter have confirmed that relation more often – something that happens in infancy. This custom or facility is corporeal rather than mental. And because a facility owing to a natural relation and a facility brought about by a habit appear similar to the mind, science is readily confounded with prejudices.

This account of the truth criteria entails that Geulincx rejects Descartes' notion of material falsity. As we have already seen in Chapter 2.2.3, he argues instead that a cognition can only become confused by an act of the will, through which a thought is referred to an object it does not represent – for which reason confusion is no more than an external denomination instead of a real property of that cognition. Indeed, Geulincx claims that a cognition cannot deceive us, and that there is no danger of error as long as we refer it to what they ‘refer to in themselves and in their own nature (*suapte natura*)’ – another term that stands for the natural relation of a representation to its object.<sup>118</sup> In other words, cognitions refer to something by nature. The analogy by which Geulincx explains this is again that of a painting.<sup>119</sup> On his view, if a painting is compared to what it represents, there is no risk of falsity. For example, the painting that depicts Caesar refers ‘in itself and by its own nature’ to Caesar, provided that the painter has correctly followed his exemplar. But if he has made a mistake and the painting is of another person, then the painting refers naturally to that person instead of Caesar, even though the painter intended to paint Caesar. What is more, if the painter has not painted a human being at all, it simply does not refer to or represent anything. Geulincx' point is then that the painting – or cognition – simply refers to what it actually represents, or

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<sup>117</sup> Geulincx, *AL* I, §66, III 406.

<sup>118</sup> Geulincx, *AL* I, §30, III 390: ‘Nimirum nec intellectus nos decipiet, nec sensus [...] Cum enim hi non sint aliud quam repraesentationes, dummodo referantur ad id, ad quod per se et suapte natura referuntur, nullum erit errandi periculum ...’

<sup>119</sup> See Geulincx, *AL* I, §30, III 389-390.

that it does not represent anything at all. Accordingly, no painting could be false in itself. Falsity arises only if the painting is referred to something different from what it refers to naturally.<sup>120</sup> Falsity is, accordingly, exclusively caused by an act of the will by which something is referred to what it does not represent. From this account, it is apparent, again, that Geulincx thinks of representation in terms of resemblance. An idea represents an object in virtue of a internal resemblance-relation.<sup>121</sup>

In conclusion, in comparison to his other works Geulincx considerably broadens his conception of idea. He explains that an idea is every non-contradictory concept that can be used in a proposition. But by using such concepts, of which we know the meaning to some degree, we need not grasp the essence of that to which the concept refers. Still, it is somehow related to that essence. If we use a concept, we have a representation, and the thought is then concerned with external reality. For if this were not the case, we would not have a concept or idea, a point to which Geulincx repeatedly returns in the commentary.

#### *6.4.4 Perceptions of primary and secondary qualities*

From section 6.3 it became clear that Geulincx holds both that only ideas represent and that ideas are always pure thoughts, that is, thoughts for which no body is needed. This entails that sensory cognitions are neither ideas nor representations. Furthermore, we have noted in the previous subsection that Geulincx explains that to represent a thing is to resemble it, so that qualitative perceptions cannot be representational on his view. However, primary qualities have not been extensively discussed thus far. If Geulincx consistently holds on to his restriction of representations to pure thoughts, they should be considered non-representational as well. Nevertheless, we have seen that this was a difficult subject in Descartes, thus encouraging us to consider this issue in Geulincx, too. Moreover, if Geulincx suggests that there is room for similarity between sensory cognitions of primary qualities and the same qualities in external objects, then his insistence on the strict opposition between reason and bodily perceptions proves to be not consistently carried through. If so, imaginations are not just incentives for acts of

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<sup>120</sup> Geulincx also calls it a natural relation. See *AL I*, §34, III 391: ‘... repraesentatio et naturalis relatio isius repraesentationis ad objectum seu repraesentatum ...’

<sup>121</sup> See Geulincx, *AL I*, §31, III 390: ‘Voluntas habet se instar pictoris, qui picturam suam subinde refert ad aliud, quam ad quod ipsa natura sua refertur. Ut Caesarem depingere volens, alium quem depinxit; ad quem alium si ipse picturam suam referret, sicut illa suapte natura refertur ad alium illum, utique non erraret; jam vero errare dicitur, quia ad Caesarem refert. Unde error omnis in pictore, in pictura ipsa tantum veritas’; *AL I*, §32, III 390: ‘Nam ultra perceptionem repraesentationem reperitur in his modus aliquis tendendi in objectum, in affirmatione quidem annisus, in negatione vero renisus (ut totidem verbis Scholae antehac docuerunt); qui modi manifeste non pertinent ad repraesentationem aliquam (ut ipsi male tribuebantur), sed ad voluntatem, cuius est tendere, ut vel ipso verbo admoneri debebant Scholae.’

the pure intellect, but may also provide some intelligible or representational content themselves, however little that may be. In this subsection I address this issue.

Before discussing this issue, we have to consider whether qualitative sensations represent referentially. We have seen that Geulincx considers all qualitative perceptions to be mere appearances, and, accordingly, to have no objective reality, that is, to be non-representational and therefore to be no ideas. They have no representational content but are solely mental acts.<sup>122</sup> This means that sensory cognitions do not represent by resemblance. Nonetheless, Geulincx claims that they do refer to external objects, thus representing them somehow. In order to explain how perceptions represent, he compares them with a painting, which, even if it would refer only to itself, nonetheless discloses its author, whom it would accordingly represent to some minimal degree (*minime*).<sup>123</sup> Likewise, qualitative perceptions (resemblance) represent nothing other than themselves, but nevertheless disclose 'as author and cause extension outside ourselves (*extensionem extra nos*), as being in some way affected, and provided with certain of its modes, which may fall into it.'<sup>124</sup> The point is that *species* or appearances supply us with knowledge of the existence (*existentia*) of certain objects, without providing knowledge of their essence. These are known by the pure intellect only. But apart from the idea of God, no ideas allows us to conclude to the existence of anything. As a result, only sense perceptions can teach us the existence of created things. We are allowed to draw that conclusion on the basis of sense perceptions because our body is instrumental in causing sensory cognitions. As a result, sensory cognitions represent referentially.

In the *True physics*, Geulincx calls the objects of our perceptions phenomena (*phaenomena*) or appearances (*apparentia*), as in the following quotation:

Phenomena or appearances are parts of this world in so far as they fall under our senses (such as the Sun, Moon, the rising and setting of the sun, Earth, Water, and so on, in so far

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<sup>122</sup> Geulincx *AL* I, §66, III 405: 'In perceptione autem nostra, quantum ad sensus et affectus et appetitus pertinet, nihil aliud quam ipsa perceptio continetur, cum argumento causae a qua perceptio ista extrinsecus suscitatur.'

<sup>123</sup> Geulincx, *AL* I, §66, III 405: 'In perceptione autem nostra, quantum ad sensus et affectus et appetitus pertinet, nihil aliud quam ipsa perceptio continetur, cum argumento causae a qua perceptio ista extrinsecus suscitatur. Sicut ergo picturae quaedam sunt, quae se ipsas tantum repraesentant [...] arguunt tamen auctorem suum, licet hunc minime repraesentant; sic etiam sensus nostri, cum perceptiones quaedam sint, nihil praeter se ipsos nobis repraesentant; arguunt tamen extensionem extra nos et hanc certo modo affectam, certisque modis suis, qui in eam cadere possunt, instructam, ut auctorem et causam.'

<sup>124</sup> Geulincx *AL* I, §66, III 405: '... sic etiam sensus nostri, cum perceptiones quaedam sint, nihil praeter se ipsos nobis repraesentant; arguunt tamen extensionem extra nos, et hanc certo modo affectam, certisque modis suis, qui in eam cadere possint, instructam, ut auctorem et causam.'

as they affect the senses). To explain these phenomena, to refer them to their causes, and to reconcile the senses with reason, is the proper task of natural philosophers.<sup>125</sup>

Thus, phenomena are the objects we perceive by the senses, and, by consequence, are clothed with sensible species, so that their real essence is concealed. Taken together, these phenomena constitute the ‘microcosm’, the world we encounter in our perceptions, having colour, warmth and all the other sensory perceptions. Geulincx argues that these perceptions enable us to know what actually exists. Reason cannot show us that because the existence of such objects is contingent; their essences alone are necessary. The most important point is, then, that the senses both indicate the existence of these objects and mark them off from one another, so that we actually perceive different objects rather than a mere palette of colours or other sensory perceptions. Indeed, we perceive the objects *through* species, like colours, despite the fact that in themselves these are non-representational.<sup>126</sup>

But does Geulincx regard also perceptions of primary qualities to be non-representational? He does not regard them as enabling us to hold intelligible concepts of objects. He limits this unequivocally to reason. This is precisely the upshot of his comments on article 70 of the *Principles*.<sup>127</sup> Descartes explains in this article that we are inclined to refer qualitative perceptions to external objects because they come together with perceptions of primary qualities, which do denote real attributes of objects.<sup>128</sup> It is precisely this point on which Geulincx comments. He states that we must be cautious here, because we rarely perceive those primary qualities by the senses, and when we perceive them in such a way, our mind ‘generally enjoys the friendship of the pure intellect, and turns to its innate ideas’.<sup>129</sup> Geulincx uses the example of the idea of a circle to clarify this point. Although a sensory perception of a circle may occasion us to contemplate the nature of a circle by reason, it is actually not a circle at all, as the picture deviates in many ways from a mathematical circle. The mind turns to the – purely intellectual – idea of a circle because that idea is simpler and clearer than the sensory perception, and therefore also easier to consider than the figure drawn on paper, which is very irregular and varied. Indeed, the circle drawn on paper can be called a circle in a derivative sense only, given the fact that the picture is no more than an occasion

<sup>125</sup> Geulincx, *PV* IV, Intr., II 422: ‘Phaenomena seu apparentiae sunt partes hujus mundi quatenus incurrint in sensus nostros (ut Sol, Luna, horum ortus obitusque, Terra, Aqua, etc., quatenus sensum afficiunt). Haec phaenomena explicare, in causas suas referre, et cum ratione sensus conciliare, Physici proprius labor est.’

<sup>126</sup> Geulincx, *PV* IV, Hypothesis 1, II 424: ‘... quam ideae sensuales seu phaenomena istarum rerum ...’

<sup>127</sup> Geulincx *AL* I, §70, III 410-411.

<sup>128</sup> Descartes, *Principles* I §70, VIIIa 34-35, CSM I 218.

<sup>129</sup> Geulincx *AL* I, §70, III 410: ‘Bene et caute; vix enim haec sensu percipimus, et in his percipiendis mens nostra plerumque utitur intellectu puro, convertitque se ad ideas sibi innatas.’

(*occasionem*) for us to think of a circle. In other words, the role of the imagination is to turn the mind to an idea.<sup>130</sup>

In sum, concept formation is a purely intellectual activity, in which the senses do not play any role. Geulincx' remarks make it amply clear that this also goes for perceptions of primary qualities. As a further result, Geulincx thoroughly separates the intellect from the imagination, and thereby the mind of the body. The latter can only form the occasion to think of certain concepts. The only thing it does is to indicate the existence of corporeal objects.

#### 6.4.5 Conclusions

In his commentary on Descartes' *Principles*, Geulincx uses idea in a broader sense than in other works. This probably results from the fact that he closely follows Descartes in this text. Nonetheless, Geulincx does differ on crucial points from Descartes, particularly in as much as he identifies ideas with clear and distinct cognitions of possible beings. This is closely related to Geulincx' notion of representation. According to Geulincx, ideas represent their objects by resembling them. Resemblance involves clarity as well as distinctness – two features he considers to be one and the same thing. If there is no clarity and distinctness, there is simply no representation. In effect, Geulincx uses a strong picture-model of idea and representation. This leads to a stricter notion of idea than that of Descartes. But at the same time, probably by considering representations to be pictures of objects, he broadens the conception of idea in comparison with his notion of idea in other works. Ideas no longer have to be exemplars or comprehensive models of things, but some resemblance between idea and object suffices. Here, every non-contradictory concept is an idea.

The major difference between sensory cognitions and ideas is that the former do not represent anything, whereas the latter are simply representations. Rather, sensory cognitions are species, which are only acts of thinking. Geulincx does admit that sensory cognitions represent referentially by indicating the existence of objects, but denies that they teach us anything about their essences. As to forming concepts of things, sensory cognitions only form the occasion for an intellectual act of the mind of perceiving ideas.

#### 6.5 Conclusions

In the preceding chapter, it was shown that Descartes' theory of ideas is fundamentally ambiguous. Geulincx' uses a more precise notion of idea. On his view, ideas provide access to the essences of things, because they are the models, norms or archetypes on which they are based. He takes this very strictly, so not even cognitions of properties are considered to be ideas, given that they do not represent the essence of the thing, but just features of a thing that necessarily follow from the essence. In this sense, an idea has not

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<sup>130</sup> Geulincx *AL* I, §70, III 410: ‘... hoc ei occasionem praebeat, eo modo quo dictum est, convertendi se ad ideam circuli.’

only structural resemblance to its object – which can greatly vary in quality – but the idea consists of a comprehensive design of its object, according to which it is produced. Having such an idea would allow the mind to produce it – it is maker's knowledge. This notion of idea cannot be found in Descartes.

Especially wisdom is concerned with ideas. Wisdom consists in knowing reality as it is in itself. In so far as external reality is concerned this is impossible for the human intellect. We did not produce it, and are incapable of producing it. Nonetheless, we can access the ideas of things in God's mind through reason (*intelligentia*). These ideas, in turn, are the principles of scientific knowledge (*scientia*), which concerns the properties of things as being deduced from the idea. The properties of the things we know are always relative to our ways of conceiving things.

On the other hand, Geulincx' explanation of 'idea' in the commentary on Descartes' *Principles* is less strict, although he differs on some points from Descartes in that work, too. In it, Geulincx uses a picture-model of idea and representation. But the most important thing we can learn from this text is that he sharply separates ideas from sensory cognitions – which are called sensible species. Species are just acts of thinking rather than representations. Indeed, Geulincx categorically denies that sensory cognitions – phantasms, sensible species or imaginings – are representational. This means that they do not resemble external objects, even though they indicate their existence.

Although the notion of idea in the commentary may be different, Geulincx' notion of idea as it is used in his own philosophy is the result of a strong Platonic-Augustinian strain in his philosophy. This also involves a basic opposition between reason and imagination. For Geulincx, one of the main themes of his philosophy and the main point of his theory of error is the contrast between imagination and reason – which is apparent from his programmatic third inaugural address. Owing to his strong Platonic convictions, he can readily divorce Descartes' two basic notions of idea: the idea as a sensory and as an intellectual cognition. Unlike Descartes, he never entertains the notion of idea as a corporeal image or shape, nor does he consider mental images to be ideas. Imaginings are, at best, occasions for turning to ideas.

From the findings of this chapter emerge two points that have to be further examined. First, we have seen that Geulincx identifies having adequate knowledge of something with mental activity. Wisdom is the highest form of knowledge because it involves a complete activity, or consciousness, of the mind – it is maker's knowledge. But the mind is also active as to scientific knowledge (*scientia*). Presumably this type of knowledge is evident because the properties that are deduced from an idea are (in part) produced by the mind itself, thus involving mental acts or their products, which are transparent to the intellect. Second, the notions of species and abstract knowledge have to be explored. Especially the view that scientific knowledge is nothing other than abstract knowledge, which accordingly never teaches us what reality actually is like, has

wide-ranging ramifications for philosophy in general. This will be the focal point of the chapters 8 and 9.

## CHAPTER SEVEN

# MENTAL ACTIVITY AND CONCEPT FORMATION

### Introduction

An important finding of the previous chapter was the fact that Geulincx distinguishes between types of cognition on the basis of a variation in activity of the intellect. On this point he strongly deviates from Descartes, who calls the intellect passive. Indeed, Geulincx' theory of cognition is completely different. He insists that the intellect is fully active when it has perfect knowledge (*sapientia*). But Geulincx holds that the intellect is also active with what I call 'abstract' types of cognition – which he calls *doctrina*. As was shown in chapter 6, *doctrina* is that type of cognition in which an external object is scientifically known, but not as it is in itself. It concerns knowledge of how the object appears to us, which does not match reality. *Sapientia*, by contrast, is knowledge of reality as it is in itself. In fact, it is intuitive knowledge of the essences of things.

It is clear that both *sapientia* and *doctrina* are concerned with the content of concepts. Mental activity in general, however, may concern two different things: either the thought in so far as it is a thought – the mental act as such – or the representational content of such a thought.<sup>1</sup> This opposition can also be grasped by that between form and content. The thought as a form of cognition contains, or is a vehicle for, some content: this form may be perceptual, such as a sense perception of a tree, or intellectual, like a concept of a tree. In previous chapters, it was considered whether sensory perceptions have representational content. This and the following chapters, by contrast, are concerned with concept formation as a function of the intellect.

The question arises then as to what extent the intellect plays an active part in forming concepts. This question, however, is still ambiguous, because it is unclear whether we are dealing with the form or content of the concept. In any case, for a Cartesian it would be obvious that the intellect is active as regards the form of a thought – these are precisely mental *acts*. More relevant therefore is the question of to what extent the intellect is active with regard to the content of concepts.<sup>2</sup>

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<sup>1</sup> See for a modern discussion of mental activity, Geach 1971. The distinction between form and content was also quite common in seventeenth-century philosophy.

<sup>2</sup> There was not much debate on this issue among Descartes and Cartesians in particular, nor among other seventeenth-century philosophers in general. There was, however, an Augustinian

But what is the relation between the form of thought and the ability to adequately represent the object (that is, the content of thought)? This much is clear: there are no contents without a determinate form, that is, a specific modality of thought by which they are grasped, and different forms can convey the same contents. For example, the same building may be represented by both a floor plan and a verbal description. Likewise, the same mathematical figure can be represented by either a geometrical figure or an algebraic equation. The form by which a content is conveyed is different, but the content is the same. One may wonder whether the form of cognition, in this case a mental act through which something is apprehended, has consequences for the way in which the object, or rather its concept, is apprehended. Can the object be just as adequately known through whatever form of thinking? Because we are here only concerned with logical forms of thought, the question can be specified as follows: Do intellectual acts of the mind – non-perceptual forms – have an impact on our ability to accurately grasp external objects? Or do they prevent us from knowing things as they are in themselves?

To handle these issues satisfactorily, it will be necessary to discuss the scholastic theory of cognition, given the fact that Geulincx uses mostly scholastic terminology when dealing with concept formation. Unlike Descartes, he regularly employs the term ‘intelligible species’ to denote the intermediaries through which objects are apprehended. This term is central to the cognitive psychology of the scholastics for explaining the formation of concepts.

For that reason, in Section 1, I explain the essentials of the scholastic theory of cognition. In Section 2, I discuss Descartes’ view of the passivity of the intellect. Section 3 is concerned with Geulincx’ conception of species as mental acts or forms of thinking. The following chapter is concerned with Geulincx’ views on the content of thought.

## 7.1 Aristotelian accounts of intelligible species and the operations of the intellect

### 7.1.1 Introduction

The scholastic theory of cognition is built on two pillars: first, the three operations of the intellect – simple apprehension, judgement and reasoning – and, second, an explanation of how concepts are formed, from a sensory image (the phantasm), through an intelligible representation (the intelligible species), to the concept (*conceptus* or *verbum mentis*). For both components of the theory of knowledge, scholastics rely heavily on Aristotle. I will not discuss Aristotle’s theory, but proceed directly to what may be called the standard scholastic account, the Thomist theory of cognition.

In this section, I first examine the standard Thomist view of intelligible species and then the three operations of the intellect. Next, I discuss the shift in later scholastic

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scholastic tradition in which the relation between the activity of the intellect and the conceptual content was thought to be extremely important. See on this, Pasnau 1997, Ch. 4 and Ch. 8.

philosophers to an increasing emphasis on the activity of the intellect in cognition, as well as the changing view of the intelligible species that accompanies this shift by focusing on the views of Zabarella.

### 7.1.2 *Intelligible species*

In what may be called the standard scholastic theory of cognition – that of Thomas Aquinas – the formation of a concept is the first act of the intellect, which is called simple apprehension.<sup>3</sup> An intricate process precedes that act. Most importantly, to acquire concepts it is necessary to have intermediate species containing information on the object, which in turn allows us to receive the intelligible form of the object, that is, its universal nature (*quidditas*), in the intellect. Let us describe this process succinctly.

The term *species* stems from the scholastic tradition. Scholastic philosophers have used this term to accommodate Aristotle's account of form (*eidos*) in *De anima*.<sup>4</sup> On the scholastic theory, concepts are not acquired by immediate knowledge of the ideas or natures of things, as in Platonic philosophy. Rather, for obtaining intelligible content it is required that the *object* itself somehow produces its intelligible universal form in the intellect. This is done by means of what is called a *species*. Given the fact that all knowledge originates in the senses and that the universal form materially exists in the object, the initial species has to be material, too. This material species, which immediately proceeds from the object, is called the intentional species (*species intentionales*). When received by the senses it is transformed by the imagination (*phantasia*) into a sensible species or phantasm (*phantasma*). The phantasm in turn is the starting point of intellectual activity. The intellect renders phantasms intelligible by removing from it all sensuous and individual aspects. This act is generally attributed to the so-called *active intellect* (*intellectus agens*), the result of whose operation is the production of an intelligible species in the *possible* or *passive intellect* (*intellectus possibilis* or *passibilis*). The passive intellect, finally, performs the act of intellection called simple apprehension (*apprehensio simplex*), that is, the act by which a concept is produced in the intellect. This act or rather its product is called concept (*conceptus*), mental word (*verbum mentis*) or expressed species (*species expressa*).

What interests us most in this account is the precise function of the species. Most of the scholastics hold that the intelligible species is not *what* is known (*quod*), but that it is merely the intermediary *through which* (*id quo*) something is understood.<sup>5</sup> Nor is the

<sup>3</sup> See for Aquinas' theory of cognition, Nuchelmans 1983, Ch. 1; Spruit 1994-95, vol. 1, 156-174, and Pasnau 1997, 11-16, 31-60, 105-116; Day 1947, 7-12. See also, MacDonald 1993 and Stump 2003, Ch. 7-8.

<sup>4</sup> See for an insightful discussion of the species theory, Spruit 1994-95, in particular his overview of the doctrine of the intelligible species, vol. 1, 4-9. See for scholastic epistemology in general, Pasnau 1997.

<sup>5</sup> See, for example, Aquinas, *Summa theologiae*, 1a. q. 85, a. 2, vol. 12, 58: 'Sed contra, species intelligibilis se habet ad intellectum sicut species sensibilis ad sensum. Sed species sensibilis non

species that to which the act of thinking is tended. Instead, the nature – *quidditas* – of the external object is the proper and primary object of the human intellect.<sup>6</sup> Similarly, the sensible species (or phantasm) is not known immediately. What is grasped in either case, through the meditation of the species, is the external object itself. When I perceive a tree, for instance, what is actually seen is the tree itself as existing outside the mind, not the phantasm representing the tree. Accordingly, the species is not the form of the thing, but merely contains the information necessary for bringing about the form in the intellect. With some exceptions, most of the later scholastic philosophers continue to adhere to this view.<sup>7</sup>

But is the species a representation of the object? The answer to this question is generally affirmative.<sup>8</sup> In the case of Aquinas, for example, even though it is not clear how he accounts for the fact that sensible species are representational, it is unambiguously clear that he considers them to be representations of an object.<sup>9</sup> According to him, indeed, species are likenesses (*similitudines*) of reality.<sup>10</sup>

Another issue that has to be dealt with is the ontological status of the species. More specifically, what is the relation between species and act of thought? Is it identical with that act, or is it some sort of entity distinct from it? Because we think by means of species, the intelligible species cannot be the result of an act of thought. The species, in other words, is not what is produced by the intellect in intellection. So it cannot be a distinct entity in that sense. Accordingly it could still be identical with an act of thought. But that is ruled out by the fact that in the traditional account species are preserved in

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est illud quod sentitur, sed magis id quo sensus sentit. Ergo species intelligibilis non est quod intelligitur, sed id quo intelligit intellectus.' And Aquinas 1968, *Summa theologiae*, 1a. q. 85, a. 2, vol. 12, 60: 'Sed quia intellectus supra seipsum reflectitur, secundum eandem reflexionem intelligit et suum intelligere et speciem qua intelligit. Et sic species intellectiva secundario est id quod intelligitur. Sed id quod intelligitur primo est res cuius species intelligibilis est similitudo.' See also Aquinas 1999, *Commentary on Aristotle's De anima*, III.8, 357-358; Aquinas 1948, 170. Cf. Spruit 1994-95, vol. 1, 159.

<sup>6</sup> Aquinas 1968, *Summa theologiae*, 1a. q. 84, a. 7, vol. 12, 41. See also Aquinas, *Commentary on Aristotle's De anima*, III.8, 353-354; Aquinas 1948, 170.

<sup>7</sup> See on this, Spruit 1994-95.

<sup>8</sup> Spruit 1994-95, vol. 1, 6, calls the relationship between sensible objects, species and mental acts 'essentially structural', which involves some kind of representation, albeit there is no (pictorial) 'correspondence'. However, Spruit is talking here only about intelligible species. Whether and to what extent sensible species resemble their objects is not dealt with by him. In any case, he claims that most scholastics hold that intelligible species are representations.

<sup>9</sup> See Spruit 1994-95, vol. 1, 162-164.

<sup>10</sup> Aquinas 1968, *Summa theologiae*, 1a. q. 85, a. 2, vol. 12, 61. Aquinas 1926-75, *Summa contra gentiles* III, Ch. 49, in *Opera omnia*, ed. Leonina, vol. 16, 134: 'Omnis intelligibilis species per quam intelligitur quidditas vel essentia alicuius rei, comprehendit in repraesentanto rem illam ...'

the passive intellect.<sup>11</sup> Because these preserved species are not actual, a species cannot be identical with the act of thought. Thus, they are separate from the acts of thought – as being distinct entities. Of course, this does not mean that they can exist on their own – species are not substances, but rather incidental to substance.

From this we can infer some characteristics of species that are of interest for the central point of this chapter. First, species are intermediaries between objects and the intellect, enabling the intellect to form concepts of their universal natures. Although external things are the true object of knowledge, species are indispensable, as intermediaries, for acquiring knowledge of them. Second, species are representations. Finally, intelligible species are some sort of entities separate from the act of thinking.

#### *7.1.3 The three acts of thinking: Simple apprehension, judgement and reasoning*

On the standard account of cognition, scholastics distinguish three acts of the intellect, which are involved in the acquisition of knowledge: simple apprehension, judgement, and reasoning. Because simple apprehension is concept formation, the first is connected to the account given in the previous subsection. The two other acts require ‘formed concepts’, since they consist in combining concepts into propositions or constructing arguments on the basis of propositions. Each act needs to be considered separately to see what precisely it is and what function it has. I focus on the role of the intellect with respect to the form and content of thought.

The (passive) intellect performs first the simple apprehension of an object (*apprehensio simplex*), the act of thought having the universal nature – or form – of an external thing as its object, thus forming a concept of that thing. This is an intuitive act of the understanding (*intelligere, intellectus*).<sup>12</sup> Before this act can be performed, two other acts of the intellect are necessary to bring about the production of an intelligible species in the passive intellect: first the illumination of the phantasm and then the abstraction of a universal form from this illuminated phantasm.

The necessity of illumination and abstraction is closely linked to Aristotelian metaphysics. For Aristotelians, particular things are compositions of matter and form. Because the form has material being (*esse materiale*) in the external world, it cannot as such come in the intellect, which is immaterial. As said, sense perception results in the formation of a phantasm in the imagination, which is the starting point of the intellect. According to Aristotelians, the phantasm is indispensable for acquiring knowledge. On Aquinas’ view, for example, the intellect never thinks without a phantasm; even after it has formed a concept of a thing, it still needs a phantasm to think of it again.

Being a sensible image, a phantasm is as yet material. Accordingly, it has to be made intelligible, and as a result immaterial, before the intellect can receive it. That is the task

<sup>11</sup> Aquinas argues here against Avicenna, who thinks that the active intellect exists separately from individual intellects and is the place where intelligible species can be found. See Aquinas 1999, *Commentary on Aristotle’s De anima*, III.8, 352–353; Aquinas 1948, 168.

<sup>12</sup> Aquinas 1926–75, *De veritate*, in *Opera omnia*, ed. Leonina, q. 1, art. 12, vol. 22–1, 35–36.

of the active intellect. The active intellect (*intellectus agens*) turns to phantasms and illuminates them in order to make them intelligible. It is difficult to explain what precisely illumination is – many scholastics wrestle with this issue. Aristotelians usually compare it with the light by which something becomes actually visible. Moreover, they often say that illumination means dematerializing, that is, removing the material features from the phantasm. At any rate, this act of illumination is considered to be a necessary condition for the act of abstraction that follows. The active intellect abstracts the individual aspects from the illuminated phantasm, thus producing an intelligible species, which in turn represents the universal nature of a thing.<sup>13</sup> Illumination and abstraction allow the passive intellect to receive the intelligible species (*species intelligibilis*), which is therefore called ‘impressed’ (*impressa*). When the intelligible species is impressed in the passive intellect, we come to know the nature (*quidditas*) of the object associated with that species.<sup>14</sup> This reception of the form is the act of apprehension – the simple apprehension – by which the passive intellect receives a particular form. At the same time, this act produces an internal word (*verbum* or *species intelligibilis expressa*) or formed concept. And that is the act of intellection.

Accordingly, the passive intellect does not produce the content of the concept. Although there is a great difference between the material being (*esse materiale*) of the form in the external thing and its intentional being (*esse intentionale*) in the passive intellect, the form – the conceptual content – is identical. This content is merely received. It is already contained in the species, as being the vehicle of the conceptual information. Consequently, simple apprehension does not involve the active production of conceptual content.

The mental word – or expressed concept – is distinct from the impressed intelligible species because it is the product of intellection. It is, in fact, what is commonly

<sup>13</sup> Aquinas 1968, *Summa theologiae*, 1a. q. 79, a. 3, vol. 11, 154: ‘Oportebat igitur ponere aliquam virtutem ex parte intellectus quae faceret intelligibilia in actu per abstractionem specierum a conditionibus materialibus. Et haec est necessitas ponendi intellectum agentem.’ Aquinas 1968, *Summa theologiae*, 1a.. q. 85, a. 1, vol. 12, 56-57: ‘Ad quartum dicendum quod phantasmata et illuminantur ab intellectu agente, et iterum ab eis, per virtutem intellectus agentis, species intelligibiles abstrahuntur. Illuminantur quidem, quia, sicut pars sensitiva ex coniunctione ad intellectivam efficitur virtuosior, ita phantasmata ex virtute intellectus agentis redduntur habilia ut ab eis intentiones intelligibiles abstrahantur. Abstrahit autem intellectus agens species intelligibiles a phantasmatisbus, in quantum per virtutem intellectus agentis accipere possumus in nostra consideratione naturas specierum sine individualibus conditionibus, secundum quarum similitudines intellectus possibilis informatur.’ Aquinas, *Commentary on Aristotle’s De anima*, III.10, 366; Aquinas 1948, 174: ‘Intellectus autem agens facit ipsa intelligibilia esse in actu, quae prius erant in potentia, per hoc quod abstrahit ea a materia; sic enim sunt intelligibilia in actu ...’

<sup>14</sup> See Aquinas 1968, *Summa theologiae*, vol. 12, 1a. q. 84, a. 7, 40: ‘Intellectus autem humani, qui est conjunctus corpori, proprium objectum est quidditas sive natura in materia corporali existens ...’

understood as a concept, that is, a meaning of a word.<sup>15</sup> This concept can be seen either from the perspective of the intellect, and then it is a particular mental act, or from that of the object itself, in which case it is the object in so far as it is represented and conceived by the intellect – in which case it is called the objective concept (*conceptus obiectivus*).

After the formation of a concept – the simple apprehension – two operations follow: the act of judgement, resulting in a proposition, and the act of reasoning, which operates with propositions. The act of judgement is also called the act of predication, which is nothing other than a matter of ‘compounding and dividing concepts’. Thereafter, the intellect starts the process of reasoning, the final operation of the intellect, of which the syllogism is the traditional form.

Most importantly, Aquinas claims that the human intellect does not have complete knowledge through simple apprehension, but needs the other two operations of the intellect for acquiring knowledge of reality. Which he makes abundantly clear in following quotation from the *Summa theologiae*:

The human intellect must understand (*intelligere*) by combining and separating. For, in so far as the human intellect goes from potentiality to actuality, it has a certain similarity to the world of generation and corruption, which are not fully completed from the outset but achieve completeness step by step. So also the human intellect does not immediately in the first apprehension of a thing have complete knowledge (*perfectam rei cognitionem*); rather, it first apprehends only one aspect of the thing – namely, its whatness (*quidditatem*), which is the primary and proper object of the intellect – and only then can it understand the properties, accidents and relationships incidental to the thing’s essence. Accordingly, it must necessarily either combine one apprehension with another or separate them, or else it must go from one combination or separation to another (which is the process of reasoning). Thus the human intellect knows by combining, separating, and reasoning (*componendo, dividendo* and *ratiocinando*). The intellects of God and the angels, on the other hand, know combinations, separations, and processes of reasoning by way of simple understanding of what things are, not by way of combining, separating, and reasoning.<sup>16</sup>

<sup>15</sup> See on the *verbum mentis*, Pasnau 1997, Ch. 8. Cf Aquinas 1968, vol. 12, 167-168; Chauvin 1692, entry ‘Species intelligibilis’.

<sup>16</sup> Aquinas 1968, *Summa theologiae*, 1a. q. 85, a. 5, vol. 12, 74-77: ‘Dicendum quod intellectus humanus necesse habet intelligere componendo et dividendo. Cum enim intellectus humanus exeat de potentia in actum, similitudinem quamdam habet cum rebus generabilibus, quae non statim perfectionem suam habent sed eam successive acquirunt. Et similiter intellectus humanus non statim in prima apprehensione capit perfectam rei cognitionem; sed primo apprehendit aliquid de ipsa, puta quidditatem ipsius rei, quae est primum et proprium objectum intellectus; et deinde intelligit proprietates et accidentia et habitudines circumstantes rei essentiam. Et secundum hoc, necesse habet unum apprehensum alii compere vel dividere; et ex una compositione vel divisione ad aliam procedere, quod est rationinari. Et ideo intellectus humanus cognoscit componendo et dividendo, sicut et ratiocinando. Intellectus autem divinus et angelicus

Thus, Aquinas says here that the primary object of the human intellect is the nature (*quidditas*) of an external object. The *quidditas* is connected to a definition, and thereby to the concept, that is, what written or spoken words signify. Contrary to what one might expect, he continues by underscoring that this does not imply that the thing is perfectly known. When the mind apprehends the *quidditas* it reaches its object, but not its aim. Apparently, having knowledge of the properties of things is also necessary for having scientific knowledge. In view of what we have seen in Chapter 3, this should not come as a surprise. Aquinas in turn also claims that, unlike God and the angels, the human intellect cannot have intuitive knowledge of all properties that follow from the essence of a thing.<sup>17</sup> Human knowledge is discursive. Indeed, scientific knowledge consists precisely in assertions that are conclusions of scientific inferences. So, for having scientific knowledge of things it is necessary to make judgements and inferences. Therefore, Aquinas insists that understanding (*intelligere*) comes about only by judging and reasoning.

To return to the basic issue of this chapter, it is clear that the acts of the active intellect – illumination and abstraction – do not relate to the *contents* of thought: the point of the species theory is precisely that the information conveyed by the species is not altered. It ensures that our intellect can have adequate knowledge of reality. The only thing the active intellect does is changing the vehicle of information, so that the passive intellect can receive it. As a result, concepts that are attained by simple apprehension do not involve any intellectual activity as to their content.

#### 7.1.4 Zabarella's view of intelligible species and acts of the intellect

In the later Aristotelian tradition, the activity of the intellect becomes increasingly emphasized. This can already be found in Duns Scotus.<sup>18</sup> This subsection, however, is limited to a brief discussion of Zabarella's theory on the relation between intelligible species and mental act, because his theory will prove useful for the interpretation of Geulincx.

Zabarella was deeply engaged in debates on the (intelligible) species.<sup>19</sup> Original with him is that he equates the intelligible species with the act of intellection. His argument is that the intellective soul must be both active and passive. Briefly, although the intellect must receive something from external object, in which respect it is passive, this does not

cognoscunt quidem compositionem et divisionem et ratiocinationem, non componendo et dividendo et ratiocinando, sed per intellectum simplicis quidditatis.' Cf. MacDonald 1993.

<sup>17</sup> See Marenbon 1987, 120-127. Cf. Aquinas 1968, *Summa theologiae*, 1a. q. 58, a. 4, vol. 7, 154-155; Aquinas 1925-75, *De veritate*, in *Opera omnia*, ed. Leonina, q. 15, art. 1, vol. 22-2, 479-480.

<sup>18</sup> See on the passivity and activity of thought in Duns Scotus, Pasnau 2003, 290-293; Bettoni 1961, Ch. 4, 93-117; Marenbon 1987, 156. See especially, Duns Scotus 1975, q. 15, 'Is the possible intellect active or passive as regards the concept of a creature?', 344-368, and Scotus 1960, *Lectura*, Prologus, 15-16.

<sup>19</sup> See for Zabarella, Spruit 1994-95, vol. 2, 225-236; Kessler, 530-534; Poppi 1972.

necessarily entail that there is a mediating entity (the intelligible species) prior to the mental act, nor that some sort of entity remains in the intellect after that act. Instead, species are identical to the act of intellection, which in turn is identical with the act of judgement. This accounts for the active aspect of cognition. It is now time to explain this theory in more detail.

In a separate treatise on intelligible species, Zabarella takes as his starting point the question of the existence of intelligible species. Although the theory of the species had come under scrutiny at the time, with interpreters denying it to be a correct interpretation of *eidos* in *De anima*, Zabarella simply starts his discussion by noticing that Aristotle speaks often of intelligible species in *De anima* III.<sup>20</sup> He rejects the innatism of the Platonists, who deny the existence of impressed species. He then continues by presenting some historical positions on species. Zabarella first turns to the ‘Latins’, including such authors as Aquinas, Duns Scotus, Gregory of Rimini (c. 1300-1358), and Marcantonio Zimara (c. 1475-1532). According to Zabarella, all those philosophers argue for the necessity of impressed species. Their view is that ‘species are affixed to the intellect and are spiritual accidents produced by phantasms in the intellect, which both precede intellection in time and are preserved in the intellect after intellection, whence they are called impressed ...’<sup>21</sup> Thereafter, he moves on to another group of philosophers, among whom he counts Henry of Ghent (c. 1217-1293), who deny the necessity of intelligible species by claiming that illuminated phantasms suffice to trigger the generation of mental acts. They only allow for the existence of external material species (phantasms), and deny that these can be impressed in the intellect.

Zabarella takes a middle position between these two extremes.<sup>22</sup> His own theory is that species are impressed upon the intellect by phantasms, but that species do neither

<sup>20</sup> Zabarella 1966b, *De speciebus intelligibilibus*, Ch. 1, 979: ‘De mente humana agens Arist. in. 3. de Anima libr. frequenter specierum intelligibiliū mentionem fecit; dixit enim ipsam esse locum specierum ...’

<sup>21</sup> Zabarella 1966b, *De speciebus intelligibilibus*, Ch. 2, 980: ‘Illi, qui priorem sententiam sequuntur, dicunt eas esse quiddam intellectui superadditum, & esse accidentia spiritalia a phantasmatis in intellectu producta, quae & praecedunt tempore intellectionem, & post eam servantur in intellectu, unde eas impressas appellarunt ...’

<sup>22</sup> Zabarella 1966b, *De speciebus intelligibilibus*, Ch. 5, 986: ‘Ego in hac difficultate neutri opinioni adhaerendum puto, sed medium quandam viam tenendam, per quam ut mihi videtur, omnia dubia, & argumenta facile solvuntur: credo intellectionem fieri non posse sine impressione speciei intelligibilis in intellectu, quae sit quiddam diversum tum a phantasmate producente, tum a substantia intellectus recipiente; & in hoc puto posteriorem sectam fuisse deceptam, priorem vero recte sensisse; sed hanc quoque in eo errasse, quod posuit speciem hanc impressam praecedere intellectioni, & post intellectionem manere in intellectu; ego enim arbitror tam diu servari in intellectu speciem, quam diu intellectus intelligit actu, quia puto speciem in intellectu receptam, & intellectionem reipsa idem esse; proinde errasse in hoc omnes, qui species impressas re distinctas ab intellectione posuerunt: ob id posterior secta in hoc bene sensit, quod nihil in intellectu posuit praeter intellectionem, in eo tamen male, quod dixit nullam a phantasmate speciem in intellectu

precede the mental act nor remain in the intellect after intellection. This implies that the species is not what triggers the act of intellection (the *ratio operandi*), as in Aquinas' theory of the intelligible species, but that it is rather the cognitive act (*operatio*) itself. A species is, in fact, nothing other than the representational aspect of that intellective act. He infers from this that three things have to be shown: first, that having an impressed species in the intellect is necessary for intellection because an illuminated phantasm is not a sufficient condition for that; second, that impressed species do not precede the act of intellect; and third, that the fact that the intellect can readily contemplate something after intellection must be accounted for. I focus on those aspects that are relevant for our discussion.

As for the necessity of the impressed species, Zabarella argues first that 'the conjunction of the intellect with what is known can be realized only by receiving something in the intellect.'<sup>23</sup> But the intellect does not become the object in such a way that it would not retain its own nature – which he regards as the consequence of the alternative view that knowing is 'assimilating the entire object' (*imbibere totum objectum*). The relation between species and intellect is rather like that between matter and form, according to which the intellect is the matter and the species the form.<sup>24</sup> Zabarella's second argument boils down to the claim that action and passion require two separate forms – the productive form and the recipient form. The phantasm is the productive form, namely, a form acting on the intellect (*forma agens in intellectum*). As a result, there also has to be a recipient form, which is the intelligible species.

Even though Zabarella makes a distinction between the intellect (matter) and the intelligible species (form), they differ only conceptually. Actually, they are one and the same thing. The act of cognition 'if it is only referred to the intellect itself, in which it inheres, and by which it is judged, is called intellection' while 'if it is referred to the external object, it is called species, and an image of the object, or the object itself spiritually'.<sup>25</sup>

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imprimi, & intellectum absque ullius formae receptione intelligere: in eo quoque hi defecerunt, quod in intellectu intellectionem ponentes negarunt speciem, proinde diversum quiddam esse putarunt speciem ab intellectione; quod etiam aperte protulerunt, dum phantasma illustratum expressam speciem appellarent: sic enim etiam subjecto distingui speciem, & intellectionem asseruerunt, scilicet unam in phantasia esse, alteram vero in intellectu.'

<sup>23</sup> Zabarella 1966b, *De speciebus intelligibilibus*, Ch. 5, 987: '... in intellectione conjunctionem fieri intellectus cum intelligibili, haec aut fieri non potest, nisi aliquid in intellectu recipiatur ...' He appeals to Aristotle's view that the intellect becomes the thing thought; this, he argues, is only possible if the intellect receives something it did not have before.

<sup>24</sup> Zabarella 1966b, *De speciebus intelligibilibus*, Ch. 5, 987: '... oportet igitur speciem in intellectu imprimi, & ita unum fieri tanquam ex materia & forma, nam ipse in recipiendo tenet locum materiae, unde vocari solet intellectus materialis, species autem impressa tenet locum formae ...'

<sup>25</sup> Zabarella 1966b, *De speciebus intelligibilibus*, Ch. 5, 989: '... ut actualis cognitio equi est equus ipse spiritualis; discrimen est solum secundum rationem, hoc est, secundum diversas considerationes: nam si referatur ad ipsum intellectum, in quo est, & a quo judicatur, dicitur

Again, Zabarella insists on the fact that thought does not just consist in passively receiving something. Rather, it is itself active. Zabarella explains that the act of intellection consists in judging, and that what is judged is the species.<sup>26</sup> Zabarella further explains the acts of the intellect in a treatise on the agent intellect – *On the agent intellect* (*De mente agente*) – in which he also discusses the functions of the possible intellect. He recognizes the agent intellect as a distinct faculty of the intellectual soul. What is idiosyncratic about his theory of the agent intellect is its role in producing concepts. Unlike the standard account, he claims that the active intellect only illuminates the phantasm, whereas the act of abstraction is performed by the possible intellect instead. As in the standard account, the phantasm is made intelligible by the act of illumination.<sup>27</sup> Then, the phantasm is capable of moving the possible intellect in such a way that it has cognition of the universal nature (*quidditas*).

The possible intellect produces the act of intellection. Zabarella denies explicitly that the agent intellect produces the act of understanding (*actus intelligendi*) in the possible intellect.<sup>28</sup> Rather, this act is produced by the possible intellect when it *judges* a received species.<sup>29</sup> As a result, the possible intellect is not completely passive in forming concepts,

intellectio; si vero ad objectum externum, vocatur species, & imago illius, seu illud ipsum spiritualiter.' Zabarella refers in this context to Aquinas' *Summa theologiae* in which Aquinas presents Avicenna's argument for identifying the species with intellection. See Aquinas 1968, *Summa theologiae*, 1a. q. 79, a. 6, vol. 11, 166-169; Zabarella 1966b, *De speciebus intelligibilibus*, Ch. 6, 993.

<sup>26</sup> Zabarella 1966b, *De speciebus intelligibilibus*, Ch. 7, 999: '... speciem intelligibilem non dici intellectionem quatenus solum recipitur, sed simul etiam quatenus judicatur, adeo ut species recepta & judicata idem sit quod intellectio: atqui phantasma ad speciei judicium nihil confert, sed ad impressionem solum: ideo dum hanc solam spectamus, intellectus patitur tantum, phantasma vero agit; sed dum judicium respicimus, ipsa intellectus natura est principium activum intellectionis: quare adaequatum principium intellectionis productivum neque solum phantasma est, neque solus intellectus, sed ambo simul: ilud ut speciem imprimens, hic vero ut judicans; quae duo simul eodem tempore fiunt sed ratione & natura distinguuntur; prior enim est impressio judicatione, & in judicatione praecipue consistit intellectio, quare praecipuum agens intellectionem est intellectus ipse. Idem prorsus de sensibus dicendum est: nam objectum externum est principium productivum sensionis quatenus speciem in organo imprimit, sed facultas ipsa sensibilis dicitur agens, dum speciem judicat, qua ratione sensionem producit, sicut alias declaravimus in lib. quem de sense agente scripsimus.'

<sup>27</sup> Zabarella 1966b, *De mente agente*, Ch. 4, 1012: '... intellectum agentem esse agentem ut intelligibilem potius, quam ut intelligentem; quia si debet reddere phantasma actu intelligibile, oportet ipsum per se esse actu intelligibilem, quemadmodum etiam lumen, quatenus est per se visibile, non quatenus videns, reddit colorem actu visibilem.'

<sup>28</sup> See Zabarella 1966b, *De mente agente*, Ch. 4, 1019.

<sup>29</sup> Zabarella 1966b, *De mente agente*, Ch. 4, 1018-1019: '... negandum esse, patibilis intellectus officium esse solum pati [...] intelligere est etiam agere; nam cognoscere non in sola specierum receptione, quae passio est, consistit, sed etiam in receptarum judicatione, quae est actio, quare patibilis intellectus speciem quidem recipiendo patitur, sed eam judicando agit, & ita agendo

as would be the case if it merely received the species. In other words, understanding something is not identical with receiving an intelligible species of it – the reception of species is but a necessary condition for intellection.<sup>30</sup> In fact, to understand something is nothing other than judging it, according to Zabarella. He in turn identifies the act of judging – which is achieved by division and composition – with the act of abstracting. Consequently, Zabarella does not recognize a separate act by which simple concepts are formed – the simple apprehension. The first act of the intellect is judgement, that is, the act of predication.<sup>31</sup>

To conclude, it is clear that Zabarella held on to central elements of the standard scholastic theory of cognition. He still thinks that species are necessary and that species are representations. On the other hand, he simplifies the standard theory of cognition by eliminating the simple apprehension and by identifying abstraction and judgement. In what follows, it will become clear that these points are relevant for understanding Geulincx' theory of cognition. Before turning to Geulincx, however, Descartes' notion of the passivity of the intellect needs to be examined.

## 7.2 Descartes on the activity of the intellect

### 7.2.1 Introduction

So Aristotelians have continuously debated the relation between the active and the passive side of the intellect, and have offered accounts of concept formation that do justice to both aspects of thought. Descartes, by contrast, sharply separated the *activity* of the will from the *passivity* of the intellect, ever since the *Meditations*.<sup>32</sup> This does not mean that the intellect is completely passive, performing no operations whatsoever. Rather, Descartes mentions several times the operations (*operationes*) of the intellect. So, what does Descartes mean by the passivity of the intellect and why does he consider it to be so important? To answer these questions, I first examine the *Rules* and then Descartes' remarks in later works.

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dicitur abstrahere, quo fit, ut intellectio dicatur actio immanens, quia sit ab ipso patibili intellectu, & ipsomet recipitur.'

<sup>30</sup> Zabarella 1966b, *De mente agente*, Ch. 4, 1019-1020: '... intellectio non est sola receptio, sed etiam judicatio, imo est praecipue judicatio, & haec sit solo intellectu paciente, siquidem ipse ad judicandam speciem est sibi sufficiens ex propria sua natura sine ope intellectus agentis; ideo non dicimus intellectum agentem producere intellectionem in intellectu paciente, hoc enim neque solus facit, neque phantasmibus junctus, nisi ut cause remota, & antecedens; causa enim proxima, & aquata est ipsem patibilis intellectus, qui ex sua natura speciem receptam judicat.'

<sup>31</sup> See for a more recent defense of the act of predication as the primary act of the intellect, Geach 1971.

<sup>32</sup> This was shown in Chapter 2.

### 7.2.2 The Rules: Intuition and deduction

Descartes' most extensive remarks on the activity of the intellect can be found in the *Rules*. Although it is not certain whether Descartes continued to hold the views expressed in it, a discussion of the *Rules* is justified as a starting-point for an examination of Descartes' views on intellectual activity given the fact that his later views do not contradict those of the *Rules*.

The actions of the intellect (*intellectus nostri actiones*) are mentioned for the first time in Rule 3. The backdrop of his discussion on those acts is the question after the possible objects of scientific knowledge.<sup>33</sup> In Rule 2, Descartes had already confined the object of cognition to those things that can be known clearly and distinctly. In Rule 3, Descartes builds on this by explaining what acts of the intellect lead to *scientia*, namely, intuition and deduction.<sup>34</sup>

Descartes defines intuition as 'the conception of a clear and attentive mind, which is so easy and distinct that there can be no room for doubt about what we are understanding', which he claims to be identical to the following definition: 'intuition is the indubitable conception of a clear and attentive mind which proceeds solely from the light of reason'.<sup>35</sup> He offers, among other things, the following examples of intuition: knowing that one exists, that one thinks, and that a triangle is bound by three lines. He continues by stating that he does not take *intuitus* or *intueri* in its technical, scholastic sense. Instead, he claims that he is just concerned with the ordinary meaning of the Latin word. However, despite the fact that he denies that he uses *intuitus* in the scholastic sense, he makes a comment that alludes to the limitation scholastics have put on intuitive knowledge. Scholastic philosophers restrict 'intuition' to individual concepts and propositions (*enunciationes*).<sup>36</sup> Unlike scholastics, Descartes uses 'intuition' also for what was generally regarded as discursive knowledge. He offers the example of the equation that 2 plus 2 equals 3 plus 1. That this equation is known through intuition would be plainly inconceivable to scholastic philosophers.

As a result, deduction in the usual sense of the term, or rather the ordinary form of inference, seems to be superfluous. Things that were usually considered to be known discursively are known by intuition. But Descartes thinks otherwise. He defines *deductio*

<sup>33</sup> Descartes, *Rules* II, AT X 362, CSM I 10. Cf. Chapter 3.3.2.

<sup>34</sup> Descartes, *Rules* III, AT X 366: 'Circa objecta proposita, non quid alii senserint, vel quid ipsi suspicemur, sed quid clare & evidenter possimus intueri, vel certo deducere, quaerendum est; non aliter enim scientia acquiritur.', CSM I 13.

<sup>35</sup> Descartes, *Rules* III, AT X 368: '... mentis purae & attentiae tam facilem distinctumque conceptum, ut de eo, quod intelligimus, nulla prorsus dubitatio relinquatur; seu, quod idem est, mentis purae & attentiae non dubium conceptum, qui a sola rationis luce nascitur ...', CSM I 14.

<sup>36</sup> Descartes, *Rules* III, AT X 369: 'At vero haec intuitus evidentia & certitudo, non ad solas enuntiationes, sed etiam ad quoslibet discursus requiritur. Nam, exempli gratia, sit haec consequentia ...', CSM I 14. See Descartes 1977, 127-128, where Marion quotes several scholastics, apart from Aristotle himself.

as ‘the inference of something as following necessarily from some other propositions which are known with certainty’.<sup>37</sup> That he refers here to the traditional definition of the scientific proof from principles is clear from the sentence that follows in which Descartes remarks that ‘many facts which are not self-evident (*non ipsae sint evidentes*) are known with certainty, provided that they are inferred from true and known principles (*a veris cognitique principiis*) through a continuous and uninterrupted movement of thought (*cognitionis motum*) in which each individual proposition is clearly intuited’.<sup>38</sup> Moreover, Descartes explains that the major difference between deduction and intuition is that deduction involves a *movement* of thought. Although intuition may also concern what are normally called inferences, these cognitions are just as static as intuiting terms and self-evident propositions.<sup>39</sup> On traditional Aristotelian theories, this could not be the case because *all* discursive-rational knowledge, in which one proceeds from one assertion to another, is characterized as a movement of thought, and so is contrasted with intuitive knowledge.

But how literally should we take the word ‘movement’? And does it concern the activity of the intellect with respect to conceptual content of thought? This does not seem to be the case. Deduction means that some steps must be taken before we can establish a link between one proposition and another with which it is necessarily connected. Movement refers to the fact that several steps of thought are necessary. But the individual, minimal steps which compose this chain are known through intuition, so there is no movement in the case of each of these steps individually.<sup>40</sup> And because these minimal steps constitute in fact the deduction, it is difficult to maintain that deduction actually involves any activity at all. But why, then, is the distinction between intuition and deduction so important for Descartes?

The relation between intuition and deduction in the *Rules* is complicated and has led to much debate in the secondary literature.<sup>41</sup> I can only be brief in my discussion and only intend to establish that deduction does not involve the actual construction of conceptual content. To start with, Descartes claims that deduction is necessary

<sup>37</sup> Descartes, *Rules* III, AT X 369: ‘... deductionem: per quam intelligimus, illud omne quod ex quibusdam aliis certo cognitis necessario concluditur.’, CSM I 15.z

<sup>38</sup> Descartes, *Rules* III, AT X 369: ‘Sed hoc ita faciendum fuit, quia plurimae res certo sciuntur, quamvis non ipsae sint evidentes, modo tantum a veris cognitique principiis deducantur per continuum & nullibi interruptum cognitionis motum singula perspicue intuentis ...’, CSM I 15.

<sup>39</sup> Cf. Descartes, *Rules* XI (AT X 407, CSM I 37), where Descartes compares intuition and deduction on the notion of movement. Intuition means that the proposition is known clearly and distinctly (*clare & distincte*), as well as in its entirety and immediately (*tota simul & non successive*). Deduction, in contrast, ‘involves a kind of movement of our mind (*motum quemdam ingenii nostri*)’ in ‘inferring one thing from another’.

<sup>40</sup> See Descartes, *Rules* XI, AT X 407: ‘... simplicem vero deductionem unius rei ex altera ibidem diximus fieri per intuitum.’, CSM I 37.

<sup>41</sup> See, for example, Beck 1952; Joachim 1957, 27-61; Descartes 1977, 217, 220-223.

whenever intuition is impossible: ‘if we cannot take in at one glance all the intermediate links on which the connection depends’.<sup>42</sup> Again, ultimately every individual ‘reasoning’ or minimal step, which concerns the necessary link between two propositions, is based on an intuition, while only the larger steps require a deduction. The connection between two propositions is then not immediately seen, as is the case with the smallest steps. What Descartes in fact means by deduction is that we are aware that all the intermediate steps have been correctly intuited.<sup>43</sup> He explains in Rule 7 that it seems sometimes possible to intuit a necessary link between two propositions that do not immediately imply each other, and that then memory ‘is left with practically no role to play’. This makes it clear that deduction is closely connected to memory. In fact, the only thing needed for a deduction is to remember that the intermediate steps have been properly intuited, so that the larger connection can be affirmed and is evident.<sup>44</sup> Memory guarantees that all steps are intuited. Even though in Rule 12, deduction is characterized as a form of composition of elements, again it can, eventually, be reduced to intuition.<sup>45</sup>

As a result, because deduction is closely related to memory and can be reduced to (a series of) intuition(s), the activity attributed to it cannot amount to much either. Furthermore, deduction does not actually concern the content of these propositions, but is rather related to the epistemic status of the connections between propositions.

Intuition does not concern the content of thoughts either. It rather indicates the way in which some content is apprehended. *Intueri* can be translated as ‘to look at, upon or towards’ or ‘to regard, observe, contemplate, consider, give attention to’, all of which suggests passivity with respect to the content of thought.<sup>46</sup> Indeed, the type of cognition on which Descartes models intuition is visual perception.<sup>47</sup> As for the individual intuitions that make up a deduction, this concerns nothing but *passively ‘seeing’* necessary connections between concepts and between propositions. Although an act of directing oneself to some object is needed to perceive those connections, a matter of attention, yet what is seen – the content – is given either by the object itself or by an

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<sup>42</sup> Descartes, *Rules* III, AT X 369-370: ‘...etiamsi uno eodemque oculorum intuitu non omnes intermedios, a quibus dependet illa connexio ...’, CSM I 15.

<sup>43</sup> See Descartes, *Rules* VII, X 388, CSM I 25.

<sup>44</sup> It may be objected that deduction also includes what Descartes calls ‘enumeration’, although he separates them at some points. Enumeration concerns two distinct things. First, a review, or verification, of all the steps of a deduction. Second, a methodical ordering of data and premises, that is, a logical classification for the determining and limiting of problems (a *perquisitio*). Descartes explains that this is necessary in the case of complex problems, so as to facilitate our (limited) memory. This process, however, has nothing to do with deduction (*illatio*) strictly taken.

<sup>45</sup> See Descartes, *Rules* XII, AT X 424-425, CSM I 48,

<sup>46</sup> See Lewis and Short 1962, 991.

<sup>47</sup> Which is why Descartes compares intuition with ‘ordinary vision’, *Rules* IX, X 400, CSM I 33.

innate concept.<sup>48</sup> In neither case is the content *produced* (in the sense of constructed or fabricated) by the intellect.

It can now be concluded that Descartes' holds that intellectual cognition is completely passive with respect to the content of thought, at least in so far as scientific knowledge is concerned. Because relations between propositional contents are also known through intuition, this also holds true of all inferences from principles. In other words, both the principles and the conclusions following from them are passively perceived.

### 7.2.3 Descartes' later philosophy

Ever since the *Meditations*, the distinction between the passivity of the intellect and the activity of the will directs Descartes' enumerations of the mind's functions.<sup>49</sup> It is again to be considered whether activity and passivity relate either to the representational content or to the act of thinking.

Answering these questions, however, is difficult because Descartes is rather vague about what passivity of the intellect means. Two philosophers who adopted Descartes' notion of idea, Locke and Malebranche, are more outspoken on this issue. Locke connects the idea, as being the object of the understanding ('whatsoever is the object of the understanding when a man thinks'), immediately to the passivity of the intellect.<sup>50</sup> To think is, for Locke, nothing other than perceiving or contemplating an object that is immediately present, namely, an idea. This is a representation or concept. On Locke's view, the mind is completely passive when it perceives ideas, and active if it wills something. This is even true with respect to the perception of agreements and disagreements between ideas, which according to him is the process of reasoning. Accordingly, even reasoning is regarded by him as some sort of vision.

<sup>48</sup> Cf. Descartes, *Rules* XII, AT X 425: 'Colligitur secundo, nullam operam in naturis istis simplicibus conosendis esse collocandam, quia per se sunt satis notae; sed tantummodo in illis ab invicem separandis, & singulis seorsim defixa mentis acie intuendis.', CSM I 48.

<sup>49</sup> See on the relation between the intellect and the will, particularly Descartes, *Meditations* II, AT VII 37, CSM II 25-26; *Correspondence*, to Regius, May 1641, AT III 372: 'Intellectio enim proprie mentis passio est, et volitio ejus actio; sed quia nihil unquam volumus, quin simul intelligamus, et vix etiam quicquam intellegimus, quin simul aliquid velimus, ideo non facile in is passionem ab actione distinguimus.', CSMK 182; to Regius, December 1641, AT III 454-455, CSMK 199; to Mesland, 2 May 1644, AT IV 113-114, CSMK 232; *Notes on a certain programme*, AT VIIib 363, CSM I 307; *Principles* I §32, AT VIIIa 17, CSM I 204; *Passions* I §18-19, AT XI 343, CSM I 335-336.

<sup>50</sup> Locke 1997, *An essay concerning human understanding* I, Ch. 1, §8, 58-59: 'It [= idea] being that term, which, I think, serves best to stand for whatsoever is the object of the understanding, when a man thinks, I have used it to express whatever is meant by *phantasm*, *notion*, *species*, or whatever it is, which the mind can be employed about in thinking ...'; II, Ch. 8, §8, 134: 'Whatsoever the mind perceives in itself, or is the immediate object of perception, thought, or understanding, that I call *idea* ...' See also, McRae 1965, 175-176, and Chappell 1994.

Malebranche takes a similar position.<sup>51</sup> Perception, judgement and reasoning are all just ‘perceptions’ – acts of intellectual seeing. This is deeply connected to his notion of idea. Malebranche holds that only ideas are representational.<sup>52</sup> They represent by means of a resemblance with their objects. By contrast, sensory cognitions do not resemble, and thus are not ideas. Sense perceptions, imaginings, and emotions are nothing but *modifications* of the mind. Because cognitions of primary qualities do resemble external objects, these qualities are perceived by the intellect rather than sense perception. This act of perception by the intellect is nothing other than ‘seeing’ the ideas of things in God’s intellect. Malebranche insists that we perceive the ideas of material things directly in God, whose intellect (‘universal Reason’) is the origin of ideas. On his view, ideas are the archetypes or models used by God to create the material world. As a result, for Malebranche, ideas are not psychological entities, but conceptual entities residing in God’s intellect. So our intellect does not produce them. Abstract eternal truths in turn are relations between those ideas and are seen in God as well. In short, despite great differences in their theories, both Locke and Malebranche take the passivity of the intellect very strictly. The only thing human reason does is passively perceiving – ‘seeing’ – objective concepts, as well as relations between them.

Can we find a similar view of the passivity of the intellect in Descartes? At first sight that does not seem to be the case. Descartes mentions, at various points in his works, the possibility of forming or amplifying ideas, and speaks also repeatedly of the operations of the intellect.<sup>53</sup> On the other hand, he uses far more often passive expressions such as ‘finding them in myself’ (VII 63), ‘noticing them’ (VII 54, VII 75), ‘perceiving them’ (VII 56), and ‘looking at them’ (VII 73). Likewise, Descartes asserts that God has put an idea of himself in us.<sup>54</sup> Add to this the fact that Descartes’ best-known characteristic of clear and distinct concepts is that they are innate, by which he again seems to indicate that somehow we received them. So, these two lists of passages express seemingly contradictory views, which have to be reconciled one way or another. The likely solution

<sup>51</sup> Malebranche 1958-84, *Oeuvres I, The search after truth*, 43: ‘La premiere & la principale des convenances qui se trouvent entre la faculté qu'a la matière de recevoir différentes *figures* & différentes *configurations*, & celle qu'a l'âme de recevoir différentes *idées* & différentes *modifications*, c'est que de même que la faculté de recevoir différentes figures & différentes figurations dans les corps, est entièrement passive, & ne renferme aucune action: ainsi la faculté de recevoir différentes idées & différentes modifications dans l'esprit, est entièrement passive, & ne renferme aucune action; & j'appelle cette faculté, ou cette capacité qu'a l'âme de recevoir toutes ces choses, ENTENDEMENT.’ Cf. McRae 1965, 176-177.

<sup>52</sup> See on this, Watson 1987, 57-65.

<sup>53</sup> In a letter to Regius, Descartes mentions the possibility of forming an idea of God (*Correspondence*, to Regius, 24 May 1640, AT III 64, CSMK 147). See also *Correspondence*, to Hyperaspistes, August 1641, AT III 427-428, CSMK 192; to Elisabeth, 21 May 1641, AT III 665, CSMK 218.

<sup>54</sup> See Descartes, *Principles I* §18, AT VIIIa 11, CSM I 199; *Meditations III*, AT VII 51, CSM II 35; *Principles II* §3, AT VIIIa 42: ‘... ideas sibi a naturas inditas ...’, CSM I 224.

is that Descartes deals with the form of thinking in the passages in which he attributes activity to the intellect, whereas he speaks about the conceptual content in the other passages. But is this confirmed by the texts?

Descartes is fairly clear on the difference between the form and content of concepts.<sup>55</sup> Indeed, he makes a sharp distinction between thoughts as mental acts and the representational content of thoughts. Particularly in the preface to the *Meditations*, Descartes insists on the difference between the idea taken as a mental act, the thought in so far as it is just a (non-representational) operation of our mind, and what is represented by that act.<sup>56</sup> He calls the former notion of idea the idea taken materially (*materialiter*). Elsewhere he uses the terms ‘act’ (*actus*), ‘operation’ (*operatio*) and ‘mode of thinking’ (*modus cogitandi*) to refer to ‘idea taken materially’.<sup>57</sup> Thoughts are modes (*modi*) because they are modifications or particular states of the mind as a thinking thing (*res cogitans*).<sup>58</sup> In so far as we are dealing with acts of cognition, they are different ways of cognizing an object. For example, we can touch a tree, see it, or form a concept of it. Descartes makes it abundantly clear that as such these acts (seeing, touching, conceiving) are non-representational.<sup>59</sup>

These non-representational acts of cognition must have an object. It is heavily debated in the literature what the object of such an act is. The discussion mostly concerns whether the object of such a mental act is the idea taken objectively (*objective*) as the representational content or the external object.

In the last decades, the theory of ‘direct realism’ to explain Descartes’ theory of cognition has become en vogue.<sup>60</sup> On this theory, what is immediately apprehended is

<sup>55</sup> See Chapter 5.2.2-5.2.3.

<sup>56</sup> Descartes, *Meditations*, praef., AT VII 8: ‘... hic subesse aequivocationem in voce ideae: sumi enim potest vel materialiter, pro operatione intellectus, quo sense me perfectior dici nequit, vel objective, pro re per istam operationem repraesentata, quae res, etsi non supponantur extra intellectum existere, potest tamen me esse perfectior ratione suae essentiae.’, CSM II 7.

<sup>57</sup> See Descartes, *Meditations*, III, AT VII 40: ‘Nempe, quatenus ideae istae cogitandi quidam modi tantum sunt, non agnosco ullam inter ipsas inaequalitatem, & omnes a me eodem modo procedere videntur; sed, quatenus una unam rem, alia aliam repraesentat, patet easdem esse ab invicem valde diversas.’, CSM II 27-28. Cf. Descartes, *Principles I* §17, AT VIIIa 11: ‘... quatenus sunt quidam modi cogitandi, non multum a se mutuo differre ...’, CSM I 198. In the letter of Descartes to Regius of June 1642 (AT III 566-567, CSMK 214), Descartes speaks of the essence of the idea (*essentia ideae*) to denote the mode of thinking (*modus cogitandi*) in so far as it is unrelated to the representational content of an idea.

<sup>58</sup> Cf. Chappell 1986, 181.

<sup>59</sup> This is the upshot of Descartes’ discussion of the mental act and the representational content in the preface to the *Meditations* referred to above. It is also apparent in Descartes’ letter to Regius of June 1642 (AT III 566, CSMK 214) where he compares an idea to a painting.

<sup>60</sup> In the following studies, among still others, Descartes is regarded as a proponent of direct realism: McRae 1965, Kenny 1968 (p. 240-242), Lennon 1974, O’Neil 1974, Cook 1975, Yolton 1975a and 1975b, Costa 1983, Yolton 1984 (Ch. 1), Normore 1986, Cook 1987, Nadler 1989,

the external thing itself. Ideas are not objects of mental acts, but the mental acts themselves or rather the representational aspect of those acts. This representational aspect is not the object of the mental act, but only a means by which an object is directly perceived. The act of cognition is called ‘idea’ to emphasize the fact that the act is representational. This much is clear. Explanations of direct realism in Descartes, however, are widely divergent. There is, among many other things, much debate about the range of cognitions it is considered to apply to. For example, some hold that sense perceptions are direct cognitions of external objects, while others preclude them or hesitate to include them.<sup>61</sup>

The opposite theory is called ‘representationalism’, according to which the intellect is not immediately conscious of external objects, but rather of representations of these objects – that is, of ideas as proxies for the external objects known. These ideas may be located outside the mind, as in Malebranche’s theory of vision in God, or in the mind, which is how Locke explains it. In the latter case, ideas are the representational aspects of the mental act itself.

We need not, and cannot, resolve here which theory offers (probably) a correct interpretation of Descartes’ theory of ideas. Discussing this in detail would take us too far afield.<sup>62</sup> However that may be, the discussion concerning the object of the mental act is instructive for our purposes. It makes it clear that we should consider relations between the act of cognition (the intellect), the representational content, and the external object. To be more specific, Descartes’ basic classification of thoughts is between perceptions, comprising all acts of cognition, and volitions. In so far as perceptions and volitions are mental acts both are operations and thus active. In another respect, perceptions are characterized as passive, whereas volitions are regarded as completely active. Because passivity of the intellect cannot concern acts of the intellect as such, it is a feature either of the relation between the intellect and the representational content or between the intellect and the external object. It is obvious that the intellect does not cause the external object, so only the representational content by which an object is represented remains to be considered. If, however, ‘passivity’ refers only to the fact that the intellect does not cause the object, then the mind may still cause the representational content and accordingly would form the content of concepts actively. So the question is: what causes the representational content, either the external thing – or something else outside the intellect like God – or the intellect itself?

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Pessin 2007, and Clemenson 2007. Representationalism is argued for by Chappell 1986, Wilson 1994, and Hoffman 2002b.

<sup>61</sup> Clemenson 2007 therefore distinguishes between weak direct realism, according to which direct realism is confined to clear and distinct ideas, and strong direct realism, which includes sense perceptions.

<sup>62</sup> At any rate, the view that ideas are cognized outside the mind is nowhere to be found in Descartes, so that it is likely that, if Descartes is a representationalist, he takes a view similar to Locke. Particularly Chappell 1986 has explained Descartes’ theory of ideas in such a way.

Descartes defends the first position in the *Passions of the soul*. In *Passions I* §16, he emphasizes the difference between intellect and will in terms of passivity and activity and explains this as follows:

Having thus considered all the functions belonging solely to the body, it is easy to recognize that there is nothing in us which we must attribute to our soul except our thoughts. These are of two principal kinds, some being actions of the soul and other its passions. Those I call its actions are all our volitions, for we experience them as proceeding directly from our soul and as seeming to depend on it alone. On the other hand, the various perceptions or modes of knowledge present in us may be called its passions, in a general sense, for it is often not our soul which makes them such as they are, and the soul always receives (*reçoit*) them from the things that are represented by them.<sup>63</sup>

So, the will is characterized as active because volitions are ‘experienced as’ being produced by the mind *alone* and ‘seem’ not to depend on other things. Action thus refers to being a complete cause of something, as was shown in Chapter 2.<sup>64</sup> It is not entirely clear why Descartes is so cautious in saying that our mind causes volitions, by using ‘seeming’, but probably this is his way of avoiding theological problems. This cautiousness is missing in Descartes’ remarks on perceptions. Cognitions are passive because the mind *receives* them from the objects they represent. This must imply that it did not cause them (or made them as they are), for this is precisely the point of comparison. This passivity, of course, cannot concern the cognition in so far as it is a mental act. Even though these mental acts are certainly triggered by external objects, the passivity relates to the representational content of these acts. Indeed, it is unlikely that external objects only initiate the construction of a representation by the intellect. If so, the intellect would not receive something. Rather, Descartes insists that it *receives* a representation.

This interpretation is confirmed by a few remarks in a letter to Mesland.<sup>65</sup> In the following passage from this letter, Descartes compares the relation between the mind, consisting of mental acts, and the representational content with a piece of wax and the shapes it can take:

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<sup>63</sup> Descartes, *Passions I* §17, AT XI 342: ‘Après avoir ainsi considéré toutes les fonctions qui appartiennent au corps seul, il est aisément de connaître qu'il ne reste rien en nous que nous devions attribuer à notre âme, sinon nos pensées, lesquelles sont principalement de deux genres, à savoir: les unes sont les actions de l'âme, les autres sont ses passions. Celles que je nomme ses actions sont toutes nos volontés, à cause que nous expérimentons qu'elles viennent directement de notre âme, et semblent ne dépendre que d'elle. Comme, au contraire, on peut généralement nommer ses passions toutes les sortes de perceptions ou connaissances qui se trouvent en nous, à cause que souvent ce n'est pas notre âme qui les fait telles qu'elles sont, et que toujours elle les reçoit des choses qui sont représentées par elles.’, CSM I 335. Cf. Descartes, *Principles I* §32, AT VIIIa 17.

<sup>64</sup> See Chapter 2.1.2.

<sup>65</sup> Cf. Descartes, *Correspondence*, to Regius, December 1641, AT III 454-455, CSMK 199.

I regard the difference between the soul and its ideas as the same as that between a piece of wax and the various shapes it can take. Just as it is not an activity but a passivity in the wax to take various shapes, so, it seems to me, it is a passivity in the soul to receive one or other idea, and only its volitions are activities. It receives its ideas partly from objects which come into contact with the senses, partly from impressions in the brain, and partly from prior dispositions in the soul and from movements of the will. Similarly the wax owes its shapes partly to the pressure of other bodies, partly to the shapes or other qualities it already possesses, such as heaviness or softness, and partly also to its own movement, in so far as it has in itself the power to continue moving when it has once been set in motion.<sup>66</sup>

In fact, Descartes uses here the same metaphor as he uses for sense perception as a corporeal phenomenon in the *Rules*, which was discussed in Chapter 5. In that chapter, I also showed that the intellect can receive shapes. The shape-model is used to characterize the representational content. Consequently, Descartes emphasizes here that representations are passively received by the intellect. They either come from the object itself, from the corporeal imagination, or from ‘innate’ sources, which is what he here calls dispositions.

But what about those innate ideas? Are they actively constructed by our intellect? This seems to be the case, because Descartes denies that they are a kind of forms distinct from the intellect.<sup>67</sup> The idea of God, for example, which is innate, seems to be formed by the intellect. Descartes relates that one comes to know the idea of God through recognizing one’s own imperfections, the awareness that one strives to acquire all possible perfections, and the notion of dependence on something else. However, the real issue here is not that the idea of God is constructed, but it concerns rather the way in which it is discovered. That is the reason why, when relating this argument briefly at the beginning of the fourth meditation, Descartes uses the words ‘there arises in me’ (*mihi occurrit*) the idea of God as an independent and complete being.<sup>68</sup> This is supported by Descartes’ account of the primacy of knowledge of infinity (or absolute perfection). He insists that the idea of infinity, which is in fact the idea of God, cannot be formed by

<sup>66</sup> Descartes, *Correspondence*, to [Mesland], 2 May 1644, AT IV 113-114: ‘Je ne mets autre différence entre l’âme et ses idées, que comme entre un morceau de cire et les diverses figures qu’il peut recevoir. Et comme ce n’est pas proprement une action, mais une passion en la cire, de recevoir diverses figures, il me semble que c’est aussi une passion en l’âme de recevoir telle ou telle idée, et qu’il n’y a que ses volontés qui soient des actions; et que ses idées sont mises en elle, partie par les objets qui touchent les sens, partie par les impressions qui sont dans le cerveau, et partie aussi par les dispositions qui ont précédé en l’âme même, et par les mouvements de sa volonté; ainsi que la cire reçoit ses figures, partie des autres corps qui la pressent, partie des figures ou autres qualités qui sont déjà en elle, comme de ce qu’elle est plus ou moins pesante ou molle etc., et partie aussi de son mouvement, lorsqu’ayant été agitée, elle a en soi la force de continuer à se mouvoir.’, CSMK 232-233.

<sup>67</sup> Descartes, *Notes on a certain programme*, AT VIIIib 366, CSM I 309.

<sup>68</sup> Descartes, *Meditations* IV, AT VII 53, l. 12, CSM II 37.

amplifying the idea of a limited or finite perfection. Instead, Descartes argues that it is the other way round. We have an idea of imperfection (or finitude) only because we already had an idea of infinity. And that idea, he claims, can only come from God himself. Accordingly, the idea as such is not constructed by our intellect.

In sum, the intellect is active just in so far as it is a mental act, or as Descartes says an ‘operation of the intellect’.<sup>69</sup> In a limited sense, then, the idea is constituted by an act of cognition (‘perception’) of the intellect. That is why Descartes speaks of forming or constructing ideas.<sup>70</sup> But the representation as such is not formed or constructed by the intellect.

If Descartes would be a representationalist, the representation is that which is perceived by the operation of the intellect, or, if he is a direct realist, it is the representational aspect of the operation by which an object is perceived. In either case, the representation is passively received. Accordingly, a metaphor Descartes often uses for the intellect is *vision*.<sup>71</sup> Although in a way vision is an activity of the sense organ, its content is given by something else. This metaphor of vision underscores the fact that the content of ideas is wholly received and that the human intellect has a passive relation to it. The act responsible for the content lies altogether outside the intellect.<sup>72</sup> As is clear from our discussion of the *Rules*, this even holds for inferences of complex ideas from simple ideas, because the intellect simply *sees* the necessary relations between these ideas, but does not play a truly active role as regards the content. That is why Descartes calls the result of a deduction a proposition which is clearly ‘intuited’, a term which again alludes to vision.<sup>73</sup> In short, we do not *cause* the representational content ourselves.

Although Descartes does not expressly discuss this, the reason why he insists on the passivity of the intellect is probably identical with the reason why most Aristotelians adhere to it. That is, adequate knowledge of reality is possible precisely because representations are *received* from external objects (or God). Accordingly, like

<sup>69</sup> See for example, Descartes, preface to the *Meditations*, AT VII 8, CSM II 7; Replies II, AT VII 134, CSM II 96-97. See also Descartes’ definition of thought in the geometrical exposition of the proofs for God’s existence in Replies II, AT VII 160, CSM II 113; *Principles* I §32, AT VIIIa 17: ‘... quorum unus est perceptio, sive operatio intellectus ...’, CSM I 204.

<sup>70</sup> Descartes, *Meditations* IV, AT VII 57, CSM II 40; *Meditations* VI, AT VII 75, CSM II 52.

<sup>71</sup> See for instance, Descartes, *Correspondence*, to Regius, December 1641, AT III 455, CSMK 199. In addition, Descartes’ theory of the truth criterion is, as is argued for in Chapter 5.4.3, also intimately bound up with the view of the intellect as vision.

<sup>72</sup> For innate ideas, the ultimate cause is God and for sense perceptions – ‘adventitious ideas’ – the corporeal imagination. See on the division of ideas, regarding their content, into adventitious (*adventitiae*), factitious (*factae*) and innate (*innatae*) ideas, *Meditations* III, AT VII 37-38, CSM II 26, and *Correspondence*, to Mersenne, 16 June 1641, AT III 383, CSMK 183-184. Adventitious ideas are ideas coming from sources external to the mind, one’s own body, and God; it is identical with sense perception.

<sup>73</sup> Descartes, *Rules* III, AT X 369-370, CSM I 15.

Aristotelians, Descartes does not show any sign of the view that intellectual ways of thinking, by which we represent objects to us, may be detrimental to or prevent us from having adequate knowledge of reality. Instead, he attempts to prove that our clear and distinct ideas correspond exactly to reality.

### 7.3 Geulincx' account of species as mental acts

#### 7.3.1 Introduction

In Chapter 2, I showed that for Geulincx the contrast between will and intellect does not run parallel to that between activity and passivity. He emphasizes on the contrary that the intellect is active. Again, this may concern either the form or the content of thought. In this section, I investigate Geulincx' ideas on the form of thought, whereas I discuss his account of activity with regard to the content of thought in the next chapter.

It is clear that Descartes cannot have been of major influence on Geulincx' views of the active construction of objective concepts, considering that Descartes rejects precisely that. As to the form of thought, on the other hand, the opposite may be the case. So, the question of this section is: What precisely is the relation between Geulincx' theory of mental activity and that of Descartes as to the form of thought? Because Geulincx uses the term 'species' for forms of thinking, this has to be placed in the context of the scholastic species theory.

#### 7.3.2 Species as modes of thinking (*modi cogitandi*)

To start with, we already know a lot about Geulincx' view of species. At several points in this study, it was noticed that Geulincx uses 'species', referring to both sensible and intelligible species, for forms of thinking. And it has also been noticed that he thinks that it is necessary both to use species and to attribute them to external objects.<sup>74</sup> At the same time, it has been shown that he argues that we are not allowed to confirm this attribution by an explicit judgement by the will, because species are non-representational. Forms of thought (species) do not resemble external objects. In this respect, they are completely opposite to ideas, which precisely are representations of reality.<sup>75</sup> That is why Geulincx concludes that the major source of error is mistaking a species for an idea.<sup>76</sup> Other terms Geulincx uses for 'species' are 'mode of thinking' (*modus cogitandi*) and for sensible species 'phantasm' and 'image'.

Thus, a species is a mental act. In this respect, Geulincx concurs with Zabarella, who also identified species and mental acts. Unlike Zabarella, however, (and unlike the entire scholastic tradition) Geulincx insists that species are not representations. This raises the question of why Geulincx uses the term 'species' at all. To start with, it is apparent that Geulincx uses the term 'species' because he wants to connect his theory with the

<sup>74</sup> See Chapter 1.6.2; Chapter 2.3.3.

<sup>75</sup> See Chapter 6.2.2; Chapter 6.4.

<sup>76</sup> See Chapter 6.1.2; Chapter 6.2.2.

traditional account of cognition. Given the fact that it is central to the scholastic account that species are intermediaries, it is likely that Geulincx keeps using ‘species’ because they are not objects of knowledge, but necessary *means* to produce knowledge.<sup>77</sup> In other words, by using the term ‘species’ Geulincx intends to emphasize the fact that to form concepts of external things, that is, to know external things, mental acts must intervene. Geulincx applies this view to a Cartesian setting in which sense perceptions occur in the mind alone. Both sensible and intelligible species are in themselves just mental acts, without any content. As was shown in Chapter 6.4, the act contains, when the thought is intellectual, a representation; and when it is a sensible species it indicates (the existence) of an external object. As a result, the intelligible species is *a vehicle for* the representational content. I will here elaborate somewhat on this point.

That Geulincx identifies species, mode of thinking (*modus cogitandi*) and mental act is clear from the *True metaphysics*. In it, Geulincx uses the term mode of thinking to denote all possible thoughts. First, he uses the term to refer to various kinds or classes of sensory cognitions. He mentions, among other things, the class of visual perceptions, a category comprising numerous other modes of thinking such as the whole range of colours, and the class of hearing, comprising, for instance, both whispering and singing.<sup>78</sup> What Geulincx means is that all these sensory thoughts are mental acts. Then, he offers some examples of intellectual modes of thinking, such as affirming, making a disjunction, and inferring, and finally emotions like hating and fearing. They are all presented as acts of the mind: Geulincx consistently speaks in terms of ‘I see’, ‘I perceive’, ‘I affirm’, ‘I hate’, and so on. From this can be concluded that modes of thinking really are *acts* of the mind. The same can be inferred from the fact that they are called *modes* of the mind. The mind as a whole is active and thus also its modes have to be acts. They are, accordingly, specific states of the mind and types of thought. These modes or classes of thinking are what Geulincx calls elsewhere species. At this point, Geulincx insists that the mind knows its own acts immediately; it has infallible and complete knowledge of these thoughts.<sup>79</sup> He calls this self-reflexive knowledge *conscientia*.<sup>80</sup>

At other points, Geulincx stresses that it is erroneous to judge that species are representations – that is, ideas. This is Geulincx’ main point in the introduction to the *Peripatetic metaphysics*. In it, Geulincx notes first of all that ‘true wisdom (*Vera*

<sup>77</sup> Although the term occurs only a few times in his *True metaphysics*, he uses it more frequently in the *Larger commentary*, the *Peripatetic metaphysics*, and the *True physics*, both in contexts in which he attacks the scholastic theory and in which he expands on his own view.

<sup>78</sup> Geulincx, *MV I*, Sc. 2, II 148: ‘*Varios habeo cogitandi modi in infinitum.*’

<sup>79</sup> Geulincx, *MV I*, Sc. 2, II 148: ‘Clarissime, inquam, intelligo me videre lumen et colores, et me audire sonos, etc. me amere, me odisse etc.; quia hoc non est aliud quam hoc vel illo modo me habere, cuius modi hoc ipso, quo illum habeo, intime mihi conscientia sum.’

<sup>80</sup> Geulincx, *MV II*, Intr., Ann., II 271: ‘In hac secunda parte non quaeritur conscientia sed scientia.’

*Sapientia*) considers things as they are in themselves, abstracted from our modes of thinking', that is, abstracted from our *species*.<sup>81</sup> He continues by referring to the dictum of Aristotle that 'our thought does not affect the thing' (*propter nostrum dicere nihil mutatur in re*), which, he claims, is a principle of reason, and constitutes in fact the quintessence of human wisdom.<sup>82</sup> This principle teaches us to ascribe all species merely to the mind rather than to external objects, simply because they are just mental acts. This goes both for sensible and intelligible species.<sup>83</sup>

Species are also vehicles of representations. Although in the *Larger commentary on Descartes' Principles* Geulincx' main point is that species are non-representational, he also confirms in this work that species are means of cognizing objects. In the passage in which he explains this, he first denies that ideas are modes of thinking. He explicitly divorces ideas from species by referring to the Cartesian distinction between a thought as a mental event and the representational content of such thoughts.<sup>84</sup> The species is merely a means of accessing the representational content (a concept), and 'represents' at most itself. In addition, Geulincx claims in the *True physics* that sensible species are ways (*modi*) by which we perceive the external world.<sup>85</sup> As we have seen in Chapter 6, this means that they indicate external objects.

As a result, species, as modes of thinking, coincide with Descartes' notion of idea as an ephemeral psychological phenomenon. Following Descartes, Geulincx claims that mental acts as such are non-representational. Because species are identified with mental acts, they are also non-representational. The identification of species with mental acts is a point on which Geulincx clearly concurs with Zabarella. But unlike him and other scholastics, Geulincx claims that those species are not representations of objects, for which reason he urges to separate them sharply from ideas. It is likely, then, that Geulincx combined Descartes' notion of the mental act as a non-representational act of thinking with the view of Zabarella that species are mental acts.

<sup>81</sup> Geulincx, *MP* Intr., Sect. 1, II 199: 'Vera Sapientia considerat res ut sunt in se, abstracte a modis nostrarum cogitationum ...'

<sup>82</sup> See for this principle, Aristotle 1984, *De interpretatione*, Ch. 9, vol. 1, 29: 'For it is not because of the affirming or denying that it will be or will not be the case ...' (1018b38-39)

<sup>83</sup> Most of Geulincx' comments on sensible species can be found in this introduction to the *Peripatetic metaphysics* and in the *True physics*. In the latter work, he emphasizes that sensible species do not correspond to objects in the external world. See in particular, *PV* Intr., II 369; *PV* V, Intr., II 428-429.

<sup>84</sup> Geulincx, *AL* I §14, III 369: 'Et sicut distinguimus inter maculas illas, quae tabulae per penicillum adpersae sunt, quibus Caesar reprezentatur, et inter ipsum Caesarem, ut ibi reprezentatum; sic etiam distinguimus inter cognitiones nostras et ideas.'

<sup>85</sup> Geulincx, *PV* Ann., II 451: 'Cum igitur fulgor, color, sonus, etc. sint diversum quid ab his, necessum est illa non spectare ad mundum ipsum prout extra nos positus est, sed ad modum quo nos illum percipimus; qui modus est in ipsa nostra perceptione, non autem in re percepta; sicuti cum titione in tenebris appetit circulus igneus.'

In any case, species are ‘mental vehicles’, which, although they are means to present external reality to our mind, are in themselves just empty ways of thinking. But that is not Geulincx’ only point. He adds that they also prevent us from having adequate knowledge of external objects as they are in themselves.<sup>86</sup> Because of the fact that (concepts of) external objects are grasped by means of species, we do not have full access to them.<sup>87</sup> Another way Geulincx usually refers to this is by saying that the senses and the intellect present reality to us ‘clothed with our modes of thinking’. And, as modes of thinking are mental acts, the fact that we must use mental acts to know reality prevents us from knowing external things as they are in themselves (*res ut in se sunt*). This point will be clarified by discussing the acts of the intellect.

### 7.3.3 *Intelligible species or acts of the intellect*

It is now clear that intelligible species are mental acts and vehicles for representations of external objects. It is still to be determined what acts of the mind Geulincx distinguishes. Before discussing Geulincx’ classification of *intellectual* acts, it needs to be emphasized that his most fundamental classification of *mental* acts is that of acts of the will and acts of the intellect.<sup>88</sup> Because only acts of the intellect are relevant for cognition, these are the only ones discussed here.

Geulincx offers a basic classification of the intellectual acts of the mind. In his commentary on Descartes’ *Principles* I §48, he divides them into three kinds: 1) acts by which we understand something as a thing or being (*res, ens*); 2) acts by which we understand something as the attribute of a thing or being (*affectio, modus entis*); 3) acts by which we judge the value of something (*sententia*).<sup>89</sup> Because only the first two classes of acts are concerned with knowledge, that is, with items that are subject to truth and falsity, logic is confined to treating them. In logical terms, the first class concerns the subject and the second the predicate. These are ‘parts’ of the primary act of the intellect:

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<sup>86</sup> Geulincx, *AL* I §48, III 396: ‘Pertinent igitur haec omnia ad modos nostrae cogitationis, omniaque aliquo horum modorum (ut res, ut affectiones, ut sententias) cognoscimus; et sine modo nihil cognoscimus. Hoc proprium est supremae mentis, sine modo cognoscere; illa proinde sola cognoscit res ut sunt; creatura nunquam ut sunt, sed semper pro modo suo.’

<sup>87</sup> One may, however, be misled by Geulincx’ remark in *AL* I §18 (II 374) that ‘in so far as that idea [of God] is your mode of thinking, it is yours ...’ (*quatenus idea ista est modus cogitandi tuus, a te est ...*). But he immediately corrects himself by saying that ‘in so far as it [the idea of God] is an idea, or represents, to that extent it cannot be yours ...’ (*sed quatenus idea est, seu repraesentat, eatenus a te esse non potest ...*) In addition, in *AL* I §48 (II 396), Geulincx claims that notions like thing (*res*) and substance are modes of thinking without which we cannot know anything.

<sup>88</sup> Geulincx, *Logic Ann.*, II 462-463: ‘Nota duplex est, nempe nota Mentis seu Intellectus, et nota Animi seu Voluntatis. Actus enim omnes nostri vel ad Intellectum vel ad Voluntatem pertinent [...] De notis Animi nihil ad Logicam pertinet; sunt enim hae sine veritate falsitateve, imo ad veritatem falsitatemve nihil faciunt, ad quas tantum Logica pertinet.’

<sup>89</sup> See Geulincx, *AL* I §48, 396; *MP* I §1, II 211: ‘Quae cogitamus per intellectum, aliquo horum trium modorum cogitamus: nempe ut ens, ut modum entis, et ut sententiam.’

the affirmation (*affirmatio*). What this precisely amounts to will be further explained in Chapter 9.

But logic is not the only discipline in which these acts are treated. In so far as they are concerned with being (a thing, a property), they are also discussed in ontology, whose subject matter precisely is being (*ens*). Geulincx' *Peripatetic metaphysics* is concerned with ontology. This work is divided into two parts according to the basic division of intellectual acts. Thus, the first part is concerned with being (*ens*), which is the metaphysical counterpart of what in logical terms is called 'subject', and the second with the 'mode of being' (*modus entis*), which is the metaphysical equivalent of predicate. Because Geulincx' ontology also concerns mental acts, it can be concluded that the first part discusses those acts by which we consider objects as things (or beings) and the second part those acts by which we consider objects as 'modes' or attributes of things. Since this basic division is taken from Descartes' *Principles I* §48, we may conclude that Descartes influenced Geulincx on this point.

The basic act of the intellect, however, is the affirmation, as was shown in Chapter 4.<sup>90</sup> Affirmation here means the act of predication, that is, the act of predicating a predicate of a subject.<sup>91</sup> As a result, Geulincx no longer recognizes the simple apprehension. It is not the case that concepts are formed because they are combined in a judgement. This is a point on which Geulincx agrees with Zabarella. A consequence of Geulincx' view that affirmation is the primary act of the intellect is that each object of cognition is necessarily considered either as a subject or as a predicate – a being or a mode of being. Because subject and predicate are only non-representational ways of considering things – *species* – and thus are not aspects of reality, these ways of considering reality are false – at least, as soon as we refer them by an act of our will to a reality outside us. In actual fact, external things are not really subjects and predicates or beings and modes of beings. This has dramatic consequences for philosophy and scientific knowledge. Because it is *necessary to consider* objects as subjects or predicates or beings or modes of being, we cannot think otherwise of them. Indeed, they are intelligible to us only through those forms of cognition. Hence, Geulincx concludes, it is impossible to know reality as such.

To return to the main question of this section, what role did Descartes play in all this? It is likely that Geulincx adopted from Descartes the view that mental acts as such are non-representational. Combined with the theory of Zabarella that species are

<sup>90</sup> See Chapter 4.5.

<sup>91</sup> It is again to be emphasized that Geulincx denies that the affirmation includes assent. Affirmation is the primary act of the intellect, whereas assent belongs to the will. De Vleeschauwer, though, thinks that Geulincx applies Descartes' theory of judgement to logic, asserting that Geulincx' Cartesianism becomes apparent in his logic because of the primacy of the affirmation. He claims that the affirmation is not only an act of the intellect but also an act of assent by the will (De Vleeschauwer 1941, 15). However, he does not have any convincing argument for this position. See further on this Chapter 2.2.3.

identical with those acts, the theory arose that species are non-representational mental acts, as well as means of cognizing concepts – that is, in Cartesian terms, ideas.

#### 7.4 Conclusions

The key question of this chapter was what consequences the form of thought may have for our ability to know reality. Both Descartes and the Aristotelians discussed deny that the form of thought prevents us from knowing reality as such. Geulincx takes the opposite view. In his view, *species*, which he identifies with forms of thought or acts of thinking, are necessary means to grasp concepts of external things. They prevent us from knowing objects as they are in themselves. With regard to intelligible species, Geulincx emphasizes the fact that affirmation is the primary act of the intellect, so that external objects are necessarily conceived either as beings or as modes of being. Because these ways of thought (*species*) are non-representational, our conceptualization of reality does not fully correspond to it. As a result, we cannot know reality as it is in itself.

## CHAPTER EIGHT

# THE PRODUCTION OF CONCEPTUAL CONTENT: ABSTRACTION, SEPARATION AND DISTINCTION

### **Introduction**

The preceding chapter has made it clear that both Descartes and Geulincx maintain that the intellect is active with respect to the form of thought. As to the content of concepts, by contrast, Descartes insists that the intellect is completely passive. Geulincx partially concurs with this position, namely, in so far as it concerns concepts representing the essences of external objects, that is, ideas. Ideas of external objects are not actively constructed by the intellect, but rather perceived in God. Still, it is true that Geulincx' insistence on the activity of the intellect concerns precisely conceptual content. Consequently, concepts in so far as they are constructed by the intellect cannot amount to knowledge of the essences of external objects.

Instead, we have shown that Geulincx claims that we have doctrine (*doctrina*): scientific knowledge of external objects as they appear to us. I called this ‘abstract knowledge’, because it does not concern reality as such, but reality as perceived by us. As I showed in Chapter 6, this type of scientific knowledge consists of adequate concepts of properties. They are adequate because we constitute these properties ourselves by mental activity, while having full knowledge of those acts. It has to be clarified in this chapter what this activity of the intellect, as regards the conceptual content, precisely amounts to.

At this point, then, it is clear that doctrine consists of adequate knowledge of properties of external things. But there are many kinds of property. The basic classification of properties is between real and notional properties, that is, those properties a thing only has in so far as it is perceived. For Descartes, both primary attributes – representing the essences of things – and modes are real instead of notional properties. He discerns, however, also ‘general attributes’, including ontological notions such as substance and order – concepts with which the next chapter is concerned. In Descartes the ontological status of these attributes is unclear. Because followers of Descartes adopted his distinctions of attributes, they also had to come to terms with the status of general attributes, and thereby of ontological notions. It is to be seen how

Geulincx deals with them. In this chapter, my discussion of general attributes is limited to the question of what type of property they are.

From this emerges a host of interrelated questions about the relation between intellectual activity and different kinds of properties. Although it is likely that the intellect is completely responsible for the content of notional properties, it is to be seen what role it plays in acquiring concepts of general attributes. Apart from that issue, it is also to be determined how properties that are related to modes of things, such as the concept of the movability of body, are constituted, and whether they also amount to abstract knowledge. Does Geulincx include knowledge of these properties among doctrine? Also the epistemic status of concepts of the modes themselves – such as line and motion – is unclear. In short, this chapter is concerned with the issues of the extent and consequences of the activity of the intellect as regards the content of various kinds of concepts. More specifically, the key question is what the precise meaning and extent is of abstract scientific knowledge – *doctrina*?

Geulincx was not the only one to emphasize the activity of the intellect. Especially the Italian philosopher Giambattista Vico (1688-1744) is renowned for it. Because a discussion of Vico's theory is instructive for our purposes, I shall give an outline of it in Section 1. From this discussion, it appears that abstraction is central to mental activity. For that reason, the next section is devoted to theories of abstraction and the closely related topic of the theory of distinction. This will bring us to the heart of Geulincx' theory of the production of conceptual content. In the following section, the consequences of his theory of mental activity and abstract knowledge for scientific knowledge will be spelled out, which will allow us to answer the key question of this chapter.

### **8.1 *Verum-factum*: Maker's knowledge**

The principle of *verum-factum*, which is primarily associated with Vico, has been connected to Geulincx' theory of cognition by De Vleeschauwer.<sup>1</sup> Another expression for this principle is 'maker's knowledge', a term that has been attributed to Bacon by Pérez-Ramos.<sup>2</sup> The central point of this theory is that we can adequately know only what we produce or can produce ourselves.

The term maker's knowledge clarifies that we are dealing with the production or fabrication of something. In fact, it conveys that knower and maker coincide. Pérez-Ramos points out three contexts in which this principle functions historically. First, the principle functions in a theological context, which goes back to Philo's *On the unchangeableness of God* (*Quod Deus immutabilis sit*). Philo explains that God is the pre-eminent knower and maker; he is the craftsman, the true father of the universe and of all that is in it. Second, the principle occurs also in Proclus' commentary on Euclid's

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<sup>1</sup> See De Vleeschauwer 1953a and 1953b, 247.

<sup>2</sup> See Pérez-Ramos 1988, Ch. 5.

*Elements.* In this text, the geometrician is the archetype of the maker as knower. The exactness and certainty of mathematical notions result from the fact that they are creations of the mind itself. This is why one cannot be deceived in knowing mathematical objects. The mathematician, in other words, knows the truth about his objects because he has made them himself. Accordingly, the mathematical criterion of truth is the constructivistic principle of its production. Finally, Nicholas of Cusa (1401-1464) and Francisco Sanchez (1523-1600) use the principle as an apologetic weapon against the sinful pretensions of human knowledge. Given the fact that there are many things we are unable to produce there is much that we cannot know – the extent of our knowledge is severely limited. Vico uses it for similar purposes. More specifically, he uses it to preclude a priori knowledge of nature and natural processes – it is explicitly directed against Descartes.

Vico elaborates the notion of *verum-factum* in *On the most ancient wisdom of the Italians* (*De antiquissima Italorum sapientia*) of 1710.<sup>3</sup> At the outset of the first chapter, the *verum-factum* principle is introduced with the following words:

For the Latins, *verum* (the true) and *factum* (what is made) are interchangeable, or to use the customary language of the Schools, they are convertible.<sup>4</sup>

In other words, ‘the true is precisely what is made’ (*Verum esse ipsum factum*).<sup>5</sup> In this context, being made (*factum*) means both acting (or having acted) and fabricating (or having fabricated). The true is thus identical and synonymous with fabricating a thing by one’s own action. Accordingly, Vico’s criterion of truth is nothing other than to have made it.<sup>6</sup> In other words, if someone can make something, he has true knowledge of the object. This entails that knowing (*scire*) is making (*facere*); to know is to fabricate the object known in and by the act of cognition. More specifically, scientific knowledge means knowing *how* a thing is made – ‘the genus or mode by which a thing is made’.<sup>7</sup>

This has profound implications for the boundaries of human knowledge.<sup>8</sup> Vico explains this by comparing human knowledge with God’s knowledge. God possesses *intelligentia*, while human beings only have *cogitatio*, which corresponds to the distinction between intuitive and discursive knowledge, respectively.<sup>9</sup> It means that the

<sup>3</sup> See on this, Morrison 1978; Pompa 1975, 77-84; Verene 1981, 37-52.

<sup>4</sup> See Vico 1988, Ch. 1, §1, 45; Vico 1971, 63: ‘Latinis ‘verum’ et ‘factum’ reciprocantur, seu, ut Scholarum vulgus loquitur, convertuntur ...’

<sup>5</sup> Vico 1971, 63.

<sup>6</sup> Vico 1971, Ch. 1, §2, 69: ‘... veri criterium ac regulam ipsum esse fecisse ...’

<sup>7</sup> Vico 1988, Ch. 1, §1, 46; Vico 1971, 63: ‘... scientia sit cognitio generis, seu modi, quo res fiat, et qua, dum mens cognoscit modum, quia elementa componit, rem faciat ...’

<sup>8</sup> See Vico 1988, Ch. 1, §1, 46; Vico 1971, 63, 65.

<sup>9</sup> Vico 1971, Ch. 1, §1, 63; Vico 1971, Ch. 1, §2, 65: ‘Deus scit omnia, quia in se continet elementa, ex quibus omnia componit; homo autem studet, dividendo, ea scire. Itaque scientia humana naturae operum anatomie quaedam videtur.’

way in which God constructs his concepts is completely different from that of man. What God knows is immanent to his act of cognition. Because the object of God's knowledge must be the best thing, he knows himself. Moreover, he knows all things intuitively, in one unitary act of thought. Man does not (scientifically) know himself, but something other than himself. That external object, however, is not nature, for man has only non-scientific knowledge of some outward features (*extrema, extima*) of natural things. He is incapable of scientifically knowing nature because he has not made it nor could make it. Vico concludes that 'for this reason it [= human mind] can indeed think about reality, but it cannot understand it fully'.<sup>10</sup> This explains also why knowledge of our own mind does not amount to scientific knowledge, for the mind does not make itself, and thus 'does not know the genus or mode by which it knows itself'.<sup>11</sup> Rather, the only knowledge we have of our mind is consciousness (*conscientia*), which also unlearned persons possess.<sup>12</sup>

The only kind of scientific knowledge man has is abstract knowledge.<sup>13</sup> The human intellect has the capacity of abstraction by which it can partly remedy its cognitive deficiency. This act of abstraction is the basis of mathematical knowledge, providing us with the concepts of point and unity. Mathematical knowledge in turn is the product of operations of the mind on these two abstract, fictional entities: the point as the basis for geometry and the unity for arithmetic. Consequently, man can only obtain certain and exact knowledge in mathematics, so that this is the only scientific knowledge (*scientia*) he possesses. This is possible because mathematics is the most abstract science. Physics, by contrast, is far less abstract than mathematics, because it studies the motions of bodies, which are not caused by man, thus preventing us from having scientific knowledge of nature. In short, for Vico, the extent of scientific knowledge is narrowly limited.

This theory shows some similarities with Geulincx. According to De Vleeschauwer, Geulincx' highest epistemological-metaphysical principle 'What one does not know how to do, one does not do' (*Quod nescis quomodo fiat, id non facis*) is a particular expression of the verum-factum principle. Further, De Vleeschauwer interprets Geulincx' account of having intimate knowledge of a thing as a form of rational constructivism. In addition, Geulincx would hold that because of the fact that we cannot influence external reality through acts of the mind, we cannot have full knowledge of nature. As a result, our knowledge of reality would be severely limited.

However, there are many differences between Geulincx' theory of cognition and Vico's. Most significantly, Geulincx recognizes intuitive knowledge of mental acts, so that man resembles God in this respect – the human mind can actually be itself an object of knowledge and knows intimately how mental acts come about while we

<sup>10</sup> Vico 1988, Ch. 1, §1, 46; Vico 1971, 63.

<sup>11</sup> Vico 1988, Ch. 1, §2, 52; Vico 1971, 69: '... nescit genus seu modum, quo se cognoscit.'

<sup>12</sup> Vico 1988, Ch. 1, §3, 55; Vico 1971, 73-75.

<sup>13</sup> See Vico 1988, Ch. 1, §2, 50-52; Vico 1971, 65-69.

produce them. It is precisely this type of knowledge that Geulincx regards as wisdom (*sapientia*), the highest type of knowledge. As for scientific knowledge of external objects, on the other hand, Geulincx appears to settle with abstract knowledge (*doctrina*), as well. Unlike Vico, however, Geulincx does not limit this to mathematics; it comprises all traditional theoretical sciences, as well as ethics.

## 8.2 Theories of abstraction

### 8.2.1 Introduction

It has become clear from the discussion of Vico's theory that the mental operation of abstraction is central to his notion of scientific knowledge. It is a precondition for the construction of concepts that are completely transparent to the mind and thus true. Geulincx also claims that scientific knowledge of external reality is necessarily abstract. Is this the same theory as Vico's? More specifically, does abstraction yield (the basis for) new conceptual content, which is produced in its entirety by the intellect? Or does Geulincx' theory of abstraction resemble the scholastic theory, according to which, as we have seen in Chapter 7.1, abstraction is only an operation of the intellect to 'free' the conceptual content of the phantasm by removing the material and individual aspects?

Prior to discussing Geulincx' notion of abstraction, it is helpful to give a preliminary definition of abstraction. The notion of abstraction has been studied by Laporte, whose treatment is useful for our purposes.<sup>14</sup> He starts his book by noticing that abstraction is not identical with generalisation.<sup>15</sup> Abstraction is not limited to the production of general concepts from particulars. Therefore, he proposes the notion of 'separation' as an alternative to generalisation. Abstraction would then be nothing but separating one item from another, for example the colour red from a red apple. But, according to Laporte, separation still is not specific enough to fully characterize abstraction. The problem is that something can be considered apart from something else even though they cannot exist separately. Laporte even thinks that this is what abstraction precisely amounts to. He therefore defines abstraction as 'thinking in part what cannot be given in part' and explains that 'abstraction isolates in thought what cannot be isolated in the representation'.<sup>16</sup> In such a way, one can conceive the figure of an apple without considering its red colour, even though there is no perception of an apple's figure apart from the perception of that apple. Likewise, a figure can be considered without a surface, a surface without a colour, and so on. All of them cannot be given in perception without the other. Instead, they can only be thought separately, an act of 'consideration'. Historically, both separation and consideration are called 'abstraction'. In what follows,

<sup>14</sup> See for the history of the theory of abstraction, Laporte 1940, Weinberg 1968, Aubenque and Oeing-Hanhoff 1971, and Kambartel et al 1971.

<sup>15</sup> See Laporte 1940, Ch. 1.

<sup>16</sup> Laporte 1940, 8: 'En bref, l'abstraction consiste à penser à part ce qui ne peut être donné à part'; 'L'abstraction isole par la pensée ce qui ne peut être isolé dans la représentation.'

I will call the latter ‘consideration’ and the former ‘separation’. That these two types of abstraction have been distinguished ever since Aristotle will be shown in the next subsection.

### 8.2.2 Two notions of abstraction: Consideration and separation

Historically considered, all theories of abstraction go back to Aristotle. However, the term ‘abstraction’ – which has Latin roots – stems from Boethius. He uses ‘abstractum’ for two distinct Greek terms of Aristotle: 1) *aphairesis*, which means taking away a chosen part; 2) *horismos*, which means separating (or defining). As a result, right from its inception the notion of abstraction comprises two distinct things, namely, to consider a thing without another and to separate two things from one another.

Aristotle has two uses for his theory of consideration.<sup>17</sup> First, he needs it to explain how universal forms of things can be known, considering that they cannot exist independently from the material objects in which they inhere. He denies that they can be known by contemplating separately existing ideas, as with Plato. According to Aristotle, universal forms are not abstract entities that can be known independently of material objects. The forms are not actually separate from the matter in which they inhere. As we have seen in Chapter 7.1, for obtaining the universal form in the immaterial intellect it is necessary to abstract the material and individual aspects from the phantasm. Second, the theory of abstraction is also needed to account for knowledge of mathematical items. Because mathematical objects are not separately existing entities either, Aristotle needs the theory of abstraction to explain how mathematical features can be abstracted from physical objects. Only by taking away all that is sensible, that is, all features that were later considered secondary qualities, discrete and continuous quantity as well as their attributes are left to be known. These two uses are instances of consideration. For the objects of metaphysics, by contrast, it is necessary to use the act of separation. Matter has to be completely removed from material objects to acquire knowledge of items that also apply to immaterial objects.

Thus, it is confirmed that there always have been two notions of abstraction: separation and consideration. Aquinas, whose theory of abstraction was to become standard, clarifies the relation between these two types of abstraction.<sup>18</sup> He makes, in fact, a sharp distinction between consideration and separation. If something can be separated from another thing in thought, that thing can actually exist apart from that

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<sup>17</sup> See for Aristotle’s account of abstraction, *Metaphysics* VI.1, vol. 2, 1619-1620; VII.11, 1036b3, vol. 1, 1636; XI.3, 1061a29, vol. 1, 1677; XIII.1-3, vol. 2, 1701-1705; *Physics* II.2, 193b32-35, vol. 1, 331; *Posterior analytics* I.18, 81b3, vol. 1, 132; *De anima* I.1, 403b15, vol. 1, 643; III.7, 431b12-19, vol. 1, 686; *Nicomachean ethics* VI.8, 1142a17-21, vol. 2, 1803; *On the heavens* III.1, 299a13-17, vol. 1, 490.

<sup>18</sup> See for Aquinas’ account of abstraction, *Summa theologiae*, 1a. q. 13, a. 9; 1a. q. 15, a. 3-4; 1a. q. 17, a. 3; 1a. q. 40, a. 3; 1a. q. 85, a. 1; 2a. q. 8, a. 1; *Summa contra gentiles* I, Ch. 25, par. 2; I, Ch. 26, par. 5, 11; I, Ch. 54, par. 3; *Commentary on Boethius’ De trinitate*, q. 5, art. 3-4.

from which it is separated. By contrast, if the item can only be considered apart from a thing, it cannot exist apart from it: it can only be thought separately by not considering the thing with which it is connected. Aquinas in turn explains that the operation of consideration belongs to the simple apprehension ('by way of simple and absolute consideration'), whereas separation is identical with the act of judgement ('by way of combining and separating'), the second operation of the intellect.<sup>19</sup> Further, Aquinas distinguishes also two types of consideration.<sup>20</sup> These, in fact, coincide with the two uses Aristotle has for consideration: 1) the abstraction of a universal nature from a singular; 2) mathematical abstraction, which Aquinas explains as a way to abstract the form from

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<sup>19</sup> Aquinas 1968, *Summa theologiae*, 1a. q. 85, 1, vol. 12, 53-54: 'Uno modo, per modum compositionis et divisionis; sicut cum intelligimus aliquid non esse in alio, vel esse separatum ab eo. Alio modo, per modum simplicis et absolutae considerationis; sicut cum intelligimus unum, nihil considerando de alio.' Cf. Aquinas 1986, *Commentary on Boethius' De trinitate*, q. 5, a. 3, 37. Cf. Signoriello 1931, 26, who calls consideration *abstractio praecisiva* and separation *abstractio negativa*. He means by negative abstraction that one item is not only understood without considering the other but is also denied to be in (*in esse*) the other (Signoriello 1931, 7). The *abstractio praecisiva*, by contrast, is a way of understanding by which the intellect understands one item without another to which it is linked without affirming or denying anything. In other words, the former belongs to the second operation of the intellect (judgement), whereas the latter is an aspect of simple apprehension. Consideration is, moreover, an operation that Signoriello attributes to the agent intellect because the agent intellect performs the abstraction of universal forms from phantasms. Other terms for the distinction between separation and consideration are *abstractio realis/materialis* and *abstractio intentionalis/logica*, respectively (Signoriello 1931, 5-6). See also Chauvin 1692, entry 'Praecisio': 'PRAECISIO seu *abstractio* in genere, est separatio unius ab alio; quae duplex est scilicet *realis*, & *mentalis* seu *rationis*. *Praecisio realis* existit independenter ab intellectu, ut separatio *realis* capit a collo per carnificem. *Praecisio vero mentalis* seu *rationis* existit tantum per operationem intellectus concipientis unum sine altero. Estque haec vel positiva, vel negativa. *Praecisio mentalis positiva*, est qua unum concipitur sine altero, tanquam separatum ab ipso, a quo tamen non est realiter separatum; ut cum nigredo corvi concipitur tanquam separata a substantia corvi, a qua tamen non est realiter sejuncta: vel, qua unum concipitur tanquam distinctum ab alio, a quo non distinguitur, ut cum concipitur humanitas Alexandri tanquam distincta ab Alexandreitate, a quo non distinguitur. *Praecisio mentalis negativa* est, qua unum concipitur non concepto altero, cum quo est realiter conjunctum aut identificatum; ut cum nigredo corvi concipitur non concepta substantia corvi, cum qua est realiter conjuncta; vel cum humanitas quae est in Petro concipitur non concepta Petreitate, cum qua realiter identificatur.'

<sup>20</sup> As a consequence, there are three operations of the intellect: 1) separation, 2) considering the form without the matter, and 3) considering the whole without its parts. In his commentary on Boethius' *De trinitate* (Aquinas 1986, q. 5, art. 3, 41), Aquinas connects this to the three theoretical sciences: 1) separation has regard to metaphysics, because that science deals with things that are really separated from matter (both sensible and intelligible matter); 2) mathematics is concerned with intelligible matter, which is the form of sensible matter, for which the second type of abstraction is needed; 3) physics treats of the universal natures of material objects, and needs therefore the last type of abstraction.

sensible matter, so that the intelligible matter (substance as subjected to quantity) remains to be known.

Aquinas adds that, unlike separation, consideration cannot be false. It is never false to conceive a thing without *considering* that to which it necessarily belongs. It is, however, false to separate that thing from the other, which means that we judge that it can exist apart from the other thing with which it is connected. For example, the assertion is false that colour can exist separately from a coloured body. By contrast, the statements resulting from a consideration of colour apart from the body to which it belongs are not necessarily false. The body is not part of the definition of colour, so it is possible to understand colour apart from it. As long as we do not judge that colour exists separately from the body, there is no falsity to be found in our (correct) assertions about colour.

Since consideration does not involve separation but is connected with the simple apprehension, it involves neither affirmation nor denial, so cannot be false – falsity belongs only to assertions. Accordingly, mathematical abstraction, by which only the quantitative features of material objects are considered, is not necessarily false as long as it does not involve the claim that points and lines exist separately from bodies. It merely considers them without attending to other aspects of physical things. Similarly, in the case of the abstraction of a universal nature from a particular thing, the mind considers the specific nature of, say, man or dog, apart from the individuating aspects of the particular that has caused the phantasm. Aquinas accordingly refers in this context to Aristotle's dictum 'Abstraction does not lie' (*Abstrahentium non est mendacium*). Which holds true simply because the intellect does not assert that the specific nature of man can exist apart from a particular man.<sup>21</sup>

Closely connected to these notions of abstraction is the theory of distinction. The difference between a real and rational (or conceptual) distinction runs along the same lines as that of separation and consideration. When an item is really (*realiter*) distinct from another item, then the thing can exist apart from it. If an item, by contrast, is only rationally distinct from another, then it can be thought or considered apart from the other without being able to exist apart from that other thing. This is the reason why Aquinas claims that the essence of consideration consists in a distinction of reason.<sup>22</sup> A distinction of reason is nothing other than distinguishing without separating.

As is well known, Duns Scotus improved on the theory of distinctions.<sup>23</sup> He divides the distinction of reason into two kinds: a purely conceptual and formal distinction. A

<sup>21</sup> See for this dictum, Aristotle 1984, *Physics* II.2, 193b32-35, vol. 1, 331: 'Now the mathematician, though he too treats of these things, nevertheless does not treat of them as the limits of a natural body; nor does he consider the attributes indicated as the attributes of such bodies. That is why he separates them; for in thought they are separable from motion, and it makes no difference, nor does any falsity result, if they are separated.'

<sup>22</sup> See Aquinas 1986, *Commentary on Boethius' De trinitate*, q. 5, art. 3, 36-41.

<sup>23</sup> See Wolter 1946, 16-25.

distinction of reason can be *purely conceptual*, meaning that it does not involve any real aspect of the object and thus does not represent anything in it. In that case, the intellect alone is the cause of the distinction and its product has only mental being; it is a being of reason (*ens rationis*) or mental construction. In many cases, however, the distinction is not just based on operations of the intellect, but also on a real aspect of the object, which cannot exist separately of it. This implies that the distinction is, in a sense ('virtually'), already part of the thing before it is made by the intellect, thus giving an objective foundation for concepts formed in this way. Scotus calls these aspects 'formalities' and 'something of a thing' (*aliquid rei*). As a result, this type of distinction results in a concept of a real aspect of the thing known. This is called the *formal distinction*.

In scholastic terminology, the purely conceptual distinction is called *distinctio rationis ratiocinantis* and the formal distinction the *distinctio rationis ratiocinatae*. It is clear that the two types of consideration Aquinas discerns are both formal distinctions: both the universal nature and the intelligible matter are real aspects of material objects. Scotus also takes this position, which is why he calls the common natures, on which our universal notions are based, formalities. This (Scotist) theory of distinction was still current at Leiden university in the seventeenth century.<sup>24</sup>

#### 8.2.3 Descartes on abstraction and distinctions

Descartes also has a theory of abstraction and distinction. Like Aquinas, he distinguishes between separation and consideration. Descartes usually calls the former 'exclusion', which he, moreover, explicitly connects with real distinction. Abstraction is his term for what I called consideration. He insists that it is essential not to confuse consideration and exclusion, for we are often inclined to judge that items that we have only considered apart from other things can also exist separately from those things. If we comply with this inclination, we fall into error. Connected with this notion of consideration is the

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<sup>24</sup> See on the theory of distinctions, Burgersdijk 1657, *Metaphysical institutes*, Ch. 15, 86-95; Burgersdijk 1660, *Logic*, Ch. 21, 67-69. On the distinction between the purely conceptual distinction and the formal distinction, Burgersdijk 1657, *Metaphysical institutes*, Ch. 15, §3, 87: 'Mens dicitur ratio ratiocinans, quidditas ratio ratiocinata. Ergo distinctio rationis ratiocinantis dicitur, quae sumitur a mente sola, hoc est, a pluribus conceptibus, quorum singuli uni eidemque rei adaequantur, ideoque omnes inter se similes sunt.', §4, 88: 'Distinctio rationis ratiocinatae est, quae quidem proficiscitur a mente, hoc est, a pluribus conceptibus, sed quorum singuli uni alicui eidemque rei inaequales ideoquem inter se dissimiles sunt. Causa hujus inaequalitatis & dissimilitudinis in pluribus conceptibus de eodem Ente formalis, est in ipso Ente: nempe, diversitas in quidditate, sive in ratione ...' Burgersdijk gives the example of the distinction between an uphill slope (*acclive*) and a downhill slope (*declive*) of the formal distinction.

distinction of reason. As a result, Descartes' theory of abstraction largely concurs with that of Aquinas.<sup>25</sup>

The distinction between consideration and exclusion (or separation) is of the utmost importance for Descartes, because they have radically different ontological implications.<sup>26</sup> His point is that we can be certain that a thing can actually exist apart from another thing if we can clearly and distinctly conceive one without the other. For example, the notions of thought and extension can be clearly apprehended without one another.<sup>27</sup> Therefore, we are warranted to conclude – or judge – that extension is *really* distinct from thought.<sup>28</sup>

The intellect, however, has the capacity of consideration, according to Descartes. In that case, we produce abstract concepts from ideas of things. What actually happens is that we attend only to a part of the content of an idea without considering the remainder of that content.<sup>29</sup> For example, although the extended being which has a specific shape is part of the complete concept of that shape, we can think of the shape without considering the extended being having that shape.<sup>30</sup> Further, it can also be said that the notion of shape is contained in the innate idea of extension. We acquire it by limiting or determining extension.

This provides us with the means of recognizing the modal distinction. One can be sure that an item is modally distinct from a thing if, although it is possible to *consider* it apart from that which it modifies, the concept of that thing (which it modifies) cannot be clearly and distinctly *excluded* from the concept of that item. Thus, if we cannot clearly and distinctly think an item apart from another thing, then the distinction between them must be modal. The former is, then, a mode – or limitation – of the latter.<sup>31</sup> And the concept of the mode includes the concept of that which it modifies – shape cannot be fully understood without extension.

<sup>25</sup> Renault 1997 connects Descartes' notions of consideration and exclusion with the scholastic account. He even thinks that Descartes holds that consideration is part of simple apprehension (concepts) and exclusion part of judgement.

<sup>26</sup> See on this, Murdoch 1993 and Renault 1997. Descartes, Replies IV, AT VII 219-226, CSM II 155-159.

<sup>27</sup> Descartes asserts in a letter to Regius of June 1642 (III 567, CSMK 214) that we know that substances are really distinct because we can understand one without the other. Cf. *Correspondence*, to [Mesland], 2 May 1644, AT IV 120, CSMK 236.

<sup>28</sup> In *Principles* I §60, Descartes defines the real distinction as follows: 'a *real* distinction exists only between two or more substances; and we can perceive that two substances are really distinct simply from the fact that we can clearly and distinctly understand one apart from the other.' (AT VIIIa 28, CSM I 213)

<sup>29</sup> See Descartes, *Correspondence*, to Gibieuf, 19 January 1642, AT III 475, CSMK 202.

<sup>30</sup> See Descartes, *Principles* I §53, AT VIIa 25, CSM I 210-211.

<sup>31</sup> In *Principles* I §61, Descartes defines the modal distinction as follows: 'A *modal distinction* can be taken in two ways: firstly, as a distinction between a mode, properly so called, and the substance of which it is a mode; and secondly as a distinction between two modes of the same

Accordingly, the abstract concept that results from considering a mode without what it modifies is incomplete.<sup>32</sup> For also the thing it modifies belongs to its essence, and is therefore part of its definition.<sup>33</sup> For example, although it is possible to ‘understand’ (*intelligere*), although vaguely, the concept of motion without a concept of the body actually being in motion or to understand justice apart from considering the person who is just, these modes cannot be ‘fully understood’ (*complete intelligere*) without the concepts of the body or the person, respectively.<sup>34</sup> In contrast to abstract concepts of modes, the ideas of thought and extension are complete.<sup>35</sup> This is why one can be denied or excluded from the other. The relation between shape and extension, by contrast, is similar to the relation between the notion of a mountain and a valley. One cannot be thought, as a complete notion, without the other. Consequently, Descartes holds that if items are not really distinct, they are necessarily connected, both logically and ontologically.<sup>36</sup>

But there are also concepts that refer to items that are neither really nor modally distinct from one another. In the case of a distinction of reason, it is possible to have two notions, referring to the same thing, that do not refer to two different modes of that thing and that do not have the same definition. For example, it is possible to think separately of an uphill slope and a downhill slope. These are not modes of a hill, nor do they have the same definition. Still, they cannot exist separately, so have to be abstracted from one another. Moreover, in reality, they are also identical with the hill, and accordingly cannot be excluded from it. What is their ontological status? As for the uphill and downhill slope, they seem to be merely ways in which we consider a thing and thus to have no reality outside our mind, but seem to be purely conceptual. How does Descartes regard things that are conceptually distinct?

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substance.’ (AT VIIIa 29, CSM I 213-214) He later explains that the second type of modal distinction is in fact a real distinction between two modes. Descartes also explains that we can clearly understand a substance without some mode, while we cannot clearly understand that mode without the substance it modifies. However, as we have seen, it is possible to have an incomplete or abstract concept of that mode.

<sup>32</sup> See Descartes, *Correspondence*, to Gibieuf, 19 January 1642, AT III 474-478, CSMK 201-203.

<sup>33</sup> Descartes, *Correspondence*, to [De Launay], 22 July 1641, AT III 421: ‘Car en tout ce qui n'est séparé par abstraction par d'esprit, on y remarque nécessairement de la conionction & de l'union, lors qu'on les considere l'un avec l'autre ...’, CSMK 188.

<sup>34</sup> See Descartes, Replies I, AT VII 120-121: ‘Ita, exempli causa, inter motum et figuram ejusdem corporis distinctio est formalis, possumque optime motum intelligere absque figura, et figuram absque motu, et utrumque abstrahendo a corpore: sed non possum tamen complete intelligere motum absque re in qua sit motus, nec figuram etiam absque re in qua sit figura; nec denique fingere motum esse in re, in qua figura esse non possit, vel figuram in re motus incapaci. Nec eodem modo justitiam absque justo, vel misericordiam absque misericorde, intelligo; nec fingere licet illum eundem, qui est justus, non posse esse misericordem.’, CSM II 86.

<sup>35</sup> See on this, Descartes, Replies IV, AT VII 219-226, CSM II 155-159.

<sup>36</sup> Cf. Laporte 1940, 17-20.

This may become clearer if we move on to what Descartes calls ‘general attributes’, such as ‘substance’, ‘order’, and ‘duration’. He asserts that these general attributes are conceptually distinct from the thing that subsists, is ordered or persists in time. If what we are concerned with here are purely conceptual distinctions, these attributes are ways in which we consider (or classify) something, products of mental activity. However, Descartes denies that they are *purely* conceptual. Instead, they have a foundation in the thing. Hence, he refers to Scotus’ formal distinction (the *ratio ratiocinata*) to explain them.<sup>37</sup> These attributes seem to be, then, in Scotist terms, formalities of the things. If so, general attributes are not merely purely conceptual entities – mental beings (*entia rationis*) – but rather aspects of a thing that is known. Indeed, Descartes even rejects the possibility of the purely conceptual distinction (*ratio ratiocinans*), that is, the distinction that has no foundation in the thing (*fundamentum in re*).<sup>38</sup>

But we cannot draw the conclusion so easily that general attributes are real aspects of things. For there are also points at which Descartes identifies these attributes with ‘modes of thinking’ (*modi cogitandi*).<sup>39</sup> This suggests that they are only mental beings, considering that modes of thinking, as we have seen in Chapter 5, are thoughts only, particular states of the mind or forms of thought.

So, are (all) general attributes real aspects of the objects? There has been some discussion on this issue in the secondary literature, with some scholars defending the position that general attributes are real aspects of things, whereas others advance that they are purely conceptual items, occurring in the mind alone, and so just products of the mind’s activity.<sup>40</sup> This is a difficult problem in Descartes and I do not intend to

<sup>37</sup> See Descartes, *Correspondence*, to \*\*\*, 1645 or 1646, AT IV 350, CSMK 280-281. Cf. Gilson 1979, 86-87.

<sup>38</sup> See Descartes, *Correspondence*, to \*\*\*, 1645 or 1646, AT IV 349: ‘Atque ideo dico quidem figuram, et alios similes modos, distingui proprie modaliter a substantia cuius sunt modi, sed inter alia attributa esse minorem distinctionem quae, non nisi late usurpando nomen modi, vocari potest Modalis, ut illam vocavi in fine meae responsionis ad primas objectiones, et melius forte dicetur Formalis; sed ad confusionem evitandam, in prima parte meae Philosophiae, articulo 60, in qua de ipsa expresse ago, illam voco distinctionem Rationis (nempe rationis Ratiocinatae); et quia nullam agnosco rationis Ratiocinantis, hoc est, quae non habeat fundamentum in rebus (neque enim quicquam possumus cogitare absque fundamento), idcirco in illo articulo verbum Ratiocinatae non addo.’, CSMK 280.

<sup>39</sup> See Descartes, *Principles* I §55, AT VIIIa 26: ‘Duratio, ordo, et numerus, a nobis etiam distinctissime intelliguntur, si nullum iis substantiae conceptum affingamus, sed putemus durationem rei cuiusque esse tantum modum, sub quo concipimus rem istam, quatenus esse perseverat. Et similiter, nec ordinem nec numerum esse quicquam diversum a rebus ordinatis et numeratis, sed esse tantum modos, sub quibus illas consideramus.’, CSM I 211.

<sup>40</sup> See Skirry 2004 and Skirry 2005, Ch. 2, who argues that the conceptual distinction is ‘based on the non-identity of the definitions or essences of different attributes found in re in a way quite similar to Scotus’ formal distinction’ (p. 122). According to him, general attributes are unvarying properties or features of things, each of which has their own essence, although they are necessarily

conclusively solve it here. Instead, I will argue briefly for the position that Descartes' general attributes are real attributes – in fact, formalities – of things. At the same time, however, I admit that, at least, his presentation is ambiguous.

That Descartes makes a clear distinction between modes and general attributes is clear from the following quotation:

But existence, duration, size, number and all universals are not, it seems to me, modes in the strict sense; nor in this sense are justice, mercy, and so on modes in God. They are referred to by a broader term and called attributes, or modes of thinking (*modi cogitandi*), because we do indeed understand the essence of a thing in one way when we consider it in abstraction from whether it exists or not, and in a different way when we consider it as existing; but the thing itself cannot be outside our thought without its existence, or without its duration or size, and so on.<sup>41</sup>

Most strikingly, Descartes calls general attributes modes of thought (*modi cogitandi*) in this passage. He probably intends to underscore by this term that these attributes are not actually distinct in or from the object – they only become so by an act of consideration. This entails that an existing thing has always and necessarily both the attribute of existence and that of duration. Since they cannot be denied from the thing, they are unvarying properties of it. These attributes only become actually distinct for the mind who considers them in such an abstract way.

Although in a real thing essence and duration are identical and coincide with the thing itself, their concepts are clearly distinct in such a way that each general attribute has its own nature and definition when being considered in abstraction. For one can be understood, and defined, without the other, even though in reality they cannot exist separately and mutually imply each other. For example, essence and existence have non-identical definitions, even though they are one and the same in the thing. By comparison, modes, such as shape and motion, are particular states of a substance – and thus modally distinct from it. They are identical neither with other modes of the same thing nor with the thing they modify. Furthermore, unlike general attributes, modes are incidental to the thing – they can be absent. It is clear, then, that modes have reality outside the intellect. But what is the ontological status of general attributes?

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connected in the thing. They are only modes of thought (*modi cogitandi*) when they are abstractly considered. He takes issue with the position of Nolan 1998, who advances that general attributes are just modes of thinking. See also, Nolan 1997a and Nolan 1997b.

<sup>41</sup> Descartes, *Correspondence*, to \*\*\*, 1645 or 1646, AT IV 349: ‘Ita amor, odium, affirmatio, dubitatio, etc. sunt veri modi in mente; existentia autem, duratio, magnitudo, numerus, et universalia omnia, non mihi videntur esse modi proprie dicti, ut neque etiam in Deo justitia, misericordia, etc. Sed latiori vocabulo dicuntur Attributa, sive modi cogitandi, quia intelligimus quidem alio modo rei alicujus essentiam, abstrahendo ab hoc, quod existat, vel non existat, et alio, considerando ipsam ut existentem; sed res ipsa sine existentia sua esse non potest extra nostram cogitationem, ut neque etiam sine sua duratione, vel sua magnitudine, etc.’, CSMK 280.

Because Descartes calls the general attributes ‘modes of thinking’ (*modi cogitandi*), they seem to be just ways in which we consider things rather than real aspects of objects. But a closer reading of the texts reveals that this need not actually be Descartes’ position. First of all, the last sentence of the quotation appears to affirm that general attributes are real aspects of things. Moreover, in article 57 of the *Principles*, Descartes distinguishes attributes that are in things from those which are in thought alone.<sup>42</sup> Modes, as being particular states of a thing, are really in the thing. As for general attributes, Descartes discusses the notions of duration and time, asserting: ‘when time is distinguished from duration taken in the general sense and called the measure of movement, it is simply a mode of thought’.<sup>43</sup> This indicates that duration, which is a general attribute, is not merely a mode of thought but also a real aspect of things. Time, however, is more abstract than duration, at least because it depends on a comparison of motion of bodies – which is performed by the mind. Moreover, since immaterial things do not move (but do have duration), our concept of time, as a measure, does not depend on them, so is less general than duration. We may conclude then that perhaps even time is, eventually, a – more abstract and relative – formality of a thing, dependent on the movement (and duration) of certain bodies.

If this interpretation is correct, general attributes are real aspects of things. They are neither modally nor really distinct from it, but can only be conceptually distinguished from the thing itself.<sup>44</sup> They are ways in which we can consider things, having a foundation in the thing. In Scotist terminology, they are formalities of the thing, which can only be rationally distinguished from the things of which they are predicated. This is why Descartes calls it a conceptual distinction with a foundation in the thing (*ratio ratiocinata*).<sup>45</sup> However, Descartes’ use of the term mode of thinking does complicate this conclusion. It is very well possible that general attributes could be considered purely conceptual notions, which are related to other real aspects of the thing, thus giving it a foundation in the thing, as well. This is, in fact, how Geulincx explains it, as will be seen

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<sup>42</sup> See Descartes, *Principles* I §57, AT VIIIa 26-27, CSM I 212.

<sup>43</sup> Descartes, *Principles* I §57, AT VIIIa 27: ‘Ita, cum tempus a duratione generaliter sumpta distinguimus, dicimusque esse numerum motus, est tantum modus cogitandi ...’, CSM I 212.

<sup>44</sup> In *Principles* I §62, Descartes defines the conceptual distinction (*distinctio rationis*) as follows: ‘a conceptual distinction is a distinction between a substance and some attribute of that substance without which the substance is unintelligible (*intelligi non potest*); alternatively, it is a distinction between two such attributes of a single substance.’ (AT VIIIa 30, CSM I 214)

<sup>45</sup> Descartes, *Correspondence*, to \*\*\*, 1645 or 1646, AT IV 349: ‘... et melius forte dicetur Formalis; sed ad confusionem evitandam, in prima parte meae Philosophiae, articulo 60, in qua de ipsa expresse ago, illam voco distinctionem Rationis (nempe rationis Ratiocinatae) ...’, CSMK 280. In earlier writings, Descartes had denied that the modal distinction differed from the formal distinction (see Replies I, AT VII 120-121, CSM II 84-85). He corrects this in *Principles* I §62, AT VIIIa 30, CSM I 215.

below. As a result, the precise ontological status of general attributes is a moot point in Descartes.

#### *8.2.4 Geulincx' theory of abstraction*

Geulincx is deeply influenced by the scholastic theory of abstraction and distinction, as well as by Descartes' theory of the modal distinction and the general attributes as ways of considering things. Let us now consider Geulincx' theory in more detail, while focussing on the question whether consideration, as being an operation of the mind, yields new conceptual content. Does the act of consideration result in conceptual content that is produced by the intellect itself? In order to satisfactorily answer this question, I will consider Geulincx' account of the kinds of distinction, focusing on whether the intellect produces the conceptual content.

Geulincx distinguishes the real, modal and distinction of reason. Unlike Descartes, he extensively discusses the difference between the two types of distinction of reason: the formal distinction (*ratio ratiocinata*) and the purely conceptual distinction (*ratio ratiocinans*). It is instructive to consider which concepts belong to the former and which to the latter. Geulincx mentions that to affirm A of A ('A = A') requires a purely conceptual distinction; the object has to be thought twice – an act of repetition.<sup>46</sup> In that case, the distinction has no foundation in the thing.<sup>47</sup> But there are also things that are formally distinct, such as the distinction between an uphill slope (*acclive*) and a downhill slope (*declive*) or between a line and a body.<sup>48</sup> The latter distinction is actually a modal distinction, which Geulincx thus considers to be a kind of conceptual distinction. For both the formal and modal distinction, the referents of the concepts are already virtually distinct (*virtualiter diversa*) in the thing before we consider them in such a way.

Let us first discuss the formal distinction. The notion of an uphill slope and that of a downhill slope refer to the same hill. The operation of the mind by which such concepts are formed is called abstraction (*abstractionem*) or precision (*praecisionem*).<sup>49</sup> In such a way, an uphill slope is abstracted from a downhill slope. Likewise, the road from The Hague to Leiden differs formally from the road from Leiden to The Hague. Geulincx specifies that they only differ in our consideration (*consideratio*).<sup>50</sup> Although these items are one and the same thing, so that the distinction does not *actually* occur before the intellect produces (*fecit*) it, the distinction does have a foundation in the thing itself (*fundamentum in re ipsa*), for which reason they are called virtually distinct in the

<sup>46</sup> See Geulincx, *MP* II §6, II 255-256.

<sup>47</sup> Geulincx, *MP* II §6, II 256: '... haec enim ante accessum rationis nullum suppedant fundamentum distingendi, sed sola ratio seu cogitatio iis quasi extrinsecus affigit suam diversitatem.'

<sup>48</sup> See Geulincx, *MP* I §5, II 228-229.

<sup>49</sup> See Geulincx, *MP* I §5, II 228.

<sup>50</sup> Geulincx, *AL* I §62, III 402.

thing.<sup>51</sup> In turn, Geulincx explains this type of virtual distinction in a pragmatic sense.<sup>52</sup> For instance, it is harder to travel uphill than downhill, even though it concerns the same hill. As a result, the way in which we make use of a thing is the basis for the intellect to form a concept under which we conceive a thing. This implies that the concept is relative to us. And because Geulincx says that this concept is made (*fecit*) by the intellect, he holds that the conceptual content is produced entirely by ourselves. The concept does not come from outside the mind. Still, it is related to the external thing in some way. Geulincx explains that it is based on something in the thing, which he specifies as one of its modes. But the concept under which we conceive the thing is not that of the mode. Rather, it is *immediately* related to that mode. For example, Geulincx says that the notion of an uphill slope is based on the *mode* of an ascending slope (*ascensus*), which the hill has independently from our way of considering it. This slope can be considered by us either as an uphill or a downhill slope. Geulincx claims therefore that the formal distinction always relies on a mode of the thing. Accordingly, the formal distinction is always related to a modal distinction.<sup>53</sup>

Also universal or general notions are formed by making a formal distinction. What is common to many particulars is abstracted from them.<sup>54</sup> For example, the general notion of a brick is abstracted from singular bricks. This universal notion is also called an abstract concept (*conceptus praecisivus*). The act of abstraction consists in that the

<sup>51</sup> Geulincx, *MP* II §6, II 256: ‘... haec enim diversitatem aliquam ex re ipsa habent, unde ratio quidem ea diversa fecit, quandoquidem re ipsa non differant, sed ratio ratiocinata, et quae ante quam ipsa advenit, fundamentum aliquod supponit in re ipsa, unde diversitatem illam trahat. Hinc etiam quae ratione ratiocinata distinguunter, saepe dicuntur *virtualiter* diversa, quia nempe diversos usus praestant, ut proinde plurium rerum vice, etiam si plures res non sint, habere ea possit ...’

<sup>52</sup> Geulincx, *MP* I §5, II 228: ‘Cum vero intellectus noster rem quamlibet apprehenderit, ut in se simplicem, semper tamen invenit plura aliqua in ea consideranda, quae proinde consideratione sua, licet non re ipsa, in se diversa esse intelligit. [...] Agnoscimus etiam eo casu abstractionem et praecisionem, seu (ut Scholae loquuntur) conceptum praecisivum, qua inter ea, quae realiter eadem sunt, unum ab alio abstrahimus et praecidimus, ut in casu posito acclive a declivi dicitur; quae tunc etiam magis diversa nobis videntur, cum sub diversa sua consideratione, diversos usus in communi vita suppeditant.’

<sup>53</sup> Geulincx, *AL* I §62, III 403-404: ‘... distinctio rationis semper respicit aliquam distinctionem modalem. Oportet enim fundamentum esse in re hujus distinctionis (unde et Scholae distinguunt inter distinctionem rationis ratiocinatae, et distinctionem rationis ratiocinantis; quod illa cum fundamento in re sit, haec sine tali fundamento); hoc autem fundamentum sumitur ex aliqua distinctione modali. Sic acclive atque declive distinguimus penes ascensum et descensum; puncta, lineas, superficies, etc. penes tactum terminationemque corporis, quae sine motu non intelliguntur. Atque ita de reliquis semper mentem ad modos aliquos reales reflectimus, quotiescumque distinctionem rationis ratiocinatae exercemus, seu quadam consideratione nostra distinguimus.’

<sup>54</sup> See Geulincx, *MP* I §8, II 235-236.

intellect considers a particular brick without considering its particular aspects, such as its colour and the space it occupies. The abstract concept of brick that is thus formed is apt to be predicated of all individual bricks. According to Geulincx, this predication is legitimate because the universal concept of brick denotes a real aspect of singular bricks – which is why abstraction does not lie. The general concept actually has some reality apart from our consideration, and can therefore be legitimately predicated of particular bricks.<sup>55</sup> As a result, Geulincx is not a nominalist as to universal notions, but takes a position similar to that of Duns Scotus – universals are real aspects of singular things.

But what about the origin of the content of these universal notions? Although the universal concept is produced by an act of abstraction, it is unclear whether this amounts to the same as bringing something under some concept based on use, such as that of the uphill and downhill slope. Therefore, it is not clear whether the content of the universal notions are entirely produced by the intellect or obtained from the idea of the object. At any rate, Geulincx does not elaborate on this, so that it is best to leave this issue aside and turn to the purely conceptual distinction.

Thus, in Geulincx' view, formally distinct items are not real aspects of a thing, but are just *immediately* related to modes. This is precisely the point on which they differ from purely conceptual concepts. According to Geulincx, there are also many concepts we apply to things that are neither aspects of things nor immediately related to them. They are *only* products of mental acts or modes of thinking. One of these products is the distinction between whole and part. Whole and part are not aspects of things, have no foundation in the thing (*fundamentum in re*), 'are not in the nature of things' (*non esse in rerum natura*), but are, when predicated of those things, extrinsic denominations.<sup>56</sup> Extrinsic denomination means that the predicate which is said of a subject does not refer to a real attribute of that subject. There is nothing in the subject that corresponds to it, but the predicate refers only to a concept by which we grasp the thing. For example, the name 'Peter' is not a real aspect of Peter, but merely a name to refer to Peter.

Geulincx argues that not only proper nouns but also notions like being (*ens*) and substance, as well as colours and other species, are just extrinsic denominations when said of some object. These notions are not abstracted from these objects, such as the concepts of line and point. Nor are they formally distinct in the objects, such as an

<sup>55</sup> Geulincx, *MP* I §8, II 236: 'Quoniam vero *abstrahentium non est mendacium* (ut Aristoteles optime hic dicit), *universalia in rerum natura esse concedendum est*. Cum enim abstraximus rite, aliquid abstraximus, et hoc aliquid a nobis et cogitationibus nostris independens est, ut ex exemplo lateris de quo nunc agebamus, manifestum est. Nihilominus hoc etiam verum est, *universalia ut sic non esse in rerum natura*, seu non ita abstracta et praecisa in se ipsis sunt ut nos illa mentis nostrae opera praecidimus; quod per se manifestum est, cum praecisio illa, utpote modus aliquis cogitandi ac dicendi noster, nihil in re ipsa mutare possit; nam *propter nostrum dicere nihil mutatur in re*, ut habet oraculum Sapientiae.'

<sup>56</sup> See Geulincx, *Logic* I, Sect. 2, Ch. 3, §1, I 208.

uphill slope and a downhill slope, as being ways of considering some mode of the thing.<sup>57</sup> Concepts like being (*ens*) and part and whole, by contrast, are merely modes of thinking (*modi cogitandi*).<sup>58</sup> They do not represent anything in external reality, nor are they immediately linked to some mode; they are just features – modes – of our mind. They are ways by which we conceive objects whose ‘formal reason resides in our intellect and mode of thinking’.<sup>59</sup> Also concepts referring to sensory cognitions are not abstracted from bodies, so that if they are predicated of a body, that body is extrinsically denominated as well.<sup>60</sup> For example, saying that an apple is red is nothing other than applying the extrinsic denomination – or notional concept – of ‘red’ to an apple. This means that red is not an aspect or attribute of the apple, but just a feature of our mind – of our perception. Likewise, some unique properties of body, such as palpability, are only extrinsic denominations. Thus, we are dealing here with purely conceptual distinctions and mental constructions. These concepts are entirely produced by our mind, which is also the reason why they are completely transparent.

Geulincx, however, insists that every extrinsic denomination involves an intrinsic attribute – a mode – of the thing that allows us to consider the object in such a way.<sup>61</sup> This may be Geulincx’ explanation of Descartes’ denial of the purely conceptual distinction. The apple, for instance, does have some structure that leads, in combination with our sense organs, to an image in our brains which God uses to produce the perception of red in our mind. But unlike a formally distinct item, the extrinsic denomination does not *immediately* refer to a mode of the object. Red is not a way of considering the structure (the mode) that partially causes the perception of red. Indeed, it does not immediately refer to a mode of the apple at all; it is not a way in which we consider that mode. In short, the major difference between a formally distinct item and an extrinsic denomination is that the former is immediately based on a mode of the thing, which we consider in some way, while the latter is not immediately based on anything in the thing. They converge, nonetheless, in that they are both produced by mental activity.

In this regard, Geulincx parts company with Descartes, who is not really interested in the purely conceptual distinction, and who, on my reading, holds that general

<sup>57</sup> See Geulincx, *MP I*, §1, II 212.

<sup>58</sup> Geulincx, *AL I* §57, III 398: ‘*Alia vero in nostra tantum cogitatione*] Ut color, calor, et reliquae patibiles qualitates (hae enim sunt in sensu et non in rebus, quas extrinsecus denominant), item genus, subjectum, praedicatum, proprietas (haec enim sunt in intellectu, et non in rebus, quas extrinsecus denominant).’

<sup>59</sup> Geulincx, *MP I*, §1, II 212: ‘... sic etiam ens dicitur, quod certo quadammodo apprehendendi intellectus nostri arripimus quasi, nulla ei quod arreptum est formali ratione talis denominationis competente, sed haec formalis ratio residet in intellectu et modo cogitandi nostro.’ Cf. *AL I* §57, III 398.

<sup>60</sup> See Geulincx, *AL I* §69, III 410.

<sup>61</sup> See Geulincx, *AL I* §59, III 399; *AL I* §61, III 401-402.

attributes are real aspects of things. Nor does he suggest that the intellect may produce the conceptual content of these notions. It now remains to be seen what Geulincx thinks of the conceptual content of concepts of modes.

Because Geulincx includes the distinction between the modes of line and body among his examples of the formal distinction, it is apparent that he regards the modal distinction as some kind of formal distinction and thus a distinction of reason. In the thing modes are only virtually distinct. However, modes are particular states of a thing and as such not merely ways in which we consider it. They have more reality than that. Neither is a mode identical with the thing. Further, unlike items that are formally distinct, the concept of the mode is intrinsically related to what it modifies. Following Descartes, Geulincx concludes from this that if the abstracted concepts do not involve (*consideratio*) each other, such as an uphill and downhill slope, then none of the concepts refers to a mode.<sup>62</sup> A mode, by contrast, is something that cannot be understood without that which it modifies.<sup>63</sup> For instance, a line cannot be fully understood without a surface, since length is inconceivable without width. He in turn explains that we are absolutely certain of this because we cannot clearly conceive it otherwise, and also know with absolute certainty – through *conscientia* – that they cannot be separated. With regard to the external thing, modes are limitations of it.

Because modes follow from something apart from our intellectual activity, their ontological status differs completely from formally distinct items. Nonetheless, we can abstract a mode from the thing it modifies. Geulincx stresses that this is precisely how the human mind considers the extended thing. It is now needed to further explicate this theory of modal abstraction.<sup>64</sup> In order to understand it, it is to be remarked first that

<sup>62</sup> See Geulincx, *MP* II §1, II 243-244: ‘Ut igitur notionem aliquam modi demus, recurrendum est ad abstractionem mentis; hac enim abstractione instituta, siquidem quod abstractum est, quodque residuum, mutuas non ingrediatur considerationes, seu potius neutrum ad alterius pertineat considerationem, neutrum etiam alterius modus erit. V. g. acclive praescinditur a declivi; neutrum sine altero cogitari potest (hoc est in confesso); neutrum pertinet etiam ad alterius considerationem, nam in acclivi nulla est consideratio declivis et contra, sed sunt hae considerationes inter se quodammodo appositae; hinc igitur ex abstractione ista modum non nanciscimur, neque enim acclive declivis modus, nec hoc illius modus est. Instituta vero abstractione qua quod abstractum est ad residui pertineat considerationem, modus hoc ipso inventus est; nam tale abstractum talis residui censemur modus. Sic longum est modus lati ...’

<sup>63</sup> Geulincx, *MP* II §1, II 242: ‘... modum esse id, quod sine altero intelligi non potest, cum alterum posset sine hoc; ut motus intelligi non potest sine spatio, potest spatium sine motu.’ Cf. Geulincx, *AL* I §61, I 401: ‘... inter modaliter distincta, nos modum agnoscere non mere privatione aut negatione cognitionis, qua non cognoscamus illum, sine suo modificato, sed positiva cognitione, qua clarissime videmus, illum sicut sine modificato suo concipi non potest a nobis, ita nec sine illo in se ipso esse posse.’

<sup>64</sup> Geulincx presents this theory of abstraction at the following places in his work: *MV* II Sc. 5-8, II 164-174, Ann. 273-274, 276, 278-280; *PV* I, Prop. 5-7, II 374-378, Ann. II 454; *MP* I, §8, II 236-237; *MP* II §1, 243-244; *AL* II §20, III 435-437; *Phys. Disp.* I, §7-8, II 490-491. A similar theory of

the relation between a mode and that which it modifies is not a part-whole relation.<sup>65</sup> A point is not a part of a line, nor is a line a part of a surface. Rather, a point is a limitation or determination of a line and a line a limitation of a surface. This is clear from the fact that we never obtain a point, line or surface by dividing a body. Likewise, a surface is a boundary (*terminus*) of a body rather than a part of it. Further, we cannot separate a point from a line, which would be possible if the point is a part of a line. Instead, the correct way to express the relation between line and point is to say that a point is *in* a line, a line *in* a surface, a surface *in* a particular body, and, finally, a particular body *in* body in general (infinite extension). Put differently, all of them are limitations of infinite extension. Accordingly, body in general – the infinite extended being – is not a whole (*totum*), because it is an absolute unity, while a whole is composed of parts.<sup>66</sup> Instead, a whole is, as we have seen in Chapter 4, identical with many things taken together (*simulsumptio*) by an act of our intellect. Thus, wholes and parts are constituted by acts of our mind alone. They are, therefore, extrinsic denominations when predicated of an object.

Further, Geulincx argues that a particular body is a mode of extension (or body in general) and is partially constituted by an act of our mind – an act of consideration. Although the latter theory is difficult to comprehend, it is crucial for Geulincx and needs therefore to be discussed. As said, a particular mode is *in* body in general rather than a part of it. This implies that particular bodies are not individual things, in the strict sense of items that can exist separately. Only body in general – the infinitely extended being – is an individual thing (*individua res*).<sup>67</sup> Geulincx infers from this that particular bodies are obtained by an act of abstraction (*per determinationem mentis seu abstractionem et praecisionem*).<sup>68</sup> Because they are not actually distinct items outside thought, the ‘actualisation’ of particular bodies requires the performance of an act of abstraction by our intellect. The intellect always considers a finite aspect of extension in such a way that they become particular things for our consciousness. In reality, however, there are no such items. Particular bodies, for example, do not exist in themselves as particular things, but only for the mind that perceives them. Still, they have some sort of reality apart from our consideration. They are not just mental constructs (*entia rationis*) – we are not dealing with a purely conceptual distinction here. Nor are they merely ways in which we consider body in general. Rather, they are contained in extension.

So, particular bodies are abstractions, because outside our intellect they are not actually distinct from the thing of which they are modes. They are not concrete

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abstraction can be found in the *Port-Royal Logic*, in a separate chapter on abstract knowledge. See Arnauld 1996, *Port-Royal Logic*, Ch. 5, titled ‘Ideas considered according to their composition or simplicity, including a discussion of knowledge by abstraction or specification.’

<sup>65</sup> See Geulincx, *AL* II §20, III 435–436.

<sup>66</sup> See Geulincx, *MV* II Ann., Sc. 6, 273.

<sup>67</sup> See Geulincx, *MV* II, Sc. 6, II 167–168.

<sup>68</sup> See Geulincx, *PV* I, Prop. 7, Ann., II 454: ‘Pars corporis seu corpus particulare non est aliud quam extensio ope mentis restricta et limitata ...’

particulars, but just *aliquid rei*. This implies that they exist as particular things only for the mind that conceives them in such an abstract way. Our concepts of these modes are, consequently, abstract notions.<sup>69</sup> Geulincx explains that we *have to* consider reality abstractly, as if it really consists of (a collection of) separate things, which are in fact only modes: this is our way of apprehending (infinite) reality – the infinitely extended being. Because we are finite, we cannot consider reality otherwise than abstractly. In fact, however, particular bodies are not really distinguished from one another at all. There exists only one simple body, which is infinitely extended.<sup>70</sup>

As a further result, our notion of a body in general – infinite extension – is not obtained by abstraction from particular bodies. It is the other way round. As has been emphasized, particular bodies are abstractions, made by our mind, from body in general – the concept of which refers to a concrete particular.<sup>71</sup> Geulincx adds that the same holds true of the mind. Finite minds are not separate entities or things either. Rather, they come about only by abstraction from the infinite mind – that is, God.<sup>72</sup> Accordingly, our minds are ‘something of mind’ (*aliquid mentis*).<sup>73</sup> Because particular minds and particular bodies are modes and the relation between the mode and that which it modifies is not a part-whole relationship, modes do not affect that which it modifies.<sup>74</sup> God and body in general, the only two real things, remain always the same, considering that abstraction takes place in a mind alone.

<sup>69</sup> Geulincx, *MV* II Ann., Sc. 8, II 275: ‘... aliquando per actum, ut cum lineam dicimus, superficiem, puncta, et particularia corpora; haec enim talia sunt non in se, sed ratione certi modi cogitationis nostrae, quem praecisionem et abstractionem vocamus, quo de facto seu actualiter rem aliquam certam arripiamus seu apprehendamus.’

<sup>70</sup> Geulincx, *MP* I, §8, II 237: ‘... particularia ista corpora reapse non distinguuntur inter se, reapse sunt unum illud simplexque corpus, una illa atque individua extensio, quae quaquaversus in infinitum procurrerit ...’

<sup>71</sup> Geulincx, *MP* I, §8, II 237: ‘... corpora particularia mentis opera abstracta sunt a corpore simpliciter dicto; hoc vero corpus simpliciter dictum unum, simplex, individuum, et singulare est ...’

<sup>72</sup> Geulincx, *MP* I, §8, II 237: ‘Similem errorem errant [= the scholastics] in mente; nam et haec cum simpliciter dicitur non universale quoddam est, sed unus ille et singularis Deus prorsus individuus, et supra omne quod dici potest unus; mensque illa non abstrahitur ab individuis mentibus, sed contra hae abstractae sunt ab illa, sicut et de corpore diximus.’ Geulincx in turn refers to Pythagoras as an example of a philosopher who also taught this philosophy. See also *MV* I Ann., Sc. 6, II 269; *MV* III Ann., Sc. 7, II 293; *MV* III Ann., Sc. 9, II 298-299.

<sup>73</sup> Geulincx, *MV* III Ann., Sc. 2, II 286-287: ‘Breviter, mentes creatae non sunt mentes, sed aliquid mentis; sicut corpora particularia non sunt corpora, sed aliquid corporis.’

<sup>74</sup> Geulincx, *MP* I, §8, II 238: ‘Quod enim dicit, distractione humanorum animorum discripi ac dilacerari Deum, non magis hoc verum est quam, praecisione corporum particularum, et superficierum, ac linearum, corpus simpliciter dictum discripi; abstractio enim illa et praecisio mente perficitur, quae rem ipsam quam praecidit abstrahitque, integrum illabatamque relinquit.’ Cf. Geulincx, *AL* I §22, III 382-383.

But what does this theory of abstraction mean for the origin of our concepts of modes? This is difficult to determine. At any rate, mathematical notions are not constructed by the intellect, as with Vico. It is not the case that a line is constructed from a moving point, a surface from a moving line, and so on.<sup>75</sup> It is precisely the other way round. By determining extension, we acquire the notion of a particular body, surface, line, and point. By limitation we conceive of the notion of a triangle as a particular type of surface. So, it is unlikely that the mental activity involved in modal abstraction produces the conceptual content. Rather, the content is already contained in the notion of extension. On the other hand, these concepts are only acquired by an act of consideration, and therefore involve mental activity. The intellect operates on the concept of extension, thus producing abstract concepts of modes. One of these modes is motion.

What, then, is the status of a property such as movability? Geulincx makes it clear that this property concerns only particular bodies. Body in general does not move. Motion is nothing other than the relation between two particular bodies, considered as distinct parts. As we have seen, part and whole are products of our intellect alone. As a result, a notion like movability exists only for a mind that considers reality abstractly, as consisting of parts and wholes. Accordingly, Geulincx holds that the property of divisibility precedes movability.<sup>76</sup> Consequently, the concept of movability requires mental acts, and the conceptual content is thus in part produced by the intellect. And it is also an abstract notion, that is, of reality as it appears to us.

That concepts of formally, purely conceptually and modally distinct items are products of mental activity becomes even clearer from Geulincx' insistence on the chasm between the real distinction on the one hand, and the three kinds of distinction of reason on the other hand. This fundamental division has all to do with mental activity and consideration, and has deep epistemological and ontological consequences. Geulincx explains that this division accords with that between thinking (*cogitatio*) and consideration (*consideratio*). Unlike consideration, thinking has regard to reality. It concerns objective knowledge, knowledge of reality unaffected by mental activity. Consideration, by contrast, concerns our perspective on reality, which does not correspond to it – it yields abstract knowledge. More specifically, Geulincx argues that the real distinction, by which thought and extension are distinguished, concerns thinking (*cogitatio*), while all other distinctions are types of consideration.<sup>77</sup> Because our mind is transparent to us, so that we know all our acts intuitively, we are always aware whether we are making an abstraction, and can thus be certain if the concept does or does not relate to reality per se.<sup>78</sup>

<sup>75</sup> See Geulincx *MV* II, Sc. 8, II 172.

<sup>76</sup> See Geulincx, *MV* II, Sc. 9-10, II 174-176.

<sup>77</sup> See Geulincx, *AL* I §62, III 403.

<sup>78</sup> See Geulincx, *PV* I, Prop 7, II 377: ‘Quod sit abstrahere seu praecidere, non debet dici; nam abstractio seu praecisio est actus nostrae mentis, seu aliquid quod nos ipsi facimus, quod proinde

Geulincx explains the difference between thinking (*cogitatio*) and consideration in more detail in the chapter on relations of his *Peripatetic metaphysics*. As explained in Chapter 4, he distinguishes the following four types of relation: 1) things may be identical; 2) completely different; 3) have parts in common; 4) one is part of the other.<sup>79</sup> It was argued in Chapter 4 that only the last class is important for scientific assertions. From the perspective of this chapter, however, we have to regard this classification otherwise. It is clear that the first class ('A = A') refers to the purely conceptual distinction (the act of repetition), so that this distinction occurs in the mind alone. Geulincx in turn contends that the second class (things which are completely different) does not involve any mental activity. In other words, we are dealing here with separation or exclusion rather than consideration.<sup>80</sup> Because our mind is transparent to us, we are absolute certain that we do not cause this distinction ourselves. There is no mental activity involved in forming such a concept. As a result, we are allowed to conclude that the distinction is real and pertains to reality. The third class in which two things have parts in common, by contrast, involves several mental operations. For example, acquiring the common part of AB and BC requires first the act of repetition (*repetitio*) of B while also including the operations of taking together (*simul-sumptio*) A and B and taking together B and C. These three operations are needed to acquire the common part of these two things, which are themselves composed of at least two parts. Finally, two mental operations are needed for the last class, the superset-subset relation: when A is part of AB, the intellect has to repeat (*repetitio*) A and take together (*simul-sumptio*) A and B. In short, all distinctions between things apart from the real distinction or exclusion include acts of our mind.<sup>81</sup> The deeper reason for this is that things are unities outside our intellect; all distinctions or discernment of things in that unity requires mental operations of us. All these mental operations and their products do not correspond to reality, but are merely mental constructs. Most likely, it is precisely this feature that enables us to have scientific knowledge of external objects as they appear to us, a point I will further examine in the next section.

To conclude, it is now clear that the content of concepts of formally distinct items and extrinsic denominations are completely produced by our intellect. This entails that they are completely transparent to the mind – they are scientifically adequate but abstract notions. This is a point on which Geulincx strongly deviates from Scotus. For Scotus, formally distinct items are formalities and as such real attributes of things. He calls them therefore *aliquid rei*. Geulincx limits this term to modes of things. Only modes are real attributes of things. It is, therefore, more difficult to determine whether

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ipsa conscientia atque intima experientia nobis est notissimum.' The *notae* of the act of abstraction are terms such as *quatenus* and *in quantum*.

<sup>79</sup> See Chapter 4.2.2.

<sup>80</sup> Geulincx, *MP* II §6, II 256: 'Patet secundo, tres istarum combinationum pertinere ad operationem mentis, unam tantum esse quae pertinere ad rem ipsam videatur ...'

<sup>81</sup> Cf. Geulincx, *AL* I §60, III 399-400.

our notions of modes are also constituted by our intellect. In a sense, these notions are produced by the mind, through an act of consideration, that is, limitation or determination. What is more, they are also abstract. But then again, they are already contained in and follow from (the concept of) a thing or other modes. This makes it difficult to be conclusive on the precise status of our concepts of modes, albeit I incline to regard them as largely products of mental activity, considering that they are abstractly conceived. At any rate, at several points, Geulincx stresses the role of the intellect in the production of concept of modes. They are abstract concepts and accordingly products of acts of consideration.

In comparison to Descartes, Geulincx emphasizes the fact that the notions acquired by a formal distinction are produced by mental activity. In Descartes, this is rather unclear. On the one hand he calls these notions modes of thinking, but on the other hand he appears he sees them as real aspects of things. At any rate, Descartes does not specify that it is our intellect that produces them. Geulincx does just that. His view of the abstract concepts of modes, by contrast, certainly comes from Descartes, albeit his emphasis on the activity of the intellect in producing concepts of modes is foreign to Descartes. It attests, again, of Geulincx' idiosyncratic theory of cognition and intellectual activity.

### **8.3 The precise meaning and extent of *doctrina***

A striking conclusion from the preceding section must be that most of our scientific knowledge of reality is abstract and thus coincides with *doctrina*, according to Geulincx. Because virtually all scientific knowledge concerns parts and wholes, and involves conceptual distinctions and mental constructs, it only amounts to doctrine. And because scientific knowledge concerns properties, most, if not all, of our concepts of properties are abstract, involving mental activity. Let us elaborate on this.

Particularly the theory of modal abstraction has wide ramifications for the sciences. It makes it unequivocally clear that most of the objects of science are abstract. This does not only hold for mathematics, but also for natural philosophy. As for the subject matter of mathematics, Geulincx claims that body in general does not have dimensions. Consequently, geometry is not concerned with an abstraction from a real, non-abstract thing. Instead, dimensions are modes of particular bodies, which are already abstractions, and in turn are obtained by abstraction from them.<sup>82</sup> This is clear from the fact that the dimensions of particular bodies are not really distinct: they mutually imply each other. As we have seen, it is inconceivable for a line not to have width. Geometry, then, is concerned with an abstraction of an abstraction. This account of abstraction entails that not only geometry but also physics is a science that is concerned with mental

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<sup>82</sup> See Geulincx, *MV II*, Sc. 7, II 170-171.

abstractions.<sup>83</sup> In addition, according to Geulincx, space, a central concept in physics, is a secondary notion, which is, consequently, produced by our intellect.<sup>84</sup> Physics is, accordingly, an abstract science, which is not concerned with reality as such, but with reality as it appears to us. In other words, the objects of physics are partially constituted by us.

Still, the parts discussed in physics – particular bodies – are modes of extension, so they have some reality apart from our consideration.<sup>85</sup> Hence, Geulincx affirms that ‘abstraction does not lie’.<sup>86</sup> It is, therefore, to be emphasized that doctrine does concern external reality. Not only does this hold true of properties that refer to modes, but also for other properties. For doctrine is knowledge of reality *as it appears to us*. But how is this possible and what does this exactly mean?

In Chapter 6, it was shown that Geulincx holds that scientific knowledge (*scientia*) is knowledge of why a property belongs to a subject. Put otherwise, it is knowledge of how a property comes about – which is what Geulincx calls its *modus*. This explains why

<sup>83</sup> See on geometry, Geulincx, *MV II*, Sc. 7, II 171, and for physics, *PV I Ann.*, Prop. 7, 454: ‘Physicus non indiget consideratione corporis, sed partium corporis; seu ad Physicam non pertinet considerare corpus universale, sed tantum corpora particularia.’

<sup>84</sup> See Geulincx, *MV II Ann.*, Sc. 5, II 272: ‘NB. Spatium non dicit rem prout est in se, sed prout a nobis consideratur; estque sic notio secunda, non prima.’ Also in the following quotation, Geulincx emphasizes that our knowledge of modes is abstract: ‘Nota, voces aliquas esse, quae significant res ut sunt in se, independenter a mentis nostrae operatione. Inter tales est ista vox *corpus*; significant enim illam rem, illam extensionem, quam corpus vocamus, ut in se res illa est, seclusis modis cogitationum nostrarum, quibus circa rem illam versamur. Sunt vero etiam voces quam plurimae quae significant rem non simpliciter, sed ut substantem modis nostrarum cogitationum, quibus, dum circa illam versamur, afficiuntur. Idque aliquando per potentiam, ut cum bonum quid aut malum, sapidum aut insipidum, fragrans aut foetens, similiaque ad sensus et passiones nostras pertinentia effamur; haec enim talia sunt non in se, sed nos, dum iis utimur, hoc aut illo modo afficiunt; - aliquando per actum, ut cum lineam dicimus, superficiem, puncta, et particularia corpora; haec enim talia sunt non in se, sed ratione certi modi cogitationis nostrae, quem praecisionem et abstractionem vocamus, quo de facto seu actualiter rem aliquam certam arripiamus seu apprehendamus. Nam si rem illam, quam lineam esse dixisti, non praecise ut ea voce significatur, sed ut in se est, consideres; videbis quidem longam esse, sed hoc ipso etiam latam esse debere intelligis, itemque hoc ipso crassam, et tandem in infinitum quaquaversus extensam.’ (*MV II*, Sc. 9 *Ann.*, II 275) See on the secondary notion, Chapter 6.3.2.

<sup>85</sup> Geulincx, *MV II*, Sc. 6, II 169: ‘... *Abstrahentium non est mendacium*, seu, qui abstrahunt, non fingunt, non mentiuntur; res enim quam abstrahunt, revere est, etiamsi non sub illo abstractionis statu sit.’; *MV II*, Sc. 7, II 173: ‘Nota vero, quod et antehac diximus, *Abstrahentium non esse mendacium*; unde non sunt figmenta, non entia rationis, non chimaerae, ut quidam non satis Philosophiae consulti nimis temere loquuntur pronuntiantque, sed corpora particularia sunt aliquid ipsius corporis simpliciter dicti, sic et revere superficies, lineae atque puncta sunt aliquid extra nos in corpore particulariter sumpto; cum vero non sint partes, ut ex dictis patet, et adhuc magis patebit §. Sequenti, restat, ut *modos esse dicamus*.’ Cf. Geulincx, *PV I*, Prop. 7, II 377-378.

<sup>86</sup> Cf. Geulincx, *MV II Ann.*, Sc. 8, II 276.

we can have scientific knowledge of properties and what their epistemic status is. Scientific knowledge of properties is possible precisely because these are constructed by our intellect. This entails that we know how they come about – they are completely transparent to us. But it is, at the same time, also scientific knowledge of an external object, such as body in general. This is possible because we have access to the idea of body – that is, the idea of extension. Extension is the primary attribute of body in general, the extended being, and we are acquainted with it through intuitive reason – *intelligentia*. Scientific knowledge means that we in turn can prove properties of body, such as the notion that body is divisible. Although the concept of divisibility is constructed by our intellect, extension is presupposed by it. The concept of divisibility is impossible to construct without having the notion of extension. Only extended beings can be divided. As a result, the notion of divisibility is necessarily connected to – or contained in – the concept of extension. It is one of its – relative – properties.

Apart from an idea of a thing, scientific knowledge can also be had from subjects that are secondary notions.<sup>87</sup> These notions do not point out what reality is like. Some of them, however, may nonetheless be connected to reality in some way. For instance, an important secondary notion in Geulincx' philosophy is that of the human being, that is, the notion of man as a unity of mind and body. In Geulincx' view, it is not correct to claim that mind and body are actually, in reality, united. Still, it is a very useful concept in some sciences. We can in turn prove properties of this mental construct. These properties are used in ethics or other practical disciplines. For example, it is important for Geulincx to prove that it is God who has made us human beings, a property which he proves in his metaphysics, because, in ethics, some duties follow from this property. Moreover, it is even possible to prove properties from subjects that have no connection with external reality at all, such as the notions of good and evil, which are indispensable in ethics as well.<sup>88</sup>

I do not want to discuss here the status of sciences such as metaphysics, logic and ethics, but will postpone that issue until the next chapter. It is clear, at any rate, that subjects of scientific proofs may either be ideas – representing external objects – or secondary notions, that is, mental constructs. Moreover, it is now also clear that not only properties that are related to modes, such as movability, but also formally distinct notions and extrinsic denominations are properties. Examples of the last category are notions such as the conceivability and divisibility of body. All these notions need either secondary notions or ideas, and all involve mental activity.

It is precisely mental activity that enables us to have scientific knowledge. If Geulincx is an adherent of the verum-factum theory, and everything points in that direction, then knowledge is true if what is known is somehow produced by the mind. In the case of *doctrina*, the properties are constituted by acts of our mind. Geulincx says

<sup>87</sup> See on the secondary notion, Chapter 6.3.2.

<sup>88</sup> See Geulincx, *MP Intr.*, §2, II 205-206. Cf. *Ethics IV*, §5-8, III 99-103.

that we know how these properties come about – their way of being or *modus*.<sup>89</sup> Geulincx can maintain this by arguing that the mind has complete and intuitive knowledge of its own acts and the products of these acts. Because they are acts, the knowledge of them is also an activity, consisting in complete consciousness of them.

But this type of knowledge of our own acts does not amount to knowledge of external reality as it is in itself. As will be seen in the next chapter, Geulincx denies explicitly that we can have wisdom, that is, knowledge of external things as they are in themselves. This entails that we can only have abstract scientific knowledge – doctrine – of external objects. His point is that as long as we bear in mind that doctrine is abstract knowledge and therefore do not judge that our scientific knowledge of reality conforms with it, we do not fall into error. This is, in fact, the same solution as Aquinas opts for to explain why abstraction does not lie. It is also in agreement with the Cartesian theory of judgement, as is clear from Chapter 2.

There is, however, a question that crops up. How can Geulincx maintain that it is impossible to scientifically know reality while we do have access to ideas – representing it? What is more, Geulincx affirms that we know with certainty that there is an infinite extended being and that God exists, and that thought cannot be reduced to extension because both concepts can be denied from one another. These seem to be scientific assertions about reality per se. The next chapter deals extensively with this question.

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<sup>89</sup> See Chapter 6.2.5.



PART IV – THOUGHT AND REALITY: STRUCTURES OF  
INTELLIGIBILITY



## CHAPTER NINE

# GENERAL ONTOLOGICAL NOTIONS AND INTELLIGIBILITY

### Introduction

As was argued in previous chapters, in Geulincx' view philosophy is the search for wisdom, which in his view means knowledge of things as they are in themselves (*ut in se sunt*).<sup>1</sup> Human beings cannot obtain this type of knowledge, according to Geulincx. That is precisely the point of the following quotation:

We should not consider (*considerare*) things in so far as (*prout*) they are sensible (that is, under the species in which they come in sense); nor as intelligible (that is, under the mode by which we think them). But we cannot consider them as they are in themselves (*ut sunt in se*); from which we see our great imperfection. Only one thing remains to be done (what we both can and must do), that, whenever we apprehend a thing under any mode of thinking (what we indeed always do, nor can we otherwise do as long as we are human beings), we always keep in mind by a judgement of the mind that the thing is not in itself as it is apprehended by us. Although we always attribute (*tribuamus*) the phantasms of sense and intellect to the things themselves, still there is something divine in us, which always tells us that it is not the case; and in this alone consists our wisdom (*sapientia*), so far as we are human beings.<sup>2</sup>

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<sup>1</sup> See on this traditional notion of wisdom, Chapter 3.1.2/3.2.3; and specifically for Geulincx, Chapter 6.2.6.

<sup>2</sup> Geulincx, *MP* Intr. Ann., §1, II 300-301: 'Nos non debemus res considerare prout sunt sensibiles (id est, sub certa specie incurront in sensum); neque ut sunt intelligibiles (id est, sub certo modo a nobis cogitantur). Sed ut sunt in se, non possumus eas considerare; unde videmus magnam nostram imperfectionem. Hoc unum igitur restat nobis faciendum (quod et possumus et debemus facere), ut judicio mentis, quotiescumque rem aliquam sub modo aliquo cogitationis nostra apprehendimus (quod equidem semper facimus, nec possumus aliter dum homines sumus), semper hoc teneamus, rem non esse ita in se, ut apprehenditur a nobis. Etiamsi nos semper phasmatum sensus et intellectus ipsis rebus tribuamus; tamen est aliiquid divinum in nobis, quod semper dicit nobis, non esse sic; et in hoc unico consistit nostra, quatenus homines sumus, sapientia.'

So, Geulincx insists that it is impossible to know external objects other than by our modes of thinking. What he means is that external objects are intelligible to us only in virtue of our forms of understanding – that is, in virtue of our conceptualizing them. As a result, human wisdom is limited to the insight that the things themselves are not invested with these forms of thought; and we are wise in so far as we do not judge that these forms are real aspects of things. But at the same time Geulincx advances strong views concerning external reality, such as the fact that it consists of two infinite particulars, namely, body and God. How can this be squared with his denial of wisdom?

The issue of conceptualization can also be formulated as the problem of intelligibility. Thus taken, the question is what the necessary preconditions are for making reality intelligible to us. Ever since Duns Scotus, this issue of the intelligibility of reality has been bound up with ontology. As we will see, this is also the case with Geulincx. What we are specifically concerned with, then, is the status of the classic ontological terms in his philosophy. In the previous chapter, it was shown that Descartes considered these notions to be modes of thinking. Even though it is unclear what precisely this means, Descartes' way of interpreting ontological notions may have had its influence on Geulincx' conceptions of science and philosophy. As will be shown, it certainly influenced Clauberg's and De Raey's views of ontology. A comparison of Geulincx' theory of ontological notions with those of Clauberg and De Raey may clarify the issue of Descartes' influence.

Two questions will be discussed. First, given the fact that theoretical wisdom is unattainable according to Geulincx, to what extent can we know reality? Does Geulincx' position entail that we cannot know any of its objective features? Second, the key question of this chapter is whether Geulincx' view of science and philosophy is largely a consequence of his interpretation of Cartesian philosophy, more specifically Descartes' account of general ontological notions.

Section 1 is specifically concerned with the issue of intelligibility or conceptualization. In it, I discuss the views on the general ontological notions of Duns Scotus, Descartes, Clauberg, De Raey and Geulincx. In Section 2, I deal with the question of whether Geulincx' denial of the possibility of wisdom implies that we do not know any objective feature of reality. In Section 3, I discuss an objection to my interpretation of Geulincx' account of scientific knowledge. The chapter concludes by answering the question of Descartes' influence.

## **9.1 Intelligibility and transcendental notions**

### *9.1.1 Introduction*

It was shown in Chapter 1.2.2 in what way Bacon criticizes traditional logical and ontological notions. The upshot of his criticism is that they are imprecise and ordinary concepts, which thus do not amount to adequate scientific concepts. This is far from the

common view of ontological concepts at the time.<sup>3</sup> Ontology was considered to supply the framework of intelligibility for the other sciences. It explained what general features objects have, which allow us to properly conceive them. Ontology formed, in fact, the precondition for properly conceptualizing things, providing us with the most general concepts involved in concepts of more particular things. Generally, these ontological notions were regarded as referring to real aspects of things. Bacon's approach is completely different. In his view, these ontological terms – which were called transcendental notions and categories – have no ontological significance, and even should be eliminated from science. In the preceding chapter, it was shown that in Descartes' philosophy they are problematic and that Descartes is unclear about their epistemological status. It is to be seen, then, in what way Cartesians like Clauberg, De Raey, and Geulinckx interpreted Descartes' remarks on ontological notions.

Before discussing these philosophers, it is to be shown in what way these notions are linked to the issue of intelligibility of objects. This has been elaborated by Scotus, whose account of the transcendentals was highly influential, and was virtually the standard theory of ontology in the seventeenth century among Aristotelians. Cartesians react particularly to this theory, in their seventeenth-century variants.

#### *9.1.2 Duns Scotus: Transcendental notions and intelligibility of reality*

Although the concept of transcendental notion goes back to Aristotle, its rise in Western philosophy can be mostly attributed to Duns Scotus. It was, in fact, Scotus who reconstructed metaphysics as the science of the most general ontological concepts – the *transcendentalia*.<sup>4</sup> This conception of metaphysics proved to be influential, as many philosophers adopted it. In fact, this was still the view of ontology of many a philosopher at the beginning of the seventeenth century. More specifically, practically the same theory can be found in Burghersdijk, and thus was common in Leiden.<sup>5</sup>

For Scotus, transcendentals are concepts that escape the classification of the Aristotelian categories. Their extension is wider than that of the categories. In other words, they are applicable to all things whatsoever. Scotus defines 'transcendental'

<sup>3</sup> See on this, Althaus 1914, Petersen 1921, Lewalter 1935, Wundt 1939, Rompe 1968, Leinsle 1985, Lohr 1988a, and Lohr 1999.

<sup>4</sup> See especially Wolter 1946; Duns Scotus 1962, 1975, 1995; Bettoni 1961; Wolter 1990; Pasnau 2003.

<sup>5</sup> See Burghersdijk 1657, *Metaphysical institutes*, particularly the second chapter on being. Burghersdijk argues that we have a general notion of being (*unum conceptum formalem Entis ut Ens est*), which applies univocally to all kinds of things. He also emphasizes that being is a real attribute of things rather than an extrinsic denomination. It is a real concept, founded in the *proprio Entis actu*, by which he means the act of *esse* of the object (I, Ch. 2, §11, 16-17). The remainder of the first part of Burghersdijk's metaphysics is concerned with the modes (essence and existence) and properties of being (*affectiones Entis*), which follow from being through the modes as their principles or causes.

accordingly as ‘whatever cannot be contained under any genus’. Some of these notions can also be found in logic, but unlike logic, metaphysics deals with them as attributes of things. Being (*ens*) belongs to this class, as well as notions such as finite and infinite and necessary and contingent.

Again, Scotus’ central point is that these concepts constitute the domain of metaphysics. He argues for this by referring to Aristotle’s view that metaphysics is the science of things that are the most knowable (*maxime scibilia*).<sup>6</sup> The most knowable has two senses, according to Scotus. It refers, first, to ‘the first of all things known, and without knowing them nothing else can be known’ – in other words, they are indispensable for knowing other things. Second, the most knowable means what is known most certainly.

The first meaning of most knowable is undoubtedly the most important for Scotus. What is most knowable in the first sense is what is the most common (*communissima*), which is being-qua-being (*ens in quantum ens*) and what follows from it, that is, the unique properties of being. Because the concept of being is indispensable for knowing other things, it is present as the basic component of every definition or essence.<sup>7</sup> Being, in other words, ‘enters into every concept’.<sup>8</sup> Only being makes things intelligible to the intellect and can thus be predicated of all things. Indeed, distinct knowledge of other, more particular, things is only possible if the concept of being is known.

Another way in which Scotus explains that being is the most basic concept is by saying that it is the adequate and primary object of the intellect.<sup>9</sup> This is a view which is completely original with him. By contrast, Aquinas, against whom Scotus specifically argues, holds that the nature (*quidditas*) of the sensory thing is the primary object of the intellect.<sup>10</sup> Scotus rejects this view on the ground that the intellect has adequate notions of God and substance, both of which are immaterial objects. Further, he also argues against substance as the primary object of the intellect. Instead, the simple concept that is primarily known by the intellect is *being* (*ens*). To clarify this, Scotus compares the

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<sup>6</sup> See Scotus 1995, *Questions on the Metaphysics*, 18-21. See Aristotle 1984, *Metaphysics*, I.2, 982a30-b3, vol. 2, 1554.

<sup>7</sup> See Wolter 1946, 67.

<sup>8</sup> Scotus 1960, *Lectura I*, dist. 3, pt. 1, q. 1-2, §75, 252-253: ‘... ens non potest cognosci nisi distinete, quia non est resoluble in plures conceptus priores; sed ad hoc quod aliquid distinete cognoscatur cognitione distincta, oportet quod ens prae cognoscatur, quia in omni conceptu est; et oportet quod conceptus universaliores praecognoscantur antequam conceptus minus universales distinete cognoscantur, in quibus includuntur superiores. Unde quando per viam divisionis acquiritur definitio, quae facit distinctam notitiam definiti, prius cognoscuntur definitia quae sunt magis communia.’ Scotus continues that metaphysics is the first science (*in ordine distinctae cognitionis*), and is concerned with being (*ens*). See also, Bettoni 1961, 26-33.

<sup>9</sup> Scotus 1995, *Ordinatio I*, d. 3, §25-30, 120-121; Scotus 1960, *Lectura I*, dist. 3, pt. 2, q. 1-2, §88-104, 258-264.

<sup>10</sup> Scotus also rejects Henry of Ghent’s view that God is the primary object of the intellect. This leads to pantheism, according to Scotus.

primacy of being in the understanding with the primacy of colour in vision. Because reality can be seen by the human eye by means of colour alone, colour is a necessary condition for being present to the eye. What has no colour is ipso facto invisible. Hence, colour is the primary and adequate object of our faculty of vision. Likewise, the proper object of the intellect is what is necessary for seeing intellectually, and that is being.<sup>11</sup>

But even though being is a necessary condition for intelligibility, it is not the same as being intelligible.<sup>12</sup> Rather, being intelligible is a property that necessarily follows from being: transcendental truth. This notion of truth – in distinction from epistemic truth as a feature of assertions – is an attribute of being, which is nothing other than intelligibility. Truth is a feature of a being even if it is not regarded or understood, because every being is intrinsically intelligible or true and can thus be understood. Still, intelligibility is not the first thing grasped by the intellect, as being precedes truth.

Metaphysics, then, is the science that is concerned with being and other transcendental notions. Such a science of the general aspects of being is necessary because more particular things cannot be adequately known unless these more general things are distinctly known.<sup>13</sup> Particular sciences such as physics, psychology and politics accordingly presuppose the intelligible reality of general properties such as unity and similarity, as well as knowledge of the concept of being (*ens*) itself, and principles inferred from these notions. Indeed, particular sciences deal with a particular set or domain of beings, and thus already need the concept of being. Furthermore, this knowledge of the most common things (*communissima*) does not belong to a particular science. That is why a general science (*scientiam universalem*), which considers the transcendentals as such, is necessary. This general science is called metaphysics, a ‘transcending science, because it is concerned with the transcendentals’ (*transcendens scientia, quia est de transcendentibus*). The objects of this science are the transcendentals (*transcentia*), its subject matter is being (*ens*), and its aim (*finis*) is knowledge of God and the highest causes (*altissimas causas*).<sup>14</sup> As a result, metaphysics is concerned with more than just concrete objects such as God and angels – the immaterial substances. Concepts like being are also applicable to material substances. Therefore, metaphysics comprises all that can be predicated of being-quia-being.

Crucial for our purposes is the fact that Scotus regards transcendental notions as real concepts.<sup>15</sup> They are not merely concepts under which we classify things, but real aspects of things. Scotus uses his theory of the formal distinction, which was explained in the previous chapter, to defend this position.<sup>16</sup> Transcendentals are concepts of

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<sup>11</sup> See Pasnau 2003, 293-296.

<sup>12</sup> See Scotus 1960, *Lectura I*, dist. 3, pt. 1, q. 1-2, §137, 278.

<sup>13</sup> Scotus 1995, *Questions on the Metaphysics*, 20-21.

<sup>14</sup> Scotus 1995, *Questions on the Metaphysics*, 22-23, 27.

<sup>15</sup> See Wolter 1946, 7; Bettoni 1961, 79.

<sup>16</sup> See Wolter 1946, 16-24.

formalities, which are real aspects of things. Because the concepts of metaphysics rely on a formal distinction, metaphysics is a science about reality.

To conclude, two important points can be gathered from this discussion. First, Scotus regards the concept of being and its properties as absolutely necessary for conceptualization. Being is the most knowable concept, which confers intelligibility on other (scientific) concepts. We cannot even distinctly know anything without having knowledge of being. That is why ontology is needed. The second point is that being and its properties – the transcendentals – are real aspects of things. They can be legitimately predicated of things, because they correspond with reality. This conception of metaphysics and transcendental notions was also common, with some qualifications, in sixteenth and seventeenth century Aristotelianism.<sup>17</sup>

### *9.1.3 Descartes' on transcendental notions and substance*

Unlike Scotus, Descartes does not offer a fully-fledged ontology. His treatment of ontology is severely limited.<sup>18</sup> The metaphysics he offers in the *Meditations* is mostly confined to natural theology – consisting largely of proofs for God's existence and a deduction of his attributes in so far as needed for his purposes – and a theory of mind. To be sure, there is a theory of being that functions at the background, as well as a theory of substance, mode and attribute. But all those theories are relatively unelaborated, certainly in comparison to contemporary metaphysics textbooks. Most of Descartes' remarks on general ontological notions can be found in the *Principles I* §48 up to §59.

These articles are mostly concerned with general attributes.<sup>19</sup> Because most of them are classic transcendental notions, these articles of the *Principles* are primarily concerned with explaining the status of transcendental notions. In the preceding chapter, I argued for interpreting the general attributes, including the general ontological notions, as concepts of formalities and thus as referring to real aspects of things. If so, Descartes' position would resemble that of Scotus to a great extent. Still, it is also to be emphasized that Descartes also calls them 'modes of thinking', suggesting that they are notional concepts. In short, his account is ambiguous.

Because Article 48 of *Principles I* is especially important for the Cartesian philosophers we are concerned with later, I quote the lines concerning transcendental notions in full:

All the objects of our perception we regard (*consideramus*) either as things (*res*), or affections (*affectiones*) of things, or else as eternal truths which have no existence outside

<sup>17</sup> See Lohr 1988a.

<sup>18</sup> See on Descartes' ontology in general, Marion 1986 and Chappell 1997a.

<sup>19</sup> See Chapter 8.2.3. Chappell calls these attributes 'omni-generic', because they apply to both thought and extension (Chappell 1997, 114, 121). Nolan 1998 speaks of 'common attributes' to make the same point.

our thought. The most general items which we regard as things (*consideramus*) are *substance*, *duration*, *order*, *number* and any other items of this kind which extend to all classes of things (*omnia genera rerum*). But I recognize only two ultimate classes of things (*summa genera rerum*): first, intellectual or thinking things, i.e. those which pertain to mind or thinking substance; and secondly, material things, i.e. those which pertain to extended substance or body.<sup>20</sup>

The first line of this quotation refers to the most general ways in which we consider objects of cognition, that is, either as things (*res*) or as attributes (*affectiones*) of things. This way of regarding objects need not reflect reality, for our intellect can also regard objects as things while they are not actually things. This is precisely what happens when we consider general attributes, such as substance and order, to be actually things. In fact, these are not things, but, at most, attributes of things. In what follows, Descartes points out that he recognizes only particular material or immaterial objects as real things. More important for our purposes is that Descartes claims, in accordance with Scotus' definition of the transcendentals, that general attributes are neither material nor immaterial things, but transcend the ultimate genera. They are more universal than those, applying to both mental and material objects. So, they are transcendental notions, that is, concepts that transcend the ultimate classes (*genera*) of things (that is, minds and bodies). These two classes replace the Aristotelian categories.

Because Descartes does not say anything about the notion of being (*ens*), it is difficult to determine how he would regard this notion. Alternatively, Descartes discusses the notion of substance, which is closely connected to being in most contemporary ontologies. Although a philosopher like Scotus denies that ontology is specifically concerned with substance, as also attributes are beings according to him, others, like Suarez, argue that precisely substance is the proper object of metaphysics – and the same holds true of Clauberg, as will be seen below. So, Descartes' focus on substance is not unprecedented. At any rate, also substance is, as we have seen in the previous subsection, a general ontological notion. I focus on the notion of substance, because his use of this notion is highly insightful for the issue of the epistemological status of ontological notions.

In articles 51 to 54, Descartes deals extensively with the notion of substance. He defines substance there as ‘nothing other than a thing which exists in such a way as to

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<sup>20</sup> Descartes, *Principles* I §48, AT VIIIa 22-23: ‘Quaecunque sub perceptionem nostram cadunt, vel tanquam res, rerumve affectiones quasdam, consideramus; vel tanquam aeternas veritates, nullam existentiam extra cogitationem nostram habentes. Ex iis quae tanquam res consideramus, maxime generalia sunt substantia, *duratio*, *ordo*, *numerus*, et si quae alia sunt ejusmodi, quae ad omnia genera rerum se extendunt. Non autem plura quam duo summa genera rerum agnosco: unum est rerum intellectualium, sive cogitativarum, hoc est, ad mentem sive ad substantiam cogitantem pertinentium; aliud rerum materialium, sive quae pertinent ad substantiam extensam, hoc est, ad corpus.’, CSM I 208.

depend on no other thing for its existence'.<sup>21</sup> In other words, an item is a substance if it can exist in itself, independently from other things. A mode or accident, by contrast, is an item that is dependent on something else for its existence, namely, on a substance.<sup>22</sup> A mode is, as we have seen in the preceding chapter, a particular, limited state of a substance. For example, a perception of red is a particular state of the mind, that is, thought limited to that specific perception, while the thinking substance could have taken on an infinite number of other states. Modes are, further, changeable attributes of a substance – they are incidental to it.

Although Descartes recognizes several mental and material substances, there is, in fact, only one object that is actually independent of all other things – that is, God. Other things, minds and bodies, depend for their existence on God. In the strict sense, then, only God is a substance. But Descartes denies that there is only one substance. He solves this by making a distinction between created and uncreated substances.<sup>23</sup> Minds and bodies, as created substances, are independent from other created things. Accordingly, Descartes defines created substance as ‘things that need only the concurrence of God in order to exist’.<sup>24</sup>

But what about the notion of substance as such? Is it just a way in which we consider a thing or a real aspect of that thing? In other words, is substance a notional attribute – in fact, a purely extrinsic denomination – or is it a real attribute?<sup>25</sup>

Before answering this question, it has to be remarked that there had been at least two notions of substance around, ever since its inception. The notion of substance in terms of (causal) independence or self-sufficiency, as the item in which accidents inhere, and the notion of substance as the ultimate subject of predication.<sup>26</sup> The former I call an

<sup>21</sup> Descartes, *Principles* I §51, AT VIIa 24: ‘Per substantiam nihil aliud intelligere possumus, quam rem quae ita existit, ut nulla alia re indigeat ad existendum.’, CSM I 210.

<sup>22</sup> See Descartes, *Correspondence*, to Hyperaspistes, AT III 429, CSMK 194; to Mersenne, 26 April 1643, AT III 649-650, CSMK 216-217; Descartes 2003, no. 17, 61-62. In the synopsis to the *Meditations*, Descartes uses ‘accident’ as an equivalent of ‘mode’ (AT VII 13-14, CSM II 9-10).

<sup>23</sup> This is the classic Scotist distinction, which can be found, among others, in Suarez. Cf. Descartes, *Correspondence*, to Hyperaspistes, AT III 429, CSMK 193; *Meditations*, Synopsis, AT VII 14, CSM II 10.

<sup>24</sup> Descartes, *Principles* I §52, AT VIIa 25, CSM I 210.

<sup>25</sup> See on this distinction, Chapter 8, Intr.

<sup>26</sup> See on this, particularly Kneale 1940 and Barnes 1995b, 89-92. Aristotle speaks of a substance as a subject of predicates which cannot not itself be predicated of something (an ultimate subject) and of substance in terms of being capable of existing independently, which applies only to individuals. Aristotle 1984, *Categories* V, 2a11-15, vol. 1, 4: ‘A substance – that which is called a substance most strictly, primarily, and most of all – is that which is neither said of a subject nor in a subject, e.g. the individual man or the individual horse.’ This definition of the categories, which includes both notions of substance, has been used by De Raey and Geulinckx, as we will see below. Another notion of substance in Aristotle is that of the ultimate substrate, but this is not relevant for our purposes.

ontological and the latter a logical notion of substance. On the latter notion, substance could be mainly a way in which we consider or understand something, that is, to classify it. As has been noticed by Woolhouse, these two different notions of substance occur also in Descartes.<sup>27</sup> But Woolhouse does not problematize this.

The notion of substance is unstable in Descartes' works.<sup>28</sup> In the *Principles*, he refers to individual bodies as substances, whereas in the synopsis to the *Meditations* extension in general – or *corpus in genere* – is a substance.<sup>29</sup> The latter is apparent from the fact that individual bodies are dependent on extension for their existence, implying that they are modes rather than substances. On this model, the material substance is infinite and its modes finite – modifications or limitations of the infinite substance.<sup>30</sup> Still another notion of substance is found in the geometrical exposition of the proof for God's existence in the Second Replies. Descartes defines substance there as a term that 'applies to every thing in which whatever we perceive immediately resides, as in a subject, or to every thing by means of which whatever we perceive exists'.<sup>31</sup> He appears to refer here, at least in the first part of the sentence, to the logical notion of substance.<sup>32</sup> So, Descartes sometimes uses substance as an equivalent for a subject of which attributes can be predicated, and at other points for that which is completely independent of other things and in which attributes inhere.

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<sup>27</sup> See Woolhouse 1993, 15–17.

<sup>28</sup> See on this Markie 1994, who distinguishes three notions of substance in Descartes: 1) substance as that which can exist independently (in *Principles* I §51–52), including both causal and subject independence; 2) substance as that on which other things depend for their existence (in Replies II), which is ambiguous because it can be interpreted either as referring to a bare substratum or to a subject; 3) another type of independence occurs in synopsis of the *Meditations*. The first two notions concern individual minds and bodies, as well as man as a composite of mind and body. The last notion of substance differs in that only minds and matter in general are regarded as substances; Markie holds that this third notion is a refinement of the first notion of independency.

<sup>29</sup> Descartes, *Meditations*, Synopsis, AT VII 14: '... substantias, sive res quae a Deo creari debent ut existant, ex natura sua esse incorruptibiles, nec posse unquam desinere esse, nisi ab eodem Deo concursum suum iis denegante ad nihilum reducantur; ac deinde ut advertatur corpus quidem in genere sumptum esse substantiam, ideoque nunquam etiam perire.', CSM II 10.

<sup>30</sup> See Descartes, Replies I, AT VII 113, CSM II 81.

<sup>31</sup> Descartes, Replies II, AT VII 161: 'Omnis res cui inest immediate, ut in subjecto, sive per quam existit aliquid quod percipimus, hoc est aliqua proprietas, sive qualitas, sive attributum, cuius realis idea in nobis est, vocatur Substantia. Neque enim ipsius substantiae praecise sumptae aliam habemus ideam, quam quod sit res, in qua formaliter vel eminenter existit illud aliquid quod percipimus, sive quod est objective in aliqua ex nostris ideis, quia naturali lumine notum est, nullum esse posse nihili reale attributum.', CSM II 114.

<sup>32</sup> Also in the third meditation, Descartes' conception of substance seems to be primarily logical. In fact, he even calls substance a notion to classify things. See *Meditations* III, AT VII 44–45, CSM II 30–31. See also, *Comments on a certain broadsheet*, AT VIIIb 351, CSM I 299.

Even though Descartes does not discuss the distinction between the logical and ontological notion of substance, it may be worthwhile to disentangle these different notions of substance. The logical notion of substance does not seem to refer to a real aspect – or formality – of the thing. Rather, it seems to be just a notional concept, as being *only* a way in which we grasp or classify something. The ontological notion, by contrast, does seem to refer to a real aspect of the thing. The thing is actually an independent being; this is not just a way in which we apprehend it.

However, it is unclear how these two notions of substance are precisely related to each other. Descartes does not explain it and I am not concerned with solving this issue here. Instead, in the following subsections, it will be considered how the Dutch Cartesians Clauberg, De Raey, and Geulincx interpreted Descartes' remarks on ontological notions in general, as well as his notion of substance in particular. As for the question of intelligibility, Descartes does not specify whether general attributes are necessary for conceptualizing things, that is, for making them intelligible. That simply is not the perspective from which he discusses them.

#### 9.1.4 Clauberg on the epistemological status of ontological notions

Because Clauberg, whose works were available to Geulincx, was undoubtedly one of the most influential Dutch Cartesians, a discussion of his ontology is instructive.<sup>33</sup> Moreover, a discussion of his ontology is pertinent to our subject because Clauberg has not only published a work on ontology in his pre-Cartesian period, the *Elements of philosophy or Ontosophia* of 1647, but also issued two later editions of this work (in 1660 and 1664), published under the title *New Ontosophia (Ontosophia nova)* and *Metaphysics on being (Metaphysica de ente)*, respectively, at a time when he was fully committed to Cartesianism.<sup>34</sup> This allows us to answer the question of whether his conception of the transcendental notions has altered, and, if so, whether Descartes' treatment of the general attributes had any influence on this.

In the first edition of 1647, Clauberg explains that the *Ontosophia* is a general science of being-qua-being (*ens quatenus ens est*). Its main task is to provide the general metaphysical principles for all other disciplines as well as an explanation of their subject matter.<sup>35</sup> This science is both superior and prior to the other sciences. It is accordingly also called prime philosophy (*Prima Philosophia*), as well as metaphysics

<sup>33</sup> This is clear from the large number of editions of his works; see for that, Verbeek's bibliography of Clauberg's works in Verbeek 1999b.

<sup>34</sup> See on Clauberg's metaphysics, Müller 1891; Brosch 1926; Wundt 1939, 93-95; Mancini 1960; Weier 1960; Viola 1975; Carraud 1999.

<sup>35</sup> See for Clauberg's notion of philosophy, Rompe 1968, 283-293, and Savini 2004. Clauberg 1647, *Ontosophia*, preface, \*3v: 'Quare cum traditurus essem brevia & ordine inter se colligata Primae Philosophiae seu Scientiae Catholicae Rudimenta, & ostensurus, quopacto ex illis alia prodeant in reliquis disciplinis, inque eadem redeant & resolvantur ...'

(*Metaphysica*).<sup>36</sup> More specifically, the *Ontosophia*, otherwise called the ‘elements of prime philosophy’ (*prima philosophiae elementa*), is concerned with the transcendental concepts, that is, the concept of being (*ens*), its attributes and principles.

Clauberg starts his ontology with the concept of being (*ens*). His explanation of being is quite original, an originality that stems mainly from the influence of the German philosopher Clemens Timpler (1563/4-1624).<sup>37</sup> Like Timpler, Clauberg distinguishes three senses of being (*ens*). First, in its most general sense being denotes everything which can be conceived.<sup>38</sup> Being is what is intelligible or conceivable (*Intelligibile seu Cogitabile*). This first concept of being is the most simple and best known concept, according to Clauberg.<sup>39</sup> In fact, it is the highest genus; there are no concepts higher than that of the conceivable.<sup>40</sup> Hence, it is also that which is first known by the intellect – the *primum cognitum*.<sup>41</sup> Also the concepts of nothing (*nihil*) and of impossible beings – the so-called *chimerae* – are subsumed under this concept of being, as both can be objects of thought.<sup>42</sup> In fact, what is understood can either be nothing (*Nihil*) or something (*Aliquid*) outside the intellect.<sup>43</sup> The second sense of being is that which is something outside the intellect – which is, according to Clauberg, the usual meaning of being (*ens*) or thing (*res*). Other terms for this sense of being are something (*Aliquid*) or the ‘real intelligible’ (*Intelligibile reale*), which is real even if nobody thinks of it and the opposite of which is nothing (*nihil*).<sup>44</sup> As a result, being in this sense is contrary to nothing.<sup>45</sup> This implies that something is a real being if it does not involve a contradiction. As a further result, something (*aliiquid*) equals possible being or being

<sup>36</sup> Clauberg 1647, *Ontosophia* I, Prolegomena, §4, 2. Cf. Clauberg 1647, *Ontosophia* I, Prolegomena, §10, 4. Clauberg refers here to Aristotle’s *Metaphysics* III.3.

<sup>37</sup> See for Timpler and his metaphysics, Wundt 1939, 72-77, 352-369; Rompe 1968, 293-300; Leinsle 1985, vol. 1, 352-369; and Freedman 1988.

<sup>38</sup> Clauberg 1647, *Ontosophia* II, §1, 37: ‘Quod vulgari sermone res & aliquid (vocibus latissime acceptis) nominari solet, hoc loco Intelligibile seu Cogitabile dicitur.’

<sup>39</sup> Geulinckx, 1647, *Ontosophia* II, §5, 37: ‘Simplicissimus est, nam Intelligibilis conceptui in reliquis omnibus conceptibus semper quid superadditur.’

<sup>40</sup> Clauberg 1647, *Ontosophia* II, §4, 37: ‘Primus (generalissimus, summus) est, quia Intelligibile supra se non habet quod mens humana concipere valet (genus). Nam quicquid hujusmodi est, id jam intelligibile est. [...] conceptus ultimus.’

<sup>41</sup> Clauberg 1647, *Ontosophia* II, §8, 38-39: ‘Ex quibus elucescit, Intelligibile primo cognitum seu primum cognitum esse, cognitione confusa & originali, ut ab hujus notitiae merito incipiatur philosophari, sicut omnis infans ab eodem intelligendi capit primordia.’

<sup>42</sup> Clauberg 1647, *Ontosophia* II, §2, 37: ‘Intelligibile est, quicquid quovis modo est, cogitari ac dici potest. Ita dico Nihil, & dum dico *cogito*, & dum cogito, est illud in intellectu meo.’

<sup>43</sup> See Clauberg 1647, *Ontosophia* II, §12, 39-40.

<sup>44</sup> Clauberg 1647, *Ontosophia* II, §15, 40: ‘Aliquid est Intelligibile, quod est in rerum natura, licet non sit qui id cogitet esse, seu, quod praeter esse objectivum in intellectu aliquod esse reale extra intellectum obtinet.’

<sup>45</sup> Clauberg 1647, *Ontosophia* II, §18, 41.

able to exist outside the intellect, either as a real attribute of a thing, having *in-esse*, or as a thing that can exist by itself (a substance). The third and strictest sense of being is that which can exist by itself, specified as the thing (*res*) properly taken or the real being (*ens reale*).<sup>46</sup> Being in this sense is identical with substance and is opposed to the accidents.<sup>47</sup> Clauberg defines this most strict and, in his view, proper conception of being as follows:

A real being (*ens reale*) is Something (*Aliquid*) that has real attributes (*attributa realia*), or that which has not only real being (*esse reale*) outside the intellect, but also actually in itself (*verum etiam in seipso*).<sup>48</sup>

In general, an attribute is what can be predicated or said of a thing.<sup>49</sup> Real attributes are those attributes of a thing that do not only exist in the intellect when cognizing the thing, but also have reality outside the intellect, in the thing of which they are attributes.<sup>50</sup> They are, in other words, in the thing in itself, having *in-esse*. Only things that have such attributes are real things, capable of independent existence.

Clauberg next explains that a single thing can have several real attributes, such as the attributes of being (*ens*), one (*unum*), true (*verum*), and good (*bonum*), which are all (general) real attributes of real beings.<sup>51</sup> The opposites of real attributes are *attributa non-realia*, which are either notional or verbal attributes (*attributa notionalia* or *verbalia*), such as saying of something that it is a subject and calling it ‘Paul’, respectively.<sup>52</sup> What we are interested in here are the common real attributes, that is, those real attributes which every real being has.

The general real attributes are divided into primary (*attributa prima*) and secondary attributes (*attributa orta*), as well as absolute (*Absoluta*) and relative (*Respectiva*) attributes. Primary attributes are called modes (*modi*). Their function is to limit or modify the thing. In other words, they determine the thing, so that it is distinct from

<sup>46</sup> Clauberg 1647, *Ontosophia* II, §26, 42-43: ‘Ens illud stricte dictum propriissime etiam Res vel utroque nomine conjuncto *Ens Reale* appellatur.’

<sup>47</sup> When discussing substance and accident, Clauberg again points out that being is said primarily of substance and only secondarily of the accident (or real attribute). See Clauberg 1647, *Ontosophia* II, §299, 99: ‘Ex praecedentibus descriptionibus palam est, ens de substantia primo, secundario de accidente dici, ut in utroque non univoce, sed per analogiam attributionis insit.’

<sup>48</sup> Clauberg 1647, *Ontosophia* II, §27, 43: ‘Ens reale est Aliquid cui competit attributa realia, seu quod esse reale non tantum extra intellectum obtinet, verum etiam in seipso.’ Cf. Clauberg 1647, *Ontosophia* II, §25, 42: ‘Aliquid habet vel tantum esse reale extra intellectum, vel insuper attributa realia seu esse reale in seipso; hoc stricte Ens vocamus, illud Attributum reale. Vel sic distinctio haec efferenda: Aliquid habet esse reale in se (ut Ens), aut habet esse reale in alio seu ordinatum ad aliud (ut reale Attributum).’

<sup>49</sup> Clauberg 1647, *Ontosophia* II, §34, 44: ‘Attributum rerum generalissimo significatu dicitur quicquid quovis modo de rebus praedicari seu dici potest.’

<sup>50</sup> See Clauberg 1647, *Ontosophia* II, §29, 43.

<sup>51</sup> Clauberg 1647, *Ontosophia* II, §31-32, 44.

<sup>52</sup> Clauberg 1647, *Ontosophia* II, §35-36, 44-45.

other things or states of itself.<sup>53</sup> There are three modes: essence, existence and production.<sup>54</sup> The first two are absolute attributes and the last mode is a relative attribute, as production is always a production of something. In accordance with these three modes, there are also three classes of secondary attributes, proceeding from the modes. From the essence proceed the attributes of unity, truth, and goodness (*Unitas, Veritas, Bonitas*).<sup>55</sup> From essence, the properties (or secondary attributes) such as place (*localitas*), temporality (*temporalitas*), duration (*duratio*), and beauty (*pulchritudino*).<sup>56</sup> Finally, from the relative primary attribute of production (*productio*), consisting of the extremes *principium* and *principiatum* or cause (*causa*) and that which is caused (*causatum*), come forth attributes such as plurality (*multitudo*), distinction (*distinctio*) and union (*unio*). There are also attributes that proceed from two modes combined.

After having explained the general attributes of being, Clauberg turns to divisions of concrete beings. These can be explained by using the general concept of being. Which means that the transcendental concepts are prior in nature (and cognition) to concepts of concrete beings. In fact, Clauberg claims that the general concept of being entails other, more limited, concepts such as physical being, which is the subject matter of physics. This is exactly the Scotist conception of being and corresponds largely to Scotus' view of the tasks of metaphysics. Clauberg explains that the most general division of real beings is between God and creatures.<sup>57</sup> Then he points out how transcendental terms can be applied to real beings. For example, a real being may exist necessarily or is contingent, which is one of the major differences between God and his creatures. He also discusses other divisions of being, such as substance and accident and material and immaterial. It is not needed to discuss all these distinctions. What is relevant, however, is to keep in mind that Clauberg uses the transcendental notions to determine particular beings. In other words, knowledge of transcendentals makes them intelligible.

In sum, the examination of the *Ontosophia* allows us to conclude that the notion of being and its attributes – the transcendentals – actually refer to real aspects of things; they are real attributes, enabling us to determine real beings and to infer principles that explain what reality is like.

So much for Clauberg's *Ontosophia* of 1647. Let us now look at the third edition of this work, the *Metaphysics on being* of 1664. This book is, in fact, a reworking of the

<sup>53</sup> Clauberg 1647, *Ontosophia* II, §44, 47: 'Ejus officium est rem limitare h.e. determinare seu circumscrivere ac distinguere, idque tum ab alia re, sic differt sedens a stante per sessionem; tum a seipsa, ita distinguitur manus contracta a seipsa explicata per contractionem & explicationem ...'

<sup>54</sup> Clauberg 1647, *Ontosophia* II, §43, 47: '... Modus, qui proprie est attributum reale, positivum atque absolutum, quo res (quae hinc modificata dicitur) quoad essentiam, existentiam vel productionem limitatur.'

<sup>55</sup> Clauberg 1647, *Ontosophia* II, §53, 50.

<sup>56</sup> Clauberg 1647, *Ontosophia* II, §85, 56.

<sup>57</sup> Clauberg 1647, *Ontosophia* II, §260-261, 91-92.

second part of the *Ontosophia*, which is the part that contains ontology. There are major differences between the two versions.

In his preface to the 1664-edition, Clauberg remarks that he had written a book titled *Elements of philosophy or Ontosophia* eighteen years ago.<sup>58</sup> Three years ago, he had published a completely revised (*renovatam*) book on the subject of being (*de ente*), under the title *New Ontosophia*. The present third edition contains the main text of the second edition, to which a host of comments have been added. Clauberg emphasises in the preface that the crucial difference between the first and third edition of his *Ontosophia* is his view that the ‘most general concepts and terms (the *transendentia*) [...] are nothing but different ways of thinking (*modi cogitandi*) about the same thing’.<sup>59</sup> This is a complete reversal of his position of 1647. The fact that things have a great number of attributes is now explained in that the intellect can consider the same thing in many ways. Indeed, Clauberg even claims that showing this is the main purpose of this third edition.

The major similarity between the 1647 and 1664-edition is that Clauberg still affirms that metaphysics or rather ontology (*ontologia*) is the highest science with as its object being-qua-being (*ens quatenus ens*).<sup>60</sup> Although it also deals with God and similar things, it is first of all a doctrine of being as such, which accordingly has to be separated from sciences with particular objects.<sup>61</sup> The objects of this science are the transcendentals (*transcendentalia*), properties common to all things and which transcend all classes (*genera*) of things, such as being, one, true, and good.<sup>62</sup> In other

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<sup>58</sup> See Clauberg 1664, *Metaphysics on being*, pref., +2r.

<sup>59</sup> Clauberg 1664, *Metaphysics on being*, pref., +2r: ‘Generalissimos istos conceptus & terminos, uti vocant, ad certum prorsus numerum atque ordinem reduci non posse experiendo didici. Adeo *Transendentia* illa non solum connexa, verum etiam innexa sibi sunt. Quin imo nihil aliud sunt, quam diversi de re eadem *cogitandi modi*, qui, anomi jam huc jam illuc se convertente, mille formis variari solent & possunt. Id quod hac editione tertia vel imprimis demonstrare studui.’

<sup>60</sup> Clauberg 1664, *Metaphysics on being*, §1, 1: ‘Ontosophia est quaedam scientia, quae contemplatur *ens quatenus ens est*, hoc est, in quantum communem quandam intelligitur habere naturam vel naturae gradum, qui rebus corporeis & incorporeis, Deo & Creaturis, omnibusque adeo & singulis entibus suo modo inest.’

<sup>61</sup> Clauberg 1664, *Metaphysics on being*, Prolegomena, §3, +3v: ‘Et quamvis ad supremam hanc scientiam Dei quoque ac similium rerum cognitionem referent, imprimis tamen doctrinam de Ente generalem in ea proposuere, quam etiam recentiores Philosophi a rerum quarumlibet particularium scientia separandam esse judicarunt. Quos ea parte imitantes universalem seu Catholicam scientiam solam in praesenti tradituri sumus, cuius objectum *Ens quatenus ens est* faciunt, hoc est, quatenus communiter de Deo rebusque creatis omnibus, materialibus & immaterialibus affirmari potest.’ Which is why it is not improper to call this science ‘Ontosophia’ or ‘Ontologia’ (see §4, +3v).

<sup>62</sup> Clauberg 1664, *Metaphysics on being*, §3, 1: ‘Quae autem sic rebus communia sunt, ut omnes earum classes exsuperent, uno nomine appellantur *Transscendentia*, was allen und jeden dingem

words, ontology is concerned with the most general attributes of things (*attributa rerum communissima*), as, for instance, the fact that every being has its own essence and existence, that it is one, true and good, and distinct from others.<sup>63</sup> Apart from these general properties, metaphysics also discusses the primary divisions of things, such as the nature of God and created beings, of mind and body and their mutual differences. In short, the subject matter of the 1647-edition of the *Ontosophia* and the 1664-edition remained identical. Similarly, Clauberg starts his ontology by distinguishing three senses of being: 1) all what can be thought, the *Intelligibile*; 2) what can exist outside thought, *Aliiquid*; 3) things (*Res*) that can exist by itself (*per se existit*), the substance.<sup>64</sup> The third meaning of being, substance, is what ontology is primarily concerned with.

Clauberg claims that Cartesian metaphysics, which he now calls prime philosophy, precedes ontology. In fact, ontology is grounded in it. This is confirmed by a remark of Clauberg in which he connects the fact that ontology starts with the concept of what can be thought (*ab Ente cogitabili*) – the intelligible – to the Cartesian tenet that the thinking mind is the first thing in prime philosophy (*prima philosophia*).<sup>65</sup> Unlike ontology, prime philosophy starts with knowledge of a concrete being. Clauberg distinguishes prime philosophy (*prima philosophia*) sharply from ontology and, following Descartes' order of philosophizing, contends that philosophy has to start with the *cogito* and thus with the thinking mind. For that reason, ontology, which follows on prime philosophy, has to start with thought and therefore with the conceivable.<sup>66</sup> This is also the upshot of Clauberg's argument that the principle of contradiction, one of the common principles proved in ontology, is not the most fundamental metaphysical principle, but rather the *cogito* on which it is founded.<sup>67</sup> He argues that the principle of contradiction presupposes a division into what can be thought, namely, into being and non-being (*non-ens*). By contrast, the Cartesian *cogito* does not presuppose anything. Consequently, the concepts of *ego* and *sum* are better known than notions such as

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*gemein ist [...] omnia permeent & ambiant, ad omnia rerum genera pertineant. Cujusmodi sunt ens, unum, verum, bonum, &c.'*

<sup>63</sup> Clauberg 1664, *Metaphysics on being*, Prolegomena, §5, +4r: 'In hac igitur scientia considerantur ea quae omnibus & singulis rebus suo modo communia sunt, id est, attributa rerum communissima, ut quod omnes ens suam habeat essentiam & existentiam, sitque unum, verum ac bonum, ab alio quovis distinctum, &c. Praeterea divisiones rerum primae hic examinantur, ut natura Dei & Creatura, Mentis & Corporis mutua ista oppositione illustrantur.'

<sup>64</sup> See Clauberg 1664, *Metaphysics on being*, 1, §4.

<sup>65</sup> Clauberg 1664, *Metaphysics on being*, §5, 1: '... inchoaturi universalem philosophiam ab *Ente cogitabili*, quemadmodum a singulari incipiens prima philosophia nihil prius considerat *Mente cogitante*'

<sup>66</sup> Clauberg 1664, *Metaphysics on being*, Ann. §5, 88: '[*Prima philosophia*] sic dicta non propter universalitatem objecti, de quo agit; sed quod serio philosophatus ab ea debeat incipere. Nempe a cognitione mentis & Dei &c. Haec prima philosophia sex Meditationibus Cartesii continetur. Summam ejus etiam prima pars Principiorum exhibet.'

<sup>67</sup> See Clauberg 1664, *Metaphysics on being*, Ann. §26, 89.

impossible (*impossibile*), same (*idem*), and at the same time (*simul*) – which are all ontological notions. In other words, ‘my thinking mind’ (*Mens mea cogitans*) is a clearer and more distinct cognition than any universal concept, and is also known before them. Accordingly, Clauberg asserts that metaphysics is not called prime philosophy (*prima philosophia*) because of the universality of its object, but because it precedes other sciences. Therefore, it is possible that special metaphysics precedes ontology.

Although prime philosophy precedes ontology, Clauberg still claims that the *Cogitabile* or *Intelligibile*, the first meaning of being as all what can be thought or said (§7-8), is the primary, most general (§10), most simple (§11), and best known concept (§12). However, it is also a very confused and imperfect notion (§13).<sup>68</sup> It is indeterminate. The intellect is not satisfied by calling something a being or thing, but strives to obtain more specific knowledge of a thing. In fact, the more specific our knowledge of something is, the more distinct our concept of it.<sup>69</sup> This is a view that cannot be found in the *Ontosophia* of 1647. Instead, it is precisely what Descartes espouses in the *Principles*. For Descartes emphasizes that it is difficult to abstract the notion of a substance from particular things, and asserts as well that the more attributes we know of a thing, the clearer our concept of it is.<sup>70</sup> As a result, Clauberg simply applies Descartes’ remarks on substance and general attributes to his ontology.

This is not the only point on which Clauberg follows Descartes. Like Descartes, he rejects the Aristotelian doctrine of the categories.<sup>71</sup> He argues that they belong neither in metaphysics nor in logic. Rather, they are nothing but preliminary results based on a popular philosophy that considers ordinary language as providing us with universal and abstracts forms of thought and reality. Instead, there are only two *summa genera*, the basic division of reality: things are either intellectual or material, by which he clearly refers to Descartes’ remarks in *Principles I* §48.<sup>72</sup>

Again, ontology is primarily concerned with being in the strictest sense, which is that which has real being in itself and by itself (*in se & per se*), which is called a real

<sup>68</sup> Clauberg 1664, *Metaphysics on being*, §13, 3: ‘Quamvis autem generalissimus Entis conceptus dicto modo sit notissimus, non tamen est satis distinctus & plenus, sed *confusus & imperfectus* admodum, & qui minime implere mentem humanam aut satisfacere quaerenti potest.’ Cf. Ann. §228, 108-109.

<sup>69</sup> Clauberg 1664, *Metaphysics on being*, §13, 3: ‘Quo autem magis a generalibus ad specialia descendimus, eo distinctior redditur conceptus, & notius evadit id quod quaerebatur.’

<sup>70</sup> See Descartes, *Principles I* §63, AT VIIIa 30, CSM I 215.

<sup>71</sup> Clauberg 1664, *Metaphysics on being*, §48-54, 11-12.

<sup>72</sup> Cf. Clauberg 1658, *Old and new logic*, §33, 64: ‘Possunt, si summa tantum genera delibemus, quae duo sunt accurate semper discernanda. Res enim est vel *Intellectualis* seu cogitans, uti Deus, Angelus, Mens humana; vel est *Materialis* seu corporea, quae in longum, latum & profundum est extensa [...] Res illae communi nomine Mentes & Spiritus: haec Corpora, item Corpora naturalia nuncupantur.’ Cf. Clauberg 1664, *Metaphysics on being*, Ann. §3, 88: ‘[Classes] quo nomine vulgo intelligunt decem praedicamenta. Nobis duae sunt praecipue Rerum classes, §. 49.’

being (*Ens reale*) or substance (*Substantia*).<sup>73</sup> That which has real being in another thing is called the real attribute (*Attributum reale*). Examples of substance are the mind and the sun, which are things (*res sunt*), and of attributes knowledge and light. Real beings have attributes and modes (*modi*). Both are not separate beings but rather something of being (*aliquid entis*).<sup>74</sup> An example of the distinction between a being and an attribute of being is the distinction between the mind and the capacity to understand (*vim intelligendi*).<sup>75</sup> These attributes are what I called unique properties in Chapter 3. But there are also accidents – modes of a thing. In contrast with the *Ontosophia*, then, Clauberg uses the Cartesian meaning of mode in the third edition. Following Descartes, Clauberg asserts that modes are not really distinct from the things they modify. Rather, they are only conceptually distinct from the thing.<sup>76</sup> Unlike modes, attributes are unique properties, which a thing has always.

Because the term mode is used differently from the first edition, the principles of (*principia entis*) essence and existence are no longer called modes. Following Descartes, Clauberg claims that these principles are only rationally distinct.<sup>77</sup> They also do not differ from being itself, but are only the first things we apprehend of being.<sup>78</sup> Other

<sup>73</sup> Clauberg 1664, *Metaphysics on being*, §41, 9: ‘Hoc autem sic distinguimus: quicquid revera aliquid est & extra nihilum ponitur, id consideramus ut habens esse reale in se & per se, quod *Ens reale* & *Substantia* dicitur, vel ut habens esse reale in alio, quod *Attributum reale*.’

<sup>74</sup> Clauberg 1664, *Metaphysics on being*, §46, 11: ‘At omnes modi omniaque attributa in eo conveniunt, quod insint enti, nec tam sint entia, quam aliquid entis.’ Clauberg 1664, *Metaphysics on being*, 10, §42: ‘*Ens* in significatione tertia acceptum propriissime quoque *Res* dicitur, vel utroque nomine conjuncto *Ens reale*. Haec significatio attenditur, cum rem & modum rei (*die sache und die beschaffenheit, weise oder gelegenheit der sachen*) ut pileum & formam pilei, atque universe rem & attributa rei, uti animam humanam & vim intelligendi, distinguimus.’ Cf. Clauberg 1664, 10, §44: ‘... *Substantia*, id est, rei quae ita existit, ut aliquo ad existendum subjecto non indigeat, opponitur *Accidens*, quod in alio existit, tanquam in subjecto; sive, cuius esse est inesse. At non omnia, quae in *Substantia* considerantur, *Accidentia* [...] dici debent: cum plurima sint ejus attributa essentialia & inseparabilia, a quibus distinguuntur accidentalia & separabilia. Et haec proprie *Modi* appellantur, nempe *modi rerum* ipsarum, a quibus illae afficiuntur & variantur, ut pilei a suis formis. Sed illa priora sunt tantum *modi cogitandi*, sicuti in Deo intellectum & voluntatem distinguimus, prout circa verum vel bonum versari eum intelligimus. Nec aliunde est, quod multa in qualibet re attributa seu multas realitates numeramus, quam quod unamquamque rem ad varia ac diversa sive entia sive non entia referimus. Vel ipsum *Ens reale* generaliter consideretur: si ad facta & apparentia refertur, verum dicitur; si ad ea quae multa sunt, unum; si ad voluntatis appetitum, bonum; si ad operationes, principium & causa, &c.’

<sup>75</sup> Clauberg 1664, *Metaphysics on being*, §42, 10.

<sup>76</sup> See Clauberg 1664, *Metaphysics on being*, 10, §43

<sup>77</sup> Clauberg 1664, *Metaphysics on being*, §92, 21.

<sup>78</sup> Clauberg 1664, *Metaphysics on being*, §99, 23: ‘Hactenus vidimus de *Essentia* & *Existentia*, quae dici solent *principia entis*, intellige interna & incomplexa, non quod revera sint principia, quoniam non differunt ab ipso ente; sed quia prima sunt, quae in ente concipimus, & ex quibus reliqua attributa quodammodo colligimus atque inferimus.’

general attributes are subsumed under the primary attributes, and have to be inferred from them in metaphysics.

Clauberg's major point is that attributes, unlike modes, are just modes of thinking (*modi cogitandi*). He argues for this by claiming that they always involve relations, while claiming at the same time that relations are constructed by the intellect and thus mere beings of reason (*entia rationis*). The general attribute or transcendental notion of truth, for instance, implies a comparison with fictitious things (*ficta*). Likewise, unity (*unum*) involves an implicit regard to what is many. All these comparisons are made by the intellect. These relations are ways of considering an object by comparing it to other objects. In short, they seem to be notional concepts.

Accordingly, Clauberg starts his discussion of the general attributes of things with the following words:

Since one and the same thing can be considered in several and different ways, of which our own mind is conscious, which indeed are modes of considering or thinking that same thing, what we signify here by the name of attributes, it is manifest that there are several attributes of one thing. In such a way most properties of God are considered in theology, and it is permitted to call them attributes of God in the sense in which it is said in the Scriptures of God that we give honour, glory, and greatness to God, when we consider his powers (*virtutes*) and perfections in him and predicate them of him.<sup>79</sup>

Clauberg alludes here to the tradition of reconciling the multiplicity of God's attributes with his unity. The way in which this was generally done is by saying that we *consider* a multitude of attributes in God while these are one and the same in himself, outside our intellect. Likewise, Clauberg argues, we discover several attributes in things, which are also not distinct in the thing itself. General attributes are such a type of attribute. What he does not clarify, however, is whether these properties are virtually distinct in God. This is the usual, Scotist, interpretation, according to which these attributes of God are formalities, and thus real aspects of God. If so, also general ontological attributes are real aspects of things. The text is ambiguous on this point.

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<sup>79</sup> Clauberg 1664, *Metaphysics on being*, §55, 13: 'Quoniam res una eademque pluribus ac diversis modis considerari potest, uti mens nostra ipsa sibi conscientia est, qui quidem considerandi seu *cogitandi modi* sunt illud ipsum, quod attributorum nomine hic significamus, manifestum est, plura unius rei attributa esse. Ita plurimas Dei proprietates considerat Theologia, quas *attributa Dei* licet nominare eo sensu, quo dicimus in Scripturis Deo honorem, gloriam, magnitudinem dare, cum virtutes & perfectiones ejus in ipso consideramus atque de eo praedicamus.' See also Clauberg 1664, Ann. §55, 95: 'Quemadmodum ergo Modi sunt vel *rerum*, vel modi *cogitandi*, ex §. 44. ita Attributa vel realiter rebus tributa seu data sunt, uti omnes perfectiones Creaturis a Deo datae; vel mente & cogitatione tantum rei adscribuntur, ut perfectiones Dei ipsi tribuuntur. Et haec latior significatio vocis *Attributi* hic locum habet, prout & modi cogitandi ipsa attributa vocantur.' Cf. §44 Ann., 93; §46 Ann., 93; §62 Ann., 96; §125, 29 and Ann., 101.

As said, on Clauberg's view, attributes are nothing but ways in which we conceive reality, and which are grounded in a relation.<sup>80</sup> At the same time, however, Clauberg emphasizes that even though a relation is based on an intellectual act, it still needs a foundation in the thing itself (*fundamentum in re*). This foundation is a certain property (*proprietas*) of the thing.<sup>81</sup> Clauberg, however, does not explain which properties enable the intellect to construct attributes. At the same time, on the other hand, Clauberg denies that the relation itself is real, asserting that 'every relation is formally a being of reason, since only the mind refers one thing to another'.<sup>82</sup> As a result, attributes, as being relations, do seem to be just mental beings.

In this respect, however, it is striking that Clauberg refers to attributes by the term *aliquid entis* and asserts that the more attributes we come to know of a thing, the clearer we understand it.<sup>83</sup> This suggests that they are not merely ways of considering, but are also real aspects: *aliquid entis* is Scotus' term to refer to the fact that formalities are real aspects of things. Consequently, the epistemological status of these notions is as ambiguous in Clauberg as in Descartes. Another problem, which further complicates our understanding of Clauberg's position, is that he does not clarify what the status is of the notions of being (*ens*) and substance. General attributes are characterised as modes of thinking (*cogitandi modi*), but neither being, nor substance, nor mode is similarly explained. Even though being is listed as a transcendental, Clauberg never expressly says that it is just a mode of thinking. Consequently, the status of the concepts of being, substance and accident remains in the dark. In sum, except for his view of grounding the transcendental notions in relations, Clauberg does nothing but applying Descartes' remarks in the *Principia* to his ontology.

It is also unclear whether they are absolutely necessary to make objects intelligible to us. Because prime philosophy can proceed, at least in part, without ontological notions, this does not seem to be the case. However this may be, unlike in his *Ontosophia* of 1647, Clauberg does not discuss this issue in the third edition.

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<sup>80</sup> Clauberg 1664, *Metaphysics on being*, §207, 52: 'Itaque relatio omnis per se nihil aliud est, quam operatio intellectus. Mens enim nostra rem aliam *refert* ad aliam, aliam comparat cum alia, aliam distinguit ab alia.'

<sup>81</sup> See Clauberg 1664, *Metaphysics on being*, §208, 52: 'Obtinet tamen relatio omnis *fundamentum* aliquod in ipsa re, quod diximus esse proprietatem, &c. propter quod contingit, ut res ad se invicem non eodem, sed diversis omnino modis referantur ...' Cf. Ann. §208, 105.

<sup>82</sup> Clauberg 1664, *Metaphysics on being*, §216, 54: 'Omnis enim relatio formaliter est ens rationis, cum sola mens sit, quae *refert* rem aliam ad aliam.'

<sup>83</sup> Clauberg 1664, *Metaphysics on being*, §47, 11: 'Si ergo attributae sunt aliquid Entis, vel ipsum potius Ens hoc illove modo consideratum, et supra vidimus, necesse est, quod plura rei attributa intelligimus, eo clarius eam ut intelligamus, &, quo magis distinguimus unius rei attributa ab attributis alterius, eo distinctius illam percipiamus.'

### 9.1.5 De Raey: Aristotelian' ontology as common sense understanding of reality

De Raey has a much deeper understanding of the issue of the status of ontological notions than Clauberg. Unlike Clauberg, he does not just adopt Descartes' views of the *Principles*, but actually thinks through its consequences. This is, moreover, consistently connected with his general view of philosophy. As noticed in Chapter 1.4.2, De Raey is strongly opposed to mixing Cartesian and Aristotelian philosophy. He argues that the former amounts to philosophical knowledge, whereas the latter is not much more than a refinement of common sense knowledge, depending on the senses, the imagination, and memory. Accordingly, whereas the objective of Cartesian philosophy is the contemplation of truth by means of the true intellect, the ordinary intellect (*vulgarem intellectum*) concerns use only – it is practical knowledge rather than scientific knowledge. From this arises the question of what the status of traditional ontological notions is in this scheme. Do they belong to philosophy proper or they merely a form of (refined) ordinary knowledge?

To start with, De Raey explicates that the class of ordinary notions comprises two items: 1) sensible species and 2) 'modes of consideration' (*modi considerandi*).<sup>84</sup> The second are specified as ways in which our intellect apprehends things, consisting of both mental acts and their products, whereas the former refer to sensory perceptions. In both cases, we are dealing with the way in which objects appear to us, entailing that these notions do not correspond to things as they are in themselves. This is precisely the crucial difference with philosophical knowledge and its precise concepts – *ideas*. These concepts are primary notions which disclose reality as it is (*res ut sunt*), independently from the way in which it appears to us.<sup>85</sup>

According to De Raey, this distinction between ordinary and philosophical concepts corresponds to that between Aristotelian and Cartesian philosophy. He makes the point that Aristotelianism is a common sense philosophy working with ordinary and accordingly imprecise concepts. This is a view he adopted from Bacon. De Raey refers explicitly in this context to Bacon's central point that the common understanding is nothing other than the 'intellect left to itself' (*intellectus sibi permissus*).<sup>86</sup> Moreover, like Bacon, De Raey advances that scholastic philosophy consists entirely of common sense knowledge.<sup>87</sup> Scholastics take their starting-point in the 'anticipations' of the common understanding and ordinary language. True philosophy, by contrast, starts with the things themselves, and forms notions of them that do not depend on ordinary concepts

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<sup>84</sup> See, for example, De Raey 1692, *Specimen of the logic of interpretation* App., 575-580. See for De Raey's views of the distinction between philosophical and common knowledge, Verbeek 1993, Verbeek 1994, and Verbeek 1995.

<sup>85</sup> See about primary and secondary notions, Chapter 6.3.2.

<sup>86</sup> See, for instance, Bacon 2004, *New Organon* I.2, 64. Cf. Chapter 1.2.2/1.3.5.

<sup>87</sup> See De Raey 1692, *Thoughts on interpretation*, §9, 8-9. See on this topic also, De Raey 1692, *On Aristotle and the Aristotelians* (1669), 453-490.

and ways of thinking – but correspond to reality. The formulations of De Raey's claims confirm that it was Bacon who influenced him on this point.

This sharp distinction between philosophical and ordinary concepts has wide ramifications. The norms for both kinds of knowledge are different. For philosophical disciplines De Raey uses the strict notion of *scientia* outlined in Chapter 3. It accordingly amounts to both certain and evident knowledge, which is based on pure reason alone.<sup>88</sup> The norm for the practical disciplines, by contrast, is much less strict. This entails that these types of discipline use completely different methods. De Raey retains the Cartesian method of the *Discourse* for philosophical disciplines and the 'common logic', by which De Raey means the logic of the schools (and Ramist logic), for the other disciplines.<sup>89</sup> Because general ontological notions are discussed in logic, it is worthwhile to further discuss these two logics.

Again, the common logic is related to the common sense understanding, which according to De Raey is little precise and uncertain (*vaga & incerta*).<sup>90</sup> This logic does not deal with 'what is in the things themselves and the truth of the things in themselves, but how things are affected by our ways of considering and speaking'.<sup>91</sup> In other words, the common logic is concerned precisely with the modes through which we ordinarily conceptualize objects. De Raey specifies these modes in turn as secondary notions.<sup>92</sup>

Following Ramus' logic, which De Raey regards as the best ordinary logic, he discerns four modes of consideration: 1) cause and effect; 2) subject and adjunct, from which follow unity and identity; 3) relations of diversity and opposition; and 4)

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<sup>88</sup> See De Raey 1692, *On the wisdom of the ancients* (1669), 376.

<sup>89</sup> De Raey 1692, *On the constitution of logic*, §1, 596: 'Logica una vulgaris, altera Philosophica, quae distingueda est.' Apart from this disputation, De Raey also held a series of disputations, in the years 1669 to 1671, on the common logic, later published under the title *Specimen of the logic of interpretation* (1669-1671). These disputations were, in turn, the basis for De Raey's major work titled *Thoughts on interpretation* (*Cogitata de interpretatione*). In what follows I will refer in footnotes to these editions when necessary.

<sup>90</sup> De Raey 1692, *Specimen of the logic of interpretation*, §9, 536-537: 'Sicut ergo communiter ratio inter homines, vaga & incerta est, Logica quae ad eam accommodat se, multis videtur non posse alia esse.'

<sup>91</sup> De Raey 1692, *Specimen of the logic of interpretation*, §12, 537: 'Quod non est res ipsas & rerum in se ipsis spectatarum veritatem invenire, (ut Logica debet facere, quae Philosophiae propria est, & hoc perperam Logicae vulgari tribuitur) sed quo modo res una ad aliam affecta sit nostro considerandi & loquendi modo.'

<sup>92</sup> De Raey 1692, *Specimen of the logic of interpretation*, §7, 537-538: 'Ubi manifestum est, per rationes, secundas notiones intelligi, quae nostro considerandi modo, rerum quas cognoscimus, affectiones sunt, in sermone & cogitatione, sive in dictis & cogitatibus: quod certe non est rei affectionem in extantibus esse ...'

comparisons, such as equal, larger, smaller, similar and dissimilar.<sup>93</sup> But these are not the only common concepts or modes of consideration De Raey discusses. In his commentary on Burgersdijk's *Institutes of logic*, he discusses many other logical and metaphysical notions.<sup>94</sup> His central point is that all notions discussed by Burgersdijk in his logic are secondary notions.<sup>95</sup> All these notions are, on De Raey's view, modes of considering with respect to things (*modi considerandi circa res*). As a result, logical (and metaphysical) concepts like genus, species, cause, effect, subject and adjunct do not refer to things as they are in themselves but to things only in so far as they are objects of our understanding. Consequently, all these notions are purely notional or logical.<sup>96</sup> He adds that also universal notions, such as man, are secondary notions, not referring to external reality as such, but rather to how we apprehend reality.<sup>97</sup> In fact, only notions of concrete singulars are primary notions, according to De Raey.<sup>98</sup>

In sum, all categories, which are discussed in logic, are secondary notions – *modi considerandi* – and thus notional concepts.<sup>99</sup> Most strikingly, this entails that also the notion of substance is a *modus considerandi*.<sup>100</sup> It is one of the ordinary ways in which we grasp objects. However, as said above, the notion of substance is used in at least two senses by Descartes: as a logical and as an ontological notion. Unlike Descartes, De Raey

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<sup>93</sup> De Raey claims that Ramus' logic is the best ordinary logic, because this logic does not discuss subjects that belong to philosophy proper, see De Raey 1692, *Specimen of the logic of interpretation*, §10-13, 537-538.

<sup>94</sup> This commentary is added as an appendix to De Raey's *Specimen of the logic of interpretation*.

<sup>95</sup> De Raey 1692, *Specimen of the logic of interpretation* App., I §1, 542: '... *Termini*, ut vocant, nudi & simplices tantum modi considerandi sunt, qui ad omnia aut multa genera rerum extendunt se, vocanturque in Logica notiones secundae.'; I §2, 542: 'Censemurque secundum Logicam, quae Philosophiae propria est, conceptus clari & distincti esse, secundum simplices & primitivas notiones, quibus res ipsas cognoscimus. At secundum vulgarem Logicam, quoad notiones secundas tantum, quae non tam rerum notiones sunt, quam modorum considerandi circa res, quibus in communis vita primum rationem & conceptus nostros, hinc orationem & verba alligamus.'

<sup>96</sup> De Raey 1692, *Specimen of the logic of interpretation* App., 557: '... *Affectiones Thematum simplicium*, ut sunt *genus*, *species*, *causa*, *effectus*, *subjectum*, &c. rebus non convenire per se & natura sua, verum quatenus intellectui nostro objiciuntur. [...] Ut non tam modi essendi in rebus, quam modi considerandi, in nostra *de rebus* dictione & cogitatione sint. Vulgo *notiones secundas* vocant, quarum nomina non tam significant existens, quam cogitatum quid. Res ipsas quod attinet, eas quantum sitis est & summatim putant in Categoriis tractari. Quo idcirco pro primis notionibus habentur, quibus res ut sunt cognoscimus.' De Raey explains that also the categories do not concern essence (*modum essendi*) but predication (*modum praecandi*).

<sup>97</sup> See De Raey 1692, *Specimen of the logic of interpretation* App., 553-554.

<sup>98</sup> See De Raey 1692, *Specimen of the logic of interpretation* App., 554-555.

<sup>99</sup> See De Raey 1692, *Specimen of the logic of interpretation* App., 557-565.

<sup>100</sup> See De Raey 1692, *Specimen of the logic of interpretation* App., 559.

explicitly points this out.<sup>101</sup> The secondary notion of substance, as a logical category, means that we consider something as that of which we want to predicate something – a *subjectum denominationis*.<sup>102</sup> By contrast, substance as an ontological notion means that we are dealing with a thing that can exist on its own (*per se subsistere*), as something in which other items inhere, as a *subjectum inhaesiorum*.<sup>103</sup> De Raey refers in this context to the Cartesian view of self-subsistence, arguing that only body in general is a substance.<sup>104</sup> Likewise, one has to distinguish between accidents that truly inhere (*in esse*) in a substance ('ut subjecto inhaesiorum') as either primary attributes (*attributum essentiale*) or modes (*modi*), and other accidents, which are not actually in the thing, but merely sensible species (or *modi sentiendi*) or logical modes of consideration (*modi intelligendi* or *considerandi*).<sup>105</sup>

Even though De Raey acknowledges the difference between the logical and ontological notion of substance, the epistemological status of the latter notion of substance and accident remains vague. Given the fact that the ontological notion of substance in general does not refer to a singular thing or attribute at all, it cannot be a primary notion (or idea) and so does not refer to an aspect of reality. However, at another point, De Raey makes a distinction between logical and abstract metaphysical notions. He asserts that the class of modes of consideration comprises both logical notions (*notiones logicas*), the secondary notions with which ordinary logic is concerned, and general metaphysical notions (*notiones metaphysicas*), ontological concepts.<sup>106</sup> Secondary notions are logical notions such as genus, species, part, whole, and subject. De Raey explains that, unlike logical notions, general metaphysical concepts seem to refer to aspects of external things.<sup>107</sup> In this context, he asserts that they seem to

<sup>101</sup> De Raey 1692, *Specimen of the logic of interpretation* App., 560-561, esp. 561: 'Ita vero substantia spectata secundum modum essendi; quo res vere subsistens est, non est Logicae considerationis. Quippe quae generalem tantum notionem substantiae spectat, & in particularibus non inquirit in ipsummet substantiale modum essendi, quo a parte rei res subsistentes sunt, verum ea secundum speciem in sensu, & modum considerandi in intellectu tantum spectat, quatenus in his solum modus praedicandi fundatur.'

<sup>102</sup> See De Raey 1692, *Specimen of the logic of interpretation* App., 565-567.

<sup>103</sup> De Raey 1692, *Specimen of the logic of interpretation* App., 561, 567-569, esp. 569: 'Et hactenus quidem, ut inhaerentia, ita denominatio intrinseca spectatur. Hanc Logici communiter in omni accidente spectant: alii saltem in quantitate & qualitate. Atque hi omnium aliorum accidentium respectu substantiam putant *subjectum* tantum *denominationis* esse, quam vocant extrinsecam ...'

<sup>104</sup> See De Raey 1692, *Specimen of the logic of interpretation* App., 568-569.

<sup>105</sup> See De Raey 1692, *Specimen of the logic of interpretation* App., 571.

<sup>106</sup> See De Raey 1692, *On the true and the false* (1667-1668), §21-22, 511-513. Cf. De Raey 1692, *Specimen of the logic of interpretation* App., 578-579.

<sup>107</sup> De Raey 1692, *On the true and the false*, §22, 513: '... generalia ad communem rerum naturam ita accommodata sunt, ut videantur etiam aliquid rei, aut ipsaem res existentes esse. At difficultas haec etiam tollitur, si modo advertamus, *has notiones accommodatas quidem esse ad naturam rerum, ut est cogitatum quid, non vero ut est existens quid extra cogitationem.*'

be *aliquid rei*, which is precisely the term Clauberg and Scotus use for them. Unlike Scotus, however, De Raey denies that they actually deserve the name of ‘aliquid rei’, thus making their ontological status unequivocally clear. They are notional attributes.

De Raey further clarifies the ontological status of general logical and metaphysical concepts by saying that they refer either to mental acts or to their products. In a series of disputations *On the true and the false*, De Raey distinguishes four types of truth: 1) metaphysical truth; 2) truth in perception (simple apprehension); 3) truth in judgement; and 4) truth in speech (*sermo*). Only the second and third type of truth are relevant for our purposes. Truth in the perception or in the simple apprehension means the truth of concepts, that is, the truth of things as they are understood.<sup>108</sup> De Raey explains that there are two ways in which the mind can conceive something by way of simple apprehension: either immediately (*immediato intuitu*) or through a species or idea (*species seu idea*). We have the former type of knowledge of acts of the mind alone, which we perceive immediately and intuitively by consciousness (*sibi conscientia est*), as present and truly existing (*praesentia & vera existentia*), without needing a proxy for the thing known. Those acts are either sensible species or intellectual modes of consideration (*modi considerandi*). In addition, concepts that do not refer to mental acts, but are produced by the mind or refer to its acts are intuitively known, as well.<sup>109</sup> Interestingly, De Raey mentions general ontological notions such as being (*ens*), essence, existence, substance, duration, order, number, one, true, good, necessary, and contingent as examples of these notions. Consequently, all these notions represent nothing other than modes of consideration – either mental acts or their products.<sup>110</sup> They are, in other words, ways in which we conceive things.

External things, by contrast, are not known immediately but by means of an *idea* or *species*, by which De Raey consequently here does not understand either sensible species or modes of consideration.<sup>111</sup> Rather, what he means by idea (or species) is a representation of the thing.<sup>112</sup> Examples of ideas he offers are the idea of the body as an object of geometry, which is the notion of extension or quantity, and the physical notion of space, as well as ideas of their modes, which are abstractions or determinations of

<sup>108</sup> De Raey 1692, *On the true and the false*, §4, 491: ‘*Veritas Perceptionis*, quae etiam dici solet *simplicis apprehensionis* vel conceptus, non sic in rebus, sed in intellectu est.’

<sup>109</sup> De Raey 1692, *On the true and the false*, §6, 492: ‘*Deinde immediato intuitu quisque potest percipere ea omnia, quae aliquod in Mente & proprio actu ejus fundamentum habent, & ad ea quae unusquisque hoc pacto in se ipso deprehendit, referri possunt.*’

<sup>110</sup> De Raey 1692, *On the true and the false*, §6, 493: ‘*Id vero non alia de causa contingit, quam quia talia nihil rei in particulari subjecto, sed modi considerandi tantum sunt, quos diversos de iisdem, & eosdem possumus de rebus diversis habere. Quod sic dici nequit de ipsomet rerum conceptu.*’

<sup>111</sup> See De Raey 1692, *On the true and the false*, §7, 493.

<sup>112</sup> De Raey 1692, *On the true and the false*, §7, 493: ‘*Haec vero idea saltem in repraesentando positam habet veritatem suam, quatenus cum res ipsa non sit, rei signum & imago per essentiam, atque adeo in intellectu est loco rei, quam notam facit.*’

extension and space. These are all simple and primitive notions, which are true in the sense that they accurately represent reality. By contrast, there are also other notions of the body, based on the senses, such as hard and coloured. These notions are non-representational.<sup>113</sup> The same goes for ‘general intellectual notions’ (*generales notiones in intellectu*) such as act, potency, matter, form and nature. Instead, we have to use the simple and primitive idea of body as extension alone.

It is now unequivocally clear what the epistemological status of general ontological notions is, according to De Raey. They are all ordinary concepts referring either to acts of thought or to products of these acts, and are accordingly non-representational. As such, they do not correspond to reality. Which is why they are not proper philosophical concepts, because those concepts are primary notions, which disclose reality to us – that is, *ideas*. Therefore, general ontological notions are not to be dealt with in a philosophical discipline. De Raey does not point out whether these metaphysical notions are to be discussed in ordinary logic or in a ‘common sense’ ontology. Given the fact that he wants to keep ordinary logic free from metaphysical concepts, the latter seems to be the case. But because De Raey does not discuss this issue, it is best to leave it aside and move on to a brief discussion of the philosophical logic. This will show how philosophy – knowledge of reality per se – is possible, according to De Raey.

Philosophical logic consists of the four rules of method Descartes presents in the *Discourse*.<sup>114</sup> These rules are, as can be inferred from what is said above, only applicable to disciplines which use exact concepts.<sup>115</sup> De Raey accordingly explains that the objects of these disciplines are to be very simple and easy to know; mathematics is the prime example of this. That is precisely the reason why the rules of the philosophical method cannot be applied in the higher faculties, theology, medicine, and law.<sup>116</sup> These disciplines rely instead on ordinary concepts and therefore need the common logic. They do not belong to philosophy proper, have nothing philosophical in them, and thus are not sciences in a strict sense. The four rules apply only to genuine philosophical disciplines, especially physics.<sup>117</sup>

Still, these rules cannot be applied as easily to physics as to mathematics, because the objects of physics are composite and difficult to know (*composita ac difficilia*). For physics one needs a more comprehensive scientific logic (*Logica scientia*), which supplies also its basic concepts, the principles of human knowledge (*principia*

<sup>113</sup> See De Raey 1692, *On the true and the false*, §9, 495.

<sup>114</sup> De Raey 1692, *On the constitution of logic*, §4, 598.

<sup>115</sup> See De Raey 1692, *On the constitution of logic*, §6, 600. Cf. De Raey 1692, *Thoughts on interpretation*, §15, 15-16.

<sup>116</sup> The concepts with which these disciplines are concerned are not simple but very complex; De Raey 1692, *On the constitution of logic*, §6, 600: ‘Quae non ita possumus clare, distincte ac singula seorsim, certo semper ordine cognoscere, ut nihil omitti certi simus: verum saepe plura simul confuse ac sine ordine spectanda sunt, & multa omittenda quoque.’

<sup>117</sup> See De Raey 1692, *On the constitution of logic*, §7, 600-601.

*cognitionis humanae).*<sup>118</sup> De Raey claims that this logic is identical with first philosophy (*prima philosophy*), which provides us with the exact philosophical concepts that must be used in other philosophical disciplines.<sup>119</sup> In fact, scientific logic is identical with true – Cartesian – metaphysics.<sup>120</sup> As with Descartes, this part of philosophy comprises the first principles or elements of human knowledge. De Raey claims that these principles are known through intuitive reason (*Intelligentia*). Scientific knowledge (*scientia*) in turn flows from these first principles, providing us with the true causes of things. Thus, the other sciences – natural philosophy and ethics – flow from these primary notions and principles.<sup>121</sup> For that reason, this general science should be taught before physics, contrary to the Aristotelian view of teaching metaphysics after physics.<sup>122</sup> De Raey supports this by the view that reason precedes the senses. Moreover, according to him, this explains also the many definitions of logic and metaphysics used at the time, such as the definition of logic as ‘the art of correctly using reason, guiding the intellect in the cognition of things’ and metaphysics as ‘the way of knowing (*Modus sciendi*) and the true and most perfect science, which commands all other sciences and prescribes them their object, as in its way the master and architect, in so far as it can be’.<sup>123</sup> Indeed, De Raey claims that Aristotelians have dimly seen that metaphysics is both prior in nature

<sup>118</sup> See De Raey 1692, *On the constitution of logic*, §8, 601.

<sup>119</sup> See De Raey 1692, *Thoughts on interpretation*, §17, 18: ‘*Hanc generalem cognitionem sive scientiam, ad primam Philosophiae partem pertinere, sive ad primam Philosophiam & Metaphysicam.*’ In De Raey’s inaugural address of 1669, *On the wisdom of the ancients*, this science is called ‘rational philosophy’ (*Philosophia Rationalis*), De Raey 1692, 384-385: ‘... quae nihil aliud quam ars & scientia quaedam intelligendi est, quemadmodum Philosophia Moralis, bene beataque vivendi, Naturalis sensibilia per intelligibiles causas explicandi. [...] [prima Rationis scientia] Omnes simplices & primitivas notiones, quoad summa genera rerum, in clara luce ponimus. Quid in iis clarum & distinctum est, ab eo quod confusum & obscurum, distinguimus.’

<sup>120</sup> De Raey 1692, *On the constitution of logic*, §9, 601: ‘*Logica scientia diversa non est a vera Metaphysica sive prima Philosophia, quae veterum Sapientia & Theologia fuit.*’

<sup>121</sup> De Raey 1692, *On the wisdom of the ancients*, 385: ‘Quo solo aliquid firmum & stabile in Philosophia, & primum Rationis, hinc Naturae & sic demum vitae & Morum vera in nobis scientia est, quae certitudinem atque evidentiam habens, dici possit cognitio rei per causam esse. Quia certitudo & evidencia prima, primaeque causae & Principia humanae cognitionis his paucis continentur.’

<sup>122</sup> According to De Raey, Aristotelians prefer this order of teaching because their philosophy is accommodated to common sense, starting with the senses. See De Raey 1692, *Thoughts on interpretation*, §17, 18: ‘... quatenus Aristotelica Philosophia ad vulgarem populararemque sensum accommodata, primum a sensibilibus incipit singularibus, atque per ea adscendendum quasi per gradus putat ad intelligiblia & abstracta a singularibus istis: ac si nihil in intellectu sit quod non acceperit a sensu, atque omnem in nobis intellectum debeat antecedere sensus.’

<sup>123</sup> See De Raey 1692, *On the constitution of logic*, §8, 601: ‘... Ars recte utendi ratione, dirigens intellectum in cognitione rerum, Modus sciendi & vera ac perfectissima scientia sit, quae omnibus aliis imperans ac praescribens objectum suum, suo modo domina & architectonica est, quantum potest esse.’

and better known to us when they consider that metaphysics prescribes other disciplines their subject matter.<sup>124</sup>

As a result, De Raey's main point is that we have access to clear and distinct notions of things, so that we can know reality as such. The only thing we have to do is to keep these notions strictly separated from those of mental acts, whether sensible species or modes of consideration, as well as concepts based on them, such as the non-representational metaphysical notions.<sup>125</sup> We must refer all these notions to our mind instead. This is done in the judgement or affirmation, in which we affirm or deny some state of affairs.<sup>126</sup> Thus, only simple (and primary) notions, and what is deduced from them, should be affirmed of reality. By contrast, sensible species, modes of consideration and concepts based on them should not be attributed to external things at all.<sup>127</sup> Which is quite difficult because we hardly apprehend external things without these mental acts and their products. But De Raey still thinks that this is possible, so that man can have adequate knowledge of reality. Scientific logic assists us in obtaining this type of knowledge.

But this strategy can only work if it is possible to access reality without using common understanding. This is possible, according to De Raey. He argues that the first or true intellect (*primum intellectus*) – *intelligentia* – precedes the common intellect.<sup>128</sup> Our intellect is capable of intuitively knowing the ideas of things – which are primary concepts. This way of knowing precedes the use of mental acts, secondary notions, and general metaphysical notions. It is accordingly possible to know things without ordinary words and the anticipations of the common understanding. Unlike the common understanding, this true intellect corresponds, as we have seen, exactly with reality.<sup>129</sup> There are, then, two ways of knowing the world, according to either the common understanding or the true – philosophical – understanding.

<sup>124</sup> See De Raey 1692, *Thoughts on interpretation*, §17, 19.

<sup>125</sup> See for the modes of consideration also, De Raey 1692, *Specimen of the logic of interpretation* App., 577-580.

<sup>126</sup> See De Raey 1692, *On the true and the false*, §14, 503.

<sup>127</sup> De Raey 1692, *On the true and the false*, §20, 509-510: 'Omnis alia Veritas Affirmationis, quae videri possit ita cum rebus ipsis non cohaerere, quaeque adeo hic errorem parit, vel in Sensu vel in Intellectu consistit, extra simplices & primitivas ipsarum rerum ideas. In sensu quidem sub fallaci specie, in intellectu, quoad considerandi modum. Et ad modos considerandi in Intellectu, ipsasque species in sensu etiam judicia accedunt, quatenus ut saepe sit, in conceptu rerum inclunduntur, ut sine iis vix possimus cogitare de rebus.'

<sup>128</sup> De Raey, *Thoughts on interpretation*, §7, 7: '.... res ipsas intelligere atque secundum hunc intellectum accipere humani sermonis sensum. Qui sermonis sensus hoc pacto rebus conformis erit, quia conformis primum intellectus est, quo cognoscimus res antequam sermonem de iis instituamus.'

<sup>129</sup> De Raey, *Thoughts on interpretation*, §20, 23: '... verum intellectum sequendo, qui conformis rebus est.'

As a further result, De Raey does not hold that general ontological notions, such as ‘being’, are necessary to make reality intelligible to us. To the contrary, these notions obscure external reality, preventing us from accessing it properly. Reality is intelligible by contemplating ideas through the proper, philosophical intellect – *intelligentia*.

#### 9.1.6 Geulincx: Ontology as describing the conceptual structures of intelligibility

Geulincx offers a comprehensive account of ontological notions in his *Peripatetic metaphysics*. As said in Chapter 7, this book is divided into two parts. Part one deals with being (*ens*) and items related to it, and part two treats of the mode of being (*modus entis*) and what is related to it. Thus, Geulincx’ *Peripatetic metaphysics* is specifically concerned with transcendental notions (and also with the categories). In general, Geulincx regards these notions as forms of thought – in fact, mental acts – about external objects. He claims that they do not have any objective reality, but are *only* ways of grasping things – of making them intelligible to us. In this regard, Geulincx deviates widely from the Aristotelians, but is in line with Clauberg, De Raey and Descartes. I showed, however, that the precise status of ontological notions is unclear in Descartes and Clauberg. From this arises the question of what Geulincx’ position is on this issue. To answer it, an overview is needed of Geulincx’ *Peripatetic metaphysics*.

Geulincx starts his discussion with the remark that there are three basic ways of understanding (*modi cogitandi*): what is known is known as 1) a being (*ens*), 2) a mode of being (*modus entis*), or 3) is a judgement concerning the value of something (*sententia*).<sup>130</sup> He provides examples of them in the introduction to his *Peripatetic metaphysics*: ‘Care for health’ as an example of something that is thought of as a being, ‘caring for health’ as a mode of being, and ‘one has to care for health’ as a value-judgement. Because only the first two ways are ascribed to external reality, meaning that things are considered to be actually beings or modes of being, these are the only types discussed in the *Peripatetic metaphysics*. Moreover, only they are ontological concepts. In Chapter 7, we have already noticed that this division is taken over from Descartes, who uses it in *Principles I* §48.<sup>131</sup>

Being and mode of being refer to the two extremes of an affirmation, which is the primary act of understanding.<sup>132</sup> This is the act of predication in which a predicate, considered as a mode of being, is said of a subject, considered as a being. Because a subject is needed before anything can be predicated, the primary form of thinking consists in considering an object as a being (*ens*) or something (*aliquid, quid, id*), which is a synonym of being. Accordingly, Geulincx explains that being is a way of apprehending an object as a subject of which we intend to affirm or say something – a

<sup>130</sup> Geulincx, *MP I*, §1, II 211: ‘Quae cogitamus per intellectum, aliquo horum trium modorum cogitamus: nempe ut ens, ut modum entis, et ut sententiam.’

<sup>131</sup> Cf. Geulincx, *AL I*, §48, III 396; *MP Intr.*, §3, II 207.

<sup>132</sup> See on this, Chapter 4.5.

mode of thinking.<sup>133</sup> Likewise, the second form of thinking, the mode of being (*modus entis*), is nothing other than a way of grasping an object as a predicate, which we intend to say of a subject.

The term ‘being’ (*ens*) is a sign of the subject (*nota subjecti*), referring to the mental act by which we apprehend something (*rem aliquam*) by one of its real attributes (*per affectionem aliquam suam*) and want to subject it to our affirmation or intend to say something about it.<sup>134</sup> Of course, this term need not occur explicitly in a sentence. In the case of so-called primary substantives (*substantiva prima*), words that do not have to be declined to become substantives, the sign of subjecting is already contained in the word, because they are normally understood as beings.<sup>135</sup> Examples of these are nouns such as ‘stone’ and ‘man’. They are converted into predicates only by adding a strange suffix, such as stony (*lapideus*). The sign of subjecting (*nota subjecti*) may also lie hidden in the verb, such as in the sentence ‘John walks’, which can be rephrased as ‘John is walking’, thus revealing the sign of subjecting or rather the sign of affirming (*nota affirmandi*) – the verb.

In this context, Geulincx makes it unequivocally clear what the status of the transcendental notions is. He insists that they are ways of grasping objects, which do not affect the external thing that is thought. Nor are they (real) aspects of the thing thought. Rather, our mind *only* regards the object as a being, or in logical terms a subject of predication, while in itself it is neither a subject nor a being. Just as the fact that when we say of some object that it is located at our right hand does not make the object actually ‘right-handed’. He specifies that when we say such a thing, it is only an extrinsic denomination, for which there is no ‘formal reason’ to attribute it to the object.<sup>136</sup> Being, then, is only an extrinsic denomination with regard to the external object of which it is said, and is not based on anything in it. Thus, we are dealing here not with a formal but with a purely conceptual distinction, as well as non-representational notions.

Geulincx adds that this is precisely the mistake of Peripatetic philosophers. They regard general concepts such as being and mode of being to be real attributes of things, which are obtained by an operation of abstraction.<sup>137</sup> But this is completely mistaken, for

<sup>133</sup> Geulincx, *MP* I, §1, II 212: ‘*Ens* (seu *aliquid*, seu *quid*, seu *id*, cui consonat Belgicum nostrum *iet*) non est aliud quam modus subjecti, seu talis modus cogitandi, quo apprehendimus id de quo affirmare, de quo dicere aliquid constituimus.’

<sup>134</sup> Geulincx, *MP* I, §1, II 213: ‘*Ens* igitur, ut inter voces versatur, nihil aliud est quam nota subjecti, seu signum quo innuimus audienti nos rem aliquam per affectionem aliquam suam intellectu nostro apprehensam, subjicere velle in affirmatione nostra, seu aliquid de ea velle dicere.’

<sup>135</sup> Cf. Geulincx, *Logic* I, Sect. 1, Ch. 4, I 182-185.

<sup>136</sup> Geulincx, *MP* I, §1, II 212: ‘... sic etiam ens dicitur, quod certo quadammodo apprehendendi intellectus nostri arripimus quasi, nulla ei quod arreptum est formali ratione talis denominationis competente, sed haec formalis ratio residet in intellectu et modo cogitandi nostro.’

<sup>137</sup> Geulincx, *MP* I, §1, II 212: ‘Sed falluntur et in ente abstractio nulla talis intelligi potest, cum nulla jam sit affectio in eo quod sic abstractum esse fingitur, quam mens attingat atque percipiatur.’

if we abstract something there has to remain some real attribute (an *affectio*) to be understood. Being (*ens*), however, is a completely empty concept if it is not applied to some concrete object. Also the solution that conceivability is a real attribute pertaining to being does not work. Conceivability is, according to Geulincx, obviously a feature that refers to the intellect, which confers it on the thing known, rather than to the thing in itself.<sup>138</sup>

Because *being* is the primary form of thought and consequently applies to all what takes the place of the subject of an affirmation, it is one of the properties of external objects when thought. It is even the *first* property of the thing, because something must be thought of before it can be conceptualised – only then is it intelligible to us. The real attributes (*affectiones*) of the thing are thus known to belong to some being (*ens*). Geulincx makes this point several times in his works. Particularly in his *Logic*, he argues that being (*ens*) is the primary concept, involved in every other concept. It is, in fact, the highest genus and ultimate matter.<sup>139</sup> In this respect, Geulincx concurs with Scotus, who also thought of being as the first thing known (*primum cognitum*), making the object actually intelligible. However, both Geulincx and Scotus regard conceivability to be a property flowing from being rather than being itself.<sup>140</sup> Because of the fact that conceivability follows from being, everything which is thought as a being is also intelligible. For example, body – the extended being – is intelligible to us. This is not a property following from the real attribute of extension but from being (*ens*), the act of grasping extension as a subject of predication. Body is understood as a subject and is therefore conceivable. This entails that everything which is thought has some properties that do not derive from their essence – their primary attribute – but from an act of us, the act of which the term *ens* is a sign. *Ens* is accordingly also the *primum logicum*.<sup>141</sup>

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As far as a modal abstraction is concerned, in contrast, always some attribute (*affectio*) remains to be known. Cf. Geulincx, *MP I Ann.*, §1, II 304: ‘Nota quod cogitabilitas non sit primum in re, sed necesario praesupponat affectionem aliquam in re, quam mens attingere cogitando possit. Restat igitur ut in *ente*, quod a corpore et mente abstractum sit, illam assignent affectionem, quae possit mente attingi et in considerationem admitti, seclusa consideratione cogitationis et extensionis. Sed clarissime intelligimus, talem nullam inveniri posse. Cum dicimus: prius est *ens* quam *ens cogitans* vel *ens extensem*, abstractio non concernit ipsum *ens*, sed tantum ejus generalitatem et modum loquendi nostrum, et est abstractio obscura, de qua in Annotatis ad Cartesium. Nihil aliud est quam quod hac condicionali exprimitur: Si quid a mente et corpore abstrahi posset, id esset utroque generalius. Haec autem condicio cum liquidari non possit, nihil ponit in re.’

<sup>138</sup> Geulincx, *MP I*, §1, II 212: ‘Sed considerent illi etiam atque etiam, cogitabilitatem ad nos fundamentaliter pertinere, non vero ad res objectas, quas tantum extrinsece denominant; res enim a se non habent quod cogitabiles sint, sed a nobis.’

<sup>139</sup> See Chapter 4.4.

<sup>140</sup> Geulincx, *Logic I*, Sect. 1, Ch. 5, §6, I 198.

<sup>141</sup> See Geulincx *Logic I*, Sect. 2, Ch. 11, §9-10, I 231-232, especially §10, I 231: ‘Ex quo etiam vides, omnem Affirmationem inchoari ab *Ente*, seu *Ens* primo loco consistere in omni Affirmatione. Nam sive de *Ente* dicatur aliquid, *Ens* consistit primo loco quoad sensum; sive de Subjecto

This means that in the logical order of concepts being holds the primary place.<sup>142</sup> All things are first of all understood as beings. Geulincx claims even that, in a sense, all essences are potentially contained in being (*ens*) and therefore properties of being, although they do not follow from it. This is a profoundly Scotist conception of being.

All classic transcendentals, *unum*, *verum* and *bonum*, are properties of being, following from its nature.<sup>143</sup> Geulincx calls them the simple properties of being. He replaces *perfectum* and *purum* for *bonum*, thus bringing their number to four. Because they are unique properties of being, following necessarily from its nature, every being has these properties.<sup>144</sup> They consequently pertain to everything the intellect apprehends as a subject (and thus as a being). Again, this implies that these properties are not real attributes of the objects cognized.<sup>145</sup> It is our intellect that conceives them as one, true, perfect and pure. In fact, most of the things we understand as unities are not unities outside the intellect at all. They only become so by an act of our intellect. Consequently, when an object is called one, true, pure or perfect, this is only an extrinsic denomination. In Geulincx' view, there is nothing in the object itself that warrants such a denomination. For example, unity means that which the intellect apprehends at the same time and at once, whether the cognized thing actually is a unity or not. It is grasped as a unity, and what is one is what it is (*quod est unum hoc quod est*). Accordingly, the sea is one sea, although it consists of numerous drops of water.<sup>146</sup> Likewise, the sea is a true sea (*verum mare*), because 'what is true' is to be exactly 'what it is' and nothing else, and this is how we conceive of the sea. And the same goes for perfection and purity. A perfect sea is simply a sea and nothing less, and a pure sea is exactly a sea. If the sea is impure, then we would grasp a sea together with something else, such as a sea with fish in it.

Apart from these simple properties of being, Geulincx also discusses complex properties, following from these simple properties. Subsumed under unity are part and whole and universal and particular. As we have seen in Chapter 4, a whole is nothing

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Composito dicatur aliquid, *Ens* etiam primo loco reperitur, tamquam Materia, quae necessario dicatur antequam ipsum Subjectum Compositum dici queat. Ideo *Ens* est Primum Logicum.'

<sup>142</sup> See Chapter 4.2.4.

<sup>143</sup> See Geulincx, *MP* I, §5, II 226-227. Cf. *Ethics* I Ann., Ch. 2, Sect. 1, §3, pt. 11, III 195-196.

<sup>144</sup> Geulincx, *MP* I, §5, II 227: 'Certum est has quatuor proprietates omni enti, hoc ipso quo ens est (id est, certo modo illo, qui subjectum dicitur, ab intellectu apprehensum), competere.'

<sup>145</sup> Geulincx, *MP* I, §5, II 227: 'Hae vero omnes proprietates nihil in re ipsa ponunt, sed sunt extrinsecæ denominations ab apprehensione intellectus nostri desumptæ. Nam *unum* quidem, ut ab hoc incipiamus, denominatio est quorumcunque ab intellectu nostro simul et semel apprehensorum; sive enim intellectus rem simplicem et revera in se unam aliquam, sive multas simul apprehenderit, hoc quicquid apprehensum est, ipsa apprehensione illa unum dicitur. [...] Et verum quidem est, res alias quidem in se simplices et unas esse (ut etiam de ipso Corpore in Vera Metaphysica ostendimus); sed haec non est unitas illa transcendentalis ut vocant, haec non est illa unitas quae proprietatem entis constituit ...'

<sup>146</sup> Geulincx, *MP* I, §5, II 227: 'Quodque enim est unum hoc quod est; sic mare unum mare est ...'

other than many things united into one. The whole is simply brought about by an act of the intellect, the act of *simul-sumptio* or *totatio*. It is ‘a certain way of apprehending of us, by which what is apprehended is taken simultaneously and as it were gathered into a little bundle’.<sup>147</sup> This entails that the whole is not a real aspect of the object thought. For example, thinking of a horse and an ox as a whole – by bringing them under one concept – does not actually make them a unity. I do not intend to explain all these properties in detail, but just want to emphasize that Geulincx considers them as acts or products of acts of the intellect.

As said, the second part of Geulincx’ *Peripatetic metaphysics* deals with the mode of being (*modus entis*). This is nothing but ‘the manner (*ratio*) of the predicate or adjective, or that mode of our understanding which we add to that of which we have decided to affirm something’, the *modus praedicati* or *adjectivi*.<sup>148</sup> Adjective and predicate thus are identified, so that Geulincx seems not to distinguish grammar from logic. A little later, however, he clarifies this by asserting that it is better to say that *ens* is a *modus subjecti* and thus a logical notion (and mental act). Only when we want to relate it to language, it is called a *nota adjectivi*. In any case, he completely rejects the various accounts of the mode of being of the Peripatetics. As we have seen, Clauberg, for instance, considers essence and existence to be modes of being in his *Ontosophia* of 1647. For Geulincx, a mode of being is nothing other than a predicate. Or rather, it refers to that act of the intellect by which we consider something as a predicate to be said of a subject.

It is now needed to further examine Geulincx interpretation of substance and accident, both because these concepts are so important in Descartes’ philosophy and because Geulincx devotes so much space to it.<sup>149</sup> Substance and accident are kinds of being, so that they are discussed in the first part of the *Peripatetic metaphysics*. Geulincx starts his discussion of substance with the Aristotelian definitions of substance as ‘Being in itself’ (*Ens in se*) or as ‘Being by itself’ (*Ens per se*), whereas accidents are defined as ‘Being in another’ (*Ens in alio*) or ‘Being by another’ (*Ens per aliud*).<sup>150</sup> The first kind of definition refers to the ontological notion of substance, according to which a property inheres in a subject or substance, and the second to logical notion of substance, as a subject from which we want to predicate something. As was to be expected, Geulincx can quite easily adapt the logical notion of substance to his own theory of the ways of

<sup>147</sup> Geulincx, *MP* I, §6, II 230: ‘Ad unitatem spectat totum; totum enim nihil est aliud quam plura unita, seu multa unum facta. Cum vero impossibile sit ut multa aliquando multa esse desinat et unum fiant in re ipsa, oportet totam hanc unitatem et unionem, qua totum quid constituitur, ad intellectum nostrum referre; quae proinde non est aliud quam modus aliquis apprehensionis nostrae, qua quae apprehendimus, simul etiam sumimus, et quasi in fasciculum colligimus.’

<sup>148</sup> Geulincx, *MP* II, §1, II 241: ‘Modus Entis non est aliud Peripateticis, quam ratio praedicati seu adjectivi, seu modus ille intelligendi noster, quem adhibemus ei quod de aliquo affirmare constituimus.’

<sup>149</sup> See on Geulincx’ conception of substance, Nagel 1930.

<sup>150</sup> Geulincx, *MP* I, §2, II 215.

understanding, but has somewhat more trouble in giving a positive meaning to the ontological notion of substance. Let us first discuss the logical notion of substance.

Geulincx' explanation of the logical notion of substance runs along grammatical lines. Things are considered as substances when the words denoting them are primary substantives, that is, words that naturally hold the place of the subject in a proposition, and can only be used as adjectives by giving them a strange suffix.<sup>151</sup> Examples of these words are 'stone' (*lapis*) and 'wood' (*lignum*), which are grammatically prior to their adjective variants 'stony' (*lapideus*) and 'wooden' (*ligneus*). Substantives are naturally considered substances. The 'by itself' (*per se*) of the definition simply means that those words do not have to undergo a declension to become nouns or subjects, contrary to words like 'sweet' (*dulce*) and 'strong' (*forte*), which have to be declined in order to be able to hold the place of the subject, resulting in 'sweetness' (*dulcedo*) and 'strength' (*fortitudo*), respectively. The original or natural form of these words is the adjective, and they can be converted into nouns only by strange suffix.

But Geulincx also has to account for the fact that some words primarily came to be used as substantives and only secondarily as adjectives. In Cartesian philosophy, language does not reflect the natural order, as in Aristotle. The occurrence of primary substantives must therefore be explained otherwise. In other words, in so far as language *per se* is involved 'stony' (*lapideus*) could have been prior to 'stone' (*lapis*). In an annotation on his chapter about substance, Geulincx gives, therefore, an explanation that is not based on language.<sup>152</sup> Eventually language is grounded in something else, according to Geulincx. It is clear from the declension of the words that people used the words 'stone' and 'sun' before 'stony' and 'sunny', and 'sweet' and 'white' before 'sweetness' and 'whiteness'. And there has to be a reason why people do so. Geulincx is not entirely certain about the right cause, but still proposes the following explanation:

Perhaps the true cause of the difference between primary and secondary substantives (that takes with it the difference between a substance and an accident, or more precisely matches this difference) is that some things appear to the people as steadier, more stable, and more lasting, and other as more instable, more changeable and more perishable. Thus a body appears firmer than colour or cold; for the same body appears now as cold and shortly after as warm; likewise, light and darkness, and colours and sounds, and all similar things appear more fleeting (*fluxa*) than body or extension.<sup>153</sup>

Thus, stability and endurance are the reasons why the words for something are primarily substantives rather than adjectives. Accordingly, body and the various kinds

<sup>151</sup> Geulincx, *MP I*, §2, II 215-216.

<sup>152</sup> See Geulincx, *MP I Ann.*, §2, II 304-306.

<sup>153</sup> Geulincx, *MP I Ann.*, §2, II 305: 'Vera fortisan est causa differentiae inter substantiva primo et substantiva secundo (quae secum trahit differentiam inter substantiam et accidens, aut verius eadem est cum illa differentia) haec erit, quod quaedam res visae sint populo magis firmae, stabiles, et perennes, aliae vero magis fluxae, leves, et caducae.'

of bodies are designated by substantives and are regarded as substances. All this depends on the senses, so that our language is tainted by prejudices coming from the perspective of sense perception, and this is also operative in our use of substance and accident. Those things appearing stable to the senses are called substances and those which are not considered accidents.

Geulincx cannot explain the Aristotelian inherence-model, the ontological notion of substance, as easily, either by adapting it to its own purposes or incorporating it in his own philosophy.<sup>154</sup> He starts by noticing that according to the ‘being-in-another’-definition accidents predicated of a subject also inhere in it. It is not odd to say that sweetness is *in* a lump of sugar, nor is it wrong to assert that wood is *in* the table in the case of a wooden table. A problem with this view, however, is that it can also be said that wood is *in* a wooden table, according to Geulincx. He tries to circumvent this problem by noticing that substances do not have this feature ‘primarily (*imprimis*) through themselves and by their own expression but accidentally and because of a strange or secondary expression’.<sup>155</sup> He adds, however, that this just means that it is uncommon to say that the wood is in the table, although one certainly is allowed to say so: it is not a false assertion. According to Geulincx, Aristotle perceived this problem as well, which is why he claims that the being of an accident in something else is not the same as the being of a part in a whole.<sup>156</sup> By this specification of inherence, Aristotle intends to rule out the possibility that substances can inhere in other substances.

Scholastics even want to base the second definition on the first, that is, they want to found the subject-predicate model on the inherence model. For example, they say that ‘snow is white because whiteness is in the snow’, which is in turn grounded in the principle that ‘denomination presupposes inherence’ (*denominatio praesupponit inexistentialiam*). Geulincx rejects this argument, because he does not know of any reason why it should be evident that ‘whiteness being in the snow’ would be the reason why snow is white rather than the reverse.<sup>157</sup> There is no reason why ‘the snow is white’ should be referred to the name, while ‘whiteness is *in* the snow’ is referred to the thing itself. In an annotation, Geulincx clarifies his position.<sup>158</sup> He refers to another example in which substantive and adjective can be reversed. According to Geulincx, we can both

<sup>154</sup> See Geulincx, *MP I* §2, II 216-218.

<sup>155</sup> Geulincx, *MP I* §2, II 216: ‘... tamen imprimis non habent substantiae per se propriamque suam expressionem, sed per accidens et propter aliquam peregrinam vel secundariam expressionem.’

<sup>156</sup> See Aristotle 1984, *Categories*, Ch. 2, 1a24, vol. 1, 3; Ch. 5, 3a30-33, vol. 1, 6.

<sup>157</sup> Geulincx, *MP I*, §2, II 216-217: ‘Et rationem assignant; nempe denominatio praesupponit inexistentialiam. At non appareat, cur, albedinem esse in nive, potius ratio sit cur nix sit alba, quam contra; imo unica ratio, cur albedo in nive esse dicatur, ea est, quod nix sit alba; quamvis enim nomen sequatur rem et non contra, nihil tamen est causae cur *nivem esse albam* ad nomen referatur, et *albedinem esse in nive* ad rem referatur, quam contra; quin imo haec res est, *nivem esse albam*, et hoc posterius est et ad nomen pertinet, *albedinem inesse nivi*.’

<sup>158</sup> Geulincx, *MP I Ann.*, §2, II 304-306.

say that ‘motion is *in* a moving body’ and that ‘a body is *in* motion’, so that it is completely unclear either of which really inheres in the other.

In the main text, Geulincx refutes the four conditions of inherence Aristotelians generally propose and concludes that Peripatetics cannot explain what the ‘*in*’ means of the *inesse* of an accident in its subject. Their theory of substance and accident is thereby proved wrong. Geulincx concludes that Peripatetics do not have an adequate notion of inherence, and certainly cannot sustain that inherence accords with predication or the order of language. According to Geulincx, philosophically speaking, a substance is rather *in* an accident than reversely, because the concept of the substance, or that which is modified, is always *involved* in the concept of an accident (a mode). It is, therefore, more true to claim that a body is in motion or in whiteness than the reverse. As a result, the whole Aristotelian theory of inherence falls apart. The only possible definition which remains is the ‘per aliud’-version as explained by Geulincx, that is, a re-interpretation of the notions of substance and accident to a grammatical distinction, which is in turn explained by man’s reliance on the senses.<sup>159</sup> Thus, the Aristotelian conception of substance and accident does not have any ontological significance.

But what about Descartes’ notion of substance as being capable of existing independently (self-sufficiency)? Does Geulincx consider this notion of substance to be an extrinsic denomination as well? Geulincx discusses the Cartesian notion of substance in his *Larger commentary on Descartes’ Principles*. Geulincx insists there that substance is not a primary attribute of a thing, but at best a property (*proprietas*).<sup>160</sup> Unlike what one might expect, he says that it follows from the essence of a thing rather than from being (*ens*). He says that substance is a property of both God – the mind *simpliciter* – and body in general.<sup>161</sup> Which means that substance, as a property, can be deduced from

<sup>159</sup> Geulincx, *MP* I, §2, II 218: ‘... adeoque totam rationem substantiae et accidentis penes hoc desumendam esse, quod altera quidem sit substantivum, alterum sit adjectivum primo ...’

<sup>160</sup> Geulincx, *AL* I, §52, III 397: ‘Ratio substantiae in re aliqua pertinet ad rei istius proprietatem; nam sufficere se solo, vel non indigere alio ad existendum, non est primum attributum rei, sed sequitur ex attributo anteriori, puta quod cogitet, vel quod extensa sit; inde enim sequitur: ergo non indiget alio ad existendum. Ex quo patet, substantiam non esse genus ad mentem et corpus, seu ad spiritum et corpus (ut Scholis visum est), adeoque illam vocem non esse *abstractam*, ut loquuntur, sed *denominativam*.’ Geulincx, *MP* I, §3, II 220-221: ‘Qui vero substantiam dicunt esse ens independens, accidens vero quod ab alio dependet; ne quidem hi gradus esse accidens et substantiam sinunt; ad summum enim juxta hos sunt proprietates earum rerum de quibus dicuntur. Prius enim est habere affectionem aliquam, quae ab intellectu attingatur (puta extendi, cogitare, de loco abire, etc.) quam ab alio dependere aut non dependere; nam num pendeat nec ne, ex affectione illa aestimandum est, adeoque affectio praecedit in intellectu, et dependentia illa tanquam proprietas sequitur. Quae proinde non est gradus seu genus, ut quod speciebus suis natura prius esse debeat. Sicut ergo volubilitas (seu facilis et expedita per plana rotatio) non est genus globorum sed proprietas, sic substantia et accidens ad summum sunt proprietates earum rerum quae hisce nominibus vocantur.’

<sup>161</sup> Geulincx, *AL* II, §7, III 430; *AL* I, §63, III 404-405.

their essences. This notion of substance – as independent existence – thus seems to have another status than the logical notion. But Geulincx still says that it is just an extrinsic denomination. Thus, although Geulincx recognizes the difference between the two notions of substance, he also insists that the ‘ontological’ concept of substance is not a real aspect of things.<sup>162</sup> In fact, by calling something a substance we say only that it does not need anything else to exist. At this point, Geulincx urges that philosophy should not start with general notions such as being (*ens*) and substance, because they are at most properties (*proprietates*), which are to be dealt with after the essence is said. Instead, one has to start with body and mind, the real things and essences.

To conclude, the *Peripatetic metaphysics* presents the conceptual structures of intelligibility. That is, it explains the acts of the intellect that are needed to make objects intelligible to us. As a consequence, concepts of external objects always involve general ontological terms, as being preconditions of their intelligibility. In fact, they are even prior to the conceptual content – the ideas or representations of true attributes (*affectiones*) of things. External objects are therefore always understood through acts of the intellect – that is, intelligible species. This conceptual framework of intelligibility is absolutely necessary for conceptualizing things. Human beings cannot understand external objects without these acts of thought, that is, without thinking of them as beings, unities, wholes, and so on.

#### 9.1.7 Conclusions

It is now clear that Clauberg, De Raey and Geulincx wrestle with Descartes’ remarks in the *Principles* on the status of ontological notions. Clauberg is the least interesting, because he simply attempts to accommodate his earlier ontology to Descartes’ remarks. Accordingly, Clauberg is just as ambiguous as Descartes on the ontological significance of these notions. De Raey, by contrast, thinks through the ramifications of Descartes’ ontology for philosophy. He uses Descartes’ basic division of disciplines in philosophical and non-philosophical to explain the status of general ontological notions. Ontological notions are ordinary notions instead of philosophical notions.

It is remarkable that Clauberg, De Raey and Geulincx claim that ontological concepts involve mental activity. Clauberg explains their origin by the mental act of comparison. The approach of De Raey resembles that of Geulincx. Both believe that ontological notions refer to mental acts or to be produced by them, both of which are nothing other than ways of considering external objects. The major difference between De Raey and Geulincx is, however, that Geulincx argues that man can have philosophical-scientific knowledge of reality as it appears to us – he denies that this would not amount to philosophical knowledge. Indeed, in his view, this is the only scientific knowledge man can obtain. In other words, De Raey’s idea of divorcing

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<sup>162</sup> Geulincx, *AL* I, §52, III 397: ‘... merae denominationes externae ab intellectu nostro et ejus modis desumptae ...’

scientific knowledge from ordinary knowledge is impossible, according to Geulincx. This point will be further explained in the next sections.

### **9.2 Scientific knowledge, philosophy (wisdom) and knowledge of external reality**

It is now time to return to one of the main themes of this study: Geulincx' conception of scientific knowledge and philosophy. As I said in the introduction to this chapter, for Geulincx philosophy is the pursuit of wisdom, that is, knowledge of things as they are in themselves. This is the kind of knowledge God has of himself and his creatures, which concerns ideas of the essences of things. Geulincx contrasts these notions with secondary notions and extrinsic denominations, which refer to concepts of external objects as they appear to us. Strikingly, Geulincx asserts that wisdom is impossible for human beings. But does Geulincx claim that we cannot know anything about reality? Or does he hold that we do have some knowledge of real features of reality?

The answer must be affirmative. Before I explain this, however, it is useful to consider Geulincx' arguments as to why wisdom is impossible. First, wisdom means having knowledge of the idea – that is, the exemplar – of the thing. In Chapter 6, it was shown that this means having such a kind of knowledge of a thing that one can produce it. It is maker's knowledge, intuitive knowledge of how (*quomodo*, its *modus*) something comes about. It is clear that we possess this type of knowledge neither of nature nor of God – the two external objects. Only our mental acts and their products – extrinsic denominations and secondary notions – are fully known.<sup>163</sup> Moreover, they are also intuitively known, without the intervention of an intelligible species. As a result, neither nature nor God can be (perfectly) known. Full knowledge of external reality is impossible. The only knowledge man has of these objects is abstract knowledge (*doctrina*).

Second, Geulincx uses also another argument to establish that knowledge of reality is necessarily abstract. The argument is that because reality is infinite and consists of two infinite objects (nature – infinite extension – and God), our finite mind cannot grasp it in its entirety.<sup>164</sup> This is why we always apprehend reality from a limited perspective. This limited perspective is, moreover, always relative to us. Reality consists of two absolute and infinite unities in which *we* make distinctions and discern parts and wholes. All this is performed by mental acts and extrinsic denominations. As a result, we always understand things by our forms of thinking, either as beings or modes of being. Only an infinite mind, that is, God, can have knowledge without using modes of

<sup>163</sup> This theory of intuitive knowledge goes back to Scotus. He contrasts it with abstractive knowledge, which means knowledge by means of a species. See on this, Kobusch 1976, 528; Day 1947; Torrance 1968; Marenbon 1987, Ch. 10; Wolter 1990, 98-122; Pasnau 2003, 296-300.

<sup>164</sup> Geulincx, *MP* Intr., §3, II 207: ‘... cum enim intellectus noster finitus sit et limitatus, nunquam rem aliquam attingit, nisi sub certo modo; et quidem sub aliquo horum trium modorum attingit quicquid ei obversatur, nempe per modum entis, modi entis et sententiae.’

thinking, so he alone knows things as they are in themselves.<sup>165</sup> God does not have any modes because a mode always involves limitation, as it terminates in another mode of the same thing.<sup>166</sup> Consequently, God does not have sense perception, imagination or discursive thought.

By contrast, man always has to use these forms of thought. Creatures therefore never know things *ut sunt*, but always *pro modo suo*, that is, how they appear to them. This is precisely what happens with the primary act of the intellect: the affirmation (*affirmatio*). By this act, we understand something as either a being – a subject – or a mode of being – a predicate. Because this is the primary act of the intellect, immediate knowledge of external objects is precluded; in other words, the human mind knows them necessarily by means of logical forms of thought. Put otherwise, only by apprehending external objects as either beings or modes of being, they become intelligible to us.<sup>167</sup>

But this entails that we cannot know any objective feature of reality. Geulincx stresses that we are aware of the fact that reality consists of minds and bodies, more precisely, of an infinitely extended being and of infinite thought, that is, God.<sup>168</sup>

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<sup>165</sup> Geulincx, *AL* I, §48, III 396: ‘Pertinent igitur haec omnia ad modos nostrae cogitationis, omniaque aliquo horum modorum (ut res, ut affectiones, ut sententias) cognoscimus; et sine modo nihil cognoscimus. Hoc proprium est supremae mentis, sine modo cognoscere; illa proinde sola cognoscit res ut sunt; creatura nunquam ut sunt, sed semper pro modo suo.’; Geulincx, *AL* I, §23, III 384: ‘Sensus est modus quidam cognoscendi; modus autem (ut et ipsum illud nomen innuit) semper importat aliquam limitationem. Nam modus semper terminatur ad alium modum ejusdem subjecti, seu ad commodum; nunquam enim modus est sine correspondente alio modo. Si ergo Deus sentiret, esset aliquid in ipso limitatum; cum tamen ex aeternitate ejus clarissime demonstratum sit, nullos limites ad ipsum posse pertinere, hinc non tantum sequitur, non esse sensum in Deo, sed nec ullum alium verum ac reale modum. [...] Intelligit igitur Deus, sed sine modo ...’

<sup>166</sup> Geulincx, *AL* I, §23, III 384.

<sup>167</sup> Cf. Geulincx, *Logic* I, Sect. 1, Ch. 4, §1, I 182-183: ‘... de rebus ipsis, praeveniendo omnem nostram expressionem, qua eas verbo aliquo (oris scilicet vel mentis) exprimamus, nihil potest affirmari; tunc tantum affirmari de illis aliquid potest, cum apte exprimuntur. Quia vero quidlibet sic potest apte exprimi, hinc quodammodo de quolibet etiam affirmari aliquid potest, sed remote tantum, quamdiu non exprimitur; tunc demum proxime, cum idonea expressio accessit. Ratio manifesta est, quia non possumus dicere de aliquo, nisi ipsum intra dictionem nostram admissum sit; intra illam autem non admittitur aliter, quam si ipsum etiam dicatur seu voce exprimatur; adeoque prius est ipsum dici, quam de ipso aliquid dici.’

<sup>168</sup> See Geulincx, *MP* I, §1, II 215: ‘Res in se sunt quod sunt, nempe mentes vel corpora; nos vero cum de illis loqui volumus merito *res* appellamus ea, quia haec est nota subjecti; proinde cum de illis loqui volumus adhibenda est nobis ista nota. Et expostulatio ista similis est huic, qua quis expostularetur: cum Petrus in se ipso, seu quatenus in se est, non habeat illud nomen *Petrus*, cur, quando de Petro secundum se loquimur, semper tamen ei id nomen *Petrus* induamus? Itaque res in se non sunt res, seu non habent modum illum intellectus nostri, quo constituantur in ratione rerum; nos tamen cum de illis etiam ut sic, seu de illis ut sunt in se loqui volumus, necessum est ut

Consequently, we know that things in themselves are either minds or bodies. However, in his view, this does not amount to scientific knowledge (*scientia*). For scientific knowledge it is necessary to have an explanation of why a unique property pertains to a subject. Science is, moreover, always discursive knowledge and accordingly requires that we make assertions, thus taking minds and bodies for beings, which, in fact, they are not. This is one of our forms of thinking, which is non-representational. Moreover, if we had intimate knowledge of the essence of minds and bodies, it would be known how they come about.

Still, there are some remarks on God and body in general that show us some of their objective features. We know, for instance, *that* body in general consists of extension and is infinite, as well as *that* God exists and is infinite thought. This, again, does not amount to scientific knowledge proper or wisdom because it is unknown how these properties come about. How, then, can we be certain of these assertions?

Geulincx explains that we can acquire true knowledge of God and extension by using the implications of the theory of abstraction. We have already seen that the mind has intimate awareness of how abstraction is performed, because it is an act of our mind. As a result, we know that abstraction means limitation. Geulincx argues in turn that if we examine ourselves and remove everything that belongs to ‘precision, abstraction or limitation’, we come to recognize with the utmost clarity (*clarissime*) that God is truly in us and we in him.<sup>169</sup> In other words, we have to remove the limitations of our mind – which is characterized by the real attribute (*affectio*) of thought – and all its imperfections. Then, the concept of God as an infinite mind is discovered. Likewise, when we discover that a line is in body and body in the line, and then remove all abstractions by which a line is constituted in its being (*illa in esse suo constituitur*), the notion of body itself remains. Thus, by removing all limitations or modes of the real

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illis tribuamus modum subjecti aut entis, seu potius, ut apprehendamus illas: nam in ea ipsa locutione in qua de iis loquimur ut sunt in se, non finimus illas ut sunt in se, sed damus eis rationem subjecti.’ There are also words to refer to external things; see Geulincx, *MV* II Ann., Sc. 9, II 275: ‘Nota, voces alias esse, quae significant res ut sunt in se, independenter a mentis nostrae operatione. Inter tales est ista vox *corpus*; significant enim illam rem, illam extensionem, quam corpus vocamus, ut in se res illa est, seclusis modis cogitationum nostrarum, quibus circa rem illam versamur.’

<sup>169</sup> Geulincx, *AL* I, §51, III 396: ‘Aliae enim omnes sunt limitatae; limites autem etiamsi rem finitam faciant, necessario tamen praesupponunt rem infinitam. Limes enim (quod Scholae parum videntur observasse) tam necessario excludit aliquid, quam includat et finiat aliquid; quod fieri non potest sine infinitudine. Necessum est enim, aut in limitibus ipsis hoc posito in infinitum progredi (si nempe quod exclusum est, rursum semper atque semper limitatum sit), aut simpliciter rem illimitatam seu infinitam esse; et siquidem prius illud supponatur, equidem posterius hoc consequetur; nam ablatis limitibus, res manere intelligitur utique illimitata. Ita ut majus argumentum Infinititudinis vix esse possit, quam ipse limes seu finis.’ See also Geulincx, *MP* I, §8, II 239.

attribute of thought and extension, we can recognize two individual things: God, the Mind *simpliciter*, and Body or extension.<sup>170</sup>

Elsewhere Geulincx offers another explanation. He claims that the idea of God is not formed by using a *species*, which eventually goes back to the basic form of an affirmation, given the fact that the idea of God is not formed by us through compounding (*componendo*) or dividing (*dividendo*).<sup>171</sup> And if the cognition is not formed in this way, the only option left is that we are dealing here with a thing as such (*rem ut est*). To remove the limits from a limited thing, in this case from our mind, is not an act of affirming or denying, and thus no mode of thought is used here.<sup>172</sup> The result is knowledge of a real thing, namely, God, the unlimited mind. The point is that an infinite thing is a necessary precondition for a finite thing, and that it is therefore legitimate to remove those limits, whereby an unlimited thing (*res*) remains. By this procedure we acquire knowledge of the concrete and particular things, of which there have to be just two because there are just two real attributes. We are certain of this because we can *exclude* one attribute from the other, as we have seen in the preceding chapter.

As a result, Geulincx' theory is more subtle than is suggested in the interpretations of his theory of cognition to date. To be sure, Cassirer, who has pointed out similarities between Kant and Geulincx, was correct in arguing that Geulincx carried through Descartes' criticism of secondary qualities to the intellect and its forms of thought.<sup>173</sup> Thereby Aristotelian metaphysics was proved to be concerned only with our ways of

<sup>170</sup> Geulincx, *MP* I, §8, II 240: ‘Videmus itaqua duas res singulares, mentem inquam atque corpus, creditas hactenus ut universales ...’

<sup>171</sup> Geulincx, *AL* I, §16, III 373: ‘Posset ergo quis suspicari, num forte quam Dei ideam dicimus, non sit similis aliqua species; et multi jam talem speciem pro Deo obtrudunt etiam hodie, vel incauti vel impii. Dicunt enim quidam, Ens in genere esse Deum; quod non est aliud quam species, ut Philosophus noster bene agnoscit art. 48. et 49.; sed de his alias. Quantum ad praesens, cum in Entis summe perfecti contemplatione penitus desigimur, clarissime videmus, non speciem, sed veram ideam habere nos prae manibus, in qua modi nostrarum cogitationum nihil loci sibi vindicent. Nam idea Dei non formatur a nobis componendo aut dividendo, sed relinquendo rem ut est, id est, auferendo tantum limitationes; limitibus autem ablatis res non componitur aut dividitur, sed finitur ut est, seu relinquitur sibi. Sic a cogitatione auferendo eas limitationes, quas in nobis habet (v. g. quod non extendatur ad futura, etc.), deprehenditur ipsa Dei cogitatio, ipse Deus.’

<sup>172</sup> Geulincx, *AL* I, §16, III 373: ‘Quantum ad praesens, cum in Entis summe perfecti contemplatione penitus desigimur, clarissime videmus, non speciem, sed veram ideam habere nos prae manibus, in qua modi nostrarum cogitationum nihil loci sibi vindicent. Nam idea Dei non formatur a nobis componendo aut dividendo, sed relinquendo rem ut est, id est, auferendo tantum limitationes; limitibus autem ablatis res non componitur aut dividitur, sed finitur ut est, seu relinquitur sibi. Sic a cogitatione auferendo eas limitationes, quas in nobis habet (v. g. quod non extendatur ad futura, etc.), deprehenditur ipsa Dei cogitatio, ipse Deus.’

<sup>173</sup> See Cassirer 1911, 532-553.

thought, which are ways in which we grasp reality. Cassirer argues that this is, above all, grounded in language. I take issue with the second half of his conclusion. Certainly, Geulincx connects substance and accident to grammatical distinctions. But substance and accident are not the most fundamental forms of thought. Rather, being and mode of being, as well as their properties, are primarily what ontology is concerned with. Unlike substance and accident, these notions have nothing to do with language. What we are dealing with are logical forms of thought – types of acts of the intellect (*modi cogitandi*). A science which is grounded in language is impossible for Cartesians, because language is conventional and related to the imagination. More recently, Van Ruler made the same mistake, by speaking of ‘intellectual-linguistic schemes’.<sup>174</sup> The origin of this mistake is, again, that he only discusses the categories of substance and accident. Owing to this, Van Ruler does not take into account the wider theory of which these notions are a part. Above all, the *Peripatetic metaphysics* does not deal only with categories. It is better to characterise it as the science which deals primarily with transcendental terms, just like contemporary ontology.

There is another point on which I slightly differ from Cassirer. Cassirer argues that Geulincx’ criticism of metaphysics is limited to ontology, because Geulincx presents a basically Cartesian metaphysics. Cassirer explains that on Geulincx’ view this metaphysics takes its starting-point in the experiential knowledge of the dualism of mind and body. Van Ruler follows Cassirer in calling our knowledge of the dualism of mind and body experiential and prelinguistic.<sup>175</sup> I think that the use of the term ‘experiential’ does not clarify much. In fact, what is the case here is that the mind has access to ideas of real attributes (*affectiones*), either by self-consciousness – thus forming the idea of thought (*cogitatio*) – or by perceiving them in God, in which way it has access to the concept of extension. These ideas are complete and can thus be excluded from each other, and, with the procedure outlined above, the argument can be made that they refer to infinite things. That is Geulincx’ point.

Although I do not want to make a precise comparison of Geulincx and Kant, this shows us the major difference with Kant. Unlike Kant, Geulincx is convinced that man has access to ideas that represent both external reality and of the acts of our mind. We have an idea of God, body, and the mind. Kant denies, to the contrary, that our notions of these objects have any objective reality (in theoretical philosophy). They are just (transcendental) mental constructs. Still, Geulincx does argue that we do not have full knowledge of reality, because we always conceive reality through acts of thought.

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<sup>174</sup> See Van Ruler 2003a and 2003b. In an earlier article, Van Ruler argues that Geulincx’ criticism of substance has to do with individuation (Van Ruler 1999, 380). We grasp minds and bodies as individual existing ‘things’, which is not actually the case.

<sup>175</sup> See Van Ruler 2003a.

### 9.3 *Doctrina* and true philosophy

One might, however, propose an alternative reading of Geulincx' theory of doctrine and philosophy. On this reading, he separates abstract knowledge of reality (*doctrina*), consisting in knowledge of reality as it appears to us, from true philosophical knowledge, which can be found in his *True metaphysics*. If so, Geulincx' position would largely concur with De Raey's, who, as we have seen, also argues for strictly divorcing philosophical knowledge from abstract (common sense) knowledge. But a thorough reading of Geulincx' texts rules this out. Let us first explain the alternative reading.

In an annotation to his *True metaphysics*, Geulincx claims that 'True metaphysics considers things as they are in themselves, independent from our consideration', whereas 'the Peripatetic Metaphysics considers things as they are considered by us'.<sup>176</sup> Elsewhere, moreover, he speaks, in a similar context, of the *Peripatetic doctrina*.<sup>177</sup> This may give more credence to the view that doctrine does not actually apply to his own philosophy, but to common sense – Aristotelian – philosophy instead. Indeed, Geulincx regards his physics as treating of the world as such, rather than the way in which the world appears to us – under sensory forms of thought.<sup>178</sup> In short, Geulincx seems simply to demarcate his philosophy, which is concerned with reality as such, from Aristotelian philosophy, which treats of reality as it appears to us. Geulincx' *True metaphysics*, which is concerned with knowledge of the self, the world (physics), and God (natural theology), amounts accordingly to wisdom. It explains what reality is like, independent from our ways of considering it.

But, again, Geulincx repeatedly insists that humans cannot attain wisdom, that is, knowledge of things as they are in themselves. So, what is the status of Geulincx' own philosophy, then? In Chapter 6, it was shown that he distinguishes four types of knowledge. As his own philosophy is not wisdom, experience, or sensory cognition, it can only amount to doctrine, abstract knowledge of reality, the only type of knowledge that is left. This, however, may not hold true of the first part of his *True metaphysics*, which is concerned with the self, because the knowledge the intellect has of the mind is intuitive and so does amount to wisdom. But that knowledge does not concern external reality, and that is precisely what concerns us here.

What, then, is the epistemic status of physics, natural theology and ethics? As to physics, although Geulincx affirms that it is possible to correct the senses, it still amounts to doctrine, as we have seen in the preceding chapter. To be sure, in physics, we are certain that reality does not correspond with the way in which we perceive it through the senses. Having access to ideas of extension and motion, the intellect knows

<sup>176</sup> Cf. Geulincx, *MV* II Ann., Sc. 13, II 284: 'Vera Metaphysica considerat res ut sunt in se independenter a nostra consideratione; Peripateticorum autem Metaphysica considerat res prout illae considerantur a nobis.'

<sup>177</sup> Geulincx, *MP* Intr., §1, II 199. Cf. Chapter 1.6.2.

<sup>178</sup> Geulincx, *PV* Intr., II 368.

for sure that physical reality does not have characteristics similar to our perceptions. Thus, the intellect corrects the senses. But the way in which we conceptualize physical reality involves mental acts of consideration, so that reality is still known abstractly. Physics is concerned with modes which are in part constituted by our mental activity. Moreover, we always understand physical reality in our conceptual framework of intelligibility, our perspective on the world. As a consequence, physical objects are regarded as beings, which is an abstract way of grasping reality. And the same goes for natural theology, in which Geulincx uses typically abstract concepts – such as that of God as a father – for speaking about him. In short, with the exception of the first part on self-knowledge, Geulincx' *True metaphysics* consists of abstract knowledge. Man has wisdom neither of nature nor of God. Both are infinite things, whereas our own perspective is finite. In addition, Geulincx is unequivocally clear about the status of ethics. Ethics is an abstract science, dealing with abstract notions such as good and evil.<sup>179</sup> Good and evil are human ways to consider reality, rather than grounded in it. They are nothing but extrinsic denominations, which do not concern reality per se.

As a result, contrary to De Raey's view of abstract knowledge, Geulincx argues that doctrine is scientific and thus philosophical knowledge. The solution of De Raey is impossible, according to Geulincx. In Chapter 7, for example, it was shown that Geulincx denies the possibility of simple apprehension. Man cannot obtain a concept of a thing without at the same time making an affirmation. In other words, the act of affirmation is the primary act of the intellect. As a result, every object is conceived of as either a being or a mode of being. This is a major reason why wisdom is impossible in Geulincx' philosophy. De Raey, by contrast, thinks that it is possible to use intuitive reason without performing other mental acts, thus allowing us to know reality as such. In such a way, he thinks, the mind has access to ideas representing reality. Geulincx, on the other hand, insists that reality can be conceptualized through mental acts (*modi cogitandi*) alone, thus preventing us to know reality per se. That is why Geulincx reduces human wisdom to judging correctly, that is, not to ascribe our acts of thought, as well as their products, to reality. Only ideas of external objects are representations. As a result, Geulincx does not contrast knowledge of reality as it appears to us with philosophical/scientific knowledge. Instead, he insists that it is very well possible to have adequate, scientific concepts of things as they appear to us. In fact, this is the only kind of scientific knowledge we possess.

#### 9.4 Concluding remarks

It is now time to draw some general conclusions as to the influence of Descartes on Geulincx with respect to ontology. That Descartes' ambiguous remarks on the status of general ontological notions in the *Principles* had an impact on the Cartesian philosophers discussed is unequivocally clear from our discussion in this chapter. All

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<sup>179</sup> See particularly, Geulincx, *MP*, Intr. §2, 205-206.

three philosophers try to make sense of these remarks. In any case, they cannot (simply) regard general ontological notions as referring to real aspects of things, as was common at the time. Clauberg adopts Descartes' terminology and refers explicitly to him. Also De Raey's treatment of them, as modes of considering things, is clearly linked to Descartes' remarks, while at the same time drawing on the way in which secondary notions were considered in contemporary logic. Given the fact that Geulincx bases his *Peripatetic metaphysics* on a distinction of Descartes in *Principles I* §48, it is absolutely certain that he used Descartes' *Principles* as a point of reference as well.<sup>180</sup>

But to what extent is Geulincx' theory of the ontological notions, and thereby the status of scientific knowledge, determined by Descartes' remarks? To be sure, they may have been what prompted Geulincx to regard them in such a way, as it was the case with Clauberg. But there are also other sources for Geulincx' theory. The fact that we cannot know external reality because it is infinite reminds one of the tradition of negative theology. And his insistence on the unity and infinity of reality places him, in this regard, into the neo-Platonic tradition.<sup>181</sup> On such a view, all (actual) distinctions in reality are due to the mind. With the exception that Geulincx acknowledges that reality consists of two ultimate things, infinite mind and body, he certainly holds this view. As a consequence, scientific knowledge is necessarily abstract.

In comparison with Descartes, Clauberg and De Raey, Geulincx' view that we necessarily conceptualize external reality by means of general ontological concepts is original. This is a view that was common in contemporary ontology, but does not occur in Descartes. It is likely, then, that Geulincx combined some insights that come from Descartes with a Scotist conception of ontology. His re-interpretation of ontological concepts as referring to mental acts (or their products) is, again, on the one hand an obvious interpretation of *Principles I* §48, but on the other also a consequence of the fact that he considers the act of affirmation to be the primary act of the intellect. The latter view can be found in Zabarella, not in Descartes. It is very likely that Geulincx' combined his interpretation of 'modes of thinking' as mental acts (and logical forms of thought) with Zabarella's view of the species and the primacy of the act of affirmation, and also with the Scotist conception of ontology.

So, in Geulincx' view, external reality is only accessible by means of our conceptual schemes, which do not reflect reality. Only through these structures of intelligibility, external things are intelligible to us. Does that make him an idealist? This question will be briefly taken up in an appendix to this study.

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<sup>180</sup> Moreover, Geulincx also claims this in his commentary on the *Principles*, see *AL I* §15, III 370-371, 372-373.

<sup>181</sup> Cf. Ayers 2005, 187.

## Conclusion

In the introduction of this study we asked two questions. First, what does Geulincx do with the received (Aristotelian) views of philosophy and scientific knowledge? Second, what does that teach us about Descartes? These questions can now be answered.

In this study, it has been shown that Geulincx generally opposes the received Aristotelian philosophy as being a common sense philosophy that cannot accomplish its aim, namely, knowledge of reality as it is in itself (of *res ut sunt*). This goal was called ‘wisdom’ (*sapientia*). Moreover, in Geulincx’ view, it also does not yield scientific knowledge of reality as it appears to us. Aristotelian philosophy is simply mistaken. Geulincx nonetheless adopts its view of the goal of philosophy (as the acquisition of wisdom). But because he denies that human beings can achieve knowledge of the world as it is in itself, this goal is unattainable. Geulincx draws this conclusion explicitly. At the same time, however, he proposes a weaker version of wisdom by combining the Aristotelian view with Descartes’ idea that wisdom means judging correctly. Thus, for Geulincx, wisdom comes to mean that we do not refer our knowledge to the world in itself as a result of the awareness of our inability to have such knowledge of reality.

But the notion of wisdom is not the only thing Geulincx adopts from Aristotelian philosophy in order to accommodate it to his own views. More generally, he adheres to the Aristotelian scheme of types of knowledge (like *experientia*, *scientia*, and *prudentia*), and employs the intricate technical apparatus that accompanies the Aristotelian conception of scientific knowledge. He tries to accommodate these to his own tenets as well. Following the Aristotelian distinction between wisdom (*sapientia*) and scientific knowledge (*scientia*), as demonstrative knowledge of properties of things, Geulincx claims that only the latter kind of knowledge is attainable if the object of *scientia* is the world as it appears to us. Although the latter proviso is un-Aristotelian, Geulincx still characterizes this type of knowledge by the Aristotelian theory of *scientia*.

This characterisation, however, concerns rather the formal specifications of *scientia* than what is known scientifically, that is, the properties of things. In this regard, Geulincx gives a new meaning to *scientia* as knowledge of properties that are relative to us. It is to be emphasized that Geulincx uses here the strict notion of knowledge as full consciousness of the object of knowledge (that is, its essence), which only those possess who can make that object. Because we construct the properties that are the object of scientific knowledge ourselves, we can know reality as it appears to us. At the same time as producing these properties, we also construct their concepts, which are used in scientific assertions and proofs. This idiosyncratic theory of the production of conceptual content can be found neither in Cartesian nor in Aristotelian philosophy. It is original with Geulincx. But he explains it in the context of the Aristotelian theory of scientific knowledge.

Apart from using the Aristotelian division of types of knowledge, Geulincx also employs the common division of philosophy in logic, metaphysics (including ontology), physics, and ethics. He takes part in contemporary discussions on the classification and demarcation of the sciences, more specifically elaborates on the relation between logic and metaphysics. None of these issues can be found in Descartes. But they were hotly debated issues in the seventeenth century. Those views and debates determine, to some extent, the structure and formal aspects of Geulincx' philosophy, as does Aristotelian logic in general. The contents of Geulincx' philosophy, however, are – with the exception of logic – determined by Cartesian and Augustinian-Platonic tenets. This means that he combined Descartes' philosophy with other doctrines to construct a fully elaborated philosophy of his own.

In so far as Aristotelian philosophy is concerned, this can be particularly observed in Geulincx' logic and ontology. Indeed, he parts company with Descartes especially in his assessment of logic, who completely omitted it from his system. In addition, Descartes does not offer an ontology comparable to that of Geulincx or the Aristotelians. Accordingly, for both logic and ontology Geulincx draws heavily on Aristotelian philosophy, again changing it in the process of appropriating it. In fact, he reinterprets Aristotelian ontology as a theory of logical forms of thought, which are necessary for conceptualizing reality. Probably this reinterpretation of general ontological notions is a result of Geulincx' encounter with Descartes. But again, he elaborates this theory by combining it with specific Aristotelian notions.

In sum, it can be said that Geulincx attempts to maintain the general structures of the Aristotelian theory of philosophy and scientific knowledge of his time, and combines it with Cartesian views and other tenets. Again, of course, the contents of Geulincx' philosophy are un-Aristotelian. Particularly his physics and metaphysics are pervaded by Cartesian doctrines.

What, then, does Geulincx' approach to the received theories of philosophy and scientific knowledge teach us about Descartes' philosophy? First of all, the simple fact that a Cartesian philosopher like Geulincx had to rely on the Aristotelian conception of philosophy and scientific knowledge to construct a comprehensive philosophy makes it clear that Descartes' philosophy is not well elaborated on these points. To start with, he does not say much about the formal (or methodological) aspects of philosophy and science. Further, I have noticed several times in this study that Descartes does not offer a complete theory of scientific knowledge. More generally, it can be said that what is missing are a logic, philosophy of science, and elaborated ontology. That is why Geulincx could not develop a comprehensive system of philosophy on the basis of Descartes' works alone.

Second, because of the fact that Descartes does not have a fully developed theory of philosophy, scientific knowledge, and does not offer a logic or elaborate ontology, his followers could not find solutions in Descartes' own texts to urgent issues with which they were confronted. Descartes' philosophy alone did not allow Cartesians to

participate in contemporary debates. Geulincx' discussions on the division of the disciplines, and the relation between logic and metaphysics, are a case in point. This again confirms the view that Cartesians had to rely on, or combine Cartesian tenets with, other views to answer contemporary concerns. This could lead to an original, at some points decidedly un-Cartesian, philosophy like that of Geulincx.

As a result, my study underlines the fact that Cartesian academic philosophers were not only Cartesians, but were also trained in an academic tradition and had to participate in that tradition. In Descartes' philosophy they could not find the technical apparatus necessary for doing so. Because Geulincx was a participant in the academic debates of his time, he needed both terms and solutions that he could not find in Descartes.

To conclude, then, what does this study tell us about Geulincx as a Cartesian? What type of Cartesian was he? In the introduction, I distinguished between 1) those who follow Descartes in every respect, 2) those who adopt only specific parts of philosophy, 3) those who criticize specific points but retain the overall structure of his philosophy and adhere to its fundamental tenets, and 4) those who combine it with other philosophies and principles. As Geulincx is neither an orthodox Cartesian nor employs only one or several parts of Descartes' philosophy, he should be ranked among those who typify either the third or fourth kind of response to Cartesian philosophy. Given that Geulincx adopts Descartes' physics on the whole, and rarely makes adjustments to it, he would fall into the third category. However, although his metaphysics is clearly, to a large extent, Cartesian, it is quite original. His proofs for God's existence and the deduction of his attributes certainly do not originate in Descartes. In addition, he does not use the method of doubt for purposes similar to those of Descartes, rejects the creation of the eternal truths, and denies that the human mind is a substance. As a whole these deviations are so fundamental that Geulincx cannot be regarded as someone who only improves on, or alters some Cartesian views, but leaves the structure of his philosophy intact. Add to this that Geulincx offers a fairly traditional logic, has a different theory of will, action, and cognition, and, more generally, thinks that our cognitive abilities are more limited than Descartes does. In short, apart from the fact that Geulincx draws other conclusions from Cartesian principles, he combines it with other views and theories. Where precisely these views stem from is often unclear. Roughly, it is combination of late-Aristotelian views with Augustinian-Platonic tenets. As a consequence, his response to Cartesian philosophy should be regarded as belonging to the fourth type.

### **Further research**

This study gives rise to, at least, three suggestions for further research: 1) into the specific changes in the conception of philosophy and scientific knowledge in (early) modern philosophy; 2) into the role of mental activity in the construction of (scientific) concepts; 3) into the epistemological status of (fundamental) ontological notions and

the categories. It is likely that the views on these three topics have changed dramatically in the early modern period. This is probably a result of, first, philosophical reflections on the mechanical philosophy, which led to a completely new picture of nature, and, second, of modern subjectivism. A thorough study of these three topics will make it clear whether this suggestion is correct.

This is a proposal for a general line of research. To be more specific, it would be worthwhile to compare Geulincx with Spinoza on the three points mentioned. There has been some speculation about whether Spinoza, whose philosophy, to some extent, resembles that of Geulincx, and Geulincx have personally known each other.<sup>1</sup> This could well have been the case. Perhaps Spinoza studied in Leiden while Geulincx taught there. In any case, Spinoza could have known some of Geulincx' works, as well as manuscripts which circulated among students. It is more important that Geulincx has often been seen as a precursor of Spinoza, or as someone who occupies a position halfway between Descartes and Spinoza. It is doubtful, however, to what extent these claims are tenable. In any case, already many commentators in the seventeenth and eighteenth century allied Geulincx with Spinoza.<sup>2</sup> And this subject also attracted attention in the nineteenth and twentieth century.<sup>3</sup> However, these studies are often vague on specifics. It would be more fruitful to compare Geulincx and Spinoza on some specific points, such as the three mentioned above. This could give us a new perspective on Spinoza's philosophy, and may clarify points of his philosophy that have remained unclear to date (such as the theory of the second and third kind of knowledge in Spinoza).

In sum, my study has not only offered new insights into the philosophy of Geulincx, but has also provided us with suggestions for new perspectives on (early) modern philosophy.

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<sup>1</sup> Also some friends of Spinoza studied in Leiden, notably Lodewijk Meyer (1629-1681) and Walther Ehrenfried von Tschirnhaus (1651-1708). See on this, De Vleeschauwer 1961 and Rousset 1999, 18. See about Meyer and Geulincx, Israel 2001, 32.

<sup>2</sup> See Israel 2001, 434-435, 483-485, 543, 551, 635.

<sup>3</sup> See Samtleben 1885, Hubbeling 1975, Hubbeling 1983, Aalderink 1999, and Van Ruler 2002.

## Appendix: Early idealism

There is one final point I touched upon in the last chapter which I should discuss here due to the fact that it is so important for the history of modern philosophy, namely, the relation between Geulincx and early idealism. Although it is difficult to define precisely what ‘idealism’ is, it can be made clear what I aim at here.<sup>1</sup> To start with, idealism need not involve the Berkeleyan view that all things are either perceptions (*esse est percipi*) or perceivers, or the view that there is no mind-independent reality, which means that the world as such is (in part) constituted by the mind. For example, Kant’s philosophy is often characterized as a kind of idealism, but he claims neither that only mental things exist nor that there is no mind-independent reality. His point is rather that the human mind can only know the world as it appears to us, and that this world is in part constituted by mental activity, that is, by our ‘conceptual schemes’. These conceptual schemes, consisting of forms of thought (‘pure concepts of the understanding’ or ‘categories’) and forms of sensibility, need not correspond with how reality is actually structured.

It is this type of idealism with which I am concerned here. The origins of this kind of idealism in modern philosophy are unclear. Ayers has pointed out that the English philosopher Richard Burthogge (1638-1705) advances an idealist position that, to some extent, resembles that of Kant. In the article on this philosopher, he mentions, among other things, the following four possible sources of idealism in early modern philosophy: 1) Platonic monism; 2) the theory of error; 3) the question as to the possibility of scientific knowledge; 4) the theory of the logical form.<sup>2</sup> Platonic monism means that all things are one, and that accordingly diversity does not lie in reality, but in our notions. As a result, our knowledge of reality, as consisting of many discrete objects, does not reflect it properly. As for the theory of error, Ayers claims that ‘Error theory becomes idealism when it is held, in effect, that error is normal, and that there is no conceivable way of allowing for the distorting veils of sensation and of conception or language’.<sup>3</sup> In other words, if we must use the common way of experiencing the world and if that is mistaken, then we cannot know reality as it is in itself. The same conclusion can be drawn if scientific knowledge is either deemed impossible or if it is thought that scientific concepts do not mirror external reality. Finally, if the ways in which we

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<sup>1</sup> See on the idealism-realism debate, Loux 2002, Ch. 7, esp. pp. 250-257; Ayers and Snowdon 2001.

<sup>2</sup> See Ayers 2005, 194, 199-200.

<sup>3</sup> Ayers 2005, 194.

conceptualize the world, through our logical forms of thought, do not reflect reality, the world outside the mind cannot be known as well.

All the four points which Ayers mentions as possible sources of idealism come together in Geulincx, and have been discussed in this study. As we have noticed several times, there are Augustinian-Platonic strains in his thought. Most important in this regard is that he adheres to the view that reality consists of two infinite unities and that therefore all diversity with regard to these two things is due to us. Next, the theory of error is central to Geulincx' philosophy, and certainly attributes to his view of our knowledge of reality. Above all, the fact that Geulincx claims that scientific concepts (of properties) are constructed by our intellect has far-reaching consequences for our capacity to have scientific knowledge of reality as it is in itself. Concepts of properties do not reflect reality, but concern reality only in so far as it appears to us. So, scientific knowledge does not amount to adequate knowledge of reality as it is outside the mind. Finally, also the concepts of (the essences of) external objects, in so far as they are perceived by our intellect, do not correspond to reality. This is a consequence of the fact that we apprehend them through our logical forms of thought, which are non-representational. Even though reality is not structured in this way, we must conceive of external things as beings, substances, and so on.

But what were the origins of Geulincx' idealist views? In this study, we encountered several possible sources. In any case, it can be concluded that Descartes' philosophy must have been of great influence on the development of Geulincx' idealist position. First, he emphasizes several times that external reality is infinite and therefore unknowable. The idea that the infinity of God prevents us from knowing him is not new. But the theory that material nature is infinite, and thus an absolute unity, is clearly a result of Geulincx' appropriation of Cartesian physics. It is to be expected that this view of nature has been an important motive for developing the theory of the limitations of our knowledge of nature. But not only the Cartesian 'metaphysical physics' was of importance. Also Descartes' theory of ideas must have been influential. Descartes' notion that the forms of thought (the *modi cogitandi*) are non-representational comes to the fore in Geulincx' theory of cognition. And the view that (qualitative) sensory perceptions are only mental phenomena and so should not be judged to resemble reality, an essential component of Descartes' theory of error and judgement, has certainly contributed to Geulincx' idealism as well. He applies, in other words, Descartes' theory of judgement to the logical forms of thought.

In sum, Geulincx' philosophy can rightly be characterized as 'idealist', at least if it is not central to idealism to involve the denial of the existence of matter, nor the view that there is no mind-independent reality. But unlike Kant, he believes that we can know with certainty some objective features of reality. For example, we know that reality is infinite and consists of infinite thought (God) and extension (nature). As a result, in comparison to what is often called Kant's 'global idealism', which means that man is unable to know anything about reality as it is in itself, Geulincx presents a kind of

'limited idealism', by which I mean that even though we cannot fully know the essence of reality, we do know some of its objective features. Geulincx can claim this because he thinks that we have access to ideas in God. Nonetheless, his view that reality is conceived through our forms of thought points towards a Kantian type of idealism.



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## Samenvatting

In de zeventiende eeuw beschouwden velen zichzelf als cartesiaan of werden zo door anderen aangeduid. Echter veel opvattingen die als cartesiaans gezien werden zijn niet bij Descartes te vinden. Bovendien had Descartes geen volledig filosofisch systeem geleverd, zodat cartesianen zich op andere tradities moesten baseren voor die delen van de filosofie die niet door Descartes waren gedekt. Voorbeelden hiervan zijn de logica, de ethiek en de ontologie (de wetenschap die zich bezighoudt met het zijnde-qua-zijnde). Daarnaast gaf Descartes geen oplossing voor veel detailproblemen waar zijn volgelingen mee in aanraking kwamen. Dit gold met name voor academische filosofen, die een volledige en coherente filosofie moesten doceren. Hun oplossingen voor problemen die de cartesiaanse filosofie opwierp, geven vaak nieuwe gezichtspunten op die filosofie. Een belangrijke kwestie in die tijd was de opvatting van wetenschappelijke kennis.

In dit proefschrift staat de vraag centraal welke gevolgen Descartes' filosofie heeft gehad voor de op universiteiten heersende, aristotelische theorie van filosofie en wetenschappelijke kennis. De aristotelische filosofie heeft een precieze opvatting van wetenschappelijke kennis als demonstratieve kennis van unieke eigenschappen van dingen en beschouwt de kennis van de ultieme principes en oorzaken van de dingen als het einddoel van de filosofie. De mechanistische natuurfilosofie die Descartes voorstaat heeft de aristotelische fysica radicaal afgeschreven. Ook kunnen grote delen van de aristotelische metafysica niet langer gehandhaafd worden. Maar hoe zit dit met de opvatting van wetenschappelijke kennis en van de filosofie als zodanig?

Om tot een beter inzicht te komen op deze thema's is gekozen voor een nauwkeurige bestudering van de Nederlandse cartesiaan Arnout Geulincx omdat hij een volledige (min of meer) cartesiaanse filosofie heeft ontwikkeld en omdat hij uitvoerige kritiek geeft op de traditionele aristotelische filosofie. Aangezien de conceptie van de filosofie en wetenschappelijke kennis centraal staan bij Geulincx, vormt hij een bij uitstek geschikt studieobject om meer inzicht te krijgen in de gevolgen van de cartesiaanse filosofie voor deze thema's. Daarnaast zal nader ingegaan worden op de vraag in hoeverre Geulincx een cartesiaan is, een belangrijk onderwerp in de secundaire literatuur over Geulincx.

In dit proefschrift wordt Geulincx' filosofie enerzijds vergeleken met die van Descartes en anderzijds met de (contemporaine) aristotelische filosofie. Het proefschrift is opgedeeld in vier delen: 1) de theorie van de dwaling; 2) de theorie van wetenschappelijke kennis; 3) de theorie van cognitie en begripsvorming; 4) de relatie tussen denken en werkelijkheid (structuren van intelligibiliteit). Deze vier delen hangen samen met de algemene thema's van deze studie. De theorie van de dwaling is nauw verbonden met Geulincx' opvatting van filosofie en wetenschappelijke kennis. Bij begripsvorming gaat het om (de oorsprong van) wetenschappelijke begrippen. Tenslotte

staat in het laatste deel de vraag centraal of wij de werkelijkheid kunnen kennen zoals die op zichzelf is en daarmee de status van wetenschappelijke kennis en filosofie.

### **Deel 1: De theorie van de dwaling**

Het eerste deel beslaat de theorie van de dwaling. Een belangrijk resultaat van dit deel is dat Descartes, Geulincx en de Engelse filosoof Francis Bacon, een bron voor zowel Geulincx als Descartes, deze theorie hoofdzakelijk hebben ontwikkeld om de aristotelische filosofie te ondermijnen.

In het eerste hoofdstuk staat de houding van Descartes en Geulincx tot de aristotelische filosofie centraal. Hierin wordt aangetoond dat Geulincx' filosofie gedomineerd wordt door een radicaal anti-aristotelisme. Hoewel ook bij Descartes fundamentele kritiek te vinden is op de aristotelische filosofie, is hij meer ambigu in zijn houding en beperkt hij zijn kritiek grotendeels tot de fysica. Geulincx daarentegen verwerpt niet alleen openlijk de aristotelische fysica maar ook de aristotelische ethiek en metafysica.

Toch zijn er overeenkomsten tussen Geulincx en Descartes. Geulincx volgt Descartes in diens kritiek op het aristotelische sensualisme: het baseren van de verklarende begrippen in de fysica op zintuiglijke waarneming. Al deze begrippen geven, volgens beiden, alleen de menselijke kijk op de werkelijkheid weer en leren ons niets over de essenties en reële eigenschappen van de dingen. In tegenstelling tot Descartes breidt Geulincx die kritiek uit tot metafysische begrippen en categorieën zoals substantie en accident. Ook bij metafysische begrippen gaat het volgens Geulincx niet om reële eigenschappen van dingen. Dingen op zich zijn geen substanties of accidenten. Zowel bij zintuiglijke waarnemingen als metafysische begrippen gaat het daarentegen om denkvormen, die niets in de externe werkelijkheid representeren.

Daarnaast wordt in dit eerste hoofdstuk aangetoond dat er een beslissende invloed is van Bacon op Geulincx' kritiek op het aristotelisme. Dit blijkt met name uit twee zaken. Ten eerste uit de notie dat de aristotelische filosofie een 'common sense filosofie' is, die slechts de alledaagse manier van kijken naar de werkelijkheid systematiseert. Dit is een idee dat bij Descartes niet voorkomt. Daarnaast heeft Geulincx evenals Bacon uitvoerige kritiek op de aristotelische theorie van de begripsvorming. Beiden menen dat de aristotelische verklarende begrippen gebaseerd zijn op alledaagse, onwetenschappelijke begrippen en geven daar uitvoerig voorbeelden van. Voor beiden gaat dit niet alleen op voor de op zintuiglijke waarneming gebaseerde begrippen, maar ook voor metafysische begrippen.

Het tweede hoofdstuk behandelt de cartesiaanse theorie van de dwaling. Deze theorie omvat twee componenten: de oordeelstheorie en de theorie van de vooroordelen. Het ene verklaart hoe het mogelijk is dat mensen dwalen en de andere de oorsprong van specifieke dwalingen. De oordeelstheorie houdt in dat een oordeel (een overtuiging) bestaat uit een inhoud, die komt van het verstand, en een wilsact waardoor die inhoud wordt toegestemd, afgewezen dan wel in beraad gehouden. Omdat de wil vrij

is kunnen we onze houding zelf bepalen. Dit stelt ons in staat dwalingen te vermijden en maakt ons ervoor verantwoordelijk. In dit tweede hoofdstuk wordt naast de twee componenten van de theorie van de dwaling ook nader ingegaan op de theorie van de wil. Uit een vergelijking komt naar voren dat Geulincx' theorie van de wil, handelingstheorie en theorie van cognitie volledig verschillen van Descartes. Toch neemt Geulincx de oordeelstheorie van Descartes over en maakt die zelfs tot de basis van zijn filosofie. Aangezien de oordeelstheorie in de zeventiende eeuw alleen bij Descartes en diens volgelingen voorkomt, verschaft dit een belangrijke reden waarom de filosofie van Geulincx cartesiaans genoemd moet worden. Ook wat betreft de vooroordeelstheorie staat Geulincx op één lijn met Descartes. Beiden beschouwen vooroordeelen als hardnekkige mentale neigingen die stammen uit de kindertijd. Ze zijn een gevolg van het feit dat onze ziel toen zeer nauw verbonden was met het lichaam, zodat we onze rede niet konden gebruiken.

Zoals ik al gezegd heb is de theorie van de dwaling ontwikkeld tegen de achtergrond van een weerlegging van de aristotelische filosofie. Bij Descartes gaat het dan primair om de aristotelische fysica. Die is gebaseerd op begrippen die uit de alledaagse ervaring stammen, zoals kwalitatieve, op zintuiglijke waarneming gebaseerde begrippen als warm, koud en zwaar (de zogenaamde *secundaire kwaliteiten*). Mechanistische natuurfilosofen werken alleen met kwantitatieve, wiskundige begrippen zoals uitbreidheid, vorm en beweging (de *primaire kwaliteiten*). Descartes gebruikt zijn oordeelstheorie om te laten zien dat de kwalitatieve, op zintuiglijke waarneming gebaseerde begrippen en de daarmee verbonden vooroordeelen niet noodzakelijk toegestemd hoeven worden. Met een oordeel bedoelt Descartes de act waarmee een idee wordt toegekend aan een extern object. Bijvoorbeeld een idee van warmte verbonden met het idee van een kachel leidt gewoonlijk tot het oordeel dat de kachel, een extern object, warm is. Met andere woorden, we oordelen dat het idee van warmte overeen komt met of lijkt op een eigenschap van de kachel. Dit is de alledaagse manier waarop wij de wereld beschouwen. Dat dit daadwerkelijk het geval is, wordt volgens Descartes niet helder en welonderscheiden waargenomen, maar is een vooroordeel dat verbonden is met zintuiglijke waarneming. Het gaat hier volgens hem om een vooroordeel dat zo hardnekkig is dat alleen een krachtige vrije wil het teniet kan doen. Aangezien het vooroordeel dat zintuiglijke waarnemingen corresponderen met reële eigenschappen van dingen onjuist is, vervalt de basis van de aristotelische fysica.

Het is deze oordeelstheorie waarop Geulincx zich baseert. Het gaat hem erom dat waarnemingen (gedachten) die niets in de externe werkelijkheid representeren niet worden toegeschreven aan externe objecten. Dwaling ontstaat wanneer een waarneming toegekend wordt, door een wilsact, aan iets wat het niet representeert. Geulincx legt representatie uit als een natuurlijke relatie van gelijkenis tussen een waarneming en een extern object. Een vooroordeel daarentegen is een onnatuurlijke relatie, waarbij er geen gelijkenis is tussen waarneming en object. Deze onnatuurlijke relatie, in feite een gewoonte, is voortgekomen uit oordelen die we gevormd hebben tijdens onze kindertijd,

toen we nog niet op de hoogte waren dat deze waarnemingen niets representeren. Wanneer de wil deze relatie toestemt dwalen wij. Waarnemingen die niet representeren noemt Geulincx wijzen of vormen van denken (*modi cogitandi* of *species*). Daartoe behoren zintuiglijke waarnemingen (zintuiglijke denkvormen) en logische denkvormen zoals het begrijpen van dingen in termen van substanties en accidenten. Het laatste is, zoals gezegd, nieuw ten opzichte van Descartes. De neiging om deze denkvormen, die niets representeren, toe te kennen aan externe objecten kan niet afgelegd worden. Wij moeten de werkelijkheid zo beschouwen en kunnen alleen nadat we deze houding hebben ingenomen ons oordeel intrekken. Ondanks het feit dat we een stok die onder water gehouden wordt als gebroken zien en in eerste instantie ook als zodanig beoordelen, oordelen we toch niet dat de stok daadwerkelijk gebroken is.

Dit moeten we volgens Geulincx doen in alle gevallen waarin een gedachte de werkelijkheid niet representeert. Dit komt neer op het correct onderscheiden en beoordelen van *ideeën*, waarnemingen die representeren, en *species*, die niet representeren. In het juiste oordeel worden de eerste toegekend aan externe objecten en de tweede niet. *Wijsheid*, als dat waar de filosofie naar streeft, is het vormen van zulke oordelen. De cartesiaanse oordeelstheorie is dus voor Geulincx de basis van de filosofie. Hij neemt de these van Descartes over dat filosofie, en dus wijsheid, niets anders is dan het vullen van juiste oordelen, dat wil zeggen dat alleen waarnemingen die representeren worden toegeschreven aan de externe werkelijkheid.

### **Deel 2: De theorie van de wetenschappelijke kennis (*scientia*)**

Zoals gezegd heeft Geulincx radicale kritiek op de aristotelische fysica, metafysica en ethiek. Maar hoe beoordeelt hij de aristotelische logica? Dit is belangrijk omdat in de logica de theorie van de wetenschappelijke kennis wordt behandeld. Om deze vraag te kunnen beantwoorden is het nodig om te weten wat de aristotelische theorie van wetenschappelijke kennis precies inhoudt. In hoofdstuk drie ga ik daarop in, evenals Descartes' opmerkingen over wetenschappelijke kennis.

Volgens Aristoteles is wetenschappelijke kennis het kunnen geven van een bewijs waarom een bepaalde eigenschap toekomt aan een object. Dit gebeurt door het geven van de naaste oorzaak van deze eigenschap. We weten dan de oorzaak of reden waarom iets is zoals het is en niet anders kan zijn. Daarnaast presenteert Aristoteles een zwakkere vorm van wetenschappelijke kennis. Deze bestaat eruit dat we een bewijs kunnen geven dat een bepaalde eigenschap toekomt aan een object. Bij beide typen van wetenschappelijke kennis gaat het om absoluut zekere kennis.

Een wetenschappelijk bewijs bestaat volgens Aristoteles uit drie elementen: een *subject* waaraan een eigenschap wordt toegeschreven, de *eigenschap* waarvan bewezen wordt dat of waarom het aan het subject toekomt en tenslotte de *principes* (of oorzaken) waardoor een eigenschap wordt toegekend aan dat subject. Met een eigenschap wordt hier een unieke eigenschap van een ding bedoeld. Dit zijn eigenschappen die niet de essentie van een subject uitmaken, maar daaruit noodzakelijk voortvloeien. Dat water

kookt bij 100 graden is niet haar essentie, maar wel één van haar noodzakelijke eigenschappen. Water is dan het subject van een bewijs. De aristotelische theorie van de principes is gecompliceerd. Principes kunnen zowel axioma's zijn als eenvoudige begrippen, zoals materie en vorm in de fysica. Het is belangrijk op te merken dat wetenschappelijke bewijsvoering uiteindelijk is gebaseerd op principes die niet bewezen kunnen worden, maar waarvan onmiddellijk wordt ingezien dat ze waar zijn. Hieruit volgt dat de principes zelf niet gekend worden door middel van wetenschappelijke kennis. Zij worden door een ander kenvermogen gekend: de *noûs* (in het Latijn *intelligentia*). Ook is de kennis van subjecten geen wetenschappelijke kennis.

Deze theorie van wetenschappelijke kennis wordt overgenomen door zestiende- en zeventiende-eeuwse aristotelici en is wat gewoonlijk gedoceerd wordt op universiteiten ten tijde van Descartes en Geulincx. Toch zijn er verschillen in benadrukking. De theorie van de Italiaanse filosoof Jacopo Zabarella speelt een hoofdrol in deze periode. Hij benadrukt het onderscheid tussen noodzakelijkheid en contingentie als het demarcatiepunt van wetenschappelijke en niet-wetenschappelijke kennis. Parallel aan dit onderscheid loopt de verdeling van disciplines in theoretisch en praktisch. Alleen in het eerste geval gaat het om wetenschappelijke kennis, dat wil zeggen natuurlijke en noodzakelijke kennis. Contingente zaken hangen af van de menselijke wil, zoals de objecten van de kunsten (*artes*) en morele filosofie. Objecten van wetenschappelijke kennis hangen niet af van de menselijke wil, maar zijn natuurlijk en noodzakelijk. Dit zijn de objecten van de theoretische filosofie: de metafysica, fysica en wiskunde. Ook de invloedrijke aristotelicus in Leiden, Franco Burgersdijk, benadrukt dit onderscheid.

Descartes zegt opmerkelijk weinig over wetenschappelijke kennis. De aristotelische en algemeen geaccepteerde theorie ontbreekt bij hem volledig, evenals de theorie dat de objecten van wetenschappelijke kennis noodzakelijk zijn en een oorzaak hebben. In zijn vroege werk de *Regulae* staat niet de status van het object van kennis centraal maar een kenmerk van onze kennis. Alleen dat wat we helder en welonderscheiden kunnen kennen is een object van wetenschap. Evenals de aristotelici houdt hij eraan vast dat wetenschappelijke kennis absoluut zeker is. Voor hem is het model van zulke kennis de wiskunde. Ook maakt hij een onderscheid tussen zelf-evidente principes en conclusies uit de principes. Maar deze worden niet op verschillende wijze gekend. Zowel de deductie uit principes als de kennis van de principes zelf is een kwestie van intuïtieve kennis. Descartes erkent het onderscheid niet tussen wetenschappelijke kennis (*scientia*) en intuïtieve rationele kennis (*intelligentia*). Principes zijn hetzij axioma's – zoals de regels van de gevolgtrekking – of eenvoudige naturen (begrippen), zoals uitgebreidheid en vorm voor materiële objecten en denken en wil voor immateriële objecten. Uit deze eenvoudige naturen zijn complexe naturen (begrippen) samengesteld. Als deze samenstelling op wetenschappelijke wijze tot stand komt spreken we van deductie. Deductie is uiteindelijk gebaseerd op intuïties, waarbij we onmiddellijk inzien hoe eenvoudige naturen aan elkaar gerelateerd zijn. Het gaat hier om logisch-noodzakelijke relaties tussen begrippen. Er is bijvoorbeeld een noodzakelijke conceptuele relatie tussen

vorm en uitgebreidheid. Vorm veronderstelt uitgebreidheid, of liever het begrip vorm ligt besloten in het begrip uitgebreidheid.

Hoewel deze theorie ook in later werk voorkomt, benadrukt Descartes in de *Principes van de filosofie* dat het bij wetenschappelijke kennis gaat om bewijzen die de ware oorzaken van dingen leveren. Deze bewijzen moeten vallen binnen een conceptueel raamwerk. Dit omvat principes die de metafysica levert, zoals die van uitgebreidheid en vorm, en de bewegingswetten. In essentie gaat het dus om een mechanistisch conceptueel kader waarbinnen de natuurfenomenen verklaard dienen te worden. Opnieuw maakt Descartes geen onderscheid tussen *intelligentia* en *scientia*. Evenmin gebruikt hij de traditionele aristotelische terminologie om wetenschappelijke kennis te beschrijven. Bij hem is geen theorie over unieke eigenschappen, naaste oorzaken, subjecten en principes te vinden, noch een uitgewerkte theorie van de wetenschappelijke bewijsvoering die enigszins vergelijkbaar is met de aristotelische syllogistiek.

In hoofdstuk vier wordt Geulincx' theorie van wetenschappelijke kennis behandeld. In tegenstelling tot Descartes sluit Geulincx zich nauw aan bij de aristotelische theorievorming. Dit werkt hij vooral uit in zijn *Logica*, die ten dienste staat van het vormen van wetenschappelijke bewijzen: het levert zowel de regels voor dit type bewijzen als de instrumenten die nodig zijn voor het vormen van zulke bewijzen (zoals de definitie). Evenals de contemporaine aristotelische filosofie neemt Geulincx zijn uitgangspunt in het onderscheid tussen noodzakelijke en contingente dingen. Alleen de eerste zijn object van wetenschappelijke kennis. Hij brengt dit in verband met Gods verstand en wil. Noodzakelijke dingen behoren tot Gods verstand in plaats van zijn wil. Waar het dan om gaat zijn de essenties van de dingen en wat daaruit voortvloeit, dat wil zeggen de unieke eigenschappen van de dingen. De laatste moeten bewezen worden op basis van het eerste. We zijn hier dus in traditioneel aristotelisch vaarwater beland. Wetenschappelijke kennis is volgens Geulincx dan ook een conclusie uit een bewijs; bewijzen die uiteindelijk teruggaan op zelf-evidente principes.

In de *Logica* geeft Geulincx een uitvoerige bespreking van de rede (*ratio*). De rede duidt zowel de mentale act van het maken van een gevolgtrekking als de logische grond van die gevolgtrekking (de reden) aan. Redenen (*rationes*) staan centraal bij wetenschappelijke kennis. Dat is vanzelfsprekend als we in overweging nemen dat het bij wetenschappelijke kennis gaat om aan te geven *waarom* iets het geval is. We vragen dan om een reden. Om een juiste reden te geven is allereerst een definitie nodig van de essentie van het subject waar het om gaat. Dit is een principe voor wetenschappelijke kennis. Niet van alles kunnen we echter een definitie verschaffen. Als iets volledig helder is, valt het niet te definiëren. Een definitie van iets geven is niets anders dan het duidelijker maken door de verschillende componenten van een ding afzonderlijk te geven. Bij mentale acten, die we intuïtief kennen, kan dit niet. Het enige wat we dan kunnen doen is het geven van een voorbeeld, zodat we het ding onmiddellijk en volledig kennen door de aandacht van onze geest erop te richten.

Uit deze definities moeten eigenschappen worden afgeleid. Waar het dan volgens Geulincx om gaat is het expliciteren van conceptuele relaties door middel van formele bewijzen. Een voorbeeld hiervan de relatie tussen de essentie van het lichaam – uitgebreidheid – en de eigenschap deelbaarheid. Uitgebreidheid is een noodzakelijke voorwaarde voor deelbaarheid. Evenals Descartes is het Geulincx dus te doen om logische relaties tussen concepten. Hij werkt deze theorie uit met behulp van zijn theorie van ‘logical containment’ (*continentia*), een voorloper van de moderne verzamelingenleer. In tegenstelling tot Descartes verbindt hij het met de traditionele logica en aristotelische theorie van wetenschappelijke kennis.

### **Deel 3: De theorie van cognitie en begripsvorming**

Wetenschappelijke bewijzen bestaan uit concepten. Het is daarom van centraal belang om te weten hoe we aan die concepten komen. In het derde deel van het proefschrift staat die vraag centraal. Wanneer we in een cartesiaanse context spreken van concepten dan hebben we het over ‘ideeën’. Dit is hét centrale begrip voor Descartes. Descartes begrip van idee is echter zeer ambigue. In hoofdstuk vijf laat ik zien dat Descartes ‘idee’ gebruikt voor allerlei soorten van percepties. In ieder geval is het helder dat hij met een idee een representatie bedoelt. De vraag is dan wat de extensie is van Descartes notie van idee: welke gedachten zijn representaties? Meer in het bijzonder staat de vraag centraal of zintuiglijke waarnemingen ideeën zijn. Als dit het geval is dan zijn ideeën niet alleen concepten in de gebruikelijke zin van het woord, maar geldt dit ook voor zintuiglijke beelden. Het is allereerst opmerkelijk dat Descartes in zijn vroege werk de term ‘idee’ gebruikt voor een lichamelijke vorm – een materieel kenbeeld – in de hersenen. De gebruikelijke betekenis van idee als een mentale waarneming – een gedachte – komt pas in later werk voor. Bovendien, wordt de term idee vóór het *Vertoog over de methode* nooit gebruikt voor niet-zintuiglijk waarneembare entiteiten zoals God. Dat gebeurt pas vanaf de *Meditaties*. In dit hoofdstuk wordt aangetoond dat Descartes, hoewel hij daar soms over twijfelt, zintuiglijke waarnemingen beschouwt als representaties door middel van gelijkenis. Descartes denkt over representatie in termen van gelijkenis en dit geldt voor zowel lichamelijke representaties (kenbeelden in de hersenen) als mentale representaties. Toch maakt Descartes naast de brede extensie van idee als representatie die zowel (zintuiglijke) beelden als concepten omvat, ook gebruik van een veel preciezere notie van idee. Een idee is dan een aangeboren begrip van de essentie van een ding, zoals het idee van uitgebreidheid en God.

In hoofdstuk zes wordt aangetoond dat Geulincx alleen gebruik maakt van deze precieze notie van idee en dat hij ontken dat zintuiglijke beelden ideeën zijn. Hij gebruikt een platonse notie van idee als een ontwerp of model waarop een ding gebaseerd is, een uitdrukking van de essentie van het ding. Dat is omgekeerd aan Descartes opvatting van idee als een kopie van een ding. Bovendien beperkt Geulincx ideeën tot het zuivere verstand (*intelligentia*), wat inhoudt dat het verbeeldingsvermogen (*imaginatio*) geen enkele rol speelt. Omdat wetenschappelijke

kennis gebaseerd moet zijn op ideeën, mag zintuiglijke waarneming geen enkele rol spelen bij de strikte wetenschappen. Alle zintuiglijke cognities zijn enkel *species*, denkvormen die niets representeren. Alleen ideeën representeren. Ideeën zijn objecten van het zuivere verstand en worden onmiddellijk gekend. Ze zijn de principes voor wetenschappelijke kennis, die ons bekendmaken met de essenties van de dingen. Wetenschap is het deducerend van unieke eigenschappen van dingen uit hun ideeën. Kennis van ideeën is bijgevolg geen wetenschappelijke kennis.

Geulincx maakt dus een scherp onderscheid tussen *species* en *ideeën*. Maar dat is niet de enige classificatie van kenwijzen die hij onderscheidt. Hij geeft ook een vierdeling van typen kennis in zintuiglijke waarneming, ervaring, *doctrina* en wijsheid (*sapientia*). Met ervaring bedoelt hij fenomenale kennis. Deze kennis is zeker, maar niet wetenschappelijk. Door dit type kennis weten we enkel *dat* iets het geval is, maar niet *hoe* iets tot stand is gekomen. Middels ervaring weten we bijvoorbeeld *dat* onze ziel verbonden is met een lichaam, maar *hoe* dit gebeurt is ons volstrekt onduidelijk. Voor wetenschappelijke kennis is het een noodzakelijke voorwaarde dat we weten *hoe* iets tot stand is gekomen. Dit geldt zowel voor *doctrina* als wijsheid. In dit hoofdstuk wordt betoogd dat *doctrina* een synoniem is voor wetenschappelijke kennis (*scientia*), in de zin van demonstratieve kennis van een eigenschap van een ding. Wij zouden dan weten hoe zulk een eigenschap tot stand komt en daarmee de essentie van die eigenschap kennen.

Gegeven Geulincx' causaliteitsprincipe dat we alleen dat kunnen kennen wat we zelf hebben geproduceerd, zou dit inhouden dat we die eigenschappen zelf produceren. Dat sluit goed aan bij het gegeven dat Geulincx onophoudelijk benadrukt dat het bij *doctrina* gaat om kennis van eigenschappen van dingen die relatief zijn aan onze waarneming of conceptualisatie. *Doctrina* is volgens Geulincx wetenschappelijke kennis van de dingen zoals ze ons aandoen. Dit type kennis noem ik 'abstracte kennis'. Dit zou dus betekenen dat we zelf de objecten van dit type kennis – relatieve unieke eigenschappen – produceren en daarom hiervan kennis kunnen hebben. Omdat deze eigenschappen toegekend worden aan een extern object, is er ook een representatie – een idee – betrokken bij *doctrina*. Wetenschappelijke kennis gaat dus over de externe werkelijkheid, maar die kennis is abstract.

In tegenstelling tot *doctrina* heeft wijsheid (*sapientia*) betrekking op kennis van de dingen zoals ze op zichzelf zijn (*res ut in se sunt*). Dit noemt Geulincx 'kennen door een idee'. Geulincx legt vervolgens uit dat alleen de maker van het ding deze kennis kan hebben. Bijgevolg kunnen mensen niet zulk een kennis hebben van de externe werkelijkheid (de natuur). Die is niet gemaakt door mensen maar door God. Mensen hebben alleen zulke kennis van hun eigen mentale acten, maar dat betreft juist niet de externe werkelijkheid. Dus alle adequate kennis die we kunnen hebben van de werkelijkheid is *doctrina*.

Toch heeft, zoals gezegd, *doctrina* betrekking op de werkelijkheid: het gaat om relatieve eigenschappen van *externe* objecten. Daarom moet er ook een representatie, en dus een idee, van een extern object bij betrokken zijn. Deze kennis van ideeën kan

echter geen wijsheid zijn, want we kunnen deze externe objecten niet zelf produceren. Mijn oplossing voor dit probleem is dat deze ideeën, met behulp van het zuivere verstand (*intelligentia*), gekend worden in God. Wij hebben dan deze ideeën niet zelf geproduceerd maar nemen ze onmiddellijk waar in God. Er zijn verschillende teksten in Geulincx' oeuvre die deze interpretatie ondersteunen. Hoewel we ideeën in God kennen en daarmee in aanraking komen met de essenties van dingen, zijn we toch niet op de hoogte van de dingen zoals ze op zich zijn. Dat wordt immers explicet uitgesloten door Geulincx. Dit komt omdat we deze ideeën altijd denken door onze denkvormen. Aangezien deze denkvormen geen reële eigenschappen van dingen representeren, maar we ze wel als zodanig moeten opvatten, kunnen we niet weten wat de dingen op zichzelf zijn.

Logische denkvormen worden nader onderzocht in hoofdstuk zeven. Daarin bestudeer ik de opvattingen over de relatie tussen de vorm en de inhoud van concepten en welke activiteiten het intellect ontplooit met betrekking tot zowel vorm als inhoud. Daarnaast ga ik in op de vraag of het gebruik van denkvormen kwalijke gevolgen heeft voor de mogelijkheid om externe objecten adequaat te representeren. Geulincx wordt vergeleken met scholastieke opvattingen en met Descartes. Zowel scholastici als Descartes menen dat het intellect actief is wat betreft de denkform. De conceptuele inhoud wordt echter passief ontvangen. In tegenstelling tot Descartes en de scholastici meent Geulincx dat het intellect actief is wat betreft zowel de vorm als de inhoud van concepten. *Species of modi cogitandi* zijn de denkformen waardoor conceptuele inhouden worden gevatt, die evenals bij Descartes niets representeren. Deze denkformen zorgen ervoor dat representaties van externe objecten – ideeën – als het ware vertekend worden. Daardoor is het onmogelijk om de dingen zoals ze op zichzelf zijn te kennen.

In het achtste hoofdstuk wordt vervolgens ingegaan op Geulincx' theorie van de oorsprong van de inhoud van concepten. Geulincx benadrukt dat het menselijk intellect actief is bij het produceren van conceptuele inhouden. Uit het bovenstaande blijkt dat dit geen betrekking kan hebben op ideeën van externe objecten. Deze worden niet door de menselijke geest maar door God geproduceerd. Het gaat daarentegen om concepten van relatieve eigenschappen van dingen, de objecten van wetenschappelijke kennis. In dit hoofdstuk beargumenteer ik uitvoerig dat deze eigenschappen door de menselijke geest geproduceerd worden en dat deze niet tot de werkelijkheid als zodanig behoren. Volgens Geulincx bestaat de werkelijkheid uit twee afzonderlijke en eenvoudige dingen: God en de natuur. Alle diversiteit in deze dingen wordt ten dele geproduceerd door de activiteit van ons intellect; ons intellect maakt abstracties uit de oneindige werkelijkheid.

#### **Deel 4: Denken en werkelijkheid: structuren van intelligibiliteit**

Hiermee zijn we aangeland bij het eindpunt van de studie, waarin duidelijk gemaakt wordt waarom volgens Geulincx de externe werkelijkheid niet gekend kan worden ondanks het feit dat we toegang hebben tot ideeën. De reden is, zoals hierboven al is vermeld, dat we ideeën altijd begrijpen via onze denkformen. Deze denkformen zijn de

structuren van intelligibiliteit. Daarmee bedoel ik dat denkvormen noodzakelijke zijn om de werkelijk voor ons begrijpelijk te kunnen maken. Dit is een punt dat Geulincx uitvoerig behandelt in zijn *Peripatetische metaphysica*, een boek over aristotelische ontologie (de leer van het zijnde-qua-zijnde). Geulincx meent dat de ontologische begrippen, zoals zijnde, substantie en accident, niets representeren maar verwijzen naar denkvormen. Voor Descartes' was de status van deze begrippen problematisch. Het is bij hem onduidelijk of ze overeenkomen met reële aspecten van dingen: óf bijvoorbeeld het begrip substantie verwijst naar een reële eigenschap van het ding dat als een substantie gedacht wordt, óf dat het enkel een logische categorie is waardoor wij het ding denken. Geulincx is veel duidelijker. Het is gaan hier volgens hem enkel om denkvormen. Iets denken als een substantie, deel of geheel, accident, of zijnde, zegt niets over het ding op zich maar alleen over de manier waarop wij dat ding begrijpen. Volgens Geulincx is het bovendien *noodzakelijk* om dingen zo te denken; alleen zo worden ze begrijpelijk, dat wil zeggen denkbaar, voor ons. Omdat de primaire act van het intellect (de *affirmatio*) – de act van predicatie – inhoudt dat we iets begrijpen als een substantie waaraan eigenschappen toekomen, moeten we externe wereld zo begrijpen en kunnen we niet weten wat de dingen op zich zijn. Het enige dat we met zekerheid weten is dat de dingen op zichzelf deze eigenschappen – van substantie en eigenschap – niet hebben, maar dat het slechts denkvormen zijn. Daarin bestaat onze wijsheid.

### Conclusies

Filosofie is het streven naar *wijsheid*. Deze opvatting wordt zowel door aristotelici als door Geulincx aangehangen. Beiden menen ook dat theoretische wijsheid inhoudt dat we de werkelijkheid kennen zoals ze op zich is, onafhankelijk van onze denkvormen. Volgens Geulincx is dit onmogelijk. Daarmee lijkt de filosofie zelf onmogelijk te zijn. Geulincx heeft echter een uitweg die hem door Descartes is aangereikt: de cartesiaanse oordeelstheorie. Wijs zijn is dan het maken van correcte oordelen, dat wil zeggen alleen dat aan de werkelijkheid toe te schrijven wat daaraan ook daadwerkelijk toebehoort en alle andere zaken (de denkvormen en andere producten van intellectuele activiteit) toe te schrijven aan onszelf. *Wetenschappelijke kennis* is vervolgens absoluut zekere en demonstratieve kennis die betrekking heeft op de werkelijkheid zoals die ons aandoet. Dit type kennis is mogelijk omdat wij de eigenschappen waarvan bewezen wordt *hoe* ze toebehoren aan een object zelf creëren. Dit is een theorie die niet bij Descartes te vinden is. Volgens hem heeft filosofische kennis wel degelijk betrekking op de externe werkelijkheid zoals die op zichzelf is. Bovendien creëren wij volgens Descartes kennis niet zelf, laat staan het kenobject. Ondanks het feit dat Geulincx een volledig andere theorie van kennis heeft dan Descartes, moet hij toch een cartesiaans filosoof genoemd worden. Op beslissende punten is zijn *metaphysica* en *fysica* cartesiaans. Maar bovenal heeft hij de cartesiaanse oordeelstheorie tot de basis van zijn filosofie gemaakt.

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