

# “Art and Technique Always Balance the Scale”: German Philosophies of Sensory Perception, Taste, and Art Criticism, and the Rise of the Term *Technik*, ca. 1735–ca. 1835

---

Marieke M. A. Hendriksen, *Utrecht University*

## ABSTRACT

The term *technical* is used widely in relation to art and art history today, yet we do not have a history of the shifting meaning of the term *technique* in the arts and sciences. Although related forms were occasionally used in European languages before around 1700, the word *technique* was a neologism in the vernacular that started to appear sparsely in treatises on arts and sciences only from the middle of the eighteenth century. Rooted in the Greek *techne*, which was translated routinely as “art” until the mid-eighteenth century, *technique* referred to both processes of making or doing and their products. Yet from around 1750, a distinction of processes of making or doing from the resulting artwork appears to have arisen in German philosophies of art. This article suggests that this distinction may have come about explicitly to develop arguments about judgments of taste, artistic value, and the appreciation of art.

The term *technical* is used widely in relation to art and art history today, both to refer to the technical analysis of artworks and to a more holistic analysis of creative processes. Technical art history combines the knowledge and skills of historians, art historians, scientists, and conservators; it is a discipline in which the humanities and sciences converge, yet we do not have a history of the shifting meaning of the term *technique* in the arts and sciences. Although related forms like *pyrotechnica*

I would like to thank Ernst-Otto Onnasch for discussing Kant’s use of *Technik* with me and the two reviewers for their constructive comments and suggestions. This project has received funding from the European Research Council (ERC) under the European Union’s Horizon 2020 research and innovation program (grant agreement no. 648718).

---

*History of Humanities*, Volume 2, Number 1. <http://dx.doi.org/10.1086/690579>

© 2017 by Society for the History of the Humanities. All rights reserved. 2379-3163/2017/0201-0011\$10.00

201

and *technicus* were occasionally used in European languages from the sixteenth century onward, the word *technique* was a neologism in the vernacular that started to appear sparsely from around 1700 and in treatises on arts and sciences from the middle of the eighteenth century.<sup>1</sup> Rooted in the Greek *techne* (τέχνη), which was translated routinely as “art” until the mid-eighteenth century, *technique* referred to processes of making or doing and their products. Such processes had been referred to previously as art, methods, manners, or mechanics in the vernacular and were primarily described with the intention of transmitting practical skills and knowledge.<sup>2</sup> Yet, in the mid-eighteenth century, a distinction of processes of making or doing from the resulting artwork appears to have arisen, and I suggest that this distinction may have come about explicitly to develop arguments about judgments of taste, artistic value, and the appreciation of art.

The secular humanism of the Renaissance led to a new appreciation of the visual and literary arts and the persona of the artist, yet the centuries-old system that united art and craft, artisan and artist, was the norm in Europe well into the eighteenth century, and modern ideals of and ideas about art, artist, and aesthetic, although rooted in seventeenth-century France and sixteenth-century Italy, were shaped by the philosophers of that century, as others have convincingly argued before me.<sup>3</sup> In the 1950s, Paul Oskar Kristeller stated that “it is [also] generally agreed that such dominating concepts of modern aesthetics as taste and sentiment, genius, originality and creative imagination did not assume their definite modern meaning before the eighteenth century” and that the term *art* in its modern sense and the related term *fine art* only first emerged in the eighteenth century.<sup>4</sup> Some would argue that this is a very narrow reading of “art,” but it is undeniable that the broad, Aristotelian meaning of *arte*, anything that requires skilled handiwork, narrowed considerably from the eighteenth century onward.<sup>5</sup>

These epistemic shifts coincided with a slowly emerging distinction between fine arts, crafts, liberal arts, humanities, science and philosophy, although art and science

---

1. Wilfried Seibicke, *Technik: Versuch einer Geschichte der Wortfamilie um τέχνη in Deutschland vom 16. Jahrhundert bis etwa 1830*, Technikgeschichte in Einzeldarstellungen (Heidelberg: Verein Deutscher Ingenieure, 1968), 161–81.

2. Jan-Peter Pudelek, *Der Begriff der Technikästhetik und ihr Ursprung in der Poetik des 18. Jahrhunderts* (Würzburg: Königshausen & Neumann, 2000), 7.

3. Larry Shiner, *The Invention of Art: A Cultural History* (Chicago: University of Chicago Press, 2001), 17–76.

4. Paul Oskar Kristeller, “The Modern System of the Arts: A Study in the History of Aesthetics, Part I,” *Journal of the History of Ideas* 12, no. 4 (1951): 496–527, esp. 496–97.

5. See, e.g., Mary Mothersill, “Beauty Restored,” in *Aesthetics: A Comprehensive Anthology*, ed. Steven M. Cahn and Aaron Meskin (Oxford: Blackwell, 2008), 509–20, 517.

were still deemed to be closely connected at the end of the eighteenth century.<sup>6</sup> I argue that these developments were inextricably intertwined with new philosophical ideas regarding the role of the senses in the acquisition of knowledge and the appreciation of beauty. This essay focuses on the emergence of the term *technique* and the role of skilled making processes and the natural sciences in the work of German Enlightenment philosophers. It explores why they started paying attention to what we now call technique and how this was related to contemporary art theory and criticism and thus adds a chapter to the history of the shifting meaning of the term *technique*.

*Technique* with the meaning of processes and skills of creating visual art was probably first used in print in French in the *Encyclopédie* in 1765. However, I suggest that this was not the beginning of the use but rather one of the outcomes of a predominantly German discourse on the appreciation of the visual arts that had been developing for well over a decade and would continue to do so for more than half a century. I focus on the work of Germans Alexander Gottlieb Baumgarten (1714–62), Johann Joachim Winckelmann (1717–68), Gotthold Ephraim Lessing (1729–81), Immanuel Kant (1724–1804), and Johann Wolfgang von Goethe (1749–1832).<sup>7</sup> We should realize that the writings on art that Denis Diderot (1713–84) produced between 1759 and 1781 were hidden from public view during his lifetime, while Baumgarten’s work was popularized in the late 1740s by a German publication based on his lectures.<sup>8</sup> Similarly, Winckelmann and Lessing’s works were soon reprinted, widely read (by Diderot, for example), and received much critical acclaim. Kant’s early work was received enthusiastically, and Goethe was a famous novelist by age twenty-five.<sup>9</sup> But before we turn to the work of these men, in order to understand how attention to “technique” arose in critique of the visual arts, we have to look at the history of the term.

What did the words *art*, or *ars*, and *techne* mean in northwestern Europe around 1700? In the Aristotelian scheme of knowledge that was dominant up to the seven-

6. Charlotte Konk, “Science, Art, and the Representation of the Natural World,” in *Eighteenth-Century Science*, ed. Roy Porter, Cambridge History of Science 4 (Cambridge: Cambridge University Press, 2003), 184–210; Stephen Gaukroger, *The Natural and the Human: Science and the Shaping of Modernity, 1739–1841* (Oxford: Oxford University Press, 2016), 1–14.

7. On this first occurrence of *technique*, see Paul Taylor, “From Mechanism to Technique: Diderot, Chardin, and the Practice of Painting,” public lecture, Goethe Institute, Amsterdam, February 11, 2013.

8. Thomas Crow, “Diderot’s Salons,” in Denis Diderot, *Diderot on Art*, vol. 1, *The Salon of 1765 and Notes on Painting*, ed. John Goodman (New Haven, CT: Yale University Press, 1995), ix–xx, esp. x.

9. Alex Potts, “Introduction,” in Johann Joachim Winckelmann, *History of the Art of Antiquity* (Los Angeles: Getty Research Institute, 2006), 1–53, esp. 1–2; Monika Fick, *Lessing Handbuch. Leben – Werk – Wirkung* (Stuttgart: Verlag J. B. Metzler, 2010), 2–4; Ernst-Otto Onnasch, “Receptieonderzoek. De eerste receptie van Kants filosofie in Nederland,” *Tijdschrift voor filosofie*, 68 (2006): 133–56; Gerhart Hoffmeister, “Reception in Germany and Abroad,” *The Cambridge Companion to Goethe*, ed. Lesley Sharpe (Cambridge: Cambridge University Press, 2002), 232–55, 234.

teenth century, *techne* was practice or bodily labor resulting in and knowledge of how to make things or produce effects.<sup>10</sup> The Greek word *techne* was translated into Latin either as *techne* or *ars*. *Techne* and related terms in Latin like *technicum* were routinely translated as *art* (English and French), *Kunst* (German), or *Konst* (Dutch). These terms did not only apply to the processes and products of the fine arts like painting, music, architecture and poetry, but to the application of skills and the resulting products in a wide array of fields, from grammar, music, painting, sculpting, mining, and metal-working to philosophy, physics, medicine, botany, chemistry, and anatomy.

Visual art and artists were predominantly judged by one measure until the mid-eighteenth century, namely, how successful they were in approaching the Platonic ideal of beauty.<sup>11</sup> Similar criteria, together with detailed discussions of methods of depicting a variety of subjects, can be found in the works of art theorists from the sixteenth to the mid-eighteenth century, such as Giorgio Vasari, Karel van Mander, Roger de Piles, and Gerard de Lairese. Because the evaluation of both artist and art work was largely based on artistic skill, they were inextricably connected, and there was no attempt to distinguish between the process of making and the final result. A skillfully made artwork was a beautiful or good artwork. Where processes of making were described, they were referred to as “manners,” “foundations,” “arts,” or “secrets,” and from the eighteenth century onward as “methods,” but never as “techniques.”

In German, we see the translation of the Latin word *techne* into the German *Kunst* in book titles from the first decades of the eighteenth century: a *Technophylacium vitae et sanitatis* is a *Kunst-Kammer* (a chamber of the arts of life and health), and *Termini technici* are *Kunst-Wörter* (art words).<sup>12</sup> In Zedler’s universal lexicon of arts and sciences from the first half of the eighteenth century, *technica ingenia*, *technice*, *technice termini*, *techniotecae principium*, and *technologie* are listed and all are translated as *Kunst*, that is, related to the arts in the broad, Aristotelian sense of the word. For example, *technica*

10. Pamela H. Smith, *The Body of the Artisan: Art and Experience in the Scientific Revolution* (Chicago: University of Chicago Press, 2004), 17.

11. Paul van den Akker, *Looking for Lines. Theories on the Essence of Art and the Problem of Mannerism* (Amsterdam: Amsterdam University Press, 2010), 24.

12. This can be seen clearly in book titles from the period, for example, Johann Georg Hast, *Technophylacium vitae et sanitatis, oder Kunst-Kammer des Lebens u. d. Gesundheit, darinn zu sehen, wie durch Göttliche Gnade, gute Diaet, wenige u. gute Medicamenta, die Gegenwärtige Gesundheit erhalten, die zugefallene Krankheit aber durch drey Medicamenta curiret werden kan* (Lübeck: Cosmopoli, 1700); and Johann Hübner, *Curieuses und Reales Natur-, Kunst-, Berg-, Gewerck- und Handlungs-Lexicon: darinne nicht nur die in der Philosophie, Physic, Medicin, Botanic, Chymie . . . gebräuchliche Termini technici oder Kunst-Wörter, nach alphabetischer Ordnung ausführlich beschrieben werden* (Leipzig: Gleitsch, 1714).

*ingenia* "is the name for those who are involved with all kinds of art objects. Like the *technica* is called the *Kunst-Lehre* [study of art] in philosophy in German."<sup>13</sup>

For much of the eighteenth century the Latin terms derived from *techne* were translated into the vernacular as "art," but inflections of *techne* in the vernacular that refer to the processes, skills, and knowledge of making art appear to have been nonexistent. It was probably in France in December 1765, when volumes 8–17 of the *Encyclopédie* appeared, that *technique*, as a noun referring to art, was first printed in an anonymous article on imitation.<sup>14</sup> Paul Taylor has convincingly argued that the first use of the term *technique* in the theory of art was to give aesthetic value to the practice of painting; it was used by those who believed that artistry had a value in itself.<sup>15</sup> Yet it would be decades before *technique* was commonly used in European languages in relation to art to distinguish the processes and skills of making.

In order to understand the emergence of the word *technique* in art theory, we have to move away from the francophone and anglophone context, because Diderot and many other eighteenth-century philosophers were strongly influenced by the German discourse on aesthetics that had been developing since the 1730s.<sup>16</sup> Moreover, the *Encyclopédie* was the result of a very particular sociopolitical program.<sup>17</sup> In order to understand why Diderot felt it was necessary to use the term *technique* to distinguish the practice or processes of painting from the results, and the methods from the appreciation of art, we have to look at the development of art criticism, which was closely linked to the development of the philosophical discipline of aesthetics, especially in the German context.

---

13. "TECHNICA INGENIA, heissen diejenigen, die mit allerlen Kunst-Sachen zu thun haben. Wie denn Technica auf Deutsch die Kunst-Lehre in de Philosophie genennet wird" (Johann Heinrich Zedler, *Grosses vollständiges Universal-Lexicon aller Wissenschaften und Künste* (1731–54), available at <https://www.zedler-lexikon.de> [accessed November 16, 2016]).

14. "Le jugement de l'homme de goût & celui de l'artiste sont bien différens. C'est la difficulté de rendre certains effets dans la nature, qui tiendra l'artiste suspendu en admiration. L'homme de goût ne connoît guere ce mérite de l'imitation; il tient trop au technique qu'il ignore: ce sont des qualités dont la connoissance est plus générale & plus commune, qui fixeront ses regards" (Denis Diderot and Jean le Rond d'Alembert, eds., *Encyclopédie, ou dictionnaire raisonné des sciences, des arts et des métiers, etc.*, ARTFL Encyclopédie Project, ed. Robert Morrissey and Glenn Roe, <http://encyclopedia.uchicago.edu/>, 8:567).

15. Taylor, "From Mechanism to Technique."

16. Paul Guyer, "18th Century German Aesthetics," in *The Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta, <http://plato.stanford.edu/archives/spr2014/entries/aesthetics-18th-german/> (accessed March 9, 2016).

17. Daniel Roche, "Encyclopedias and the Diffusion of Knowledge," in *The Cambridge History of Eighteenth-Century Political Thought*, ed. Mark Goldie and Robert Wokler (Cambridge: Cambridge University Press, 2006), 172–94; Daniel Brewer, "The Encyclopédie: Innovation and Legacy," *New Essays on Diderot*, ed. James Fowler (Cambridge: Cambridge University Press, 2011), 47–58.

The word *aesthetica* to designate a way of knowing and a philosophical discipline first occurred in the work of philosopher Alexander Gottlieb Baumgarten (1714–62). Baumgarten was a student of Leibniz and Wolff and published not only on aesthetics but also on ethics, logic, law, and theology. He extensively addressed the issues that arose from knowledge gained through sensory cognition as well as from the criticism of taste in the arts in his 1735 *Meditationes philosophicae de nonnullis ad poema pertinentibus*. In order to be able to explain this combination of mental and practical activity in gaining knowledge, Baumgarten argued that there are two levels of cognition, namely, logic—comparable to the Aristotelian *scientia*—and the lower level of aesthetics—comparable to the Aristotelian *artes*—which is autonomous and has its own laws. The object of logic is to investigate the kind of perfection proper to thought and to analyze the faculty of knowledge, while the object of aesthetics is to investigate the kind of perfection proper to perception.<sup>18</sup>

Baumgarten's student G. F. Meier soon popularized these ideas with the publication of a treatise in German based on Baumgarten's lectures, *Anfangsgründe aller schönen Wissenschaften* (Rudiments of all beautiful sciences; it should be noted here that the German word *Wissenschaften* incorporates the humanities). Baumgarten's *Æsthetica*, which appeared between 1750 and 1758, continued the investigation. The title was derived from the Greek *αισθητική*, meaning material things perceptible by the senses, as opposed to immaterial, thinkable things. The term would quickly become a thoroughly ambiguous one. Much eighteenth-century writing we would now describe as aesthetic theory was referred to by contemporaries simply as art theory or as discussion about taste, whereas theories referred to as aesthetics or *aesthetica* in the eighteenth century would now more likely be described as "cognition theory."<sup>19</sup> Yet aesthetics according to Baumgarten was "the science of sensory cognition" (*scientia cognitionis sensitivae*).<sup>20</sup> Although it is difficult to submit perception to an exact and systematic treatment, there must be some way for reason to penetrate the world of perception while maintaining the absolute power of reason; this was something Baumgarten was attempting to do with his work.<sup>21</sup>

18. Alexander Gottlieb Baumgarten, *Reflections on Poetry*, trans. William B. Berkely (Berkeley: University of California Press, 1954), §§115–16.

19. Marieke M. A. Hendriksen, *Elegant Anatomy: The Eighteenth-Century Leiden Anatomical Collections* (Leiden: Brill, 2015), 17.

20. Alexander Gottlieb Baumgarten, *Aesthetica*, vol. 1 (Hamburg: Meiner, 2007), §1, 10–11; Monroe C. Beardsley, *Aesthetics: From Classical Greece to the Present, a Short History* (New York: Macmillan, 1966), 156–57.

21. Terry Eagleton, *The Ideology of the Aesthetic* (Oxford: Blackwell, 1990), 15; Hendriksen, *Elegant Anatomy*, 22–23.

Baumgarten's use of the term *aesthetica* thus refers to a theory of perception as a faculty that produces a certain type of knowledge; it is a defense of the relevance of sensory perception. As Hammermeister points out, philosophical aesthetics originated as an advocacy of sensory perception, not as a theory of art, but without this positive valuation of the senses and their objects, art could not have obtained an autonomous status and philosophical dignity.<sup>22</sup> The emergence of the use of the word *aesthetica* in the mid-eighteenth century should be seen in the context of contemporary natural philosophy. In the preceding century, both visual artists and natural philosophers had started to depend increasingly on perception and experiment, and both skills that were described as *techne* in Latin or "art" in the vernacular and sensory perception played an important role in gaining knowledge about the "Book of Nature," which to philosophers was inextricably connected to understanding that other, all-important book, the Bible.<sup>23</sup>

It is in this context that Johann Joachim Winckelmann, a cobbler's son from Brandenburg, studied theology in Halle in 1738–39, where he took classes with Baumgarten's brother, a professor of theology, and probably also with Alexander Baumgarten himself. Winckelmann was certainly familiar with Alexander Baumgarten's work, because although he does not use the term *aesthetics*, he is clearly not only concerned with the kind of perfection proper to thought, but also with the investigation of the kind of perfection proper to perception. After he left Halle, Winckelmann studied medicine in Jena.<sup>24</sup> Subsequently, he worked as a headmaster and as librarian to the Count of Büнау for a while and took extensive drawing lessons from Adam Friedrich Oeser in Dresden.<sup>25</sup> He had been interested in Greek art from a young age and converted to Catholicism and moved to Rome in 1755. His *Gedanken über die Nachahmung der Griechischen Werke in der Malerei und Bildhauerkunst* (Thoughts on the imitation of Greek works in painting and sculpture) appeared in the same year.<sup>26</sup>

---

22. Kai Hammermeister, *The German Aesthetic Tradition* (Cambridge: Cambridge University Press, 2002), 4.

23. See, e.g., Smith, *Body of the Artisan*; Eric Jorink, *Reading the Book of Nature in the Dutch Golden Age, 1575–1715* (Leiden: Brill, 2010).

24. Katherine Harloe, *Winckelmann and the Invention of Antiquity* (Oxford: Oxford University Press, 2013), 36–40; David R. Carter, *Johann Joachim Winckelmann on Art, Architecture, and Archaeology* (Rochester, NY: Camden House, 2013), 2–3.

25. Van den Akker, *Looking for Lines*, 246.

26. Johann Joachim Winckelmann, *Gedanken über die Nachahmung der Griechischen Werke in der Malerei und Bildhauerkunst* (Friedrichstadt: Hagenmüller, 1755). The references given here are to the page numbers of the 1756 edition (Dresden: Waltherischen Buchhandlung, 1756). English citation has been checked for accuracy and was taken from Henry Fusseli's translation, *Reflections on the Painting and Sculpture of the Greeks* (London: Millar, 1765).

The *Gedanken* opens with the statement that we owe taste to the Greeks, and Winckelmann posits that there is only one way for contemporary artists to become great, and maybe even unequalled: by imitating the ancients.<sup>27</sup> The first part of the book is devoted to the role of the study of nature in art. Although this is a central aspect of creating great art, Winckelmann explains that adhering too strictly to nature is useless: “The imitation of beauty is either reduced to a single object, and is individual, or, gathering observations from single ones, composes of these one whole. The former we call copying, drawing a portrait; ’tis the straight way to Dutch forms and figures; whereas the other leads to general beauty, and its ideal images, and is the way the Greeks took.”<sup>28</sup>

This is of course a critique of the seventeenth-century Dutch tradition of seemingly hyperrealistic paintings, which was very common in the eighteenth and nineteenth centuries. For example, Gotthold Ephraim Lessing (1729–81), an art critic, philosopher, publicist, and dramatist who had studied theology, medicine, philosophy, and philology, expresses similar critique. In his 1766 *Laocoön* he described the Greek painter of everyday life scenes who was mentioned by Pliny as “the painter of filth,” Pyreicus, as working “with all the zeal of a Dutch artist.”<sup>29</sup>

Dutch seventeenth-century art visually recorded and communicated new knowledge. We now believe that it can neither be reduced to a mirror of reality nor to emblematic interpretation.<sup>30</sup> Yet in the eighteenth and nineteenth centuries, as Winckelmann’s and Lessing’s comments show, the descriptive Dutch tradition, and particularly “realistic” landscape painting, was widely dismissed as boringly descriptive and its subject matter as vulgar.<sup>31</sup> To Winckelmann and many of his contemporaries the (real or perceived) realism, level of detail, and “true to nature” character of seventeenth-century paintings and illustrations in books on natural history and philosophy were inferior to the openly idealizing style of neoclassicism.<sup>32</sup> It was in their philosophy that the aesthetic attitude and

27. Winckelmann, *Gedanken*, 1, 3.

28. *Ibid.*, 13–14, and Winckelmann, *Reflections*, 18.

29. Gotthold Ephraim Lessing, *Laokoon: Oder über die Grenzen der Malerei und Poesie*, vol. 1 (Stuttgart: Philip Reclam, 2012), 17.

30. Svetlana Alpers, *The Art of Describing: Dutch Art in the Seventeenth Century* (Chicago: University of Chicago Press, 1983), xvii–xviii, 5–10, 229–33.

31. Notwithstanding widespread critique on seventeenth-century “realism,” masters like Rembrandt and Teniers the younger were appreciated. Moreover, “to the life” was a rather nuanced actor’s category in the seventeenth century, but this was ignored by eighteenth- and nineteenth-century art critics. See Claudia Swan, “Ad vivum, naer het leven, From the Life: Defining a Mode of Representation,” *Word & Image: A Journal of Verbal/Visual Enquiry* 11, no. 4 (1995): 353–72, and *Art, Science, and Witchcraft in Early Modern Holland: Jacques de Gheyn II (1565–1629)* (Cambridge: Cambridge University Press, 2005), 10–11.

32. Although Diderot ridiculed Winckelmann’s devotion to Greek art, saying that a good artist should study both nature and antiquity, he agreed with Winckelmann on the need of idealization;



pleasure of the spectator replaced the imitation of nature as the key concept for the appreciation of visual art.<sup>33</sup>

Winckelmann's *Gedanken* occasionally discusses what we would now describe as artistic technique in quite some detail.<sup>34</sup> But although technical skills had to be learned in order to produce great art, detailed knowledge of those skills was seen as unnecessary for its appreciation. Winckelmann and many of his contemporaries saw the "proper" appreciation of art and beauty as a skill in its own right, a very time-consuming occupation, and an activity that required not only talent but also training and experience.<sup>35</sup> The artist himself in turn should not only be trained in practical skills but also in philosophy and classical philology. Winckelmann closed the *Gedanken* with a paragraph describing how the artist's pencil, like Aristotle's pen, should be impregnated with reason and that he should invest his ideas in his paintings through allegory and poetics, thus nourishing and instructing the mind of the art lover.<sup>36</sup>

This idea of thorough knowledge of practical skill as irrelevant for the appreciation of art was echoed elsewhere. In 1766, for example, Lessing published his *Laocoön*, named after the Roman statue Laocoön and His Sons. In this work, he attempted to define the fundamental artistic differences between visual art and literature. Lessing's biggest problem with Baumgarten and Winckelmann's theories was that they treated visual art and poetry as a whole, while he felt that they were subject to different rules, although Lessing himself in turn did not distinguish between painting and sculpture.<sup>37</sup> He argued that confused critics who think that there is a great correspondence between painting and poetry have inspired a mania for description in poetry and a mania for allegory in painting, without considering "to what degree a painting is able to express general ideas without denying its true function and degenerating into a purely arbitrary means of expression."<sup>38</sup> However, according to Lessing, beauty, not truthfulness,

---

see Diderot, *Salon of 1765 and Notes on Painting*, 157. Similarly, Joshua Reynolds (1723–92) argued that artistic beauty is reached through an ideal distillation of nature's particular, empirical forms, and "history painting" (painting of mythological or religious subjects in which the human figure plays a central role), is ideal; see *Sir Joshua Reynolds's Discourses on Art*, ed. Edward Gilpin (Chicago: McClurg, 1891), 82–83, 317.

33. Sven-Olov Wallenstein, "Space, Time, and the Arts: Rewriting the Laocoon," *Journal of Aesthetics & Culture* 2 (2010), <http://www.aestheticsandculture.net/index.php/jac/article/view/2155/5310>.

34. Winckelmann, *Gedanken*, 28–33.

35. Johann Joachim Winckelmann, *Abhandlung von der Fähigkeit der Empfindung des Schönen in der Kunst und dem Unterrichte in derselben* (Dresden: Waltherischen Buchhandlung, 1763), 4–8.

36. Winckelmann, *Gedanken*, 44.

37. Edward Allen McCormick, "Translator's Introduction," in Gotthold Ephraim Lessing, *Laocoön: An Essay on the Limits of Painting and Poetry* (Indianapolis: Library of Liberal Arts, 1962), xx–xxi.

38. Lessing, *Laocoon*, 9.

is the goal of all classical artists, and people will experience and approach that beauty in various ways. An amateur will only notice that poetry and painting both have a similar effect on him; both are pleasantly deceptive. Yet a philosopher will investigate the nature of this pleasure and discover that its source is the beautiful, the notion of which we first derive from corporeal objects, and which has general rules applicable to various things. The art critic, finally, will reflect on the value and distribution of the general rules of beauty in a work of art.<sup>39</sup>

Although Lessing does not use the term *technique* in *Laocoön*, it is clear that he too believes that the process of making, the skills of the craftsman, or the “truth to nature” should not be used by the art critic as the basis for his evaluation of a work of visual art, but more abstract measures of success, such as beauty, proportion and contour. Beauty or the beautiful (*das Schöne*) was another problematic concept in the phenomenology of perception in general and in art criticism in particular in the second half of the eighteenth century. For a long time, beauty had been equalled with teleological perfection; something that perfectly suited its purpose was considered beautiful. However, in this period, the realization grew that in nature there were many examples of things that were perfectly purposeful but that were not necessarily experienced as beautiful, such as the viscera of the human body.<sup>40</sup>

For example, philosopher Moses Mendelssohn (1729–86), a close friend of Lessing, in 1755 published his *Briefe über die Empfindungen* (Letters on the sensations), in which he stated that although he agreed with Leibniz that ours is the most perfect universe possible, not every expression of perfection equates with beauty. Some forms are perfect, as they fulfill their *telos* (τέλος), their goal, but still they are ugly. Mendelssohn argues that the body is perfectly purposeful, but “underneath the skin terrible forms lie hidden” and “all vessels are seemingly without order;” harmony and unity cannot be discerned.<sup>41</sup> This paradox called for a better definition of beauty, something Immanuel Kant (1724–1804) explored in his later work.

Although best known today for his philosophy of mind, Kant’s early work on celestial bodies clearly demonstrates a profound engagement with subjects that we would now define as scientific.<sup>42</sup> Yet in this natural philosophical work, the term *technique*

39. *Ibid.*, 7.

40. Hendriksen, *Elegant Anatomy*, 117–18.

41. Moses Mendelssohn, “Schriften zur Philosophie und Ästhetik,” in *Gesammelte Schriften*, vol. 1, ed. Fritz Bamberger and Leo Strauss (Berlin: Akademie-Verlag, 1929), 59.

42. Immanuel Kant’s *General Natural History and Theory of the Celestial Bodies; or, an Attempt to Account for the Constitutional and Mechanical Origin of the Universe, upon Newtonian Principles* was of major importance for astronomy. In his “nebular hypothesis,” Kant argued that the solar system was shaped through a large cloud of gas, a nebula, thus opposing Isaac Newton, who had explained the

does not occur. To understand how Kant understood and used the word, we have to look at his philosophy of the beautiful. In his 1764 *Beobachtungen über das Gefühl des Schönen und Erhabenen* (Of the distinct objects of the feeling of the beautiful and sublime), Kant first discussed the subjectivity of feelings of enjoyment, and described the experience of the beautiful as "a pleasant sensation but one that is joyous and smiling," whereas the sublime "arouses enjoyment but with horror," a theory he would later refine in his third *Critique*.<sup>43</sup> Developments in natural philosophy in general meant that there was a growing understanding of the physiology of perception, but this raised new questions regarding the organization and understanding of sensory perceptions in the human mind.<sup>44</sup> Although strictly speaking physiology itself was not a subject of the *Kritiken*, Kant's transcendental aesthetics were an attempt to metaphysically and systematically reformulate the physiological aspect of perception, thus avoiding the problems connected to the ideas within Locke's and Hume's philosophies.<sup>45</sup>

Kant initially used the term *aesthetic* in the Baumgartian sense, to refer to knowledge derived from sensory perception in general. In 1781, he wrote in his *Kritik der reinen Vernunft* (Critique of pure reason): "The science of all the principles of sensibility a priori, I call transcendental aesthetic," explaining in a footnote that, at the time, only the Germans used the word *aesthetic* to indicate what others call the critique of taste. He then went on to argue that Baumgarten, whom he admired, had tried in vain to subject the criticism of the beautiful to the principles of reason, thus incorporating its rules into a science. He therefore felt it was advisable "to give up the use of the term as designating the critique of taste, and to apply it solely to that doctrine, which is true science, the science of the laws of sensibility, and thus come nearer to the language and the sense of the ancients in their well-known division of the objects of cognition into 'aistheta kai noeta' [perceived things and things known through reason]."<sup>46</sup>

---

origin of the solar system as God's creation. Kant also correctly theorized that the Milky Way must be a large disk of stars and suggested that there might be other, more distant nebulae and disks of stars, thus extending astronomy beyond the solar system for the first time; Immanuel Kant, *Allgemeine Naturgeschichte und Theorie des Himmels, oder Versuch von der Verfassung und dem mechanischen Ursprunge des ganzen Weltgebäudes nach Newtonischen Grundsätzen abgehandelt* (Zeitl.: Webel, 1798).

43. Immanuel Kant, *Beobachtungen über das Gefühl des Schönen und Erhabenen* (Leipzig: Insel-Verlag, 1913), 5–6.

44. Susan Meld Shell, *The Embodiment of Reason: Kant on Spirit, Generation, and Community* (Chicago: University of Chicago Press, 1996), 306–11.

45. I owe a debt of gratitude to Ernst-Otto Onnasch for his feedback on this section.

46. "Die Deutschen sind die einzigen, welche sich jetzt des Worts Ästhetik bedienen, um dadurch das zu bezeichnen, was andere Kritik des Geschmacks heißen. Es liegt hier eine verfehltte Hoffnung zum Grunde, die der vortreffliche Analyst Baumgarten faßte, die kritische Beurteilung des Schönen

Subsequently however, as Kant's ideas developed, he started using *aesthetic* to refer to judgments of taste too. In his later philosophy, he distinguishes between transcendental aesthetics, on the one hand, which entails the aforementioned science of perception in the first Critique, and aesthetic judgment, on the other, which entails judgments of taste and beauty as formulated in the third Critique. Kant eventually felt that the judgment of taste, although not belonging to transcendental aesthetics nor to transcendental logics, depends on sensory perception. Therefore, a critique was needed to define the viability of judgments with respect to taste, while *aesthetic* had to be reintroduced as an adjective to designate these judgments correctly, that is, as judgments different from the judgments of knowledge. Kant's subtle distinction between transcendental aesthetics and aesthetic judgment in his overall complex metaphysics became obsolete in the slipstream of post-Kantian philosophy. His doctrine of "transcendental aesthetics" in particular did not survive this criticism, while the use of *aesthetic* in both philosophy and popular discourse after Kant, referring in general to judgments of taste and beauty, survives to this day.<sup>47</sup>

In this context of the philosophy of judgments of taste and logic, the term *technique* starts to appear in Kant's work in the last decades of the eighteenth century. It only appears twice in Kant's first two critiques, the *Kritik der reinen Vernunft* (1781) and the *Kritik der praktischen Vernunft* (Critique of practical reason; 1788), both times as a synonym for "method" or "skill."<sup>48</sup> *Technik* appears much more frequently in the *Kritik der Urteilskraft* (Critique of judgment; 1790)—no less than twenty times in this book and more than forty times in the first introduction to this work. However, the word appears only once in an analogy about art in the broad sense of the term in the first part of the book, the "Critique of Aesthetic Judgment," but very frequently

---

unter Vernunftprinzipien zu bringen, und die Regeln derselben zur Wissenschaft zu erheben. Allein diese Bemühung ist vergeblich. Denn gedachte Regeln oder Kriterien sind ihren Quellen nach bloß empirisch, und können also niemals zu Gesetzen a priori dienen, wonach sich unser Geschmacksurteil richten müßte, vielmehr macht das letztere den eigentlichen Probiertein der Richtigkeit der ersteren aus. Um deswillen ist es ratsam, diese Benennung wiederum eingehen zu lassen, und sie derjenigen Lehre aufzubehalten, die wahre Wissenschaft ist, wodurch man auch der Sprache und dem Sinne der Alten näher treten würde, bei denen die Einteilung der Erkenntnis in *aistheta kai noeta* sehr berühmt war" (Immanuel Kant, *Kritik der reinen Vernunft, Kritik der praktischen Vernunft, Kritik der Urteilskraft* [Wiesbaden: Fourier, 2003], 62 n. 9).

47. Mark Arthur Cheetham, *Kant, Art, and Art History: Moments of Discipline* (Cambridge: Cambridge University Press, 2001), 4.

48. For example, in the *Kritik der reinen Vernunft*, Kant speaks of "der gewohnten Technik der Logiker" (Immanuel Kant, *Kritik der reinen Vernunft*, 1st ed., chap. 22, available at <http://gutenberg.spiegel.de/buch/kritik-der-reinen-vernunft-1-auflage-3508/22>).

in the second part, the "Critique of Teleological Judgment."<sup>49</sup> In a paragraph on art in general, Kant writes, "Art as human skill is also distinguished from knowledge (*being able to* from *knowing*), as practical from theoretical ability, as technique from theory (like the art of geodesy from geometry)."<sup>50</sup>

Yet Kant used the word *Technik* most frequently not to describe the skills and processes necessary for making artworks but rather to explain the perceived beauty of natural objects. He used the phrase "Technik der Natur" to explain that humans unwarrantedly discern design in nature; works of nature (*Wirkungen*) appear as works of art (*Werke*) to the human eye.<sup>51</sup> But nature is not an artist, and the "Technik der Natur" is an analogy; the perceived technique, the seemingly skillful process of creation underlying natural phenomena, does not belong to nature, but to the faculty of judgment. As John H. Zammito put it in his book *The Genesis of Kant's Critique of Judgment*, "the key cognitive strategy of reflective judgment was the idea of artifice projected from the subject onto empirical nature: nature as art."<sup>52</sup>

As far as I have been able to establish, this is the first repeated use of the term *Technik* in German philosophy of mind, albeit mostly in relation to skilled practice in general and nature perceived as art rather than to works of fine art specifically. After these appearances in Kant's *Critique*, the word *technique* also appears repeatedly in relation to both visual art and poetry in the works of Johann Wolfgang von Goethe (1749–1832), a lawyer turned writer and statesman who published on a wide variety of topics, such as anatomy, botany, color perception, and literary and visual art criticism, and wrote a number of novels, poetry, and an autobiography.

Goethe appears to have used the term *technique* mainly after 1800. He used the word to distinguish between the skillful making of things from the end product and from theory; technique from artwork and natural philosophy. For example, in his autobiography Goethe described how he was attracted to the "tidy technique" of etching as a young man.<sup>53</sup> In his 1810 book *Zur Farbenlehre*, Goethe connected color theory to

---

49. Occurrences have been counted with searches of the digital editions of Kant's *Kritiken*; see <http://www.gutenberg.org/cache/epub/6342/pg6342-images.html>, [https://archive.org/stream/kritikderpraktis00kantuoft/kritikderpraktis00kantuoft\\_djvu.txt](https://archive.org/stream/kritikderpraktis00kantuoft/kritikderpraktis00kantuoft_djvu.txt).

50. "Kunst als Geschicklichkeit des Menschen wird auch von der Wissenschaft unterschieden (*Können* vom *Wissen*), als praktisches vom theoretischen Vermögen, als Technik von der Theorie (wie die Feldmeßkunst von der Geometrie)" (Immanuel Kant, *Kritik der Urteilskraft*, chap. 53, §43, "Von der Kunst überhaupt," <http://gutenberg.spiegel.de/buch/kritik-der-urteilskraft-3507/53>).

51. Kant, *Kritik der Urteilskraft* (2003), §§73–78, 835–56.

52. John H. Zammito, *The Genesis of Kant's Critique of Judgment* (Chicago: University of Chicago Press, 1992), 153–55.

53. Johann Wolfgang von Goethe, *Dichtung und Wahrheit*, vol. 9 of *Goethes Werke: Autobiographische Schriften I*, ed. Erich Trunz (Munich: Beck, 1994), 326.

physiology, physics, chemistry, natural philosophy, technique, pathology, mathematics, and even music theory. In his book, he used the word *technique* and related forms such as *technician* repeatedly, each time to stress the use and application of the practical skills involved in the mixing of colors, as opposed to theory. Although theoretical reflection can play a part in developing these techniques and skills, it is not necessary.<sup>54</sup> However, Goethe suggested that practically trained craftsmen did reflect theoretically on their craft and that they would be pleased with his new theory of color: “The technician and the dyer should welcome our work, while those who thought about the phenomena of dyeing were the least satisfied by the existing theory. They were the first to realize the inadequacy of the Newtonian doctrine.”<sup>55</sup>

Technique, or skill, was also essential to the fine arts in Goethe’s opinion, as he saw crafts and fine art as a continuum rather than as separate entities. In his work on poetry for example, Goethe developed a logic of making that rejected “genius-aesthetics,” the idea that writing poetry had nothing to do with technical skill and required only inspiration and talent. As Köhn explains, *technique* in the sphere of craft means to Goethe the process of a conscious, regulated production, the form of a specific knowing and ability that guarantees the craftsman the reliability of his work: “Like the mason himself, when he brings together bricks, tiles, and lime, with his human technique, moves half mechanical, half chemical.”<sup>56</sup>

Technique, as knowledge and command of means and procedure is equal to handiwork or craft in this understanding. Of greater meaning to Goethe are considerations about the relationship of art to craft.<sup>57</sup> In the novel *Wilhelm Meister’s Wanderjahre* (Wilhelm Meister’s journeyman years), Goethe wrote, “it is beautiful to notice how art and technique always balance the scales, and are so closely related that one always inclines to the other, so that the art cannot sink without passing into praiseworthy craft, and the craft cannot be increased without becoming artful.”<sup>58</sup>

---

54. Johann Wolfgang von Goethe, *Zur Farbenlehre* (Tübingen: Cotta, 1810), 101, [http://sydney.edu.au/intellectual-history/documents/Goethe\\_zur\\_Farbenlehre.pdf](http://sydney.edu.au/intellectual-history/documents/Goethe_zur_Farbenlehre.pdf).

55. “Dem Techniker, dem Färber hingegen muss unsre Arbeit durchaus willkommen sein. Denn gerade diejenigen, welche über die Phänomene der Färberei nachdachten, waren am wenigsten durch die bisherige Theorie befriedigt. Sie waren die ersten, welche die Unzulänglichkeit der Newtonischen Lehre gewahr wurden” (ibid., 11).

56. “Wie denn ja der Maurer selbst, wenn er Steine, Ziegel und Kalk zusammenbringt, bei seiner menschlichen Technik halb mechanisch, halb chemisch verfährt” (Goethe, cited in Seibicke, *Technik*, 229).

57. Eckhardt Köhn, *Erfahrung des Machens: Zur Frühgeschichte der modernen Poetik von Lessing bis Poe* (Bielefeld: Transcript, 2005), 172–74.

58. “Hieran schloß sich die Betrachtung, daß es eben schön sei, zu bemerken, wie Kunst und Technik sich immer gleichsam die Wage halten, und so nah verwandt immer eine zu der andern sich

It appears from these examples that by the early nineteenth century, *Technik* in German was a term educated readers would understand as referring to the skills and methods necessary to create something, either a work of art or a work of craft. It was no longer used as a synonym for art but rather as a synonym for skill; *technique* and *technical* used in relation to visual art now indicated that without artistic talent or inspiration, the mastery of technique, however admirable, was not enough to produce a work of art.

In Goethe's novel, art and craft are described as a continuum of products resulting from practices based on technical skill rather than as two distinct enterprises. Yet when the Brockhaus encyclopaedia first included an article on *Technik* in 1829, the distinction between technical and aesthetic appreciation was a sharp one: "To this fits the observation that technique in the true sense of the word should mean the study of art [*Kunstlehre*], but in the fine arts, which have a double element, it is understood as the lower, the material, and the intellectual, the study of the material conditions of an art, and how they are applied according to the rules of art."<sup>59</sup>

Hence it is no surprise that *technique* was used in a condescending way by some. For example, historian and author Karl Friedrich von Rumohr (1785–1843) in 1827 argued that visual art should not be judged on its level of realism or the artist's mastery of skills; in order to appreciate art one should not focus on the "merely technical," but on the spiritual in art.<sup>60</sup> However, around this time, the first treatises that explicitly discuss the restoration of old paintings appeared, suggesting that knowledge of artistic technique gained new importance.<sup>61</sup> This raises the question how the use of the term *technique* in relation to art and science developed further in the course of the nineteenth century.

---

hinneigt, so daß die Kunst nicht sinken kann, ohne in löbliches Handwerk überzugehen, das Handwerk sich nicht steigern, ohne kunstreich zu werden" (Johann Wolfgang von Goethe, *Wilhelm Meister's Wanderjahre*, vol. 6 of *Sämtliche Werke* [Heraus: Verlag vom Literatur-Comptoir, 1837], 135).

59. "Technik würde dem Worte nach eigentlich Kunstlehre heißen, aber man versteht darunter bei den schönen Künsten, welche ein doppeltes Element haben, das niedere, materielle, und das geistige, die Lehre von den materiellen Bedingungen einer Kunst, und wie sie kunstgerecht (regelmäßig) zu handhaben sind" ("Technik," in *Allgemeine deutsche Real-Enzyklopädie für die gebildeten Stände*, Supplementband [Leipzig: Brockhaus, 1829], 1069).

60. Karl Friedrich Rumohr, *Italienische Forschungen*, vol. 1 (Berlin: Nicolai'schen Buchhandlung, 1827), 3–4.

61. See, e.g., Friedrich G. H. Lucanus, *Anleitung zur Restauration alter Oelgemälde und zum Reinigen und Bleichen der Kupferstiche und Holzschnitte* (Leipzig: Baumgärtner, 1828), and *Gründliche und vollständige Anleitung zur Erhaltung, Reinigung und Wiederherstellung der Gemälde* (Halberstadt: Helm, 1832).

If we look at the nineteenth-century works on art restoration and historical knowledge of painting materials Marjolijn Bol discusses elsewhere in this issue, it appears that the use of the term *technique* as a way to describe the material and practical aspects of creating and restoring artworks, even in German, did not really take off until the 1860s outside the realm of philosophy, when Gottfried Semper published his *Der Stil in den technischen und tektonischen Künsten*, a “Handbuch für Techniker, Künstler und Kunstfreunde.”<sup>62</sup> In Merrifield’s and Eastlake’s works from the 1840s, for example, meant to “investigate the nature of the durability of the techniques of the old masters from written sources,” as Bol puts it, the terms *technique*, *technology*, or *technical* do not once appear. This patchy history of the development of the use of the term *technique* in relation to the visual arts as connected to the natural sciences deserves a more thorough investigation.

Most works and theories discussed here are part of a larger system of philosophy of perception and were written by people who did not identify primarily as art theorists or historians but rather as natural philosophers and writers. Although studying their work can give us some insight into the rise of *technique* as a neologism in art theory, we have to be careful not to impose our modern disciplinary boundaries on these people and their ideas; all were profoundly interested in poetry and visual art, yet they were also all involved in the development of broader theories of sensory perception and judgment of taste. Most of them studied and wrote about a wide range of subjects in an array of fields, from theology, astronomy, logic, ethics, botany, medicine, physics, and chemistry to poetry and visual art, in the form of philosophical treatises, art critiques, novels, plays, and poems. The work of these men reflects how natural philosophy and art theory developed in conjunction, with the aesthetic attitude and pleasure of the spectator slowly but steadily replacing the imitation of nature as the key concept in the appreciation of art.

Diderot’s early use of *technique* seems rather isolated, and the question of where he acquired it remains. Although the term *technique* was occasionally used in works of art critique from the mid-eighteenth century onward either to give aesthetic value to the practice of painting, or to ridicule a lack of artistic talent, it was the need to distinguish between the idea of processes of making and the sensory perception of objects of art and nature in order to develop a new philosophy of perception that meant the term *technique* turned from synonym for *artes* to a word that distinguished processes and skills of making from works of art or nature.

---

62. Gottfried Semper, *Der Stil in den technischen und tektonischen Künsten, oder praktische Aesthetik*, 2 vols. (Frankfurt: Verlag für Kunst und Wissenschaft, 1860–63), 1:v.



In this light, asking why the term *technique* emerged in art theory and critique in the eighteenth century seems to be a slightly anachronistic question; instead, it would be better to ask why the term *technique* appeared in philosophy more generally. The philosophies discussed here provide an answer to that question: if you want to give works of art and other things perceived as "beautiful," such as natural phenomena, a special phenomenological status in the philosophy of perception and the judgment of taste, you need to distinguish the finished artwork from its maker, his skills, and the methods of making. Only after the term *technique* had become relatively common in early nineteenth-century German philosophy and literature to describe the real or supposed "formal or practical aspect of art; manner of execution or performance with regard to this" could the term develop the additional, and now much more common, meaning of "a particular way of carrying out an experiment, procedure, or task, especially in a scientific discipline or a craft."<sup>63</sup>

#### WORKS CITED

- Akker, Paul van den. 2010. *Looking for Lines. Theories on the Essence of Art and the Problem of Mannerism*. Amsterdam: Amsterdam University Press.
- Alpers, Svetlana. 1983. *The Art of Describing: Dutch Art in the Seventeenth Century*. Chicago: University of Chicago Press.
- Baumgarten, Alexander Gottlieb. 1954. *Reflections on Poetry*. Translated by William B. Berkely. Berkeley: University of California Press.
- . 2007. *Aesthetica*. Hamburg: Meiner.
- Beardsley, Monroe C. 1966. *Aesthetics: From Classical Greece to the Present: A Short History*. New York: Macmillan.
- Brewer, Daniel. 2011. "The Encyclopédie: Innovation and Legacy." In *New Essays on Diderot*, edited by James Fowler, 47–58. Cambridge: Cambridge University Press.
- Brockhaus, F. A. "Technik." 1829. In *Allgemeine deutsche Real-Enzyklopädie für die gebildeten Stände*, Supplementband. Leipzig: Brockhaus.
- Carter, David R. 2013. *Johann Joachim Winckelmann on Art, Architecture, and Archaeology*. Rochester, NY: Camden House.
- Cheetham, Mark Arthur. 2001. *Kant, Art, and Art History: Moments of Discipline*. Cambridge: Cambridge University Press.
- Crow, Thomas. 1995. "Diderot's Salons." In *Diderot on Art. Vol. 1, The Salon of 1765 and Notes on Painting*, edited by John Goodman, ix–xx. New Haven, CT: Yale University Press.
- Diderot, Denis. 2016. *Encyclopédie, ou dictionnaire raisonné des sciences, des arts et des métiers, etc.* Edited by Denis Diderot and Jean le Rond d'Alembert. University of Chicago ARTFL Encyclopédie Project (Spring 2016 edition). Edited by Robert Morrissey and Glenn Roe, <http://encyclopedie.uchicago.edu/>.
- Eagleton, Terry. 1990. *The Ideology of the Aesthetic*. Oxford: Blackwell.
- Fick, Monika. 2010. *Lessing Handbuch: Leben – Werk – Wirkung*. Stuttgart: Metzler.

---

63. See *OED Online*, s.v. "technique, n.," <http://www.oed.com/view/Entry/198458?redirectedFrom=technique&> (accessed January 6, 2017).

- Gaukroger, Stephen. 2016. *The Natural and the Human. Science and the Shaping of Modernity, 1739–1841*. Oxford: Oxford University Press.
- Goethe, Johann Wolfgang von. 1810. *Zur Farbenlehre*. Tübingen: Cotta.
- . 1837. *Wilhelm Meister's Wanderjahre*. Vol. 6 of *Sämmtliche Werke*. Herisau: Verlag vom Litteratur-Comptoir.
- . 1994. *Dichtung und Wahrheit*. Vol. 9 of *Goethes Werke: Autobiographische Schriften I*, edited by Erich Trunz. Munich: Beck.
- Guyer, Paul. 2014. "18th-Century German Aesthetics." In *The Stanford Encyclopedia of Philosophy*, edited by Edward N. Zalta, <http://plato.stanford.edu/archives/spr2014/entries/aesthetics-18th-german/> (accessed March 9, 2016).
- Hammermeister, Kai. 2002. *The German Aesthetic Tradition*. Cambridge: Cambridge University Press.
- Harloe, Katherine. 2013. *Winckelmann and the Invention of Antiquity*. Oxford: Oxford University Press.
- Hast, Johann Georg. 1700. *Technophylacium vitae et sanitatis, Oder Kunst-Kammer des Lebens u. d. Gesundheit, Darinn zu sehen, wie durch Göttliche Gnade, gute Diaet, wenige u. gute Medicamenta, Die Gegenwärtige Gesundheit erhalten, die zugefallene Krankheit aber durch drey Medicamenta curiret werden kann*. Lübeck: Cosmopoli.
- Hendriksen, Marieke M. A. 2015. *Elegant Anatomy: The Eighteenth-Century Leiden Anatomical Collections*. Leiden: Brill.
- Hoffmeister, Gerhart. 2002. "Reception in Germany and Abroad." In *The Cambridge Companion to Goethe*, edited by Lesley Sharpe, 232–55. Cambridge: Cambridge University Press.
- Hübner, Johann. 1714. *Curieuses und Reales Natur-, Kunst-, Berg-, Gewerck- und Handlungs-Lexicon: Darinne nicht nur die in der Philosophie, Physic, Medicin, Botanic, Chymie . . . gebräuchliche Termini technici oder Kunst-Wörter, nach Alphabetischer Ordnung ausführlich beschrieben werden*. Leipzig: Gleditsch.
- Jorink, Eric. 2010. *Reading the Book of Nature in the Dutch Golden Age, 1575–1715*. Leiden: Brill.
- Kant, Immanuel. 1798. *Allgemeine Naturgeschichte und Theorie des Himmels, oder Versuch von der Verfassung und dem mechanischen Ursprunge des ganzen Weltgebäudes nach Newtonischen Grundsätzen abgehandelt*. Zeitz: Webel.
- . 1913. *Beobachtungen über das Gefühl des Schönen und Erhabenen*. Leipzig: Insel.
- . 2003. *Kritik der reinen Vernunft, Kritik der praktischen Vernunft, Kritik der Urteilskraft*. Wiesbaden: Fourier.
- Köhn, Eckhardt. 2005. *Erfahrung des Machens: Zur Frühgeschichte der modernen Poetik von Lessing bis Poe*. Bielefeld: Transcript.
- Konk, Charlotte. 2003. "Science, Art, and the Representation of the Natural World." In *Eighteenth-Century Science*, edited by Roy Porter, 184–210. Cambridge History of Science 4. Cambridge: Cambridge University Press.
- Kristeller, Paul Oskar. 1951. "The Modern System of the Arts: A Study in the History of Aesthetics, Part I," *Journal of the History of Ideas* 12, no. 4: 496–527.
- Lessing, Gotthold Ephraim. 2012. *Laokoon: Oder über die Grenzen der Malerei und Poesie*, vol. 1. Stuttgart: Philip Reclam.
- Lucanus, Friedrich G. H. 1828. *Anleitung zur Restauration alter Oelgemälde und zum Reinigen und Bleichen der Kupferstiche und Holzschnitte*. Leipzig: Baumgärtner.
- . 1832. *Gründliche und vollständige Anleitung zur Erhaltung, Reinigung und Wiederherstellung der Gemälde*. Halberstadt: Helm.
- McCormick, Edward Allen. 1962. "Translator's Introduction." In Gotthold Ephraim Lessing, *Laocoön: An Essay on the Limits of Painting and Poetry*, xx–xxi. Indianapolis: Library of Liberal Arts.
- Mendelssohn, Moses. 1929. *Schriften zur Philosophie und Ästhetik*. Vol. 1 of *Gesammelte Schriften*, edited by Fritz Bamberger and Leo Strauss. Berlin: Akademie-Verlag.

- Mothersill, Mary. 2008. "Beauty Restored." In *Aesthetics: A Comprehensive Anthology*, edited by Steven M. Cahn and Aaron Meskin, 509–20. Oxford: Blackwell.
- Onnasch, Ernst-Otto. 2006. "Receptieonderzoek: De eerste receptie van Kants filosofie in Nederland." *Tijdschrift voor filosofie* 68:133–56.
- Potts, Alex. 2006. "Introduction." In Johann Joachim Winckelmann, *History of the Art of Antiquity*, 1–53. Los Angeles: Getty Research Institute.
- Pudelek, Jan-Peter. 2000. *Der Begriff der Technikästhetik und ihr Ursprung in der Poetik des 18. Jahrhunderts*. Würzburg: Königshausen & Neumann.
- Reynolds, Joshua. 1891. *Sir Joshua Reynolds's Discourses on Art*. Edited by Edward Gilpin. Chicago: McClurg.
- Roche, Daniel. 2006. "Encyclopedias and the Diffusion of Knowledge." In *The Cambridge History of Eighteenth-Century Political Thought*, edited by Mark Goldie and Robert Wokler, 509–20. Cambridge: Cambridge University Press.
- Ruhmohr, Karl Friedrich. 1827. *Italienische Forschungen*, vol. 1. Berlin: Nicolai'schen Buchhandlung.
- Seibicke, Wilfried. 1968. *Technik: Versuch einer Geschichte der Wortfamilie um τέχνη in Deutschland vom 16. Jahrhundert bis etwa 1830*. Technikgeschichte in Einzeldarstellungen. Heidelberg: Verein Deutscher Ingenieure.
- Semper, Gottfried. 1860. *Der Stil in den Technischen und Tektonischen Künsten, oder Praktische Aesthetik*. 2 vols. Frankfurt: Verlag für Kunst und Wissenschaft.
- Shell, Susan Meld. 1996. *The Embodiment of Reason: Kant on Spirit, Generation, and Community*. Chicago: University of Chicago Press.
- Shiner, Larry. 2001. *The Invention of Art: A Cultural History*. Chicago: University of Chicago Press.
- Smith, Pamela H. 2004. *The Body of the Artisan: Art and Experience in the Scientific Revolution*. Chicago: University of Chicago Press.
- Swan, Claudia. 1995. "Ad vivum, naer het leven, From the Life: Defining a Mode of Representation." *Word & Image: A Journal of Verbal/Visual Enquiry* 11 (4): 353–72.
- . 2005. *Art, Science, and Witchcraft in Early Modern Holland: Jacques de Gheyn II (1565–1629)*. Cambridge: Cambridge University Press.
- Taylor, Paul. 2013. "From Mechanism to Technique: Diderot, Chardin, and the Practice of Painting." Public lecture, Goethe Institute, Amsterdam, February 11.
- Wallenstein, Sven-Olov. 2010. "Space, Time, and the Arts: Rewriting the Laocoon." *Journal of Aesthetics & Culture* 2, <http://www.aestheticsandculture.net/index.php/jac/article/view/2155/5310>.
- Winckelmann, Johann Joachim. 1756. *Gedanken über die Nachahmung der Griechischen Werke in der Malerei und Bildhauerkunst*. Dresden: Waltherischen Buchhandlung.
- . 1763. *Abhandlung von der Fähigkeit der Empfindung des Schönen in der Kunst und dem Unterrichte in derselben*. Dresden: Waltherischen Buchhandlung.
- . 1765. *Reflections on the Painting and Sculpture of the Greeks*. Translated by Henry Fusseli. London: Millar.
- Zammito, John H. 1992. *The Genesis of Kant's Critique of Judgment*. Chicago: University of Chicago Press.
- Zedler, Johann Heinrich. 1731–54. *Grosses vollständiges Universal-Lexicon aller Wissenschaften und Künste*. Available at <https://www.zedler-lexikon.de> (accessed March 8, 2016).