Critical Thinking as Reflecting on Understanding Others

Heleen Torringa

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Critical Thinking as Reflecting on Understanding Others

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(met een samenvatting in het Nederlands)

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Johanna Gesina Hendrika Torringa
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Promotoren:

Prof. dr. M. de Winter

Prof. dr. W. Koops

Leden beoordelingscommissie:

Prof. dr. M. Brekelmans	Universiteit Utrecht
Dr. K.J. Brons	Universiteit van Amsterdam
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Introduction

Critical Thinking and Judgment (Formation)

Critical thinking in any conceptualization refers to the phenomenon of human judgment (formation). The etymological origin of "critical" seems preserved in contemporary uses of the adjective. At the same time, to many contemporary language users "critical", unfortunately, is thought to refer only to rejecting judgment. However, "critic" comes from the Greek verb *krinein* (to decide) (Ayto, 1990). The Greek derived noun *kritēs* (a judge) produced in turn *kritikós* (able to make judgments); this came to be used as a noun, 'one who makes judgments', which passed via the Latin *criticus* into English (ibid.). Critic-al, as an adjective, is derived from "critic" (ibid.). Conceptualizations of critical thinking differ. This dissertation for example offers one which differs from extant conceptualizations of critical thinking. Yet the overarching element in all concepts is the reference to judgment (formation).

Thoughtless Judgment

When we think of the word "judgment" in the daily, not particularly philosophical, sense of the word, harsh judgment easily comes to mind. When we think of human judgment in daily reality, we might see judgments stemming from heartfelt emotion. Not infrequently those within the negative range... And not infrequently based on misunderstandings of another person's statement to which a critical response led in the first place.

The phenomenon "critical thinking" refers to in this book regards the attempt to understand others' utterances first after which an evaluation, from one's own perspective, is followed. 'Understanding others' in the context of this dissertation by no means refers to empathizing (*per* se) with others or the attempt to understand with an *a priori* intention to *agree* with others' statements. However, presenting critical thinking in the book title as 'reflecting on understanding others' aims to intensify the focus on 'judgment from understanding'. That is, understanding how others may have meant their utterances to be taken by the receiver.

As will become clear throughout this book, 'judgment from understanding' is somewhat opposed to accounts of critical thinking that focus on 'judgment that meets criteria of good thinking'. However, what seems clear from the start is that both 'judgment from understanding' and 'judgment that meets criteria of good thinking' oppose these forms to thoughtless judgment.

Reluctance to Judge

Aside from thinking of harsh judgment stemming from heartfelt emotion when the word "judgment" is raised, one can also think of people who display a reluctance to judge. It was political theorist and philosopher Hannah Arendt who addressed this reluctance in 1964 in the context of her attendance at the Eichmann trial three years before. And in the context of the "furious controversy touched off by my book *Eichmann in Jerusalem*" as Arendt's (1964) reference to it. When the controversy had burst out, Arendt held that "there exists in our society a widespread fear of judging that has nothing whatever to do with the biblical "Judge not, that ye be not judged". Behind the unwillingness to judge lurks the suspicion that one is a free agent, and hence the doubt that anyone is responsible or could be expected to answer for what he has done (Arendt, 1964).

He who raises moral issues will be confronted, Arendt (1964) argues, with this frightful lack of self-confidence and pride and with a kind of mock-modesty. By mock-modesty Arendt means that in saying "Who am I to judge?", one is actually saying: "We'll all alike, equally bad, and those who try, or pretend that they try, to remain halfway decent are either saints or hypocrites, and in either case should leave us alone".

Another account of the reasons why people display reluctance to judge can be read in an article of the, by origin, Nigerian philosopher Polycarp Ikuenobe. Ikuenobe (2001) holds that the idea of questioning one's ideas is regarded by many as an affront. "Questioning is often taken to mean that one is not making a good point or one is not articulating one's ideas properly. As a result, questioning tends to engender a defensive response. This attitude has a long tradition. It was responsible for how Socrates was received by Athenians, and why he was eventually killed" (Ikuenobe, 2001, p. 325).

Another reflection in the 21st century on the reasons why some of us show reluctance to judge can be added. The present writer senses a trend in which Western people declare to refrain from judgment by reference to Buddhism. The "Who am I to judge?", in some spiritual circles, seems explained in terms of pointing to one of the "three signs of being"; the "no I" as part of the important Buddhist doctrines ("Teachings", n.d.). Buddhists do not believe in the self in which a stable sense of 'I' might anchor itself (ibid.). "The whole idea of 'I' is in fact a basically false one that tries to set itself up in an unstable and temporary collection of elements" (ibid.). Seen in this light, "I think (critically)" may be perceived by those who are inspired by Buddhist thought as a contradiction in terms.

What can also explain the attitude of "Who am I to judge?" by the spiritually minded Westerners of our culture, is that it is believed that judgment violates the "second noble truth" about the cause of suffering. After all, forming and passing

judgments from social engagement is often accompanied by feelings of restlessness. Restlessness is a form of suffering which can be overcome by following the noble eightfold path ("Teachings", n.d.). Passing judgment about the greed displayed by bankers who contributed to the economic crisis of our time for example from a heartfelt sense of justice may not bring about the awakening that the Buddha himself achieved. This could stand in the way of achieving nirvāna, that is, the state of mind that is free from craving, anger and other afflicting states (ibid.). At the same time, the current Dalai Lama, Tenzin Gyatso, illustrates how a spiritual and political life do not need to be mutually exclusive.

To raise a thought, perhaps those Westerners who are reluctant to judge by reference to Buddhism, judge (all the same...) from *responding* to those who judge from thoughtless misunderstanding. Ironically, the source of those who refrain from judgment may be exactly the same as the source of those who attribute to judgment a positive value. This is perhaps a movement which is similar to one that took place in ancient Greece in which Pyrrhonian skepticism responded to dogmatism, considered as the view that something can be known with certainty and 'judged' by the Pyrrhonians to be a disease... (Hadot, 2003). The Pyrrhonian skeptics aimed for *ataraxia*, of having a peaceful mind (ibid.). Suspending judgment finally had to make way for refraining from judging at all (ibid.). The latter seems to resemble the Buddhist effort to achieve freedom from suffering.

But why throw out the baby with the bath water? Why does it matter to judge? In other words, why would critical thinking make a difference? Further on in this introduction this question comes up for discussion. It returns in the general discussion of this book. First though a relevant 'empirical fact about judgment' is revealed which marks the to and from between philosophy and the social sciences in this dissertation.

An Empirical 'Fact About Judgment'

Without giving the game away, one important fact about the number of individuals that understand assertions as *judgments* rather than *opinions* is introduced here. As will become clear in chapter IV of this book, critical thinking, as reinterpreted in chapter III, is related to (Kuhn's (1999) model of) epistemological understanding. Epistemological understanding has to do with an individual's broader understanding of knowledge and knowing (Kuhn, 1999). It contains a general aspect – How does anyone know? - and a personal aspect – What do I know about my own knowing? The developmental task that underlies the achievement of mature epistemological understanding - in which assertions are understood as judgments and critical evaluation deemed relevant - is the

coordination of the subjective and objective dimensions of knowing (Kuhn, Cheney, & Weinstock, 2000).

The progression of epistemological understanding is reflected in a sequence of levels. "Someone at the absolutist (as well as the preabsolutist realist) level sees knowledge as an objective entity, as located in the external world and knowable with certainty. In what we take to be a key event in the development of epistemological thought, the multiplist relocates the source of knowledge from the known object to the knowing subject, hence becoming aware of the uncertain, subjective nature of knowing. This awareness comes to assume such proportions, however, that it overpowers and obliterates any objective standard that could serve as a basis for comparison or evaluation of conflicting claims. Because claims are subjective opinions freely chosen by their holders and everyone has a right to their opinion, all opinions are equally right. The evaluativist reintegrates the objective dimension of knowing, by acknowledging uncertainty without forsaking evaluation. Thus, two people can both have legitimate positions – can both "be right" – but one position can have more merit ("be more right") than the other to the extent that position is better supported by argument and evidence" (Kuhn et al., 2000, p. 310-312).

Kuhn et al. (2000) tested, among other things, levels of epistemological understanding among a sample of seven groups of children, adolescents, and adults, varying in age, education, and life experience. The pure multiplist pattern of epistemological level across judgment domains (personal taste, aesthetic, value, and truth) was shown by 29% of the total sample (27 of 129 participants). This attests to the strength of multiplist thought among adolescents and adults in our culture (Kuhn et al., 2000).

What was also found is that no more than half of the adults of any background and in any judgment domain make the transition from multiplist to the evaluativist position (Kuhn et al., 2000). "There appears not to be any progression toward the evaluativist level of understanding with the increase of age and experience represented in the comparison between undergraduate and mature adult groups. Undergraduates show the highest proportion of evaluativist thought of all groups except the experts. Maturity and life experience, particularly educational experience, are often mentioned as the most likely contributors to the development of epistemological understanding.
To the extent, as our data suggest, that increasing age and education are not sufficient to effect the transition to an evaluativist level of epistemological understanding, other experiential factors need to be considered as possibly implicated in this transition (or, more precisely, in its failure to occur)" (Kuhn et al., 2000, p. 325).

To summarize, a minority of individuals seems to attain the level of evaluative epistemological understanding as indicated by Kuhn et al. (2000) and Mason, Boldrin, &

Zurlo (2006). Interestingly, educational experience / level, does not seem a sufficient condition to effect the transition to evaluative epistemological understanding (Kuhn et al., 2000). Evaluative epistemological understanding is hypothesized in chapter IV as one of the requirements of critical thinking, as conceptualized in this dissertation. What is more, having attained evaluative epistemological understanding seems the prerequisite for one part of critical thinking, as conceptualized by the present writer.

Suppose the suggestion by Kuhn et al. (2000) about education as possibly a necessary though not sufficient condition for the attainment of mature epistemological understanding is true. What else then could explain the (supposed) minority of evaluativists in our culture?

A Current Trend in Western Culture as Explaining the Lack of 'Evaluativists'?

One factor, mentioned by Kuhn et al. (2000), Kuhn and Park (2005) and Kuhn (2008), which may explain the strength of multiplist thought among adolescents and adults in our culture can said to be paradoxical. It is suggested that one set of Western values is challenged by another set of Western values. That is, at the heart of the evaluativist position is the view that reasoned argument is worthwhile and the most productive path to knowledge (Kuhn et al., 2000). Competing with this set of values in modern society are the values of social tolerance and acceptance (ibid.). Perhaps the latter set of values overpowers the former with the result being an inhibition of intellectual development beyond the multiplist level (ibid.). An example which illustrates the number of multiplists in our culture is the choice of political candidates which tends to be treated as a matter of personal taste and opinion rather than comparison on the basis of positions supported by reasoned argument (ibid.).

To repeat, at the multiplist level of epistemological understanding, common by adolescence, knowledge is regarded as consisting of nothing but opinions, chosen by their owners like personal possessions and not open to challenge (Kuhn, 2008). "No one's opinion merits being treated as better than another person's. This lack of discriminality is equated with tolerance: Because everyone has a right to their opinion, all opinions are equally right" (Kuhn, 2008, p. 128). Many adults remain multiplists for life (ibid.). Multiplist thinking conveniently reinforces certain of the values that prevail in democratic societies; beliefs deserve respect and tolerance (ibid.). Tolerance is thought to only be a good thing (ibid.).

However, there is downside to tolerance. "When tolerance is equated with equal merit of all claims, the ability and disposition to make discriminations – to be judgmental – is undermined. If any claim is as valid as any other, there is little reason to expend the mental effort that judging another's claims entails. Better to respect his right to have it

and keep a respectful distance. Nor is there any reason to justify one's own views – it is enough simply to hold them. (...) Tolerance, then, can translate into a willingness to listen to another's view but not to engage it. Once respective views are articulated, the inclination is to end conversation with the conclusion, "Well, I guess we disagree – to each his own." The disinclination to continue is partly one of being reluctant to invest the intellectual energy that discourse requires. But equally it is one of fearing that to criticize another's view is disrespectful, hostile, and ultimately injurious. The argument and the person are not distinguished, leaving injury to one tantamount to injury to the other. So, better to let things be, "to live and to let live." To avoid the risk of being judgmental, it is safest not to judge at all" (Kuhn, 2008, p. 129). The inclination to discuss sensitive topics, or even any topic, with people like ourselves with whom we agree paradoxically leads in a direction the opposite of tolerance (Kuhn, 2008).

Value, such as valuing evaluation of statements, exists at a group level and derives from a shared conception of the activity as worthwhile to the well-being or advancement of the group rather than existing only at the individual level (Kuhn & Park, 2005). Kuhn and Park (2005) claim that in the absence of sufficient development of epistemological understanding, students are unlikely to be willing to invest the effort that sustained intellectual engagement entails. Thus, being *willing* to 'evaluate statements' is regarded, by cognitive development researchers, as dependent on individuals' attainment of mature epistemological understanding. Further, epistemological understanding and intellectual values are not constructs located primarily at the individual level (ibid.). These constructs have social and cultural meaning (ibid.). "It is in this social cultural context that they are experienced and in this context that they must be examined and understood" (Kuhn & Park, 2005, p. 123).

Suppose there is a cultural trend going on in which social tolerance for example overpowers the value of reasoned argument as suggested by Deanna Kuhn and colleagues. Or, as suggested by the present writer in the general discussion of this book, increased individualization co-explains the cultural tide of multiplism in which evaluation of statements is deemed irrelevant. Suppose this cultural trend, whether mostly to do with the cultural belief that tolerance can only be a good thing or with (Western) individualization, undermines the ability and disposition to make discriminations.

In other words, what if a current trend in our culture inhibits the development of individuals' attainment of mature epistemological understanding in which evaluation of statements is deemed relevant? So what? What is the problem with being willing "to listen to another's view but not to engage it" (Kuhn, 2008)?

What Difference Can Critical Thinking Make?

Although Hannah Arendt's concept of judgment must be understood in the context of her engagement with what happened in World War II, its content has not lost credibility today. When some emotional edges in her word use are cut off, it can be argued "why Arendt matters" in our time to quote Young-Bruehl's (2006) book on Hannah Arendt. It can equally be argued why critical thinking, understood for the present as referring to judgment, can make a difference by applying Arendt's analysis of thinking and judging.

Thinking as such, Arendt (1971) holds, does society little good. It does not create values, it will not find out, once and for all, what "the good" is (ibid). It has no political relevance unless special emergencies arise (ibid.). That is, thinking can be transformed into judging which to Arendt is a political ability. "When everybody is swept away unthinkingly by what everybody else does and believes in, those who think are drawn out of hiding because of their refusal to join in is conspicuous and thereby becomes a kind of action. In such emergencies, it turns out that the purging component of thinking (Socrates' midwifery, which brings out the implications of unexamined opinions and thereby destroys them – values, doctrines, theories, and even convictions) is political by implication. For this destruction has a liberating effect on another faculty, the faculty of judgment, which one may call with some reason the most political of man's abilities" (Arendt, 1971, p. 192).

"Thinking can become dialectical and critical because it goes through this questioning and answering process, through the dialogue of *dialegesthai*, which actually is a "traveling through words", a *poreueshai dia tōn logōn*, whereby we constantly raise the basic Socratic question: *What do you mean when you say...?* except that this *legein*, saying, is soundless and therefore so swift that its dialogical structure is somewhat difficult to detect" (Arendt, 1971, p. 185).

The criterion of this mental dialogue that can become critical is no longer truth, but agreement, to be consistent with oneself (Arendt, 1971). Not surprisingly, Arendt concludes that the manifestation of the wind of thought is not knowledge; truth is not the criterion which can produce knowledge of the mental dialogue between me and myself that can become critical. Instead, it is the ability to tell right from wrong, beautiful from ugly (Arendt, 1971).

Indifference about our company, "though common enough", is regarded by Arendt (1965-6) as the greatest danger which includes the "widespread tendency to refuse to judge at all". In the unwillingness or inability to choose one's examples and one's company and unwillingness or inability to "relate to others through judgment lie the horror and at the same time the bananility of evil" (Arendt, 1965-6, see p. 146).

Arendt concludes that the moral collapse of respectable society during the Hitler regime may teach us, that under such circumstances those who cherish values and hold fast to moral norms and standards are not reliable. Much more reliable will be the doubters and skeptics, not because skepticism is good or doubting wholesome, but because they are used to examine things and to make up their own minds (Arendt, 1964, see p. 45).

The political ability to judge may at the "rare moments when the stakes are on the table, prevent catastrophes, at least for the self" (Arendt, 1971). Whether the ability to judge can prevent catastrophes in *society at large* remains an open question. Critical thinking, as reinterpreted in this book, is treated as an educational ideal. As such it aims to support individuals' orientation in all too many perspectives and simply *hopes* to be of societal importance. The intention is to create conditions in which people can come to "a meeting of minds" to quote a phrase of Golinkoff (1993). And in which they reflect critically on one another's views from *understanding*.

How this Book is Put Together

How is this book built up? Chapter **I**: The first chapter sets out a problem analysis, research aims & questions and research methods. How both the field of philosophy and the social sciences are applied in the present study can also be found in this chapter.

Chapter **II**: North American accounts of critical thinking that have strongly influenced a contemporary understanding of what critical thinking means, are described. Certain aspects of these accounts are problematized in the chapter's concluding remarks.

Chapter **III**: This chapter presents a reinterpretation of the phrase "critical thinking". Critical thinking, in the present study, is associated with distinguishing between propositional content and illocutionary force. Illocutionary force indicates how a proposition is to be taken [by the receiver] (Searle, 1969). Indicators are e.g. word order, stress, intonation, the mood of the verb (ibid.). This critical thinker wonders: How is this utterance meant to be taken and what are the grounds of, say, *warning*?

Chapter **IV**: What cognitive competencies would be required for critical thinking as reinterpreted here? This question results in formulating an empirically testable hypothesis on the correlates of critical thinking performance. This hypothesis involves an idea about the age at which an individual could best be supported to learn critical thinking.

Chapter **V**: How could the learning of (reinterpreted) critical thinking be scaffolded at school? In the final chapter instructional ideas and a school culture which may contribute to their effectiveness are explored. Arguments for potential effectiveness of proposed instruction methods and suggestions for creating a supportive school culture, are provided. In the general discussion possible problems with realizing this dissertation's educational ideas in the schools of today and current cultural tide are discussed.

Chapter I

#

Problematizing Critical Thinking

Introduction

Critical thinking and Western philosophy seem inherently connected. The moment thought developed into thinking *critically* about thinking perhaps marked the birth of Western philosophy. The first reflections that took prior ways of thinking as the object of reflection were critical indeed. Critical in the sense that when Greek societies in the seventh century before B.C., having their local myths and corresponding societal order, met other cultures these myths and transmitted wisdom started to lose their status as self-evident (Bor & Petersma, 1995).

In agreement with a conception of the start of Western philosophy that emphasizes *criticism of* prior ideas and practices, Robinson (1999) holds: "Prephilosophical Greek culture [also] had an accepted set of traditional and religious conceptions of the world, the gods, nature, and proper human conduct. Over time, these came to be criticized and "rationalized". The Gods were reinterpreted and moral standards were brought under their direction. These reinterpretations were part of the move toward what we now call philosophy" (Robinson, 1999, p. 5).

Yet not only philosophers are concerned with critical thinking. So are social scientists.[1] Philosophers and social scientists do seem to proceed from their own disciplinary home rather than to cooperate or to make use of each other's research methods. In this dissertation, philosophical methods of concept explication and argumentation are combined with hypothesis development based on available empirical research results. Being the subject matter that critical thinking is, that is 'philosophical' and limited to the psychology of humans who are the 'entities' that can actually think at all, *not* combining philosophy and psychology almost seems indefensible.

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[1] For a review on empirical studies that tried to ascertain retrospectively which instructional factors enhance critical thinking see Tsui (1999) and Ten Dam and Volman (2004). See also Cassel and Congleton (1993), offering an annotated bibliography, in which empirical research, related to critical thinking is reported (aside from reports on past and, at that time, current trends in the *concepts* and *teaching* of critical thinking).

In 1990 Stephen P. Norris, Professor in Education, also pleads in favour of a cross-over of philosophy and psychology. In *Thinking about critical thinking: philosophers can't go it alone*, Norris (1990) argued that many of the questions about critical thinking which philosophers have historically treated, involve empirical issues to a significant degree. Philosophers have said many relevant things about the definition of "critical thinking" and about the generalizability of critical thinking ability across different content areas (Norris, 1990). "However, to the extent that these issues shade into empirical questions concerning the psychological nature of human mental abilities, then they should be treated as such, either by philosophers so inclined or by empirical researchers sensitive to the relevant philosophical issues" (Norris, 1990, p. 74).

The present writer feels spoken to by Norris (1990). She might be the inclined philosopher who is sensitive to the empirical dimension of critical thinking. Though never without the help of Micha de Winter and Willem Koops, primary supervisors of the present study, who are both Professors in the social sciences.

Why would one intend to gain empirical knowledge about critical thinking? What phenomenon is addressed and what kind of knowledge about it can be acquired? This first chapter aims to answer this question, among others, by setting out the formulation of this dissertation's problem. A problem analysis is expounded in which one of the questions is whether to keep philosophical conceptions of critical thinking separate from psychological ones. Another question regards conceptualizing critical thinking. What reasons could one have to conceptualize critical thinking away from, the contemporary dominant conception of 'ability to reason well and disposition to do so' (Bailin & Siegel, 2003)? Further, does an interest in hypothesizing the correlates of critical thinking performance, have consequences for how to take the phrase "critical thinking"?

The aims of this dissertation in a concise formulation are to offer a reinterpretation of critical thinking and to prepare this research object for future empirical research. Specific approaches to offer (i) a reinterpretation of critical thinking, (ii) an empirically testable hypothesis on the correlates of critical thinking performance and (iii) ideas on how to scaffold the learning of critical thinking in the context of school, can also be found in this first chapter.

As a start, it might be interesting to see how the fields of philosophy and certain disciplines within the social sciences concerned themselves with this dissertation's subject matter. Gaining an understanding of how both fields treated critical thinking separately, may shed light on the present study's approach to make use of philosophy and psychology conjointly.

1.1 Philosophy, Social Science and (the idea of) Critical Thinking

1.1.1 Critical Thinking and Western Philosophy

The etymological origin of the current word "critical" dates back to ancient Greece. In Plato's *Sophist* the word "critical" can be found. This explains the impression, noted above, that critical thinking and Western philosophy are inherently connected. Thornton (Thornton, n.d.) even ventures the assertion that "critical consciousness was invented by the ancient Greeks".

In the *Sophist* Theaetetus, the Athenian pupil of the geometer Theodorus, holds a discussion with a visitor who is a philosopher from Elea. Socrates is present. Socrates asks whether the visitor and the others at Elea treat the philosopher, the statesman, and the sophist as being just one thing or rather as having three distinct intellectual capacities, as their three names indicate (Cooper, 1997). The latter appears to be the Eleatics' view. A dialogue of questions and answers follows. In defining the sophist, the visitor employs the 'method of collection and division' (ibid.). Classification – what Plato called the "collection and division of kinds" - becomes the principle method to be used by philosophers in ancient Greece, and this approach is most fully employed in such late works as the *Sophist*, *Statesman*, and *Philebus* (Kraut, 1999). The essential idea of the method of collection and division is that each thing is to be understood through a full, lively awareness of its similarities and differences in relation to other things (Cooper, 1997).

In section 226c the visitor is asked by Theaetetus what he is doing in defining the sophist (White, 1997, see p. 247). The visitor replies that he calls the mentioning of examples and subsuming them under the heading of one kind or name: the art of discrimination (ibid.), in transliterated Greek: *diakritikên*. Here we hit the origin of the contemporary word "critical". "Critic", as also noted in the general introduction, comes from the Greek verb *krinein* (to decide) (Ayto, 1990). The Greek derived noun *kritēs* (a judge) produced in turn *kritikós* (able to make judgments); this came to be used as a noun, 'one who makes judgments', which passed via the Latin *criticus* into English (ibid.). Critic-al, as an adjective, is derived from "critic". *Kritikós* in Greek means: able to discern with Aristotle and also means: able for judging (*An Intermediate Greek-English Lexicon*, 1996).

The Oxford Dictionary of English Etymology (1966) informs that the Greek *kritikós* is the substantive use of the adjective formed on *kritēs*: judge. An online Etymology Dictionary explains *kritikós* as: "able to make judgments" and holds that it is a conjugation of *krinein*, translated with "to separate, decide" ("Online Etymology

Dictionary", n.d.). Ergo, judging, discerning and deciding seem semantically connected in ancient Greek.

Many examples of philosophers in history who are strongly associated with critical thinking, despite not using the exact phrase "critical thinking", could be mentioned. In this chapter just two of these 'critical philosophers' are mentioned. They are philosophers from very different historical epochs and cultural settings. Mentioning them intends to illustrate the assertion that the field of philosophy has brought forth the idea of critical thinking. Immanuel Kant (1724-1804) and Karl R. Popper (1902-1994) are both strongly associated with critical thinking in philosophy.

Kant is the philosopher who is declared by his followers, up to now, as The philosopher of criticism. Moses Mendelssohn (1729-1786), one of Kant's predecessors, called him the *Alleszermalmer* Kant (all-crushing Kant) (Kuehn, 1999). It is the philosopher who writes the following in the preface of the *first* edition of the *Critique of Pure Reason*: "Our age is the genuine age of criticism, to which everything must submit. Religion through its holiness and legislation through its majesty commonly seek to exempt themselves from it. But in this way they excite a just suspicion against themselves, and cannot lay claim to that unfeigned respect that reason grants only to that which has been able to withstand its free and public examination" (Kant 1787, trans. 1998, Axi, footnote).

Kant clarifies the term "critique" in the preface of the second edition of the *Critique of Pure Reason*, by distinguishing between criticism and dogmatism. Criticism is not opposed to the dogmatic procedure of reason in its pure cognition as science, Kant (1787, transl. 1998) states. Instead, it is opposed only to dogmatism, i.e., to 'the presumption of getting on solely with pure cognition from (philosophical) concepts according to principles, which reason has been using for a long time without first inquiring in what way and by what right it has obtained them (ibid.). Dogmatism is therefore the dogmatic procedure of pure reason without an antecedent critique of its own capacity' (Kant, 1787, transl. 1998, see BXXXV).

Popper (1979), living in quite a different age and cultural habitat than Kant, refers to Kant in explaining how he came to understand Hume's inductive theory of the formation of beliefs as untenable for *logical* reasons. "It was first in animals and children, but later also in adults, that I observed the immensely powerful *need for regularity* – the need which makes them seek for regularities; which makes them sometimes experience regularities even where there are none; which makes them cling to their expectations dogmatically; and which makes them unhappy and may drive them to despair and to the verge of madness if certain assumed regularities break down. When Kant said that our intellect imposes its laws upon nature, he was right – except that he did not notice how often our intellect fails in the attempt: the regularities we try to impose are

psychologically a priori, but there is not the slightest reason to assume that they are *a priori valid*, as Kant thought. The need to try to impose such regularities upon our environment is, clearly, inborn, and based on drives, or instincts. (...) I decided that Hume's inductive theory of the formation of beliefs could not possibly be true, for *logical reasons*" (Popper, 1979, p. 23-24).

Popper (1979) introduces his understanding of critical or "rational discussion" as he literally denotes it, by writing: "We all have our philosophies, whether or not we are aware of this fact, and our philosophies are not worth very much. But the impact of our philosophies upon our actions and our lives is often devastating. This makes it necessary to try to improve our philosophies by criticism" (Popper, 1979, p. 33). The great instrument for progress Popper reserves for criticism. Popper calls his idea of the search for truth the critical method. "It is a method of trial and the elimination of errors, of proposing theories and submitting them to the severest tests we can design (Popper, 1979, p. 16).

Both Kant and Popper were primarily concerned with the formation and justification of beliefs and knowledge. They both consider criticism of another's beliefs or theories (or even of the capacity of pure reason as such in Kant's case), but of our *own* just as much, as a method of acquiring Enlightenment. Though Popper (1979, see p. 34) adds the idea of common sense to Enlightenment when he asserted that 'all science and all philosophy are enlightened common sense'. In sum, the field of (possibly particularly Western) philosophy brought forth and cultivated the idea of critical thinking.

1.1.2 Critical Thinking and the Pedagogical & Educational Sciences

However much critical thinking was and is a concern of philosophers, through all ages it has become a concern of educationalists too.[2] In an annotated bibliography on critical thinking (Cassel and Congleton, 1993) it is asserted that particularly in the 1980s the phrase "critical thinking" has become prevalent in philosophy, education and psychology. Cassel and Congleton (1993) argue that the concept of critical thinking dates back to Socrates in ancient Greece and has been a goal of education reformers throughout history. "Twentieth century efforts at integrating critical thinking into the forefront of education can be found in the writings of John Dewey, Edward Glaser's *Experiment in the*

[2] John Dewey (1859-1952) is a good example of a philosopher and theorist of education who, in line with Bor and Petersman (1995) and Robinson (1999), views philosophy as criticism. In *Experience and Nature*, first published in 1925, Dewey (1958) holds that 'philosophy is inherently criticism' (see p. 398). Dewey defines criticism as 'discriminating judgment and careful appraisal'. Philosophy is regarded as 'a generalized form of criticism' (Dewey, 1958). This resembles Thornton's (Thornton, n.d.) characterization of philosophy as "the manifestation of critical consciousness".

Development of Critical Thinking (1941), and Max Black's textbook *Critical Thinking* (1952)" (Cassel & Congleton, 1993, p. vii). The current Critical Thinking Movement can be traced back to 1962 with Robert Ennis's landmark article *A concept of Critical Thinking* (ibid.).

Aside from the contemporary North American Critical Thinking Movement, further specified in the next chapter, there are two disciplines also concerned with critical thinking. These are Informal Logic and Philosophy for Children. Both fields are connected to education. Informal Logic has precedents in nineteenth century works on logic and rhetoric but properly is a child of the 1960s ("Informal Logic", 1996, revision of March 2007). "It is ultimately rooted in its social and political movements, which were characterized by a call for an education more "relevant" to the issues of the day" (ibid., p. 2). Philosophy for Children can be characterized as an educational movement that got its start in the early 1970s with the publication of Matthew Lipman's philosophical novel for children, *Harry Stottlemeier's Discovery* ("Philosophy for Children", 2002, see p. 10, revision of June 2009). By the 1970s the hue and cry for teaching critical thinking in the schools was, if not clear, at least loud (ibid., see p. 9).

Matthew Lipman is Professor of philosophy and founder of the Institute for The Advancement of Philosophy for Children (henceforth: IAPC), by the mid-1970s formally in place at Montclair State College. Thousands of children in New Jersey, across the United States, have been introduced to the IAPC educational programs ("Philosophy for Children", 2002, revision of June 2009, see p. 10). In *Thinking in Education* Lipman (1991) describes procedures that must be put in place if students at all levels of education are to become more thoughtful, more reasonable, and more judicious.
It recommends that the classroom be converted into a community of inquiry and that the disciplines of philosophy be redesigned so as to provide the concepts and values now missing from the curriculum (Lipman, 1991, publisher's description).

Then there is Informal Logic, which, as a discipline, originated in North America in the 1970s like the Philosophy for Children. Informal Logic also connects critical thinking to the educational interest in ways in which students can best be taught to reason ("Informal Logic", 1996). The theoretical interests that motivate informal logic are anticipated in Toulman's *The Uses of Argument* and Hamblin's *Fallacies*. The work of Johnson and Blair, e.g. their *Logical Self-Defence* as an attempt to teach the logic of informal reasoning, led the way to Informal Logic as a discipline (ibid.).[3]

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[3] The present writer likes to use the opportunity to render honour to the Dutch linguists Van Eemeren and Grootendorst. In one of their Dutch books on "critical discussion", they set out an ideal model of a critical discussion that is focused on solving disagreements for which they employed a pragma-dialectical approach. The interested reader is referred to several of the books and international publications by the aforementioned authors in which this approach is applied. The *critical function*, next to the heuristic function, at analyzing and

The development of informal logic is tied to educational goals ("Informal Logic", 1996). That is, the desire to develop ways of analyzing ordinary reasoning which can inform general education (ibid). To this extent the goals of informal logic intersect with those of the Critical Thinking Movement which aims to inform and improve public reasoning, discussion and debate by promoting models of education which emphasize critical inquiry (ibid.). "One significant impetus in the development of the informal logic and critical thinking movements was a 1980 California State University Executive Order that required that post secondary education include formal instruction in critical thinking. According to the order: "Instruction in critical thinking is to be designed to achieve an understanding of the relationship of language to logic, which should lead to the ability to analyze, criticize, and advocate ideas, to reason inductively and deductively and to reach factual or judgmental conclusions based on sound inferences drawn from unambiguous statements of knowledge or belief" (Dumke [1980], Executive Order 338)" ("Informal Logic", 1996, p. 2).

1.1.3 Dominant Accounts of Critical Thinking

Critical thinking in dominant accounts, stemming from philosophy of education, refers to the ability to reason well and the disposition to do so (Bailin & Siegel, 2003). Most theorists in North America, the location in which this field of study arose, address an *argumentative* exchange in conceptualizing critical thinking. Someone argues something to which I respond by assessing arguments given. This reason assessment can include, and preferably does include, assessing *one's own* arguments (see e.g. "The Critical Thinking Community", n.d.; Paul, 1993).

Critical thinking is first and foremost a variety of *good* thinking, Bailin and Siegel (2003) hold. Qualifying critical thinking as "good thinking" illustrates the intention to emphasize the *normative* character of the phrase, or, as it is preferred to denote here, the *criteriological* character, as in relating to criteria.[4] North American philosophers of education developed a criteriological concept of critical thinking with regard to the

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assessing argumentative texts and discussions is seen by Van Eemeren and Grootendorst (2000) as a criterion for the assessment; the pragma-dialectical model provides a number of standards by which can be determined in what respects the argumentative exchange deviates from the course of things that is most beneficial for solving a disagreement (Van Eemeren & Grootendorst, 2000, see p. 62-63).

[4] To avoid the connotation of 'moral' – not infrequently by social scientists when they hear the word "normative" - it is preferred to communicate in terms of a "criteriological" rather than "normative" account. A criterion, even more than a norm, entails the element of 'condition', as in 'you are a critical thinker on the condition you satisfy certain criteria'. As "critical" in dominant accounts is another way of saying "thinking that meets relevant criteria", the word seems well chosen for this reason too. To underscore the foregoing: "(...) [T]hinking which is critical is "skilled" in that such thinking satisfies relevant criteria" (Bailin & Siegel, 2003).

skill/ability component of the phrase. That is to say, most philosophical theorists developed a "two-component conception" of critical thinking; *ability* to reason well and the *disposition* to do so. The skill/ability component is related, "but conceptually distinct", to the dispositional component (Bailin & Siegel, 2003). "The primary disposition consists in valuing good reasoning and being disposed to seek reasons, to assess them, and to govern beliefs and actions on the basis of such assessment" (Bailin & Siegel, 2003, p. 183).

Characterizing thinking as "critical", Bailin and Siegel (2003) argue, means to judge that it meets relevant *standards* or *criteria* of acceptability, and is thus appropriately thought of as "good" (ibid.). That is why dominant accounts of critical thinking are regarded as normative accounts, as in prescribing a norm for good thinking. Thus, the word "critical" equals good. Thinking is critical just to the extent that it manifests due attention to, and concern for, the probative strength of relevant reasons (Bailin & Siegel, 2003, see p. 182).

The emphasis on the normative character of critical thinking is intended to distinguish philosophical conceptions from psychological conceptions (Bailin & Siegel, 2003). The latter are essentially descriptive, describing psychological processes, procedures, and/or skills thought to be central to critical thinking (Bailin & Siegel, 2003). Psychological 'process accounts' are deemed problematic. Arguments given for regarding psychological accounts of critical thinking problematic are: (1) "it is impossible to determine whether particular mental operations correlate with particular cases of good thinking; (2) there is no particular set of procedures that is either necessary or sufficient for critical thinking; and (3) terms denoting thinking (for example, classifying, observing, hypothesizing) refer not to mental operations or processes but rather to different tasks requiring thinking (Bailin, 1998)" (Bailin & Siegel, 2003, see p. 181).

Thus far, three topics have been addressed: (i) conceptualizing critical thinking, (ii) ways of taking the phrase "critical thinking" and (iii) arguments for separating philosophical accounts of critical thinking from psychological ones. In the following section these topics become issues.

1.2 Problem Analysis

1.2.1 Conceptualizing Critical Thinking

What may dawn on the reader is the connection of critical thinking in dominant accounts to academically based models of reasoning. The Center and the Foundation for Critical Thinking are two sister educational non-profit organizations in the United States. They work together to promote educational reform.[5] The work of the Foundation is to integrate the Center's research and theoretical developments, and to create events and resources designed to help educators improve their instruction ("The Critical Thinking Community", n.d.). They appeal to standards such as clarity, logicalness and fairness to name a few, and intellectual traits, such as intellectual humility, intellectual autonomy, intellectual courage and intellectual empathy (ibid.). There is little doubt whether these standards and traits are derived from academic thinking.

The Foundation for Critical Thinking does permit *degrees* in performance in critical thinking which can be implied from the fact that they offer critical thinking-programs to all levels of education. Nonetheless, this interpretation of critical thinking depends heavily on the products of science, the 20th century fields of informal logic, the products of academic ethics included. All North American theorists emphasize the aspect of ethics in a form of critical thinking that is also critical toward one's own thinking and also applies *moral* standards to assess and evaluate thought. Standards, undoubtedly derived from academic ethics as the Foundation implies when referring to moral standards with notions like "intellectual integrity", "intellectual perseverance" and "intellectual humility" ("The Critical Thinking Community", n.d.). Moral, provided that it is intellectual?

Does conceptualizing critical thinking in terms of 'assessing the probative strength of reasons to support a view' (Bailin and Siegel, 2003), capture what many of us, general readers and scholars, understand by critical thinking? In the present study the association of critical thinking as reasoning *per se* is not shared.

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[5] On the Foundation's website Linda Elder, president of the Foundation for Critical Thinking, presents the mission and purpose of the Foundation in a YouTube-film of helping to create a fair-minded world. Fair-mindedness is regarded as a central aspect of their concept of critical thinking. Fair-mindedness is seen as a moral category. Critical thinking without ethics, Elder says, creates lot's of problems in the world. Therefore, next to helping to develop intellectual *skills*, fostering intellectual *virtues* is seen as crucial in achieving the mission. Thinking, left to itself is considered problematic, especially the Foundation's impression, that many people point to other people's distorted thinking, but do not see anything problematic or irrational in their own thinking. This is natural to the human mind, Elder argues, but also a big barrier in achieving the goal of creating a fair-minded world (ibid.). However, this will not keep the Foundation from trying to achieve the mission.

To introduce this dissertation's reinterpretation, worked out in detail in chapter III, critical thinking can also be thought of as listening to use a metaphor. The critical listener, addressed here, does not so much assess reasons given to support an argument with a 'correcting ear' and applying rules of good reasoning; are the reasons given valid, strong, relevant? What rule could be applied to assess the quality of these reasons? Instead, the critical listener, addressed here, tries to distinguish between what is being said on the one hand, whether it regards an argumentation, an expressed experience or attitude, and, the way the speaker or writer, relates to his own message. Listening in this sense allows the listener to reflect on the topic in question and another person's way of holding beliefs in such a way so as to be free to form his own ideas.

Every research begins with questions that are not yet formalized. Questions that represent the initial interest of the present study are: How do I decide where I stand in the midst of the constant social exchange of opinions, beliefs, values, and truths? What is the overall perspective in which all sorts of messages are being communicated? How do I prevent perspectives, including me, blend without any prior reflection? People can share beliefs but 'a person' is what discerns shared beliefs; The Other is the one who is not me and the one who I am not, to quote Jean-Paul Sartre. Even so, as a person I can still be absorbed into the one I am not, including the beliefs I have not got.

With the image of the difference between person and belief that arises in putting these informal questions into words, philosophers may be reminded of Jean-Paul Sartre's notion of consciousness, put forward in *L' être et le Néant* (*Being and nothingness*). Other people, Sartre presents as the Other, the self which is not myself (Sartre, 1943, trans. by Barnes 1969). "The Other is the one who is not me and the one who I am not" (ibid., p. 230). Between the Other and myself there is a nothingness of separation (ibid.). Sartre regards this nothingness as a primary absence of relation; the foundation of all relation between the Other and me. This is because, Sartre explains, the Other appears to me empirically on the occasion of the perception of a body, and this body is an in-itself external to my body (ibid.). In Sartre's further treatment of the way we appear to other people, something he calls "being-for-others", he uses the metaphor of "the look", *Le regard* in original.

Solomon (1999) paraphrases Sartre's notion of "the look" as follows: we tend to make and define one another in terms that are often unflattering. But these judgments become an essential and ineluctable ingredient in our sense of ourselves, and lead to conflicts (Solomon, 1999, see p. 813). For expressing the frustration these kind of conflicts can bring about, Sartre used his famous line: *L'énfer, c'est les Autres*, Hell is other people. The metaphor of "the look" that is ineluctable, as in other people's judgments which become part of our self image, resembles the present writer's

description of the effort it can take to see to it perspectives - of me and the one who I am not - do not blur without prior reflection.

The above-described concern seems also expressed in a statement made by the Russian literary theorist/philosopher Mikhail Bakhtin (1895-1975). "What would I have to gain, Bakhtin asks, "if another were to fuse with me? He would see and know only what I already see and know, he would only repeat in himself the inescapable closed circle of my own life; let him rather remain outside me" (Bakhtin, 1979, as cited in Morson & Emerson, 1990, p. 53-54).

Whether these sort of questions are raised in different but similar terms by the North American philosophers of education addressed above, is an interesting question. In other words, to what extent does 'the Critical Thinking Movement' and the present writer address the same phenomenon when using the phrase "critical thinking"?
Be it as it may, their answers to the question what critical thinking means are in many respects defensible and valuable at any rate. A description of their accounts can be found in the next chapter.

Yet something is lacking in the Critical Thinking Movement's quite technical representation of what it means to think critically. Technical in terms of referring to critical thinking for example as "thinking that both employs criteria and can be assessed by appeal to criteria" (Lipman, 1991). Not sharing the Critical Thinking Movement's assigned meaning to critical thinking incited to take up the challenge to make a contribution to this field of inquiry. In the present study another perspective on critical thinking is envisioned. Furthermore, different research aims are cherished. Before these are summed up, what about the phrase "critical thinking"? Is it a normative (or criteriological as the present writer's denotation) or a descriptive phrase?

1.2.2 Taking the Phrase "Critical Thinking"

Taking the phrase "critical thinking" as criteriological would work against this dissertation's aim to generate a hypothesis on the correlates of critical thinking performance. The present study's concern is not capturing what could count as good thinking. Nor does it aim to (help) develop instruments to measure normatively determined criteria of good thinking. One of the concerns of the present study is to create conditions to gain empirical knowledge about critical thinking performance. Another concern is to contribute to insights into what educational strategies bear effectiveness for supporting individuals' learning of (a reinterpreted concept of) critical thinking.

The question of "what kind of thing it is that one has when one can think critically", McPeck (1990), is important. "[I]f we have a fairly clear idea of what kind of competence it is, then we should have some better ideas of how to teach and test for it, and we should have more realistic expectations of what courses designed to promote critical thinking might hope to accomplish" (McPeck, 1990, see p. 22).

Norris (1990), to repeat, also pleads in favor of a cross-over of philosophy and psychology in approaching critical thinking. Norris (1992) posits that virtually all major theories of meaning assume that empirical research is necessary for denotation.
By "denotation" Norris (1992) means the extension of a term; the set of entities that have the properties, listed in the intension of the term. An intension can be explained as a list of properties that determines the referents of the term (ibid.). "Thus, *intension determines extension*; if Frank has all the properties listed in the intension of "bachelor", then he is a bachelor. Since the extension of a term is the set of entities that have the properties listed in the intension, the extension of a term is determined empirically through a procedure of matching the properties listed to entities in the world" (Norris, 1992, p. 5).

Norris (1992) refers to Frege, 1892, who showed that conceptualization alone would never have led to the truth that "the morning star" and "the evening star" denote the same entity. Norris also refers to Russell, 1905, who showed that determining the truth value of "The King of France is bald" depends upon determining whether there is an entity that possesses the property of being the King of France. Norris finally refers to Donellan, 1966, who showed that the meaning of definite descriptions depends upon empirically checking whether the descriptions are *attributing properties* to entities or merely *referring to* entities (Norris, 1992, italics added). Norris concludes that if we want the phrase "critical thinker" to denote, then its definition cannot be derived using solely conceptual analysis.

How does Norris (1992) take the phrase "critical thinker"? Norris takes "critical thinker" as a nonstrict natural kind term which he defines as common nouns whose extensions (a set of, empirically determinable, referents) are determined by both semantically related properties and empirically related underlying traits (Norris, 1992, see p. 8). Norris holds that "critical thinker" is a nonstrict natural kind term that is constrained by the psychology of human beings and also by educational values.
"My intuition is that we have the conceptual leeway to build into the concept of "critical thinker" features that we value, but that we do not have complete control, because critical thinkers are limited by human psychology" (Norris, 1992, p. 13). If this is so, the implication is that both philosophical and empirical research are needed to clarify the

meaning of "critical thinker" and to answer the generalizability question.[6] "We may have certain conceptual leeway in attaching the property of generalizability of abilities and dispositions to the term "critical thinker". However, if we want people to be contained in the extension of the term, then the psychology of human beings must be taken into account!" (Norris, 1992, p. 13).

Norris's (1992) call in which he sketches future research is interesting. "We might decide to take certain properties as semantically related to the concept [of critical thinker]. Then we might look to the world with the help of this conceptualization of critical thinkers, and search for characteristics of the individuals picked out that are empirically related to their critically thinking. Finally, some sort of amalgamation of the resulting sets of semantically and empirically related properties might be fashioned. This is probably the biggest task, since there is no theoretical framework that describes how properties that are semantically related and those that are empirically related to a term can work together to determine the extension of that term" (Norris, 1992, p. 13-14).

To conclude, Norris's (1992) sketch about future research resembles the research aim of the present study to know what is cognitively required of individuals who perform the mental activities of critical thinking, as conceptualized here. Moreover, in line with Norris (1992) it is held that conceptualizing and hypothesizing critical thinking requires both empirical and philosophical research. However, the validity of the intension-extension theory of meaning which Norris (1992) suggests applying, no longer is accepted (see e.g. Stokhof, 2000 for Dutch readers). The way philosophical and empirical literature is applied in this study to conceptualize the phrase and to hypothesize the cognitive requirements for individuals, can be found in section 1.4.

1.2.3 Separating Philosophical Conceptions from Psychological Conceptions?

Do we have to keep philosophical conceptions of critical thinking separate from psychological conceptions? Bailin and Siegel (2003) seem to think we have. The present writer does not think we have to maintain a separation of so-called normative conceptions developed by philosophers (of education) from descriptive conceptions put forward by psychologists. In the present study the contrary almost applies; *not* separating philosophical from psychological conceptions is to prefer to separate them. In other words, both scientific fields seem required for doing research in critical thinking.

[6] The problem of generalizability regards the question whether critical thinking, as defined in dominant accounts, is rightly conceived as something *general*, or should be understood as domain-, discipline-, or context-*specific* (Bailin & Siegel, 2003). More on this issue can be found in chapter II.

As we have seen above, in 1.1.3, Bailin and Siegel (2003) problematize descriptive accounts put forward in the field of psychology. What can be found fascinating is that Bailin and Siegel problematize psychological conceptions by emanating from their *own* definition of critical thinking as 'good thinking'. Doing this, understandably leads to a defence of separating philosophical from psychological accounts. After all, if critical thinking is conceptualized as meeting criteria of good thinking, a normative account will have to specify those criteria in order to assess to what extent someone can rightly be called a critical thinker.

Emanating from *another* conceptualization of critical thinking and proceeding with the aim to make empirical research in critical thinking competence possible, we would not have to separate 'psychology from philosophy'. Instead, it would *require* combining the method of concept explication, commonly used by philosophers and applying the products of the empirical method, employed by psychologists. What this position implies for the present study's research methods can be read in section 1.4. For now it is time to present the research aims and research questions of this dissertation.

1.3 Research Aims and Research Questions

1.3.1 Research Aims

All of the three problems, expounded above, have led to the formulation of research aims and questions. Research aims and questions are summed up here and returned to in the general discussion of this book. The three research aims are the following:

1. Offering an analysis in which the semantic dimension of the phrase "critical thinking" is analyzed by departing from Olson and Astington's (1993) ascription of the ability to recover the putative intentions of writers and to examine their grounds, to critical reading and critical thinking.[7]

2. Providing a theoretical framework in which the requirements of critical thinking are examined from a cognitive developmental perspective and from which an empirically testable hypothesis on the correlates of critical thinking performance is derived.

3. Proposing ideas on scaffolding the learning of critical thinking by children, adolescents and (young) adults in the context of school.

[7] Cognitive development researchers David Olson and Janet Wilde Astington will be introduced in section 1.4.

1.3.2 Research Questions

The corresponding research questions are then:

Ad 1. To what linguistic meaning of the phrase "critical thinking" does an analysis lead that connects to Olson and Astington's (1993) ascribing of the ability to recover the putative intentions of writers and to examine their grounds, to critical reading and critical thinking?

Ad 2. What hypothesis on the correlates of critical thinking performance can be derived from theorizing the requirements of critical thinking from a cognitive developmental perspective?

Ad 3. How could the learning of critical thinking by children, adolescents and (young) adults be scaffolded in the context of school?

1.4 Research Methods

1.4.1 Reinterpreting Critical Thinking

In this dissertation the non-empirical method of concept explication is used to assign linguistic meaning to the phrase "critical thinking". In a concept analysis the phrase "critical thinking" is explicated without connecting to extant interpretations in which critical thinking is associated with reasoning and being disposed to reason (Bailin & Siegel, 2003). After all, one of the incentives to make a contribution in this field of study is the lack of associating critical thinking with thinking according to rules of good reasoning.

As conceptualizations of phrases, especially the abstract ones that are inherently ambiguous, are not matters of empirical truth but of perspective, they cannot be judged in terms of being true or false. For this reason, the present study does not regard dominant accounts of critical thinking as a perspective that is false and that must give way to another perspective. Different perspectives on the meaning of critical thinking do not exclude each other unlike theories of empirical phenomena that do compete for 'the truth' and thus, eventually, are mutually exclusive. In the latter, empirical testing plays an important role for 'determining' which theories survive critical testing, to give a – perhaps somewhat out of date - Popperean representation of science.

Now, what approach for reinterpreting critical thinking is employed? In the present study, the work of cognitive development researchers David Olson and Janet Wilde

Astington plays a central role in reinterpreting critical thinking. Raising the question: "Where does the critical response come from?" leads to arguing that it can both come from assessing the reasoning and/or truth claims of statements, as addressed in dominant accounts, and from assessing speakers' or authorial communicative intention.

Critical thinking was associated by the present writer in an early research stage with Rokeach's (1960) distinguishing between belief and source, or put more neutral, between the content of utterances and the way sources may relate to their own utterances. Strikingly similar, Olson and Astington (1993) associate critical thinking and critical reading with the ability to recover the putative intentions of writers (and in the present writer's concept includes speakers all the same) and envision the critical response as coming from analyzing how an author wants a statement to be taken, not merely from analyzing propositional content (Olson & Astington, 1993).

Interestingly with respect to moving between the fields of philosophy and social science, Olson and Astington (1993) lead to philosopher John Searle in their reference to critical thinking and critical reading. As will be evidenced in chapter III, after we returned to John Searle, in building a conceptual framework, we stick with philosophers for a while. Hans-Georg Gadamer, properly introduced in chapter III, is 'asked' for example to explain to what critical self-consciousness the critical response, stemming from 'intention assessment' – somewhat contrasted with 'reason assessment' - can lead.

Hannah Arendt is consulted for her concept of judgment. As was argued in the introduction to this book, critical thinking in any perspective is closely related to the phenomenon of human judgment. This is indicated, at all, by the etymological origin of the adjective "critical", see above for a justification, as once referring to judging, discerning and deciding. In chapter III can be found what exactly an application of Arendt's understanding of judgment reveals about this book's concept of critical thinking.

1.4.2 Hypothesizing the Correlates of Critical Thinking Performance

The connection of a conceptual level to an empirical level is brought about by the formation of hypotheses (De Groot, 1961). That is, *empirically* testable hypotheses.
In the present study a theoretical framework is created in which empirical literature is applied in order to generate an empirically testable hypothesis on the correlates of critical thinking performance. What is understood by "the correlates of critical thinking performance" is explained below.

Undoubtedly there will also exist empirical methods for the formation of such a hypothesis. Also, slow hypothesis development may be rejected by 'hardcore empiricists' and quick ways to form a hypothesis while sitting at the kitchen table favored.

Having one, the empiricist could then test it empirically straight away. Why all that fuss with words?

For the present writer who was educated in the philosophy of science – and in the teaching of philosophy – employing the empirical method was not an option. Aside from this, applying empirical results, as reported in empirical publications, to form a hypothesis may have its advantages. Starting an expensive empirical investigation without thinking through the phenomenon addressed and not acquainting oneself with potentially valuable insights from previous research, may come at financial and qualitative costs. This is not to say of course that empirical methods for generating specific hypotheses are considered as limited as such.

What is meant by the "correlates of critical thinking performance"? The following line of reasoning underlies the work which is presented in chapter IV. Suppose someone endorses critical thinking as conceptualized in this dissertation. What makes competence in critical thinking, as defined in this book, possible at all? More specifically, what could be the cognitive requirements of performing (this concept of) critical thinking? Applying empirical literature, deemed relevant to examine the requirements of (this concept of) critical thinking, leads to hypothesizing a relation between performance on a critical thinking task on the one hand and performances on tasks that aim to measure other competencies on the other. This hypothesized relation is denoted as "the correlates of critical thinking performance". When a social scientist is interested to test this relation, (s)he is testing an hypothesized relation between several, later to be specified, competencies.

There does not seem to be clarity in using terms like "skills", "competence", and "performance" in publications from the social sciences. No unambiguous meaning seems attached to these frequently used terms. Explaining how such terms are used in this dissertation thus seems needed.

Because the difference between "skills" and "competencies" is not clear to many social scientists, the choice is made to refer to the activities noted in the critical thinking definition this book offers, in terms of "mental activities" rather than "skills". It intends to denote what phenomenon is addressed when the phrase "critical thinking" is used, as neutral as is possible. That is, without suggesting the extent to which this activity is being mastered. Further, the term "competencies" seems to refer, in the literature, often to developed abilities. Abilities humans are believed to possess by nature which develop in interaction with environmental stimuli, including social support.

As the mental activities, noted in the critical thinking definition, are theorized to rest on, in short, metacognitive competencies and a form of language competence, critical thinking is presented as *learnable* rather than something that develops in all humans within a normal supportive social environment. However, the literature also

seems to refer to "competencies" as the result of something that is *learned*. Thus, communicating in terms of "acquiring competence with critical thinking" does not seem to contradict the reference to "competencies" as developed abilities too much.

Assumed competencies on a theoretical level need to be operationalized in order to measure what is assumed to be traceable in humans. Anticipating testing a hypothesis about a correlation between competence with critical thinking on the one hand and other competencies on the other, requires to address the 'measuring context of empirical testing'. The latter explains the word choice for hypothesizing "the correlates of critical thinking performance". Subjecting participants to a future critical thinking task, aiming to 'display' assumed competence, enables to obtain task performances. Testing whether this task performance correlates, significantly, with task performances on the hypothesized correlating competencies may yield the empirical knowledge about critical thinking this dissertation is interested in.

The full content of the hypothesis can be found in chapter IV of this book.
As alluded to above, critical thinking may be supported by several metacognitive competencies and a particular form of language competence. Metacognition, in particular, embodies a whole field of research from which only particular elements are applied in the present study. These elements can only make sense when the reader is introduced to the larger fields from which they originate. This introduction, preceding the actual hypothesis formation, can be found in chapter IV.

Exploring the cognitive requirements of critical thinking is one thing. Teaching it is another. This brings us to the third and final research question.

1.4.3 Exploring Ideas on Scaffolding the Learning of Critical Thinking at School

The developmental framework in which critical thinking is set implies that learning 'this (concept of) critical thinking' starts early in individuals' development. After all, critical thinking, as concluded in chapter IV, seems supported by developmental phenomena such as development of metacognition and language. As will be shown in the final chapter, the developmental framework in which critical thinking is hypothesized also implies that critical thinking, as reinterpreted here, does not need to be taught in isolation from school subjects (like history) or a specific course (like journalism).

Perhaps paradoxically, although the examination of chapter IV points to finding a strategy to scaffold the learning of critical thinking *within* the regular curriculum, it does not seem bound to one particular subject. It neither seems limited to the subjects connected to the disciplines of the humanities. In this respect, critical thinking, as conceptualized and hypothesized here, would seem an activity that is generalizable across different disciplines and contexts.

The strategy to generate potentially effective ways for scaffolding the learning of critical thinking by children and adolescents in particular is to enhance the hypothesized correlates of critical thinking performance. For the sake of theory building, it is assumed that critical thinking is indeed supported by the metacognitive competencies and language competence, hypothesized in specified terms in chapter IV. Thus, designing instructional methods in which the hypothesized correlating competencies of pupils are required may support the learning of critical thinking. To simplify, when one competency is believed to correlate with another, supporting one of them, is supporting the other. Arguments, based on available empirical data, for believing proposed instruction methods bear effectiveness in supporting critical thinking are provided in chapter V.

Schools that are interested in scaffolding the learning of critical thinking, as conceptualized here, are expected to face good and bad news. The good news is that critical thinking is believed to be supportable within the regular curriculum; implementation of a new subject does not seem needed. The bad news may be that the school culture may have to change dramatically if it is to make a beneficial contribution to the effectiveness of proposed instruction methods.

To what extent will actualizing a school culture which may contribute to effecting the learning of critical thinking be a realistic possibility? Impeding forces can spoil the game. Which forces in the schools and in current Western culture may exert their influence on the educational intervention proposed in chapter V? These questions are discussed in the general discussion of this book.

Concluding Remarks

Reinterpreting critical thinking could open the door to considering it from a different perspective. Hypothesizing the correlates of critical thinking performance and examining ideas to effect the learning of it at school may open the door to doing empirical research in critical thinking. A research object which until now was primarily considered as a normative endeavour to determine norms of good thinking.

As will become clear, critical thinking, as reinterpreted here, revolves around an assessment of speakers' or writers' communicative intention. The critical thinker within the available paradigm is asking: What is the probative strength of *reasons* given to support a view and is this claim to truth, regardless who makes it, defensible? The critical thinker in this book is asking: What is meant by what is said and what are the grounds of the intended meaning I have attached to this utterance? However, it is time to acknowledge dominant accounts of critical thinking first.

Chapter II

#

Describing Dominant Accounts of Critical Thinking

Introduction

In this chapter explicit conceptions of critical thinking from the field of North American philosophy of education are introduced. When one starts to explore literature on explicit conceptions of "critical thinking" - theorists who address the phrase emphatically – one embarks on North American accounts. North American accounts emerged in the twentieth century, mainly in the 1980s and 1990s. Philosophers of education often regard critical thinking as a 'fundamental aim, and overriding ideal, of education' (Bailin & Siegel, 2003). Reasons for regarding critical thinking as an educational ideal were offered by Harvey Siegel (see 2.1.4) and can be characterized by the phrases: respect for persons, self-sufficiency, interconnectedness of critical thinking with rational traditions like mathematics, science, literature, art and history and demands of democratic citizenship which require abilities and dispositions of critical thinking (Bailin & Siegel, 2003).

Richard Paul, one of the critical thinking theorists (see 2.1.5), refers for 'the early stirrings of the modern critical thinking movement', to Edward Glaser's *An Experiment in the Development of Critical Thinking* that came out in 1941 (Paul, 1993). Edward Glaser developed the Watson-Glaser Critical Thinking Appraisal (WGCTA), together with Goodwin Watson, in 1940. In this chapter the overview of dominant accounts of critical thinking starts in 1962 with Robert H. Ennis. This appointed date is in accordance with the start of the overview Cassel and Congleton (1993) and Snik and Zevenbergen (1995) provide. It was Robert Ennis who was concerned with the development of a *concept* of critical thinking. His '62-paper gave rise to responses by others in North American philosophy of education. Important issues from the debate that arose can also be found in this chapter.

To introduce an overarching approach to critical thinking, it is interesting to look at critical thinking measure instruments. The above-mentioned WGCTA produces a single score based upon the assessment of five critical thinking skills: inference, recognition of assumptions, deduction, interpretation and evaluation of arguments (Hassan & Madhum, 2007). Recent empirical research on critical thinking still uses this instrument to measure

critical thinking performance (see e.g. Magno, 2010). Other measure instruments are the International Critical Thinking Test which aims to provide 'an assessment of the fundamentals of critical thinking that can be used in any subject' ("The Critical Thinking Community", n.d.). In this test students must accurately identify the elements of reasoning within a written piece and, in a second part of the test, must construct a critical analysis and evaluation of the reasoning in the original piece (ibid.). Also available are The Cornell Critical Thinking Tests and the Cambridge Thinking Skills Assessment (TSA). The latter assesses problem solving and critical thinking through multiple choice-questions. Critical thinking in the TSA is, again, closely defined as the mastery of informal logic skills which 'Cambridge University' specifies as: drawing and summarizing conclusions, identifying assumptions and reasoning errors, and assessing the impact of additional evidence ("Thinking Skills Assessment", 2003).

What becomes clear from the above-mentioned information is that North American theorists regard critical thinking as referring to reason assessment when it comes to what is denoted as the "skill/ability-component" of the phrase. Bailin and Siegel (2003) argue that on most philosophical accounts critical thinking involves two related, but conceptually distinct, aspects or dimensions: the *ability* to reason well and the *disposition* to do so. Furthermore, the normative character of the phrase is emphasized by arguing that critical thinking is, first and foremost, a variety of *good* thinking (Bailin & Siegel, 2003). "To characterize thinking as "critical" is, accordingly, to judge that it meets relevant *standards* or *criteria* of acceptability, and is thus appropriately thought of as "good". Extant philosophical accounts of critical thinking emphasize such criteria" (Bailin & Siegel, 2003, p. 181). For most philosophical theorists of critical thinking, then, saying that Jones "has the skills of a critical thinker" would be taken to indicate that Jones's thinking is skilled in the sense that her thinking meets relevant criteria (...)" (Bailin & Siegel, 2003, p. 183).

Does good reasoning and being disposed to reason capture what many of us understand by critical thinking? Are we critical thinkers when we are good reasoners and 'lovers of reasoning' like Siegel (1988) holds? Another question is how we can develop instruction in critical thinking properly, if we do not regard the skills of a critical thinker, like Bailin and Siegel (2003) suggest, as resting on 'mental entities' humans possess? If we do not know what competencies are required for thinking in a way defined as "critical thinking", and how correlating competencies develop, how can we gain a proper understanding of potentially effective instruction methods?

In the concluding remarks of this chapter these questions are discussed, albeit in a concise form. After all, this dissertation's formulation of the problem was set out in the previous chapter.

2.1 Critical Thinking as Conceived by North American Theorists

2.1.1 Robert H. Ennis; The Correct Assessing of Statements

In 1962 Robert H. Ennis opened a debate among North American philosophers of education with his paper *A concept of Critical Thinking*. Ennis (1962) states that research in thinking has frequently been conducted in the fields of psychology and education. In these fields there is a significant gap, Ennis argues. There has been a lack of careful attention to the *concept* "critical thinking" (Ennis, 1962). No thorough, up-to-date treatment of this concept is available, Ennis ascertains in his days. He does refer to psychologists like Bruner, Goodnow and Austin who dealt with "the knowledge and mental skills needed for judging solutions to complex problems" (Ennis, 1962). Henderson and Smith, Dressel and Mayhews, Hood and Conant made efforts with critical thinking in the field of education (Ennis, 1962).

Ennis (1962) is very clear about his approach to develop a concept of critical thinking. He starts with examining the literature on the goals of the schools and the literature on the criteria of good thinking. Ennis then selects from this literature those aspects which come under a basic notion of "critical thinking". This basic notion Ennis defines as 'the correct assessing of statements'. The third step is to elaborate the criteria to apply in making such assessments. After having established criteria, the rather elaborate criteria will be simplified by classifying some aspects under others that are logically more basic. The final step of developing a concept of critical thinking is to "simplify further, by logically analyzing the criteria into basic factors or dimensions of critical thinking" (Ennis, 1962).

This program for developing a concept of critical thinking results in: (1) a list of twelve aspects which characterize a critical thinker, (2) the presentation of criteria which may be used in exercising the critical thinking-aspects and (3) a logical analysis of the twelve abilities along three dimensions of critical thinking (Ennis, 1962). (Mind Ennis who now switches from communicating in terms of "aspects" to communicating in terms of "abilities".[8]) To name a few of Ennis's (1962) *aspects* of critical thinking, as the head of his list is titled: grasping the meaning of a statement, judging whether certain statements contradict each other, judging whether a conclusion follows necessarily,

[8] McPeck (1981) notices exactly the same. Towards the end of his paper, Ennis switches from talking about 'twelve aspects of critical thinking' to twelve 'abilities' (McPeck, 1981). "(...) Ennis provides no justification whatever for regarding his 'aspects' as generalized 'abilities'" (McPeck, 1981, p. 55). McPeck regards the belief in generalized abilities as an assumption, and one that is false. See 2.1.3 on McPeck's position in the generalizability debate which was introduced briefly in the first chapter of this book.

judging whether something is an assumption and judging whether a statement made by an alleged authority is acceptable (Ennis, 1962).

The three dimensions of Ennis's (1962) proposed concept of critical thinking are: logical, criterial and pragmatic dimensions. The logical dimension covers judging alleged relationships between meanings of words and statements (Ennis, 1962). The criterial dimension covers knowledge of the criteria of judging statements, except for the logical criteria which are covered by the logical dimension (Ennis, 1962). The pragmatic dimension covers the impression of the background purpose on the judgment, and it covers the decision as to whether the statement is good *enough* for the purpose (Ennis, 1962). The criteria of Ennis's critical thinking aspects are borrowed from the domain of informal logic.

In his later work Robert Ennis reviews his first "range definition" of critical thinking, as he phrases his own definition from 1962. In 1989, but also from 1985 (Snik and Zevenbergen, 1995), critical thinking is now defined as 'reasonable and reflective thinking that is focused upon deciding what to believe or do' (Norris & Ennis, 1989).

2.1.2 John Passmore; Critico-Creative Thinking; Imagination & Criticism in One

A long time after Ennis's (1962) effort to provide a systematic concept of critical thinking, responses by other philosophers of education were not forthcoming. What did arise in the late 1970s, probably influenced by Ennis's paper, is a submovement of the Critical Thinking Movement - specified in 2.1.5 -, denoted as the Informal Logic Movement (Snik & Zevenbergen, 1995). Before this development, the Australian philosopher John Passmore (1914–2004) wrote *On Teaching to be Critical* in 1967. This contribution appeared to establish one of the core issues in the later discussion on critical thinking. Passmore's (1967) contribution can be sketched as the concern to not overemphasize the technical, 'skill part' of critical thinking that can be misused as easily as being used.

Passmore (1967) discusses the question of what it is to teach a child to be critical, and how we can tell whether we have been successful in doing so. Teaching a child to be critical is not a matter of imparting facts (Passmore, 1967). That is, imparting facts like telling stories about famous representatives of the critical spirit for example, is not *sufficient* to make children critical (ibid.). A person who has formed a habit of questioning has not learned to be critical because drilling pupils in stock responses like: "I question that!" can properly be described as *indoctrination* (ibid.). Nor can learning to be critical mean to work out all the problems Max Black's *Critical Thinking* for example has set for his readers and to answer all questions about the content of Black's book (ibid.).
Being skilled does not equal being critical. Being an expert in the detection of fallacies for example, we can still use this skill instrumentally, e.g. to conceal the fallacies we make

ourselves rather than to use this skill "in a disinterested attempt to arrive at the truth" (ibid.).

In contrast, the critical spirit cannot be misused, Passmore (1967) argues. Being critical is suggested to be a character trait. Skills of judges and skills of a critic can be used or misused, Passmore reasons, but justice or the critical spirit can be neither used nor misused because neither being just nor being critical is a skill. One could wonder why Passmore believes the critical spirit, or even more generally, 'character traits', cannot be misused. Passmore does not provide explicit arguments for this belief. He seems to implicitly associate the critical spirit with the "disinterested attempt to arrive at the truth". Perhaps Passmore cannot think of circumstances in which "attempting to arrive at the truth disinterestedly" can be employed just as 'instrumentally' as the *skill* to detect fallacies? In any case, Passmore explicates the critical spirit by arguing that for being critical one must be alert to the possibility that established norms themselves can be rejected, rules changed, criteria in judging performances modified.

Addressing authoritarian systems of education, with a critical spirit, Passmore (1967) stresses that teaching children to be critical involves critical teachers who allow pupils for example to defend the view that Shakespeare's plays are inferior to any well-made television play. When after critical discussion pupils are not convinced by the teachers' admiration for Shakespeare, they should have learned a great deal, not only about Shakespeare, but also about critical discussion of literature in general (ibid.).

Passmore (1967) falls back on a common philosophical tradition of regarding a critical attitude towards one's *own* procedures as an important indication of the true critical spirit. He formulates his own account by reference to 'critico-creative' thinking. Critico-creative thought refers to the great human traditions of science, history, literature and technology (ibid.). In those traditions 'the free flow of the imagination is controlled by criticism and criticisms are transformed into a new way of looking at things'. The educator tries to develop the two in combination. "The educator is interested in encouraging critical discussion, as distinct from the mere raising of objections; and discussion is an exercise of the imagination" (Passmore, 1967, p. 201).

Critico-creative thinking is not a subject in the sense in which chemistry, technical drawing or history are subjects (Passmore, 1967). Critico-creative thinking can be fostered as part of the teaching of any subject. To encourage the critical spirit a teacher has to develop in his pupils an enthusiasm for the give-and-take of critical discussion (ibid.). "A child will be encouraged to be critical only if he finds that both he and his teacher can be at any time called upon to defend what they say – to produce, in relation to it, the relevant kind of ground" (Passmore, 1967, p. 198).

2.1.3 John E. McPeck; Critical Thinking as the Appropriate Use of Reflective Scepticism and Linked with Specific Areas of Expertise and Knowledge

In 1981 the Canadian Professor of Education John E. McPeck (b. 1938) publishes a response, among other things, to Ennis's '62-paper. This book, *Critical Thinking and Education*, gives rise to the burst of a heated discussion on critical thinking among North American philosophers of education. To give an impression of important issues in the critical thinking debate in which McPeck (1981; 1990) created the 'motorical moment', many of McPeck's criticisms come up for discussion in this subsection. J. E. McPeck (personal communication, August 28, 2010) gained a PhD in the Philosophy of Science at the University of Western Ontario (UWO). He taught at UWO for thirty-four years, and retired as Full Professor in 2000 (J. E. McPeck, personal communication, August 28, 2010). "The more I thought about critical thinking the more complex and interesting it became" (J. E. McPeck, personal communication, August 28, 2010).

McPeck (1981) argues that the phrase "critical thinking" is both over-worked and under-analyzed. He states that even the more careful work that has been done on critical thinking tends to rush over the analysis of the basic concept and to move on to itemizing the various skills that it is thought to involve (McPeck, 1981). He mentions Robert Ennis's "62-paper in which Ennis simply declares that critical thinking means 'the correct assessment of statements', but nowhere provides a justification for this view" (McPeck, 1981). To McPeck it is quite clear that the "correct assessment of statements" is *not* what critical thinking means, since one could correctly assess a statement without having done so critically; one could do it by chance for example (bid.). In addition, there are many activities, like mountain climbing, acting, theatre directing - activities that require conscious mental effort - and skills like chess and competitive wrestling, that permit critical thought but do not necessarily involve the "assessment of statements" (ibid.).

The problem of generalizability is one of the great issues McPeck (1981) addresses. This problem is described as the controversial question of whether or not critical thinking is rightly conceived as something *general*, or should be understood as domain-, discipline-, or context-*specific* (Bailin & Siegel, 2003). "On the *generalist* view, it would make sense to regard (for example) the ability to detect an ordinary fallacy like begging the question, basing a generalization on too small a sample, or appealing to an illegitimate authority, as general in the sense that it is applicable across many different reasoning contexts. (...) The *specifist* view, on the contrary, denies any such general ability" (Bailin & Siegel, 2003, p. 184).

McPeck (1981) aims to demonstrate that the generalist view is untenable. To this aim he uses a conceptual argument. Objections some authors, like Harvey Siegel, have made to McPeck's conceptual argument will come up for discussion in 2.1.4.

Thinking is always thinking *about* something (McPeck, 1981). "To think about nothing is a conceptual impossibility. (...) It is a matter of conceptual truth that thinking is always *thinking about X*, and that X can never be 'everything in general' but must always be something in particular. Thus the claim 'I teach students to think' is at worst false and at best misleading. Thinking, then, is logically connected to an X" (McPeck, 1981, p. 4). "The statement 'I teach critical thinking', *simpliciter*, is vacuous because there is no generalized skill properly called critical thinking" (ibid., p. 5).

The question of generalizability is connected with the question of *transfer*. Transfer entails the question of whether somebody who has learned to think critically in one field can also exercise that critical way of thinking in another. The two issues are not equated to one another (Snik & Zevenbergen, 1995). The question of generalizability is *epistemological* and *conceptual-logical* in character (Snik & Zevenbergen, 1995); can different knowledge domains be characterized by essentially different concepts and criteria that define and constitute critical judgment? Is the argumentation system for moral reasoning, for example, essentially different from empirical judgment (ibid.)?

The question of transfer across different knowledge domains is an *empirical* matter. And one that is only meaningful if generalizability is (believed to be) possible. If the generalizability of principles is untenable on epistemological grounds, research on transfer is useless; transfer then is conceptually and logically and therefore *empirically* impossible (Snik & Zevenbergen, 1995). But mind you, the adoption of generalizability does not necessarily imply the *prevalence* of transfer; whether transfer, logically possible when generalizability is accepted, actually *occurs* has to be decided by empirical research (ibid.).

McPeck (1981; 1990) sees no reason to believe that a person who thinks critically in one area will be able to do so in another. On different occasions McPeck (1981, see p. 14; 1990, see p. 20) asserts that evidence for believing in the prevalence of transfer of training across disciplinary boundaries, proofs to the contrary. What seems wrong in the standard view, McPeck (1990) explains, is that it confuses the idea of "logical subsumption" with "psychological transfer". "That is, while it is quite true that the various logical principles "apply", in some remote sense, to multiple-problem areas, we should not infer from this that psychological transfer must therefore take place between these principles and domains" (McPeck, 1990, p. 15). Referring to Michael Scriven, a member of the Informal Logic Movement, McPeck (1990) concludes that one should not confuse the order of logic with the order of pedagogy.

Why would you discredit even the *notion* of "general reasoning ability"? McPeck (1990, see p. 50) reports empirical evidence for the claim that reasoning is not a generalized detachable skill, but is connected to domains of content, notably the standard disciplines. By the standard disciplines McPeck understands (school) subjects

that are derived from the natural and social sciences, history, mathematics, literature, and art. McPeck mentions Jerome Bruner whose view is that reasoning skill and the useful *transfer* of it, are domain-specific. Transfer is the view that the mastery of one skill cuts across different fields of knowledge (McPeck, 1990). McPeck (1990, see p. 49) states that there were at least fifty empirical studies conducted in the mid-1970s which confirm Bruner's view. Recent empirical studies which are interpreted to support the specifist view of critical thinking will be referred to further on in this subsection.

Robert Sternberg, as cited by McPeck (1990), reports studies in which high-aptitude individuals who are skilfull reasoners appear so because of the level of their content knowledge as well as because of their knowledge of the procedural constraints of a particular problem form. Sternberg (1981) reports that learning and reasoning skills develop as the content and concepts of a knowledge domain are attained in learning situations that constrain this knowledge to serve certain purposes and goals. Sternberg seems to suggest that the skills involved in a particular knowledge domain (wich consists of *related* knowledge domains) become more generalizable in the sense that these skills can be applied, in *intelligent* performance, in novel, "nonentrenched", situations. But not in knowledge domains which are *not* related. In sum, McPeck (1990) refers to Sternberg as providing empirical evidence for discrediting the notion of "general reasoning ability" because skilfull reasoning and transfer appear to be domain *specific*.

The concept of reasoning ability functions somewhat like the concept of speed (McPeck, 1990, see p. 4-5). "If, out of the blue, someone offered to improve our *speed*, the first thing we would probably ask is, "At what?" We'd probably all like to be speedier at running, or reading, or typing, or even changing mufflers, but we know that no single course could improve our speed at all things. Given that the range of things over which we'd like to improve "reasoning ability" is perhaps even wider than the range of activities in which we might desire to improve our speed, then the prospects for improving our general reasoning ability are even dimmer. And the reason they are dim, I'm suggesting, is that the very notion of "general reasoning ability" is, upon reflection, incoherent" (McPeck, 1990, p. 4-5).

An example of a test which aims to measure critical thinking ability is the *Watson-Glaser Critical Thinking Appraisal*. (See the introduction of this chapter.) McPeck (1990) takes this test as one of many examples of the view that critical thinking is a *general ability* that can be measured independent of context and subject matter.

On the *conceptual* side McPeck (1990) suggests that it may be conceptually limiting to consider critical thinking as a content-free general ability. His argumentation is that *if* critical thinking is the kind of general ability that Watson and Glaser's test for example purports to measure – e.g. the ability to define a problem or to recognize stated and unstated assumptions -, critical thinking turns out to be very similar to what we

normally mean by general scholastic ability, or *intelligence*. If this is the case then it is not clear what the test is measuring apart from intelligence (ibid.).

On the *empirical* side McPeck (1990) suggests that Watson and Glaser's conception would appear to have little discriminant validity. For that reason McPeck rejects conceiving critical thinking as a contentfree general ability. Watson and Glaser are trying to have it both ways, McPeck argues. "They want to cite the tests' high correlations with general intelligence as a psychometric virtue, yet they want to claim that they are measuring something *else* (e.g., some *other* general ability)" (ibid., p. 23). However, if they are measuring something quite distinct from intelligence, then we should be able to find cases of people with low IQ yet high critical thinking ability (ibid.). Or, conversely, find people with high IQ and low critical thinking ability. We will not find such cases, McPeck reasons, as critical thinking is *conceptually* defined very similar to what we call intelligence.

Ten Dam and Volman (2004) hold that it proves impossible, referring to reviews of studies e.g. by Tsui (1999), to demonstrate the effectiveness of courses or programs especially devised to improve critical thinking. "This may be interpreted as supporting the subject-specificity position, thus in favor of integrating critical thinking in the regular curriculum" (Ten Dam & Volman, 2004, p. 367). Ten Dam and Volman (2004) argue that 'research [also] shows that special 'critical thinking-programs' are usually not resulting in transferable and durable effects'. "This confirms the subject-specificity position" (Ten Dam & Volman, 2004, p. 370).

The strategy of the standard approach to critical thinking is to maximize transfer by providing students with the general skills for using these logical principles whenever they are needed (McPeck, 1990). McPeck does not deny transfer between critical thinking skills and multiple problem areas. However, the *sense* in which these skills apply to multiple-problem domains would still not support them as a means for promoting critical thinking, *simpliciter*, in our schools (McPeck, 1990).

The goal of maximization is both the major appeal (*one* critical thinking program and *one general* critical thinking test will suffice...) and the major weakness of these general skills, McPeck (1990) holds. "Often, as decision theory predicts, when you attempt to maximize one outcome you inevitably minimize another. In this sense, the general skills approach to critical thinking represents a classical tradeoff. In its effort to maximize the number of areas to which its general principles apply, this approach perforce sacrifices genuine effectiveness in all of them. While its prescriptions are generally true, they are also hollow, more truistic, than true – for example: "Make sure the conclusion follows," "Look out for tautologies," "Is a fallacy being committed?" "Don't contradict yourself". Such sage advice resembles a baseball manager exhorting his pitcher to "throw strikes!" (McPeck, 1990, p. 13-14).

In response to John Passmore, who was discussed in 2.1.2, McPeck (1981, see p. 7) holds that critical thinking requires "the judicious use of scepticism, tempered by experience, such that it is productive of a more satisfactory solution to, or insight into, the problem at hand". The criterion for regarding scepticism as judicious, as opposed to incorrect or frivolous, must be determined by the norms and standards of the subject area in question (ibid.). "Learning to think critically is in large measure learning to know when to question something, and what sorts of questions to ask. Not just any question will do" (McPeck, 1981, p. 7).

The classical, but still crucial question to McPeck (1990) is: What knowledge and information will have the most transfer? His answers: *liberal education* and making "the philosophy of X and Y an integral part of what it means to learn X or Y"; the philosophy of natural science would be just as much a part of science education as Newton's laws (ibid.).

What is McPeck's own description of critical thinking? "The phrase 'reflective scepticism' captures the essence of the concept, but a more complete description would be something like 'the disposition and skill to do X in such a way that E (the available evidence from a field) is suspended (or temporarily rejected) as sufficient to establish the truth or viability of P (some proposition or action within X)" (McPeck, 1981, p. 13).

2.1.4 Harvey Siegel; Critical Thinking as the Educational Cognate of Rationality

Harvey Siegel is Professor in Philosophy and Chair of the Philosophy Department at the University of Miami. In 1988 Harvey Siegel's *Educating Reason*: *Rationality, Critical Thinking and Education* was published. Siegel (1988) characterizes his own account of critical thinking as one that 'highlights the close conceptual connections between critical thinking and reasons, and between reasons and principles'. Siegel's account of critical thinking seems a response to McPeck's (1981) analysis of critical thinking in large measure. Siegel's approach and position on critical thinking is described in this subsection. In this description it is indicated which issues are a response to McPeck (1981). Doing this allows to describe an important element in the critical thinking debate that took place, roughly, in the 1980s and 1990s.

In one of the sections of his book Siegel (1988) discusses McPeck's conception of the relation of critical thinking to rationality. McPeck (1981) argues that we should not regard the terms critical thinking and rationality as equivalent. Rationality includes critical thinking as a particular aspect, or subset, of itself. "Critical thinking does not merely refer to the assessment of statements but includes the thought processes involved in problem solving and active engagement in certain activities" (McPeck, 1981, p. 13).

For Siegel (1988) the distinction McPeck (1981) draws between critical thinking and rationality is untenable. If McPeck is to maintain his "epistemological" or "good reasons" approach to critical thinking, he must reject the limitation he seems to place on the range of critical thinking in his distinction between critical thinking and rationality (Siegel, 1988). Siegel clarifies this argument by stressing that his own "reasons conception approach" to critical thinking, "extends to the assessment of *all* reasons, not just "meta-reasons" concerning the constitution, relevance, or appropriateness of "ground floor" reasons". With McPeck's construal of critical thinking as a subset of rational thinking, one who planned a trip route by carefully examining maps, noting terrain, balancing time demands against the goals of the trip, in short planning it rationally, would not count as having engaged in critical thinking while planning it (ibid.). Siegel finds this absurd on its face. Norris (1992) wonders why this would be absurd. "I see nothing absurd in the claim that the individual in question did not engage in critical thinking" (Norris, 1992, p. 44).

Siegel (1988) claims that the limitation McPeck sets on critical thinking, is incompatible with the latter's "epistemological approach" according to which evaluating and utilizing reasons is central to critical thinking. Arguments for stating that McPeck's limitation is incompatible with McPeck's epistemological approach remain absent. Siegel seems to argue that *if* one rejects this limition, like *Siegel does*, the distinction between critical thinking and rationality collapses (ibid., see 30). This may count as an illustration of a tautology.

In so far as rationality consists of believing and acting on the basis of good reasons, and in so far as we accept McPeck's epistemological approach, we must perforce regard critical thinking not as a dimension of rationality, but as its equivalent or educational cognate (Siegel, 1988). Otherwise we are forced to regard instances of believing and acting on the basis of good reasons as non-instances of critical thinking and rationality cannot be sustained (ibid.).

In a different passage of his book, in the second chapter, Siegel (1988) judges that there is a confusion in McPeck's use of epistemology. McPeck uses epistemology, Siegel states, to refer both to subject-specific criteria of reason assessment and to the general account of what it is to be a reason, to offer warrant for a belief, and to be justified. McPeck though regards the "epistemology of the subject" as fundamental to learning to think critically (ibid.). This is wrong, according to Siegel, as such an epistemology of the subject is only a part of epistemology as it is usually understood. A critical thinker must not only come to understand the criteria of reason assessment in *specific* fields but also the nature of reasons *generally* (Siegel, 1988, italics added).

Moreover, Siegel (1988) continues, the critical thinker must come to understand the fact that good reasons in different fields, singled out as good by different field-

specific criteria, nevertheless stand in the same relation to the beliefs they support despite their being singled out by disparate criteria (ibid.). "In short, McPeck's call for an epistemological approach to critical thinking stops short of a fully epistemological approach, for it fails to recognize that epistemology conceived as inquiry into the nature of reasons, warrant, and justification speaks to, and backs, the particular criteria of reason assessment McPeck refers to as "the epistemology of the subject"" (Siegel, 1988, p. 37).

What is critical thinking for Siegel (1988)? Siegel articulates a "reasons conception" in which he, like McPeck (1981) and Paul (1993) as we will see in the next subsection, follows Passmore's (implicit) call for developing a "two component" account of critical thinking. Critical thinking to Siegel consists of two components: reason assessment and the critical spirit. A critical thinker, to Siegel, must be able to assess reasons and their ability to warrant beliefs, claims, and actions properly. This means that the critical thinker must have a good understanding of, and the ability to utilize, principles governing the assessment of reasons (ibid.).

Siegel (1988) distinguishes "at least two types of such principles: subject-specific principles which govern the assessment of particular sorts of reasons in particular contexts" on the one hand and "subject-neutral, general principles which apply across a wide variety of contexts and types of reason" on the other hand (ibid.). Subject-neutral principles Siegel understands as principles typically regarded as "logical", both informal and formal. Examples of these logical principles Siegel gives are: principles regarding proper inductive inference, avoiding fallacies, proper deductive inference. He mentions Ennis's (1962) list of proficiencies to characterize these subject-neutral principles further (ibid.). Examples of subject-specific principles Siegel notes are: principles governing the proper interpretation of bubble chamber photographs in particle physics or those governing proper assessment of works of art.

Siegel (1988) agrees with McPeck (1981; 1990) in asserting that knowing what an assumption *is*, and knowing what a valid argument *is,* is far from sufficient to enable people to engage in effective critical thinking. But he hastens to add *that it helps (*Siegel, 1988). How much it helps is an empirical issue, Siegel acknowledges, but believing all the same that knowledge of informal logic "might be quite an important component of critical thinking" (Siegel, 1988, see p. 21-22). As was noted above, empirical research demonstrates that special critical-thinking programs do not usually result in transferable and durable effects' which confirms the subject-specificity position (Ten Dam & Volman, 2004).

How does the *critical spirit* which Siegel (1988) adds to the component of reason assessment look like? In order to *be* a critical thinker, Siegel requires such a person to have 'certain attitudes, dispositions, habits of mind, and character traits' (ibid.).

Together he labels them the "critical attitude" or the "critical spirit" (ibid.). A critical thinker must have a well-developed disposition to engage in reason assessment; this kind of thinker must have 'a willingness to conform judgment and action to principle, not simply an ability to so conform' (ibid.). "A critical attitude demands not simply an ability to seek reasons, but a commitment to do so; not simply an ability to judge impartially, but a willingness and desire to do so, even when impartial judgment runs counter to self-interest." (...) "For the possessor of the critical attitude, nothing is immune from criticism, not even one's most deeply-held convictions" (ibid., p. 39). The heart of the critical attitude to Siegel is *valuing* good reasoning, and being disposed to believe and act on its basis.

2.1.5 Richard Paul; Critical Thinking as a Survival Need

Richard Paul is director of the Center for Critical Thinking and Chair of the National Council for Excellence in Critical Thinking (Paul, 1993). The phrase "Critical Thinking Movement" seems first used by Paul (1993) who, in the early 1990s, stated that the "critical thinking movement is beginning to have a palpable effect on the day-to-day life of some American schooling". In the mid-1980s critical thinking emerged as a movement in the United States. The Critical Thinking Movement aims to inform and improve public reasoning, discussion and debate by promoting models of education which emphasize critical inquiry" ("Informal Logic", 1996). Until the mid-1980s the movement was no more than a small, scattered group of educators calling for a shift from a didactic paradigm of knowledge and learning to a Socratic, critically reflective one (Paul, 1993). Paul's ideas about critical thinking are described in this subsection.

Paul's (1993) book, covering 505 pages, is titled *Critical Thinking, What Every Person Needs to Survive in a Rapidly Changing World*. Not surprisingly, Paul's approach to critical thinking is to first point to the problem of "new global realities in the post-industrial world order that are becoming increasingly complex". Then, after pointing out the problem, Paul presents critical thinking, among other solutions regarding the *economic* dimensions of a changing world, as an instrument to deal with it.
Critical thinking here can said to be treated within an American tradition of pragmatism.

Penetrated by the perceived necessity of challenging the world of the 21st century - understood as "surviving the intensifying competition between forms of capitalism" - Paul (1993) urges us to abandon the traditional attempt to teach our fellow citizens *what* to think. "Such efforts cannot prepare us for the real world we must, in fact, face.
We must concentrate instead on teaching ourselves *how* to think, thus freeing us to think for ourselves, critically, fair-mindedly, and deeply" (Paul, 1993, p. 16).

"Critical thinking will become a survival need, an external imperative for every nation and for every individual who must survive on his or her own talents, abilities, and traits" (Paul, 1993, p. 13).

What is critical thinking to Paul (1993)? Paul does not give one definition or confined analysis of the concept in his main work. One of his goals is 'setting out clearly what critical thinking is *in general*' (Paul, 1993, italics added). Paul does not seem interested in working out a definition. This is inferable from an answer he gave in an interview which is registered in the book. To the question what critical thinking is, Paul answers that "since critical thinking can be defined in a number of different ways consistent with each other, we should not put a lot of weight on any one definition. Definitions are at best scaffolding for the mind" (ibid.). Paul eventually defines critical thinking as "self-improvement in thinking through standards that assess thinking". "To think well is to impose discipline and restraint on your thinking – by means of intellectual standards – in order to raise our thinking to a level of "perfection" or quality that is not natural or likely in undisciplined, spontaneous thought" (ibid.).

At the end of the chapter on identifying targets, Paul (1993) concludes that we need sound critical thinking to protect ourselves and the public good is intuitively obvious, once we are clear about what critical thinking is and what it can do. "Identifying the target precisely, however, is the first step in facing the challenges ahead" (Paul, 1993, p. 36). Examples of the targets Paul has in mind are critical thinking at school and in the workplace. From this can be inferred that Paul, as noted earlier, first identifies a problem, then likes to derive from that a meaning of a notion that is supposed to fix the problem. My bike is broken. Broken bikes need critical thinking. Critical thinking is fixing bikes. Is this begging the question?

To Paul (1993) "critical thinking is a systematic way to form and shape one's thinking" (ibid.). It functions purposefully and exactingly (ibid.). Critical thinking's most fundamental concern, Paul states, is *excellence of thought*. Critical thinking is based on two assumptions: (1) the quality of our thinking affects the quality of our lives, (2) everyone can learn to continually improve the quality of his or her thinking (ibid.).

A chart in the book gives an overview of the concept of critical thinking, supported by thirteen years of research from the Center of Critical Thinking and Moral Critique (Paul, 1993). The chart enables you to form a definition. Critical thinking now is: a unique kind of purposeful thinking in which the thinker systematically and habitually imposes criteria and intellectual standards upon the thinking, taking charge of the construction of thinking, guiding the construction of the thinking according to the standards, assessing the effectiveness of the thinking according to the purpose, the criteria and the standards (ibid.).

Seven characteristics of "comprehensive critical thinking" are provided by Paul (1993). Keywords of this list are: guided by intellectual standards, supporting the development of intellectual traits, identifying the elements of thought, thinking that is routinely self-assessing, self-examining, self-improving, thinking in which there is an integrity to the whole system, thinking that yields a predictable, well-reasoned answer and seeking and identifying weaknesses and limitations in one's own position (ibid.).

Other philosophers of education often refer to Richard Paul's contribution by noting Paul's distinguishing between egocentric thinking and sociocentric thinking. He seems to borrow these notions from Jean Piaget, the Swiss philosopher, natural scientist and most famously developmental psychologist (1896-1980). Doing this, results in Paul's distinction of *weak sense* and *strong sense* thinking. Paul calls attention to the problem of education that focuses exclusively to the fostering of reasoning skills as it appears that people use those skills primarily to ward off one's own opinion for criticism (Snik & Zevenbergen, 1995). Paul, as cited in Snik and Zevenbergen (1995), understands by egocentric thinking the warding off of *personal* beliefs from criticism.[9] Sociocentric thinking is understood by Paul as the case when the prevailing beliefs of society or a (sub)culture to which one belongs, are warded off.

As we invest growing ego in our beliefs we are less inclined to bring them up for discussion (Paul, 1993). That is why education must concern itself with ways to settle these mental barriers (ibid.). "Those who think critically only with respect to monological issues and, as a result, consider multilogical issues with a pronounced monological bias have merely mastered weak sense critical thinking" (Paul, 1993, p. 205-206). *Strong sense* critical thinking is regarded as (i) an ability to question deeply one's own framework of thought, (ii) an ability to reconstruct sympathetically and imaginatively the strongest versions of points of view and frameworks of thought opposed to one's own, and (iii) an ability to reason dialectically (multilogically) to determine when one's own point of view is weakest and when an opposing point of view is strongest.

[9] With the phrase "the egocentrically critical person'" Paul (1993) refers to Jean Piaget. Piaget argues, as paraphrased by Paul, referring to Piaget's *Judgment and Reasoning in the Child* of 1928, that the egocentrism of most adult thought parallels the egocentrism of childish thought. Piaget identifies uncritical thought with a tendency toward egocentrism and critical thought with a tendency toward reciprocity which Piaget understands as 'the understanding of others' (Paul, 1993). Interestingly, the latter, "understanding of others", turns up in this dissertation as referring to an important part of critical thinking, as reinterpreted by the present writer.

Concluding Remarks

In the criteriological account, described above, the phrase "critical thinking" does not refer to cognitive abilities humans possess. Instead, critical thinking refers to skilled thinking as in thinking that meets certain criteria (Bailin & Siegel, 2003). Saying that Jones "has the skills of a critical thinker would be taken to indicate not that Jones possesses an array of inner mental entities of some sort, but rather that Jones's thinking is skilled in the sense that her thinking meets relevant criteria" (ibid.). In most accounts criteria are not specified. Ample criteriological discussions on critical thinking exist in the literature (Facione, 1990). This raises questions as the concept of critical thinking in dominant accounts hinges upon "criteria of good thinking".

Equating "critical" to "good", as in meeting criteria, counters the ordinary language notion of "critical" which refers to judgment (formation). (Unfortunately, to many of us "critical" simply refers to *criticizing* which nonetheless regards a form of judgment.) Matthew Lipman, introduced in the first chapter, is presented in the overview chapter on critical thinking in the Blackwell Guide to the Philosophy of Education, as providing one of the extant philosophical accounts in which "critical" refers to meeting relevant *standards* or *criteria* of acceptability (Bailin & Siegel, 2003).

The terms "critical" and "criterion" may have a common ancestry as Lipman (1991) knows, they do not seem connected because of a sufficient logical condition. *The Oxford Dictionary of English Etymology* (1966) describes the Greek *kritērion* as a means of judging, test, formed on *kritēs*: judge. While it is true that both *kritikós* and *kritērion* seem to be derived from *kritēs*, *kritikós* is not *solely* formed on *kritēs,* but also connected to *krinein*. As *krinein* means judging and deciding, the logical connection Lipman (1991) draws between "critical" and "criterion" can be made, but does not seem to be the only possible connection. And it does not necessarily have to result in a definition of critical thinking as "thinking that both employs criteria and can be assessed by appeal to criteria" (Lipman, 1991).

Lipman (1991) connects criteria to judgments after he connected "critical" and "criteria" and argues that it seems reasonable to conclude that there is some sort of logical connection between critical thinking and criteria and judgment. "The connection, of course, is to be found in the fact that critical thinking is skillful thinking, and skills themselves cannot be defined without criteria by means of which allegedly skillful performances can be evaluated" (Lipman, 1991, p. 116). This statement seems to hold an element of circularity. Lipman *concludes* from his connection between critical thinking on the one hand and criteria and judgment on the other, a definition of critical thinking ("*So* critical thinking is thinking that both employs criteria and can be assessed by appeal to criteria", ibid.). His argumentation seems to run like: Critical thinking is skillfull

thinking. Skillful thinking cannot be defined without criteria. So, critical thinking is thinking that employs criteria and can be assessed by appeal to criteria. Is this begging the question?

Anticipating this dissertation's reinterpretation of critical thinking, offered in the next chapter, it is possible Lipman (1991) may not have meant the word "so" as literally as can be taken by a reader. That is, following Lipman's (1991) word use, we can 'see' him choose to regard critical thinking as "skillful thinking". We also read that he holds that "a criterion is often defined as a rule or principle utilized in the making of judgments" (Lipman, 1991). This way of reasoning results in performing an *assertive*, in which Lipman's (1991) commitment to the truth of the connection between "critical" and "criteria" is expressed. What seems meant as a *logical conclusion* at first glance may be meant, by second thought, as a *suggestion* to which a certain way of reasoning had led.

Be it as it may, though "critical" and "criterion" both are etymologically related to *kritês* (judge), it does seem rather odd to conclude or suggest from this that the terms "critical" and "criteria" should be related to one another in terms of similar *meanings.* That is, there seems to be a connection between "critical" and "criterion" on the one hand to "judging" on the other, whereas there does not seem to be such a connection between "critical" on the one hand and "criterion" on the other. "Critical" and "criterion" are brothers and sisters. Although brothers and sisters (commonly) share the same parents, through their non-shared environment they usually develop into different 'identities'...

How can we develop instruction in critical thinking well, and gain ideas of how to improve instruction, if we do not emphasize (the activity of) critical thinking as supported by cognitive abilities humans possess? How can we develop instruction methods if we do not know what competencies are called for in critical thinking and how supporting cognitive abilities develop? To simplify this issue, driving a car entails performing certain actions, as in watching and steering. Finding out that a high score on a multi-task test appears to correlate with performing well on a test that aims to assess competence in driving a car, instruction can be attuned to this knowledge. So it is with critical thinking, defined in terms of a mental activity which is supposed to be something individuals can acquire competence with. However, individuals may be 'skilled' or competent in some sort of thinking, they never will without underlying cognitive abilities which support a particular use of the mind. The pivotal question now arising is: What makes competence in critical thinking possible at all?

Before the cognitive requirements of critical thinking are examined, we go to meet another conceptualization of this subject matter first. We will find that critical thinking, as conceptualized in this dissertation, does not refer to a kind of thinking which assesses reasons, given to support a belief, according to the rules of logical reasoning. What does critical thinking mean? The next chapter presents an alternative answer to this question.

Chapter III

#

Reinterpreting Critical Thinking

Introduction

It was Kuhn (1999) who affirmed the present writer in the motivation to contribute to critical thinking studies. She did this by stating: "(...) I claim, the critical thinking movement has much to gain from a developmental conceptualization of its subject matter – a perspective that has been largely absent – and it has a growing knowledge base of cognitive development research to draw on in this regard" (Kuhn, 1999, p. 16). Kuhn's statement resembles the present writer's belief that research in critical thinking requires to make use of philosophy and psychology conjointly. Above all, Kuhn and the present writer both criticize the Critical Thinking Movement for refraining, for the greater part, from applying empirical research results to questions of critical thinking.

Kuhn's (1999) thesis is that "empirical data regarding the directions and paths in which children's and adolescents' thinking develops stand to inform educators' discussions regarding critical thinking" (Kuhn, 1999, see p. 17). This thesis is taken as a guide in the present study. It is regarded as being in accordance with this dissertation's problem analysis, expounded in chapter I. However, the application of Kuhn's thesis gets its visible shape in the next chapter on the empirical dimension of critical thinking.

What can be expected from this chapter? The three sections that make up this chapter mainly reflect an analysis which intends to assign linguistic meaning to the phrase "critical thinking". Where does the critical response come from? As a way of departing, this question is dealt with in section 3.1. The bottom line is that a critical response can arise from concentrating on the content and/or reasoning of statements which is suggested to reflect the dominant paradigm of critical thinking. A critical response stemming from a different assessment, that is, in sum, concentrating on speakers' or authorial (communicative) intention is argued to be central to the reinterpretation of critical thinking this chapter sets out.

Distinguishing between the content of beliefs on the one hand and the intention speakers or authors may have with their utterances on the other hand is associated, by the present writer, with critical thinking. Cognitive development researchers Olson and Astington (1993) appear to share this association. They hold that the critical response

comes from analyzing how an author, or speaker for that matter, wants a text to be taken, not merely from comprehending its propositional content (ibid.).

Who explained that it is *possible*, at all, to distinguish between propositional content and illocutionary force (Illocutionary force indicates how a proposition is to be taken by the receiver.)? It is philosopher of language John Searle (b. 1932), following the footsteps of John Langshaw Austin (1911-1960). In section 3.2 an elaboration on the aforementioned distinction is put forward. This is done by describing some of Searle's (1969; 1979) work on speech act theory. In this way the conceptual framework, created in order to assign meaning to "critical thinking", is built up.

In section 3.3 it is described what particular critical response can arise from analyzing how speakers or writers want their utterances to be taken. It also attempts to explain the reasons why analyzing speakers' or authorial intention and reflection upon it, is regarded as critical thinking. We will see how an assessment of speakers' or authorial intention can result in a critical response that is attended by critical *self*-consciousness. The art of understanding and idea of critical self-consciousness, as understood by Hans-Georg Gadamer (1900-2002), is applied to explicate the sort of critical response, arising from 'intention assessment'. This critical response is somewhat contrasted with critical responses that follow from 'reason assessment'.

Hannah Arendt (1906-1975) helps in clarifying aspects of the critical thinking concept, developed towards the end of this chapter. Why would one respond to *particular* speech acts, always bound to particular *contexts*? Secondly, does 'understanding other people's complete speech acts' mean we have empathy? Thirdly, how can conditions of appropriateness and adequacy be established when we are to judge critical thinking performance? Hannah Arendt knows...

This chapter's concluding remarks present an explicit definition of critical thinking and consist of a summary of the semantic examination which is about to begin now.

3.1 Where Does the Critical Response Come From?

3.1.1 A Critical Response to the Reasoning and Content of Statements

Milton Rokeach (1918-1988), born in Poland, was Professor of Psychology at Michigan State University and later at Washington State University. With respect to his study on closed/authoritarian vs open/democratic minds, Rokeach (1960) stated that he was concerned with the *structure* rather than the *content* of beliefs. This triggers an idea about 'the thing' that evokes a critical response. Rokeach explained his distinguishing between content and structure of beliefs, by stating that the one who espouses a set of beliefs that are democratic in *content*, does not necessarily evidence a true anti-authoritarian outlook. This is because this person can still strike us from the *way* (structure) he espouses his beliefs. He may espouse democratic beliefs with an authoritarian attitude and as being intolerant of those who disagree with him (Rokeach, 1960, see p. 14-15). Where does the critical response come from? As a start to conceptualize critical thinking, this section deals with this question.

Does the critical response come from responding, mainly, to the *content* of beliefs and/or to the *reasoning* employed to support a view? It can. To keep Rokeach's distinction between content and structure of beliefs in mind when processing the question of what evokes a critical response, let us turn to an example. We can imagine a person who espouses a set of beliefs that are democratic in content. Pim Fortuyn, the founder and leader of the political party *Pim Fortuyn List* who was assassinated in 2002 by a Dutch animal right activist, has uttered statements that can be found undemocratic in content. However, he also has uttered statements that can be held democratic in content.

In *Against the Islamization of Our Culture* - the present writer's translation of Fortuyn's Dutch book - Fortuyn (1997) holds that the best fight against the breeding ground of fundamentalism, remains breaking the deprived social-economic position of clearly distinguishable groups. Islamic Dutch people must not, in heaps, remain in the lower classes without any perspective (ibid.). Rather, they must be offered, in the short run, the perspective of participation to the Dutch economy and society to the full (Fortuyn, 1997). The latter can be regarded as a statement which is democratic in content.

If we focus on the content of Fortuyn's (1997) stated belief, paraphrased above, a critical response, e.g. on the democratic content of the utterance, may very well remain absent by someone who deems democracy of great value. After all, stating that the Dutch government must provide chances to (minority) groups in order to let them participate in economic and cultural life, breathes the democratic value of equality.

In the next subsection we willl return to the Fortuyn example. We will see that a critical response to Fortuyn's utterances will not remain absent when concentrating on the way (structure) Fortuyn may hold his beliefs. The point is to demonstrate two differing assessments of other people's utterances, resulting in different critical responses.

What does the critical response 'look like' when focusing on the content and/or reasoning of beliefs? If the critical assessor of content and/or reasoning employed to support a belief, would evaluate the soundness of the utterance "John has measles because he has spots" [10], he might argue that cause and effect are reversed here. Some thinkers of the Critical Thinking Movement may call this an example of critical thinking. After all, judging that cause and effect are reversed meets one of the criteria of good thinking. We could call the rule that is applied by our imaginary critical assessor the rule of *retrorsum causa et effectus*, reversal of cause and effect. If our assessor would evaluate the utterance with the intellectual disposition of, say, inquisitiveness, a Movement's member may qualify him as a proper critical thinker. This thinker demonstrates ability (or potential) to reason well and displays the disposition to do so.

In the paradigm sketched above of, say, 'critical thinking is good reasoning', a critical thinker improves reasoning skills gradually by learning to criticize another's and his own reasoning according to criteria of good thinking. What is more, he learns to hold intellectual attitudes. The one whose statements are being criticized, assuming he is open to criticism, also improves his reasoning skills and learns to hold intellectual attitudes such as intellectual humility.[11] As with (Popperian) science, the function of criticism is regarded in this paradigm as a method of progress. Progress in terms of a more rational and fair-minded world in which truth claims survive as long as they stand the test of criticism.

Now, what if the actual speaker or author who uttered the statement "John has measles because he has spots" meant to express a claim-evidence relation instead of, taken by the critical evaluator of the statement, a causal relation? "John's having spots constitutes the reason for believing (i.e., the evidence) that he has measles" (Olson & Astington, 1993, p. 12). When the critical evaluator would find out the illocutionary point of a speaker who, so it appeared, meant to draw a claim-evidence relation, what has been criticized appears to be ability to express oneself with language or communication

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[10] This example is derived from the way Olson and Astington (1993) use this example. Explicit reference to this source is made below.

[11] At the website of the American Foundation of Critical Thinking it is held that: "Critical thinkers routinely apply intellectual standards to the elements of reasoning in order to develop intellectual traits" ("The Critical Thinking Community", n.d.). One of the examples of *intellectual standards* the Community gives is logicalness. An example of *the elements* is purposes. An example of *intellectual traits* is intellectual humility (ibid.).

competence. The critical evaluator who took the statement as a causal relation may have to withdraw his initial criticism. Understanding, in retrospect, the utterance was meant as a claim-evidence relation, implies that the criticism of reversal of cause and effect loses its ground. On top of this one could hold that leaving illocutionary force out of consideration in examining the statement on its logical soundness, has shown that it does not help very much.[12]

Having said this, the evaluator of logical soundness may remark that although he did not the take the utterance the way the speaker intended it, criticism of the way the statement was communicated served the function of critique, of contributing to progress, just as well. Besides, the one who claimed to have uttered a claim-evidence relation – or others who are not impartial... - may be insincere, trying to ward of criticism when confronted with a 'a reasoning mistake'. True.

It may also said to be 'true' that applying *generalized* criteria of 'good thinking' to *particular* speech acts may primarily serve to confirm *a priori* stances. Why this is considered a problem becomes (more) clear in the remainder of this dissertation.
What will happen if we focus on speakers' or authorial intention rather than focusing on the reasoning and propositional content of statements? In the next subsection an answer to this question is imagined.

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[12] How would today's Popper's and Frege's respond to this argument? They might, as Popper (1979) did, refer to their father of thinking about objectivity, Gottlob Frege (1848-1925), who, as cited by Popper (1979, see p. 109) wrote: 'I understand by a *thought* not the subjective act of thinking but its *objective content*...'.
To Popper (1979) only objective knowledge is criticisable. Subjective knowledge becomes criticisable, Popper argues, only when it becomes objective. Interestingly, subjective knowledge becomes objective when we *say* what we think; and even more so when we *write* it down, or *print* it (Popper, 1979, see p. 25). Minimizing the relevance of speakers' or authorial intention may said by today's Popper's and Frege's to create no problem at all in evaluating statements. There being a(n) (logical) option that the utterance 'John has measles because he has spots' *was* indeed meant as drawing a causal relation, focusing on propositional content serves the function of critique just fine. The difference between examining *truth claims* and *reasoning* in dominant accounts of critical thinking and examining speakers' or authorial *intention* in the here developing paradigm pops up on the horizon.

3.1.2 A Critical Response to Speakers' or Authorial Intention

What will happen if we focus on the structure or, put differently, to the way utterances are expressed? In this subsection a critical response that stems from a different way of examining utterances is the focus of attention. When we look at the way Pim Fortuyn, when he was still alive, expressed his political views on TV, we get some context in the picture. From this context we can hear a strong attitude when Fortuyn uttered political statements that were important to him. We see him take a provocative stance and having a defensive attitude in a debate among politicians, right after Fortuyn won the local elections on March 6 in 2002. The debate was broadcast on Dutch national TV.[13] Fortuyn took this provocative stance in an encounter with some politicians who went to meet him by avoiding eye contact and who did not look very friendly to their interlocutor.

Also in Fortuyn's (1997) *written* communication we read sentences in which phrases like "showing force as Western culture" (see p. 37), "new immigrants ought to conform, if not, they are not welcome" (ibid., see p. 109) and "the Netherlands is full" (ibid., p. 102). Furthermore, the (translated) title of his book *Against the Islamization of Our Culture* can said to be have been put in provocative language. Fortuyn's use of language in the just noted examples can evoke a critical response unlike critical responses to truth claims and reasoning quality of statements. After all, even in Fortuyn's less 'democratically put' phrases, noted above, a critical response can stay away when focusing on truth claims and reasoning quality. A demograph for example may confirm the content of Fortuyn's statement that the Netherlands is full.

A different kind of critical response to the *way* Fortuyn (1997) may hold his views or how he wants his utterances to be *taken* by receivers, can have the form of:
Why would you speak of cultural relativism in terms of a *threat* which may completely destroy our original culture (see p. 7, italics added)? Why would having a clear notion of the *differences* between the (orthodox) Islam and the traditional Judeo-Christian-Humanistic culture be of "essential importance" to a debate about Dutch multicultural society (ibid., italics added)? Does Fortuyn intend some of his statements as warning? Would he want to achieve the effect of the realization in the receivers of his messages that something must be done against the assumed Islamization of our culture?
Is it appropriate to warn?

Word choices for "threat", "showing force" and "conform, otherwise you are not welcome", and of course word intonations and behavior in the non-written 'speaking context', give indications for how to *take* statements as receivers.

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[13] Dutch readers can view this debate at: http://geschiedenis.vpro.nl/artikelen/29974090/

The examination of utterances accordingly their speakers' and authorial intention is what Olson and Astington (1993) point out as 'the thing' that evokes a critical response. This idea of another 'place' where a critical response can come from, is worked up into an explicit conceptualization of critical thinking in the remainder of this chapter.
Olson and Astington can said to be offering an implicit description of critical thinking. "Critical thinking about texts and beliefs requires that the thinker (...) come to see textual statements as expressions of some author's beliefs. The thinker must come to see (or imagine) the author as holding those beliefs for some reasons. Those reasons may be valid or invalid, relevant or irrelevant, decisive or indecisive. Critical reading and critical thinking are based on just this ability to recover the putative intentions of the writer and to examine their grounds" (Olson & Astington, 1993, p. 18).

Olson and Astington (1993) introduce a distinction which is strikingly similar to Rokeach's distinguishing between content and structure of beliefs. Interestingly, they associate, likewise the present writer, this distinction with critical thinking. Olson and Astington argue that what is required for criticism of a text is the recognition that texts are not repositories of the known but the product of human intention. "The critical response comes from analyzing how an author wants a text to be taken, not merely from comprehending its propositional content" (Olson & Astington, 1993, p. 18).

It is this idea on where another critical response can come from that is accepted wholeheartedly in the present study. With this idea we have now arrived a point of departure for the further conceptualization of critical thinking. We will find that consciously distinguishing, by individuals, between propositional content and illocutionary force of another person's utterance can lead to a particular critical response. Illocutionary force can be explained as referring to the way a "proposition is to be taken" by the receiver, or "what illocutionary act the speaker is performing in the utterance of the sentence" (Searle, 1969). More on this matter can be found in the next section.

The distinction between propositional content and illocutionary force is not a distinction that originates from cognitive development researchers like Janet Wilde Astington and David R. Olson. This distinction is made by Searle (1969), philosopher of language, in exploring a hypothesis on natural language. Searle thereby opened the field of (systematic) theory formation on speech acts. Speech act theory is considered to be a bridge between theories of language and social theories (Shatz, 1983). Before it is argued, in section 3.3, why this distinction forms a central part of this dissertation's reinterpretation of critical thinking, the next section focuses on a philosophical way of describing the possibility, *at all*, of distinguishing between propositional content and illocutionary force. Doing this serves the development of a conceptual framework in which the phrase "critical thinking" undergoes a transformation.

3.2 Distinguishing Between the Illocutionary Act and the Propositional Content of the Illocutionary Act

3.2.1 Speech Acts; Doing Things With Words

John R. Searle (b. 1932) is an American philosopher of language and mind, influenced by Frege, Wittgenstein, and J. L. Austin (Harnish, 1999). He is the founder of speech act theory and an important contributor to debates on intentionality, consciousness, and institutional facts (ibid.). "In *Speech Acts: An Essay in the Philosophy of Language* (1969), Searle brings together modified versions of Frege's distinctions between the force (F) and content (P) of a sentence, and between singular reference and predication, Austin's analysis of speech acts, and Grice's analysis of speaker meaning" (Harnish, 1999, p. 823).

Searle's *Speech Acts* was published – in 1969 - in the declining years of logical-positivism, the movement in philosophy of science that equated the meaning of statements to their conditions of truth (Leezenberg, 2000). Put differently, to the sensorial observable circumstances in which such a statement can be called true or untrue (ibid.). According to the more stringent variants of logical-positivism, statements of which the truth or untruth cannot be *empirically* tested, are considered literally meaningless or pointless (ibid., italics added).

It would not take long before the beliefs of logical-positivism were being criticized (Leezenberg, 2000). John Langshaw Austin (1911-1960) focused attention in the now classic *How to Do Things with Words*, to so called performative utterances such as 'I now declare you husband and wife' (Leezenberg, 2000). Utterances of the latter kind are ritual acts rather than factual statements; they do not describe independently existing facts which form the grounds to assess the truth, but they *create* facts to a certain extent (ibid., italics added). Yet they are not meaningless statements.

According to Austin they do not have conditions of truth but rather felicity conditions that are partly being determined by the circumstances and institutions in which such statements are being held and by the intentions with which the speaker performs statements (Leezenberg, 2000). In such cases, the words, sentences or propositions are not the primary unit in analyzing the meaning of the utterance. Instead, in performative utterances the primary unit in analyzing meaning, are utterances or speech acts (ibid.). From here we are just one step away from the insight that all sorts of statements, whether descriptive, questioning or performative can be taken as speech acts (ibid.). Claims that can be true or untrue then do not have priority over prototypes of meaningful language use, but are just one specific kind of speech acts (ibid.).

Austin's merit was that he showed the limitations of an empiricist theory of meaning with a subtle line of argument and revealed a whole new area of research (Leezenberg, 2000). It is Searle's merit that he intended to work out Austin's more informal thought into a systematic theory of speech acts (ibid.). The first step in doing this is the distinction between propositional content and illocutionary force (ibid.).

3.2.2 John Searle on the Possibility of Distinguishing Between Propositional Content and Illocutionary Force

How did Searle (1969) describe the possibility of distinguishing between propositional content and illocutionary force and what purpose served this description to Searle's philosophical analysis? Searle's argument on speech acts as a whole is touched upon first. After that, particular attention is paid to Searle's way of distinguishing different kinds of speech acts and his formulation of the above-described distinction.

First things first: How can Searle's argument in *Speech Acts*, or more precisely, his exploration of a hypothesis on natural language, be summarized? Searle (1969, see p. 12) suggests that speaking a language is engaging in a (highly complex) rule-governed form of behavior. "To learn and master a language is (*inter alia*) to learn and to have mastered these rules" (Searle, 1969, p. 12). Searle then gives a more detailed formulation of a twofold hypothesis. The first concerns the conjecture that speaking a language is performing speech acts (ibid.). That is, acts such as making statements, giving commands, asking questions, making promises and so on and more abstractly, acts such as referring and predicating (Searle, 1969, see p. 16). The second concerns Searle's belief that these acts in general are made possible by and performed in accordance with certain rules for the use of linguistic elements (ibid.). In a more briskly way of putting it, Searle asserts that 'talking is performing acts according to rules' (Searle, 1969, see p. 22).

What kind of rules govern the behavior of speaking a language? Searle (1969) discusses this question by arguing that the rules that govern speech acts are *constitutive*, that is rules as in chess that determine how chess is to be played; changing those rules implies that the game is no longer "chess" (Leezenberg, 2000). The rules that govern speech acts are no norms or conventions for a specific language, but rather universal principles that can be realized in different languages (ibid.).

Related to the point of constitutive rules that govern speaking a language is Searle's (1969) belief about *using* a language. The latter is regarded as the core of Searle's argument (e.g. by Harnish, 1999; Leezenberg, 2000). It is Searle's belief that speech acts are the basic or minimal units of linguistic communication. And not, as has generally been supposed, the symbol, word or sentence or even the token of the symbol,

word or sentence' (Searle, 1969, see p. 16). Searle also explores the idea that illocutionary acts, summarily: the speaker's intention (stating, questioning, commanding, promising), are acts performed in accordance with the underlying, constitutive rules of natural language (Harnish, 1999). Not only the grammar or syntax form a whole of rules to Searle (Leezenberg, 2000). Searle also regards the *use* of language as a form of rule-governed behavior by performing speech acts (ibid.).

Searle's (1969) aim in the first part of *Speech Acts* is to explore the connections he draws between "the notion of speech acts, what the speaker means, what the sentence (or other linguistic element) uttered means, what the speaker intends, what the hearer understands, and what the rules governing the linguistic elements are". Little did he know at the time that social scientists would apply his work for *empirical* purposes, e.g. by pragmatics, the empirical study of language use (Mey, 2001). As noted above, "speech act theory can be considered as the bridge between theories of language and social theories" (Shatz, 1983, see p. 864).

We can start zooming into Searle's (1969) distinction between propositional content and illocutionary force, only after we have paid attention to other distinctions Searle makes. Searle summarizes these other distinctions, described below, ultimately under the heading of the particular distinction between propositional content and illocutionary force. He introduces several distinctions for analytical reasons. That is, for exploring his hypothesis that speaking a language is engaging in a rule-governed form of behavior.

Searle (1969) starts his analysis of expressions, meaning and speech acts by addressing a speaker and a hearer and is asking his readers to imagine that in appropriate circumstances the speaker utters one of the following sentences: 1. Sam smokes habitually. 2. Does Sam smoke habitually? 3. Sam, smoke habitually! 4. Would that Sam smoked habitually. Searle's question is: What is the speaker *doing* when he utters these sentences? The answer is that in uttering 1 a speaker is making an assertion, in 2 asking a question, in 3 giving an order and in 4 expressing a wish or desire (Searle, 1969, see p. 23). What is common to all of these four different acts? It is two 'things', Searle answers: (i) the speaker *refers to* or mentions or designates a certain object (Sam) and he (ii) *predicates* the expression ("smokes habitually") of the object referred to. In each case the reference and predication are the same, though in each case the same reference and predication occur as part of a complete speech act which is different from any of the other three (ibid.).

Thus, we separate 'referring' and 'predicating' from complete speech acts as asserting, questioning, commanding etc. What justifies this separation? Searle (1969) argues that the justification of this separability lies in the fact that the same reference and predication can occur in the performance of different complete speech acts.

Searle heads the three distinct kinds of acts, that is (1) uttering words (morphemes, sentences), (2) referring and predicating and (3) stating, questioning, commanding, promising etc., under the general heading of speech acts; 1 is performing *utterance acts*, 2 is performing *propositional acts* and 3 is performing *illocutionary acts* (Searle, 1969, see p. 24). To clarify this, in performing an illocutionary act a speaker also performs propositional and utterance acts (ibid.). Propositional acts, Searle argues, cannot occur alone; one cannot *just* refer and predicate without making an assertion or asking a question or performing some other form of illocutionary act. Sentences, not words, are used to say things. This insight Searle derives from Frege who said that "Nur im Zusammenhang eines Satzes bedeuten die Wörter etwas" (ibid.).

To the above-mentioned three notions of speech acts, Searle (1969) adds Austin's notion of the *perlocutionary act* (ibid.). Austin (1971), to which Searle connects in both accepting and deviating ways, distinguished the locutionary act which has a *meaning*, the illocutionary act which has a certain *force* in saying something and the perlocutionary act which is *the achieving of* certain *effects* by saying something (Austin, 1971, see p. 120, Lecture X). Examples Searle gives of perlocutionary acts are: having persuaded or convinced someone, having scared or alarmed someone, getting someone to do something. "We need to distinguish what a speaker means from certain kinds of effects he intends to produce in his hearers" (Searle, 1969, p. 20). Searle clarifies this point by saying that by "arguing" (an illocutionary act) I may *persuade* or *convince* someone or by "informing" (another illocutionary act) I may *convince, enlighten, edify, inspire* him or *get him to realize*. The italicized expressions above denote perlocutionary acts (ibid.).

How many kinds of illocutionary acts are there? In *Expression and Meaning* Searle (1979) presents a taxonomy of illocutionary acts. Searle explicates that the "illocutionary point", the point or purpose of a type of illocution (e.g. ordering, describing, promising), is adopted as the basic notion on which to classify uses of language (Searle, 1979, see p. 29). He argues, contradicting others like Wittgenstein on this point, that there are a *limited* number of basic things we do with language (ibid., italics added). The possibility of limitless uses of language he calls an illusion. The basic categories of illocutionary acts in Searle's (1979) classification are: *assertives, directives, commissives, expressives*, and *declaratives.*

The point of *assertives* is to commit the speaker to something's being the case, to the truth of the expressed proposition (Searle, 1979). To determine whether an illocutionary act is an *assertive* one can ask whether you can literally characterize it (inter alia) as true or false (ibid.). Denoting verbs of *assertives* are e.g.: *suggesting*, *putting forward, hypothesizing, swearing* (the belief that).

The illocutionary force of *directives* is the fact that they are attempts by the speaker to get the hearer to do something (Searle, 1979). They can be "modest

attempts" as inviting or suggesting you to do it or "very fierce attempts" as when I insist that you do it (ibid.). The psychological state that is expressed in *directives* is want or wish or desire. The propositional content is that the hearer performs some future action (ibid.).

Commissives are those illocutionary acts whose point is to commit the speaker, in varying degrees, to some future course of action (ibid.). The psychological state that is expressed in *commissives* is intention (ibid.). The propositional content is that the speaker performs some future action. An example of a *commissive* is promising. Although the illocutionary acts of both *directives* and *commissives* are about some future action, they cannot be seen as members of the same class Searle (1979) reasons.
The point of a promise – in *commissives* - is to commit the *speaker* to do something, whereas the point of a request – in *directives* – is to try to get the *hearer* to do something (Searle, 1979, italics added).

In performing *expressives* we express our feelings and attitudes (Searle, 1979). The illocutionary point of *expressives*, to paraphrase Searle's (1979) somewhat complex explanation, is to express a particular psychological state about a state of affairs which is specified in the propositional content. Paradigms of expressive verbs are "thank", "congratulate", "apologize", "condole", "deplore" and "welcome" (ibid.).

In performing *declarations* we bring about changes through our utterances (Searle, 1979). The defining characteristic of this class is that successful performance garantees that propositional content corresponds to the world: if I successfully perform the act of marrying you, then you are married (ibid.).

Searle (1979) summarizes his classification of the limited number of things we do with words in Searlean brightness: "[W]e tell people how things are, we try to get them to do things, we commit ourselves to do things, we express our feelings and attitudes and we bring about changes through our utterances. Often we do more than one of these at once in the same utterance" (Searle, 1979, p. 29). The latter are cases in which one illocutionary act is performed indirectly by way of performing another. These cases are denoted as indirect speech acts (ibid.).

"The simplest cases of meaning are those in which the speaker utters a sentence and means exactly and literally what he says. (...) But, notoriously, not all cases of meaning are this simple: In hints, insinuations, irony, and metaphor – to mention just a few examples – the speaker's utterance meaning and the sentence meaning come apart in various ways" (Searle, 1979, p. 30). An example Searle gives is a speaker who says: "I want you to do it" by way of requesting the hearer to do something. A request is made by way of making a statement (ibid.). Another example is the case in which a speaker utters a sentence and means what he says and also means another illocution with a different propositional content. That is, when a speaker utters: "Can you reach the salt?",

it may be meant not merely as a question, but also as a request to pass the salt (Searle, 1979).

Thus far, Searle's (1969) distinction between propositional content and illocutionary force has not been mentioned. A *proposition*, to clarify, is defined as 'what is asserted in the act of asserting, what is stated in the act of stating' (Searle, 1969). An *assertion* is a commitment to the truth of a proposition (ibid.). "The expression of a proposition is a propositional act, not an illocutionary act" (Searle, 1969, p. 29). But, propositional acts, to repeat, cannot occur alone; one cannot express a proposition while doing nothing else and have performed a complete speech act (ibid.). "When a proposition is expressed it is always expressed in the performance of an illocutionary act" (Searle, 1969, p. 29).

The "illocutionary force indicator", as Searle (1969) calls it, shows how the proposition is to be taken or what illocutionary force the utterance is to have, that is: what illocutionary act the speaker is performing in the utterance of the sentence (Searle, 1969, see p. 30). Indicators of the kind of illocutionary act can be: beginning a sentence with "I apologize", "I warn", "I state" etc. (ibid.). However, often, Searle concludes along a Wittgensteinean argumentation, the *context* will make it clear what the illocutionary force of the utterance is (ibid., italics added). Illocutionary and propositional acts consist characteristically in uttering words in sentences in certain contexts, under certain conditions and with certain intentions (Searle, 1969, see p. 24-25).

Searle (1969) summarizes the set of distinctions he made. He concludes that he is distinguishing between the illocutionary act and the propositional content of the illocutionary act. With this explication we are back to the beginning of Searle's analysis in which it was shown that the same propositional acts can be common to different illocutionary acts; "Sam" was the object referred to and "smoking habitually" was the predication of the object referred to.

In other words, the propositional content of the four sentences about Sam who smokes habitually remains equal, while the illocutionary force is respectively one of asserting, asking a question, giving an order and expressing a wish or desire.

3.3 Critical Thinking as 'Intention Assessment'

3.3.1 Making the Distinction Between Propositional Content and Illocutionary Force by Individuals as Associated with Critical Thinking

Now that the distinction has been explained between propositional content and illocutionary force, it is time to address the question why *actually making* this distinction by individuals is associated with critical thinking. Answering this question is this section's concern. The section as a whole concentrates on converting this chapter's conceptual framework eventually into an explicit definition of critical thinking. What do we do when we think critically within the view of focusing on the illocutionary act of other people's utterances? The latter question is dealt with in this subsection.

In the following paragraphs critical thinking will be described by addressing the natural context in which someone distinguishes between the propositional content and illocutionary force of another person's utterance. When we hear speakers' utterances or read an author's text, we have to understand the propositional content in order to make sense of the words. However, focusing merely on the propositional content will not be enough to understand the complete speech act, as Searle (1969) would say.
The complete speech act, to repeat, refers to performing illocutionary acts. Illocutionary acts such as stating, questioning, promising are *complete* speech acts because propositional acts cannot occur without performing an illocutionary act. Thus, we may wonder how the utterance is meant to be taken by us, as receivers. We may wonder:
Is this utterance an *assertive* or an *expressive?* If it is an *expressive*, does it have the force of expressing thanks or of expressing regrets for example?

So far no form of evaluative thinking has occurred yet. Our way of making sense of the complete speech act has not led to a critical response. Now, imagine we wish to relate to an utterance more personally ourselves. We may, for example, feel the need to 'get a hold' on our own thought in the midst of a bulk of opinions, beliefs, and values. Then we may start to ask ourselves questions such as: If this utterance is meant as disapproving while expressed as informing - an indirect speech act - what do I think about this mental state of disapproving?

While asking these sorts of questions, I may become aware of the way I hold beliefs myself. That is, by interpreting the underlying mental state of *another's* utterance, it becomes possible to be aware of my *own* mental state. "(...) Interpreting the illocutionary force of another's speech act is parallel to determining the propositional attitude to one's own mental state" (Olson & Astington, 1993, p. 7). This kind of interpretation involves choosing the mental state terms for characterizing the mental states of others. Because these mental state terms force the, in this case, critical thinker

to reveal his own stance in characterizing the mental states of others, they may serve as the ground for the growth of consciousness of one's own and others' mental states (Olson & Astington, 1990).

Being aware of my own propositional attitude, e.g. taking an utterance as an *assertive* (in which something is disapproved of), allows me to become critical of *another's* attitude toward a proposition, yet at the same time sharpening my *own* thought. In this respect I am not so much criticizing somebody else's thought. I rather do the best I can to understand the illocutionary act in which propositional acts figure, in order to become aware of how I relate to that act. This awareness can be the incitement to think about thinking, thereby examining the grounds of speakers' or authorial intention. In other words, it can now lead to a critical response. This examination can result in *rejecting* the grounds of another's complete speech act but does not need to in order to be "critical". This form of thinking is critical primarily in terms of examining one's own thinking about another's thinking. This point is important so deserves more attention.

Examining my own propositional attitude toward another's utterance is not employed to see whether criticism of another's reasoning or truth claims would be in place. Or, put differently, we do not focus on the propositional content, leaving speakers' or authors' intentions out of consideration, because, for example, we aim to assess objective thought. Rather, examining my own propositional attitude towards another person's utterance involves that the illocutionary act by another person is projected to *me*. That is, in part, why 'thinking about thinking' is reflective. Another person's thinking or feeling – as critical thinking here is not limited to the assessment of *assertives* but can also regard thinking about an *expressive* – is reflected in my own thinking. 'Thinking about thinking' may also be reflective because we cannot literally enter another person's mind; thinking about another's thinking remains, in the end, the thinking of one and same person.

One could hold that it is not so much other people's statements that are being subjected to criticism when we pay the most attention to understanding the complete speech act. Rather, one's own way of taking utterances is subjected to a reflective examination which can lead to critical *self*-consciousness. Recognizing, being aware, of one's own way of taking other people's utterances - when trying to assign appropriate illocutionary force to their utterances - will more likely lead to a revision of one's *own* thinking than criticism of the utterance performed by *others*.

Focusing on the illocutionary force of another's speech act also helps us to understand indirect speech acts or speech acts in which more than one illocutionary point is made. If we would primarily focus on the propositional content of a speech act, we will have a hard time understanding people who *disapprove* of something by way of

informing or to understand metaphors. Metaphors like Shakespeare's "Unhappy that I am, I cannot heave my heart into my mouth".[14] We would also have difficulty in understanding people who *tell how things are* and *try to get others' to do something*. If we would focus on the reference of a certain object ("I") and predication ("heaving one's heart into one's mouth"), how will we ever come to a consideration how to take Cordelia's utterance? Do we take it as expressing a *refusal* to give a testimony of love for her father as an act of rebellion? Is Cordelia expressing *despair* in not feeling competent to testify love on demand? Or, perhaps, do we take the utterance as a sincere *statement* of not feeling able to express the love she honestly feels, but 'cannot' express as a daughter for a father and as a way to get a share of Britain in return for it?

For critical thinking, as understood here, it is crucial to attend to the people who utter propositional content with which they do not solely refer to an object and predicate it. People also, and always, intend to *do* things with words. They may tell listeners or readers "how things are, try to get them to do things, commit themselves to doing things, express their feelings and attitudes or bring about changes through their utterances" (Searle, 1969). Making the distinction between propositional content and illocutionary force allows listeners and readers to understand a speech act as a whole.

Wondering how an utterance is meant to taken by us, as receivers, creates the possibility to come to a "meeting of minds" (Golinkoff, 1993) rather than to practice one's general criteria of good thinking. Assessing utterances this way is critical in that we evaluate our own thinking about another's thinking. Doing this, we do not only invest in our understanding of others. We also invest in self-understanding because to think about another's mental state is to become aware of our own.

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[14] This is what Cordelia, one of Lear's three daughters, says when asked to testify her love for her father who intends to determine which share of his kingdom each of his daughters should get, by receiving their testimonies, in Shakespeare's *King Lear*. This sentence, see 1.1.91-93, in which a metaphor is used to perform an illocutionary act is followed up by the sentence: "I love your majesty according to my bond, no more nor less" (Shakespeare, ed. by Foakes, p. 164). Although this example concerns fiction, it does not alter the fact that in reality metaphors can be used to perform indirect speech acts, that is, cases in which one illocutionary act is performed indirectly by way of performing another (Searle, 1979). This makes competence with assigning appropriate illocutionary force to indirect speech acts important all the more. To this example is returned in the next chapter.

3.3.2 Gadamer's Critical Self-Consciousness as Arising from 'Intention Assessment'

The above-mentioned reflective form of critical self-consciousness can also be read in Hans-Georg Gadamer's work. To further clarify what is meant by thinking about another's thinking which can lead to critical self-consciousness, Gadamer's idea on the art of understanding is applied. When Gadamer was asked to summarize his philosophy in one sentence his answer was: the other person might be right (Hammermeister, 2002). This answer seems to touch the core of Gadamer's work on the art of understanding.

To give an outline of Gadamer's idea on understanding, it seems useful to start with Gadamer's idea on historical consciousness. Linge (1977) explains that Gadamer views understanding as an event, a movement of history itself in which neither interpreter nor text can be thought of as autonomous parts (Linge, 1977). Gadamer's conception of understanding takes the interpreter's present participation in history into account in a central way. Understanding with Gadamer is not reconstruction, but mediation (Linge, 1977, see xvi). Understanding remains a mediation or translation of past meaning into the present situation (ibid.). The past Gadamer conceives of as an "effective history", a *Wirkungsgeschichte* that makes possible the conversation between each new interpreter and the text or event he seeks to understand (ibid.).

In order to show the way in which the effective-historical consciousness operates, Gadamer (Gadamer, 1979, see p. 305) famously uses the metaphor of the formation and fusion of *horizons*. A horizon Gadamer (1979, see p. 269) defines as "the range of vision that includes everything that can be seen from a particular vantage point". Applying this to the thinking mind, Gadamer continues, we speak of narrowness of horizon, of the possible expansion of horizon, of the opening up of new horizons etcetera (ibid.). "The historical movement of human life consists in the fact that it is never utterly bound to any one standpoint, and hence can never have a truly closed horizon. The horizon is, rather, something into which we move and that moves with us. Horizons change for a person who is moving. Thus, the horizon of the past, out of which all human life lives and which exists in the form of tradition, is always in motion. It is not historical consciousness that first sets the surrounding horizon in motion. But in it this motion becomes aware of itself" (Gadamer, 1979, p. 271).

"Just as in a conversation, when we have discovered the standpoint and horizon of the other person, his ideas become intelligible, without our necessarily having to agree with him, the person who thinks historically comes to understand the meaning of what has been handed down, without necessarily agreeing with it, or seeing himself in it" (Gadamer, 1979, p. 270).

In the process of understanding a real *fusing of horizons* takes place in the sense that 'as the historical horizon is projected it is simultaneously removed' (Gadamer, 1979, see p. 273). This is another way of saying that interpreter and text (or interlocutor in an oral dialogue) are not autonomous parts; understanding is a mediation or translation of past meaning into the present situation. It is important to avoid the error of thinking, Gadamer further clarifies this point, that the horizon of a particular present is an *isolated* horizon (italics added). There is no more an isolated horizon of the present than there are historical horizons (ibid.); understanding is always the *fusion* of these horizons.

In the art of understanding what we need is recognizing our own fore-understanding and being open to, potentially, let our own present horizon fuse with other horizons, even when we do not agree with the other person. When we place ourselves in the situation someone else's, Gadamer (1979) argues, we shall understand him, become aware of the otherness. But, Gadamer adds, this placing of ourselves is not the empathy of one individual for another, nor it is the application to another person of our own criteria, but always involves the attainment of a higher universality that overcomes, not only our own particularity, but also that of the other.

In *Semantics and Hermeneutics*, Gadamer (1972) holds that "a critical consciousness that points to all sorts of prejudice and dependency, but one that considers itself absolutely free of prejudice and independent, necessarily remains ensnared in illusions" (Gadamer, 1972, see p. 93-94). "For it is itself motivated in the first place by that of which it is critical. Its dependency on that which it destroys is inescapable" (ibid., p. 94). He regards the hermeneutically Enlightened consciousness, which he opposes to critical consciousness which is organized on lines of an absolute Enlightenment, aiming at destroying prejudices, as 'establishing a higher truth in that it draws *itself* into its own reflection' (ibid., italics added).

The truth of the hermeneutical consciousness is that of translation and is higher, Gadamer (1972) argues, 'because it allows the foreign to become one's own, not by destroying it critically or reproducing it uncritically, but by explicating it within one's own horizons with one's own concepts and thus giving it new validity' (ibid.). "Translation allows what is foreign and what is one's own to merge in a new form by defending the point of the other even if it be opposed to one's own view" (Gadamer, 1972, p. 94). "It is precisely in confronting the otherness of the text – in hearing its challenging viewpoints – and not in preliminary methodological self-purgations, that the reader's own prejudices (i.e., his present horizons) are thrown into relief and thus come to critical self-consciousness" (Linge, 1977, xxi). This hermeneutical phenomenon is at work in the history of cultures as well as in individuals, for it is in times of intense contact with other cultures (Greece with Persia or Latin Europe with Islam) that a people becomes most

acutely aware of the limits and questionableness of its deepest assumptions" (Linge, 1977, p. xxi).

Gadamer's critical self-consciousness is the reflective form of critical self-consciousness we can become aware of while trying to assign appropriate illocutionary force to the statements of others. In the act of understanding what illocutionary act a speaker or author is performing (is (s)he informing, asking, claiming, apologizing?), we can become aware of how we take the act ourselves. That is to say, when we are using words to characterize another person's mental state, it includes implicit reference to our own mental state (Astington & Olson, 1990). Consider for example someone who utters that it will rain today. If this person thinks what I take to be true, I say: "Lesly *knows* that it will rain today". In contrast, if I take it not to be true, I say: "Leslie *thinks* it will rain today", although the proposition and Leslie's attitude towards it may be identical from his point of view (see Astington & Olson, 1990).

In both of the aforementioned examples I have not only characterized Leslie's mental state; *knowing* in the first example and *thinking* in the second. I simultaneously have become aware of my own mental state; holding the statement as *knowing* something in the first example and as *thinking* something in the second. This awareness of how we take others' utterances can be called a critical self-consciousness in that we 'tell ourselves' how to hold an utterance. What form of judgment is addressed in critical thinking, as conceptualized in this chapter? Hannah Arendt will tell.

3.3.3 Clarifying Aspects of Critical Thinking with Arendt's Concept of Judgment

Hannah Arendt's concept of judgment provides a way to specify aspects of critical thinking that have been analyzed in this chapter so far. Three aspects of the critical thinking concept, presented here, are submitted in this subsection to Arendt's philosophy in order to clarify matters. The first aspect concerns responding to particular speech acts, always bound to particular contexts in which they are performed. The second aspect refers to the form of understanding that is addressed in this dissertation's critical thinking definition. Arendt, like Gadamer did in the previous subsection, helps to explain why understanding in the sense addressed here, is to be sharply distinguished from empathy. The third aspect concerns the question of conditions of appropriateness and adequacy when we are to judge critical thinking performance.

Firstly, why do we respond to particular speech acts, always performed in particular contexts? As we have seen, a particular speech act is represented in this chapter as the object to critically think of. In *Lectures on Kant's Political Philosophy*, Arendt (1970) argues, obviously influenced by Kant's philosophy, that the faculty of judgment deals with particulars, as expressed for example in the form of saying "this is

wrong" or "this is beautiful". Arendt (1971) distinguished the faculty of judging from the faculty of thinking. "Thinking deals with invisibles, with representations of things that are absent; judging always concerns particulars and things close at hand. But the two are interrelated, as are consciousness and conscience. If thinking – the two-in-one of the soundless dialogue – actualizes the difference within our identity as given in consciousness and thereby results in conscience as its by-product, then judging, the by-product of the liberating effect of thinking, realizes thinking, makes it manifest in the world of appearances, where I am never alone and always too busy to be able to think" (Arendt, 1971, p. 193).

Leaving Arendt's Kantian belief about the relation between thinking and (moral) conscience out of consideration, what is relevant now is Arendt's concept of judging as dealing with particulars. When we engage in critical thinking, as conceptualized in this chapter, we address another person's speech act. This speech act can be an *assertive* in which someone tells how things are, a *directive* in which a person tries to get others to do things, a *commissive* in which someone commits to do something, an *expressive* in which feelings and attitudes are being expressed or a *declarative* in which a change is brought about through an utterance (Searle, 1979). In any case, we are addressing 'particulars', especially the illocutionary act in which utterance acts (uttering words) and propositional acts (referring and predicating) figure (Searle, 1969).

Secondly, presenting critical thinking as reflecting on understanding others is bound to incite misunderstandings. What, in this context, is meant by understanding? It is again Hannah Arendt who helps in clarifying that understanding in this context should not be equated with empathy. "The trick of critical thinking does not consist in an enormously enlarged empathy through which one can know what actually goes on in the mind of all others" (Arendt, 1970, p. 43). To accept what goes on in the minds of those whose standpoint is not my own, would mean no more than passively to accept their thought (ibid.).

The attempt to assign appropriate illocutionary force to others' speech acts is not employed with an attitude of compassion, aiming to empathize emotionally with others. It is to be employed as if we were translators who cannot concentrate solely on the literal words, but must pay attention to the speech act as a whole. In relating to others through judgment, our job is to actively construct representations of what goes on in *their* minds. Constructing speakers' or authorial intention consciously, allows to step back from (our representation of) others' perspectives. This distance creates space to reflect upon others' illocutionary acts from our own perspective.

Thirdly, what criteria apply when we are to make appropriate interpretations of intended meaning and need to examine the grounds of assigned speakers' or authorial

intention? What will be clear by now, is that explicit criteria to decide what counts as appropriate and what counts as a valid examination, will not be developed *a priori*.
Is critical thinking understood then as an entirely subjective activity that would not need to satisfy objective norms? And is the implication of this that judging critical thinking performance cannot be done by applying objective criteria?

Similar to this dissertation's twofold description of critical thinking, in brief: understanding and reflecting, Arendt's (1970, Twelfth Session) description of judgment is that it involves two operations. One is the operation of imagination, in which one judges objects that are no longer present, that are removed from immediate sense perception (ibid.). Though the object is removed from one's outward senses, it now becomes an object for one's inner senses (ibid.). The faculty of imagination makes the enlargement of the mind possible by comparing our judgment with the possible rather than the actual judgments of others, and by putting oneself in the place of any other man (Arendt, 1970, see p. 43). This operation of imagination prepares the object for the second operation. The second operation concerns reflection which refers to the actual activity of judging something (ibid.).

The question that arises is how we can deal with particulars, the object of judgment, without lapsing into private feelings or overgeneralization? Following Kant, in Arendt's (1970) perhaps too unique way, she holds that the twofold operation of imagination and reflection establishes the most important condition for all judgments: impartiality. Impartiality is established because, in sum, by making what one's external sense perceived into an object for one's inner sense, one is in a position to 'see' by the eyes of the mind, i.e. to see the whole that gives meaning to the particulars. The idea expressed here is that taking the role of the spectator, as opposed to the role of the actor, creates a condition of disinterestedness in that we do not have a role in the 'play' we are representing.

But what are the standards of reflecting? Arendt (1970) reasons, in Kantian parlance, that the 'imagined object' that is made present before our inner sense is instantly being tasted, as it were. Our inner sense tells us "it-pleases or it-displeases" (ibid.). The reason why a judgment of, say, the 'pleasing kind', is not sentenced to a limited *private* condition, is because our approval is itself subject to the choice whether we agree or disagree with our judgment (whether of the pleasing or the displeasing kind). What criterion applies for choosing between agreeing or disagreeing with our own attached judgment? Arendt here answers that it is the criterion of communicability which is not explained clearly but seems to refer to deciding whether expressing a judgment fits with what is socially accepted. Examples Arendt gives is that one will not feel overeager to express joy at the death of a father and, on the other hand, will have no compunctions about announcing that one enjoys scientific work.

How do we decide whether our judgments meet the criterion of communicability and overcome the *sensus privatus*? These questions seem to be answered by Arendt (1970) by referring to the *sensus communis* (*Gemeinsinnes* as Kant's translation). When one judges, one judges as a member of a community (ibid.). The *sensus communis* is what judgment appeals to in everyone, and it is this possible appeal that gives judgments their special validity (ibid.). The it-pleases-or-it-displeases-me seems so utterly private and noncommunicative, but is actually rooted in this community sense (ibid.). Therefore the it-pleases-or-it-displeases me is open to communication once it has been transformed by reflection which takes all others and their feelings into account.

This all too Kantian account of the way impartiality of judgments is established can hardly be accepted in the current era. An era that has proved that individual minds work so differently. It is defensible to assert that people in our time share a sense of community. However, the assumption that all of us share the *same* will be hard to defend, let alone that this is 'automatically' appealed to when we judge.

What can Arendt's understanding of Kant's idea of establishing impartiality teach us? Somewhat similar to Arendt's referring to the *sensus communis* to avoid that judgment laps into private feelings, determining standards of appropriateness and adequacy for judging critical thinking performance can be left to community members of the field in which critical thinking is employed.

Imagine someone who needs to try, at school, to assign appropriate illocutionary force to an *assertive* and to examine the grounds of assigned intention within the field of physics. A community of (experienced) physicists then needs to ascertain standards of what counts as an appropriate assigned intention and an adequate examination of assigned intention. Whether we are dealing with critical thinking in the field of politics, ethics, aesthetics or the natural sciences, to name a few of possible fields in which one can think critically, the community of these fields provides standards. Although more than one 'answer' could meet standards of appropriateness and adequacy, these objectified standards serve to discriminate among critical thinking performances.

In sum, the quality of critical thinking is assessed by appeal to standards a relevant community has established. Thus, critical thinking is not an entirely private and subjective activity, neither is judging critical thinking performance.

Concluding Remarks

In this chapter the semantic dimension of critical thinking has been examined. The principal aim was to assign linguistic meaning to the phrase "critical thinking". We have seen that critical thinking was associated with a distinction people can make. That is, borrowing Searle's (1969) framework of speech act theory, distinguishing between propositional content and illocutionary force. This distinction was explicated and taken back to its origin by describing the way Searle makes this distinction in exploring a hypothesis on natural language. The conceptual framework, developed throughout this chapter, now leads to defining the phrase as: Critical thinking is attempting to assign appropriate illocutionary force to the oral or written speech acts of others and examining the grounds of assigned intention.

To avoid misunderstandings, interpreting speakers' or authorial intention must not be understood as providing psychological explanations behind speech acts. Interpreting the speaker's intention *with his utterance*, rather than his psychological reason for the utterance, could not be expressed as: "This speaker utters that he promises to share cookies with his sister because he feels guilty about eating them all by himself last time" (Astington, 1994). Instead, assigned speaker's intention could be expressed as: 'This speaker performed an illocutionary act of promising'.

Going back to the beginning of this chapter, the question "Where does the critical response come from?" was raised. As a way of departing the analysis, it was shown that several kinds of critical responses can occur when assessing other people's utterances. It was illustrated, by the use of examples, that the sort of assessment determines the sort of critical response. Focusing on the content of beliefs, as Rokeach (1960) would say, or propositional content in Searlean parlance, can result in a critical response like "The reasoning of this statement is ill, therefore I will not accept it". This focus was ascribed to the dominant paradigm of 'critical thinking is the ability to reason well and being disposed to do so' (Bailin & Siegel, 2003).

It was argued that the focus on reasoning may have its limits. Assessing the utterance "John has measles because he has spots" may have been *meant* as stating a claim-evidence relation rather than a causal relation; John's having spots constitutes the reason for believing that he has measles (Olson & Astington, 1993). Understanding, in retrospect, that the utterance was meant as a claim-evidence relation implies that the initial criticism of reversal of cause and effect loses its ground. Another conclusion is that the criticism on the reasoning quality in the first instance appeared to be criticism of the way a certain argumentation was communicated in the last resort.

Irrespective of *misunderstanding* utterances which often leads to criticisms that often are withdrawn once people gain a proper understanding of what was meant by

what was said, what about cases in which an assessment of reasoning can said to be appropriate? What if someone *is* indeed reversing cause and effect for example?
It is suggested that the critical response stemming from 'reason assessment' may serve to confirm *a priori* rules of good reasoning predominantly. This form of assessment may cut us off from the social world.

How about relating to the people, always performing *particular* speech acts, within particular *contexts*, without whom there would not exist propositional content at all?
It was argued that an assessment of what speakers or writers may intend with their utterances parallels becoming aware of how we hold beliefs ourselves; interpreting the illocutionary force of another's speech act is parallel to determining the propositional attitude to one's own mental state (Olson & Astington, 1993). Trying to assign appropriate illocutionary force can lead to critical self-consciousness. The concept of critical thinking, developed in this chapter, is critical primarily in terms of examining one's own thinking about another's thinking.

Gadamer's (1972) idea of critical self-consciousness was applied in order to further explain the sort of critical response that stems from an assessment of analyzing speakers' or authorial intention. Gadamer's work on the art of understanding served to lay bare the interpretive character of this dissertation's concept of critical thinking.
The interpreter as a person cannot escape the act of understanding, yet does not fall prey to an individualized form of subjectivism. Strikingly similar to Olson and Astington's (1993) statement that learning how to *take another person's* statements provides a model for how to *hold beliefs ourselves* is Gadamer's (1972) idea of "translation".
Translation allows what is foreign and what is one's own to merge in a new form, even if it be opposed to one's own view (Gadamer, 1979). In other words, understanding does not equal being in agreement with the assertions of others (Gadamer, 1972; 1979).

Arendt (1970) also disconnects understanding and empathy. Moreover, Arendt (1971) helped to realize that critical thinking, as conceptualized here, deals with particulars. That is, assessing others' complete speech acts is assessing particular uses of language or particular kinds of illocutionary acts as Searle (1979) would phrase it.
Judging to Arendt (1971) always deals with "particulars and things close at hand" which is something she learned from Immanuel Kant. Arendt (1970) also guided in finding a way to judge critical thinking performance. This question included an examination of how we can deal with particulars, the object of judgment and critical thinking, without lapsing into private feelings or overgeneralization.

What would be required cognitively of individuals who perform a critical thinking task which is based on this chapter's conceptualization? This empirical dimension of critical thinking is examined in the pages that follow.

Chapter IV

#

Hypothesizing the Correlates of Critical Thinking Performance

Introduction

Critical thinking has been conceptualized in the previous chapter in terms of a twofold mental activity. That is (i) attempting to assign appropriate illocutionary force to the oral or written speech acts of others and (ii) examining the grounds of assigned speakers' or authorial intention. This conceptualization has come about by connecting to Olson and Astington's (1993) more implicit description of critical reading and critical thinking.

In this chapter the aim is to theorize the cognitive requirements of critical thinking, as conceptualized by the present writer. What does interpreting illocutionary force and examining the grounds of assigned intention require of individuals?
The overarching aim is hypothesizing the correlates of critical thinking performance. Anticipating empirical testing of a hypothesis on the cognitive requirements of critical thinking, explains the terminology of hypothesizing the "correlates of critical thinking *performance*".

For clarity, a critical task – construed by the inclined empiricist... - could involve interpreting illocutionary force of some author's or speaker's utterances (what would this author/speaker means to 'say' by what is uttered?) and evaluating the grounds of assigned authorial/speaker's intention (how do you evaluate the grounds of the authorial or speaker's intention you have assigned?). It is important to note that the evaluating question must not regard the question whether the research participant deems his own assigned intention, of say warning ("this author seems to warn with his statement"), justified. Rather, the participant needs to be asked whether, in the case of the research task, there are good reasons to warn.

Examining this chapter's empirical question from a cognitive developmental perspective, involves gaining a general idea about the age at which an individual is capable of learning critical thinking. Hypothesizing the correlates of critical thinking performance from a developmental perspective also implies gaining insight into the question of when and how to support the learning of critical thinking at school.
The latter is the concern of the next and final chapter of this book.

The (mostly recent) literature which is used to explore the research question of this chapter can said to originate from the Piaget-Flavell tradition. In spite of that, no researcher in this chapter makes the claim that their results about 'cognitive development and age' is universal or would not need environmental support. In fact, an important contributor to this chapter's concern holds that thinking is something people *do*, often collaboratively (Kuhn, 2008). "Thinking rarely remains a solitary activity conducted inside people's heads. Thinking is most often and most importantly a social activity, embodied in the discourse people engage in to advance their individual and shared goals" (Kuhn, 2008, p. 13-14). Explicit recognition of cultural influences on cognitive development by researchers who work in the Piaget-Flavell tradition has been noted in the general introduction of this book. It certainly returns in the general discussion of this book... Therefore, it is not expected that empirical researchers, referred to in this chapter, will frown when school is regarded in the next chapter as an environmental factor that can, potentially, scaffold the learning of critical thinking.

This chapter consists of three sections. In section 4.1 a preview is offered of the hypothesis on the correlates of critical thinking performance in very general terms. This may prepare the reader for the very specific material which is applied to this chapter's theoretical questions. This section also introduces two particular elements of cognitive development - theory-of-mind ability and epistemological understanding – of which more specific aspects will be applied further on in this chapter.

Section 4.2 concentrates on the requirements of the mental activity to assign appropriate illocutionary force to the *oral* speech acts of others. We will find that the individual who passes a task in which appropriate illocutionary force to an *oral* speech act needs to be assigned, could well be a school age child being between 7 and 11 years old.

Section 4.3 concentrates on the requirements of the other parts of the present writer's critical thinking definition, that is interpreting *written* speech acts and *examining the grounds* of assigned speakers' or authorial intention. We will find that theoretical explorations take us to a much older individual than 'the critical thinker of section 4.2'... This individual may have attained some particular level of cognitive understanding. A level which allows to receive a basis for attributing human intention to a *text* and to regard the *evaluation* of assigned speakers' and authorial intention as something relevant at all.

The concluding remarks summarize theoretical findings. The finding that one part of critical thinking is expected to be learnable by school age children but the other parts by individuals 'who are not kids any longer', may shed a new light on older discussions. Such as the question of whether children are capable of thinking about thinking...

4.1 Critical Thinking as Possibly Resting on Metacognitive Competencies and Language Competence

4.1.1 Preview of the Hypothesis

As announced in the introduction of chapter III, critical thinking in this dissertation is related to metacognitive competencies. Choosing this approach – and word choice – is following the footsteps of, specifically, Kuhn (1999) and Kuhn and Dean (2004). Relating critical thinking to metacognition is not the result of departing from one particular definition of critical thinking as Kuhn and Dean (2004) clearly explain. "Definitions of critical thinking are numerous and wide-ranging. However, one non-controversial claim we can make about critical thinking is that it entails awareness of one's own thinking and reflection on the thinking of self and others as an object of cognition. Metacognition (...) is defined in similar terms as awareness and management of one's own thought, or "thinking about thinking"" (Kuhn & Dean, 2004, p. 270). Thus, regardless of how critical thinking is defined, empirical reference points to metacognition.[15]

In this chapter the question is analyzed what competencies and cognitive understanding may have been acquired by the individual who performs a form of thinking defined as "critical thinking" in this dissertation. Metacognition, as a construct, is like definitions of critical thinking wide-ranging. Relating critical thinking to metacognition thus gives us a good starting point, though cries out for specification. Who is the individual that is competent with assigning appropriate illocutionary force to the speech acts of others and examining the grounds of assigned speakers' or authorial intention? This question, to repeat, is analyzed from a cognitive developmental perspective.

During the course of this chapter, we will find that mainly two cognitive abilities are believed to be relevant for critical thinking as conceptualized in this dissertation. These abilities, phenomena that undergo development by individuals and (therefore) consist of different aspects, is theory of mind ability and epistemological understanding. Theoretically, mastery of particular applications of these two abilities could be ranged under the umbrella of metacognitive competencies. To this proposal is returned at the

[15] Magno (2010) investigated the influence of metacognition on critical thinking skills. It was hypothesized that critical thinking occurs when individuals use their underlying metacognitive skills and strategies that increase the probability of a desirable outcome. The results indicated that metacognition has a significant path to critical thinking: $p<.05$. Critical thinking in this study was measured with the Watson-Glaser Critical Thinking Appraisal (WGCTA) which consists of five factors: inference, recognition of assumptions, deduction, interpretation and evaluation of arguments. An example of the 'deduction item' goes: Some mangoes are sour. All sour mangoes are unripe. Therefore... 1. No ripe mangoes are sour. 2. Some sour mangoes are sweet when they are ripe. Participants need to indicate whether the conclusions of 1 and 2 can be made.

end of this first section. Theory of mind (also: ToM) ability and epistemological understanding are introduced in the next subsections. Next to these abilities, knowledge of and competence with metarepresentational terms, such as *think*, *know*, *interpret* and *imply*, seems required for critical thinking and may be seen as (a form of) language competence. In sum, in this chapter can be read that critical thinking is hypothesized to rest on metacognitive competencies and a form of language competence.

In the remainder of this section, theory of mind ability and epistemological understanding are explained. This saves explanation for later which allows specification of matters in section 4.2 and 4.3. This means: specifying aspects of ToM-ability, defining what language competence (4.2) and what particular stage of epistemological development (4.3) are believed to be related to critical thinking performance.

4.1.2 Theory of Mind Ability

What is theory of mind? Similar to what was noted about the wide-ranging term metacognition, there is a range of phenomena that are included under the rubric "theory of mind" or are closely related to it (Astington & Baird, 2005). Perspective-taking, metacognition, folk psychology, mindreading, mentalizing are examples of alternative names for theory of mind (Astington, 1998). "Theory of mind" is used to refer to three different phenomena; a cognitive structure leading to certain abilities, an area of research investigating the development of these abilities and a theoretical perspective explaining this development (ibid.). For clarity, in this chapter theory of mind is used to refer, in sum, to an ability of humans.

Flavell (2004), one of the pioneers in theory of mind research, holds that the history of theory of mind research begins with Piaget, adding that this is true of so many areas of cognitive development. "A central Piagetian claim was that children begin development by being cognitively egocentric. Piaget and his colleagues used egocentrism and other concepts to interpret their developmental studies of a wide variety of social-cognitive topics: perceptual perspective-taking; egocentric communication; the misattribution of mental characteristics to physical objects (animism) and physical characteristics to mental events (realism); and understanding of thoughts, dreams, intentions, and morality. Research on some of these topics still continues, although usually not from a Piagetian theoretical perspective (e.g., Flavell, Green, & Flavell, 1995b; Wollley & Boerger, 2002)" (Flavell, 2004, p. 275).

In the early 1970s a second wave of research, preceding what since the 1980s or so is called "theory of mind" research, began. This research entails work on metacognitive development (Flavell, 2004). John H. Flavell was one of the important researchers in this field. The majority of metacognitive developmental studies have

investigated children's metamemory – that is, their knowledge about variables affecting memory performance and their knowledge and use of memory strategies (ibid.).

Whether nonhumans, like chimpanzees, have a theory of mind is a question raised by Premack and Woodruff (1978) who investigated primate cognition. The phrase "theory of mind" entered the developmental literature, at all, through Premack and Woodruff's (1978) now classic paper: Does the chimpanzee have a theory of mind? Theory of mind was described by these primate researchers to mean that the individual imputes mental states to himself and to others (either to conspecifics or to other species as well) (Premack & Woodruff, 1978). Another route by which the phrase "theory of mind" entered the developmental literature was via Wellman (1979; 1985, as cited in Astington & Baird, 2005) who worked, also, in the area of metacognition, using it to refer to the child's conception of human cognition.

How is theory of mind defined in psychology and what explanatory accounts of its development exist? Astington and Baird (2005) hold that "theory of mind" became the way researchers referred to children's understanding of people as mental beings who have beliefs, desires, emotions, and intentions and whose actions and interactions can be interpreted and explained by taking account of these mental states.

Gopnik and Wellman (1994) describe theory of mind as everyday understanding of the mind and propose the "theory theory" to explain the development of this understanding. This position holds that our everyday conception of the mind is an implicit theory (Gopnik & Wellman, 1994). Children's early conceptions of the mind are also implicit theories and changes in those conceptions are theory changes (Gopnik & Wellman, 1994). "Theory theorists argue that experience plays a major formative role in children's theory-of-mind development" (Flavell, 2004, p. 278).

An alternative account is the "simulation theory", put forward e.g. by Paul Harris in the early 1990s. According to simulation theory children become able to compute the mental states of other people through a kind of role-taking or simulation process (Flavell, 2004). Harris (2005) refers to studies that have shown that children's pretend play is correlated with their performance on theory-of-mind tasks. Harris (2005) suggests that children's ability to set aside their own identity and to act out the part of another person is linked to children's performance on standard theory-of-mind-tasks. Acknowledging the *correlational* links, as opposed to *causal* relations between role-play and theory-of-mind performance, Harris (2005) does interpret these found correlations as support for the simulation theory.

A second alternative is the view that understanding of mind is the result of an innate module as proposed by Leslie (1987) that is specialized for processing social cues indicating mood, interest, or attention (Halford, 2005). Leslie (1987) proposes that the

basic representational structures for a theory of mind are put in place by the emergence of a mechanism which allows the creation of a capacity for *meta*representation.

Halford (2005) uses the more neutral term "concept of mind" in his chapter on development of thinking because there are still doubts that children's understanding of the mind amounts to a theory. Despite efforts to employ other terms by researchers who deny that children develop a theory, theory of mind seems to be a term that refuses to be corralled (Astington & Baird, 2005). For this reason the phrase "theory of mind" is used in this dissertation. Yet the question whether the ability it refers to is best characterized with the word "theory" is regarded as one that needs more empirical evidence.

After Premack and Woodruff's (1978) claim that the chimpanzee's ability to predict what a human actor will do to achieve certain goals implies that chimpanzees have a theory of mind[16], a debate arose (Astington, 1994). A debate, in which philosophers like Daniel Dennett participated. One of the questions in this debate was how to demonstrate that someone possesses a theory of mind. Philosophers' suggestions on how to demonstrate theory of mind ability were taken up by developmentalists Heinz Wimmer and Josef Perner and their colleagues (Astington, 1994). In the "false belief" task it was demonstrated that not until 4 years of age children understand that another person may think something different from what the child knows to be the case (Olson & Astington, 1993). "In the now well-known "false belief" task, children watch while a story character puts an object in a place from which it is moved during his absence, and when he returns to get it, the child is asked where the character will look. Most 3-year-olds predict that he will look in the new location where the object actually is. Not until 4 years of age do children understand that he will look in the old location, where he thinks it is (Perner, Leekam, & Wimmer, 1987)" (Olson & Astington, 1993, p. 15). Astington and Baird (2005, Chapter 9) confirm the age of 4 in referring to research on 4-year-old's way of understanding mental states as representations rather than 2-year-old's who understand them as situations.

Children who correctly predict that the character will look at the old location recognize the consequences of a person's having a false belief. Because children have to contribute a *false* belief in order to answer the question, we know they understand that people have beliefs (Astington, 1994). "If the belief they attribute is false, it is necessarily different from their own, whereas if the belief they attribute is true, we would not know whether they were genuinely attributing beliefs to the other person or simply

[16] Interestingly, Call and Tomasello (2008) review recent evidence that suggests that chimpanzees have a theory of mind, whereas in other respects they might not. Chimpanzees, Call and Tomasello (2008) conclude from their review, understand others in terms of a perception-goal psychology, as opposed to a full-fledged, human-like belief-desire psychology.

assuming that he or she shared their own beliefs" (Astington, 1994). Gopnik and Astington demonstrated in 1988 that children's performance on the "false belief" task is correlated with their ability to remember that their own beliefs have changed, that is, that they used to believe something false (Olson & Astington, 1993, see p. 15).

Some researchers hold that theory of mind has its neurological correlate. Blakemore and Frith (2005) for example hold that theory of mind or mentalizing ability as the authors phrase it, has a distinct brain basis and can be considered at least to some extent an innate module. "It is one of the cognitive capacities that is abundant in humans and appears to be critical to our social interactions and communications" (Blakemore & Frith, 2005, p. 149). Many different mentalizing tasks activate the medial frontal cortex, temporal poles and the superior temporal sulcus (Blakemore & Frith, 2005). That is, in *nonautistic* people, Blakemore and Frith specify, as some researchers adopt the idea, which has support in brain research the authors hold, of a faulty mentalizing module in people with autism (ibid.).

Egeth and Kurzban (2009) deny the existence of a domain-specific theory of mind cognition. Some theorists, like Leslie (1994), hold that we think about mental states by means of a domain-specific "Theory of Mind Module", a dissociable piece of cognition that specifically represents mental representations like beliefs, but not non-mental representations like photographs or logical propositions (Egeth & Kurzban, 2009).
In contrast, Egeth and Kurzban (2009) suggest that the general ability to represent representations and metarepresentations underlies the human ability to understand our own and others' minds. Other researchers, like Leslie and Thaiss (1992), regard "False Belief failing and False-Photograph passing children" as evidence for domain specificity. However, False-Photograph tests do not require to represent a metarepresentation like is the case with False-Belief tests (Egeth & Kurzban, 2009). Because False-Belief failing and False-Photograph passing children fail the *Meta* Photograph test, it is concluded that there is no evidence currently supporting a domain-specific theory of mind cognition (Egeth & Kurzban, 2009). Rather, the general ability to represent representations and metarepresentations might underlie theory of mind (Egeth & Kurzban, 2009).

To complicate matters, in a brain study performed by Saxe and Kanwisher (2003) it was found that a region in the human temporo-parietal junction (TPJ-M) is involved specifically in reasoning about the contents of another person's mind, or as denoted in their paper title, in "thinking about thinking"... The latter being particularly relevant to critical thinking, conceived of as metacognition, because the latter has often been described as "thinking about thinking"... (Hofer & Sinatra, 2010). The role of the TPJ-M in understanding other people appears to be specific to reasoning about the content of mental states (Saxe & Kanwisher, 2003). Egeth and Kurzban (2009) respond to this finding in discussing their own results by suggesting that the functional brain activity

differences identified by Saxe and Kanwisher (2003) might reflect one or more of the numerous task demand differences between the False Belief and "False" Photographs tests. More research is needed to resolve this problem.

Is theory of mind competence confined to children's recognition of beliefs as beliefs, desires as desires and intentions as intentions, in other words, "children's development of a set of meta-representations" (Olson, Astington, & Harris, 1989)? No, it is not. Flavell (2004) acknowledges that there is more to the developmental story about theory of mind that 4-year-olds tend to pass standard false-belief and knowledge tasks and 3-year-olds tend to fail them. Many older children and adults will progress to other discoveries (ibid.). Older children and adults will discover for example that the mind is an interpretive and constructive device as Carpendale and Chandler (1996) hold. Older children and adults, Flavell continues, may also discover that advanced forms of reasoning and knowledge acquisition have special rules as Kitchener (2002) and Kuhn (2000) report in the form of what they resp. call "folk epistemology" or "epistemological understanding". This brings us to the next subsection.

4.1.3 Epistemological Understanding

There are researchers who believe there is a connection between children's developing theories of mind, set out above, and the development of epistemological understanding (Astington, Pelletier, & Homer, 2002; Burr & Hofer, 2002; Hofer & Sinatra, 2010; Kuhn, 2000; Montgomery, 1992). Hofer and Sinatra (2010) presume that epistemic metacognition emerges after the development of theory of mind somewhere around the ages of 4 and 5. Using the term "epistemic metacognition" instantly indicates a link between the earlier explained concept of metacognition ("thinking about thinking") and the concept of "personal epistemology" which is central in this subsection. Burr and Hofer (2002) regard "personal epistemology" as a psychological construct that refers broadly to individual conceptions and theories of the nature of knowledge and knowing and is distinguished from "epistemology" as a philosophical term. At the intersection of "metacognition" and "personal epistemology", "epistemic metacognition has been defined as "a set of beliefs, organized into theories, operating at the metacognitive level" (...), a concept that encompasses "knowing about knowing" within metacognition, consistent with early ideas of metacognition (...)" (Hofer & Sinatra, 2010, see p. 114).

At the end of this subsection some researchers' ideas about the specific connection between theory of mind ability and epistemological understanding, to use Kuhn's (1999) phrase for "personal epistemology", are set out. Since critical thinking in this dissertation is hypothesized to relate to theory of mind competence and a particular level of epistemological understanding, it is most relevant to describe researchers' ideas

and provided empirical data, for believing ToM-ability and epistemological understanding are related.

But first, what theoretical models exist of "epistemological understanding" or "personal epistemology" as it is also phrased? There are diverse areas of investigation, all part of a larger body of work, categorized as "personal epistemology". This field of research examines what individuals believe about how knowing occurs, what counts as knowledge and where it resides, and how knowledge is constructed and evaluated (Hofer, 2004). Hofer (2002) distinguishes five main models of personal epistemology. The names of the related researchers are: William Perry, Belenky, Clinchy, Goldberger & Tarule, Marcia Baxter Magolda, Marlene Schommer and Karen Kitchener & Patricia King.
The characteristics of each model will be sketched below to give an impression of this research and above all studied phenomena.

William Perry began studying Harvard freshmen in the late 1950s to investigate why students responded in dramatically different ways to the plurality of the college experience (Hofer, 2002). Perry's longitudinal study unveiled a road map to the development of epistemology during late adolescence, as influenced by a liberal arts education (ibid.). The dualistic view of knowledge, often characteristic of the first-year college student, develops into an evolving capacity for intellectual commitments in the face of relativism (ibid.). Being aware of the absence of women in the theory-building stage of research in prior studies, Belenky, Clinchy, Goldberger and Tarule conducted interviews with women from divers educational settings (ibid.). Their study on "women's ways of knowing" provided the first portrait of the epistemological perspectives of women and the developmental course of these views (ibid.). This portrait parallels and extends Perry's model (ibid.). Marcia Baxter Magolda, also drawing on Perry's work, directed attention to what she has termed "epistemological reflection" and to the role of gender (Hofer, 2002). Her longitudinal study suggests gender-related patterns in knowing within her four-point model (ibid.). See also Baxter Magolda (2004).

Marlene Schommer conceptualized personal epistemology in 1990/1994 as a system of more-or-less independent beliefs, hypothesized as five distinct dimensions of epistemology that may or may not develop in synchrony (Hofer, 2002). By a system Schommer means that there are multiple beliefs that compose personal epistemology (Schommer-Aikins, 2004). By more-or-less independent Schommer means that these beliefs may or may not devlop at synchronous rates (ibid.) She also introduced a quantitative approach to the assessment of epistemological beliefs (ibid.).

The Reflective Judgment Model (RJM), provided by Karen Kitchener and Patricia King, encompasses both personal epistemology and skills of critical thinking (Hofer, 2002). Kitchener also introduced the construct of "epistemic cognition", a phrase referring to "individuals' underlying assumptions about knowledge and how it is gained"

(King & Kitchener, 2004, see p. 6). "The RJM describes a progression of seven major steps in the development of reflective thinking leading to the capacity to make reflective judgments; each step represents a qualitatively different epistemological perspective" (King & Kitchener, 2004, p. 6). Using the phrase "critical thinking" explicitly by King and Kitchener (1994), we now arrive at an interesting junction of this doctoral research. Reading their *Developing Reflective Judgment* learns that critical thinking is mostly used to refer to dominant conceptions of critical thinking. Those conceptions are characterized as either focused on inductive and deductive logic skills or on inquiry and problem solving (King & Kitchener, 1994). Both perspectives on critical thinking are being criticized. King and Kitchener (1994) hold, and claim to have provided empirical support for it, that basic differences in assumptions about what can be known and how knowing occurs rather than *logic*, differentiates authority-based thinkers from those who use reflective thinking. And those who see critical thinking as only problem solving, fail to acknowledge, King and Kitchener (2004) contend that epistemic assumptions (assumptions about knowledge) play a central role in recognizing a problematic situation.

For clarity, recognizing a problematic situation, or ill-structured problem, is seen as a (developmental) condition to make reflective judgments. King and Kitchener (1994) are inspired by John Dewey who held, the authors hold, that a person makes a reflective judgment to bring closure to situations that are uncertain. Individuals who do not recognize that problematic situations, like deciding which candidate to vote for in an election, are truly problematic cannot make reflective judgments (ibid.). "As individuals develop, they become better able to evaluate knowledge claims and to explain and defend their points of view on controversial issues. The ability to make reflective judgments is the ultimate outcome of this progression" (King & Kitchener, 1994, p. 13). Dominant perspectives on critical thinking, like the 'logic approach' and the 'problem solving approach', assume that good / reflective thinking occurs by learning logical and problem solving skills (King & Kitchener, 1994). These perspectives are wrong in this assumption, King and Kitchener hold. Epistemic assumptions, rather than a set of steps for approaching a problem, constitute a fundamental difference between children's and adult's problem solving and it is only in adulthood that individuals hold the epistemic assumptions that allow for true reflective thinking.

While King and Kitchener (1994) see similarities in (dominant) models of critical thinking, as both 'descriptions of thinking' ("reflective" and "critical" thinking) revolve around reasoning, "the Reflective Judgment Model departs dramatically from most models of critical thinking" (ibid., see p. 18). That is specifically, King and Kitchener hold, in its insistence that the ability to engage in reflective thinking cannot be understood without considering the epistemic assumptions of the developing person. Instead of synthesizing models of critical thinking into their own model of reflective judgment,

King and Kitchener conclude, after examining measures of critical thinking based on dominant accounts, "that several measures of critical thinking focus on reasoning of well-structured rather than ill-structured problems thus do not serve as suitable measures of reflective thinking" (King & Kitchener, 1994, see p. 98). As they, to put it crudely, *reject* dominant models of critical thinking, and their Reflective Judgment Model provides too little similarity with critical thinking as conceptualized in this dissertation, this model will not be synthesized into the theoretical examination of this chapter. Nonetheless, recall King and Kitchener's (1994) contention that "differences in assumptions about what can be known and how knowing occurs, differentiates authority-based thinkers from those who use reflective thinking". Linking reflective thinking to individuals' epistemic beliefs, shows resemblance with this chapter's examination of the relation between critical thinking, as conceptualized here, and epistemological understanding.

What provides a better point of contact for examining the correlates of critical thinking performance, as defined in this dissertation, is the work of Deanna Kuhn. "Deanna Kuhn is Professor of Psychology and Education at Teachers College, Columbia University. She holds a Ph.D in developmental psychology from University of California, Berkeley, and was previously on the faculty at the Graduate School of Education at Harvard University" (Shaughnessy, 2004, p. 267). As noted before, Kuhn (1999) offered an outline of "a developmental model of critical thinking" in which she held that the development of metacognitive competencies is most relevant to critical thinking.

One of the reasons why the work of Deanna Kuhn serves the research task of this chapter, is her broad description of critical thinking as 'the evaluation of assertions' (Kuhn, 1999). A description she borrows from Olson and Astington (1993) who have been the great inspiration for conceptualizing critical thinking in this dissertation. This broad description allows to subsume the quite specific definition of critical thinking, offered in this book, into Kuhn's understanding of the phrase and related empirical assertions of its development. Above all, Kuhn and Dean (2004) held, it is recalled, that regardless of how critical thinking is defined, empirical reference points to metacognition because both critical thinking and metacognition are described in terms of "thinking about thinking".

Kuhn (1999) suggests that the development of epistemological understanding may be the most fundamental underpinning of critical thinking. Kuhn describes meta-knowing in three broad categories, of which epistemological knowing is one next to metastrategic knowing and metacognitive knowing, and regards all three kinds as central to critical thinking. Yet for serving the purpose of this subsection, it suffices to explain what is meant by epistemological understanding by Kuhn (1999) and how it develops. In section 4.2 the specific relation between critical thinking, as conceptualized here, and mature epistemological understanding comes up for discussion.

Epistemological knowing, Kuhn (1999) explains, refers to an individual's broader understanding of knowledge and knowing. It concerns an understanding of general and personal aspects of knowing: How does anyone know? and What do I know about my own knowing (ibid.)? She describes the development of this form of meta-knowing from childhood to adulthood in terms of *levels* of epistemological understanding.

"The core dimension underlying and driving the progression in epistemological understanding is the coordination of the subjective and objective components of knowing. The absolutist sees knowledge in largely objective terms, as located in the external world and knowable with certainty. The multiplist becomes aware of the subjective component of knowing, but to such an extent that it overpowers and obliterates any objective standard that would provide a basis for comparison or evaluation of opinions. Only the evaluativist is successful in integrating and coordinating the two, by acknowledging uncertainty without forsaking evaluation" (Kuhn, 1999, p. 23). Kuhn et al. (2000) also hold: "We propose that the developmental task that underlies the achievement of mature epistemological understanding is the coordination of the subjective and objective dimensions of knowing. Initially, the objective dimension dominates, to the exclusion of subjectivity. Subsequently, in a radical shift, the subjective dimension assumes an ascendant position and the objective is abandoned. Finally, the two are coordinated, with a balance achieved in which neither overpowers the other" (Kuhn et al., 2000, p. 310).

Kuhn et al. (2000) further postulate that the development of epistemological understanding "tends to occur in a systematic order across different judgment domains (personal taste, aesthetic, value, and truth) with the orders the reverse of one another in the two major transitions that constitute this progression" (ibid., see p. 309). "These predictions are supported among a sample of seven groups of children, adolescents, and adults varying in age, education, and life experience. Subjectivity is most readily acknowledged in personal taste and aesthetic judgments and least readily in truth judgments. Once subjectivity is accepted and becomes dominant, objectivity is reintegrated in the reverse order, i.e., most readily with respect to truth judgments" (Kuhn et al., 2000, p. 309). Epistemological understanding by Italian students from 5th to 13th graders was measured according to the model proposed by Kuhn et al. (2000) by Mason, Boldrin, and Zurlo (2006). Mason et al. (2006) replicate the findings of Kuhn et al. (2000) about the domain-dependent development of epistemological understanding.

Kuhn et al. (2000) trace the developmental origins of the coordination process, 'leading' to epistemological understanding, into the early childhood achievements highlighted by theory-of-mind researchers. Knowing this, we can return to the proposal made at the beginning of this subsection. It was proposed to range mastery of theory of mind ability and epistemological understanding under one umbrella of "metacognitive

competencies". The specific link between one particular theory of mind achievement and one level of epistemological understanding is, according to Kuhn (2000), the following. Understanding assertions as belief states, as measured by False Belief Tasks, provides an essential foundation for progressing *from* the realist level of epistemological understanding in which assertions are understood as copies that represent an external reality, *to* the absolutist level in which assertions are understood by children of about 4 or 5 as facts that are correct or incorrect in their representation of reality (Kuhn, 2000). "It is a transition from simply knowing that something is true to evaluating whether it might be" (Kuhn, 2000, p. 317). Kuhn and Park (2005) also hold that the conceptualization of epistemological understanding is linked to the theory of mind developments that occur in early childhood.

Burr and Hofer (2002) agree, overall, that the achievement of theory of mind seems to mark a transition from an epistemological stance in which the source of knowledge is irrelevant (because knowledge is absolute and there is one truth) to an epistemological position in which sources of knowledge become essential to determining a justifiable truth. Though Burr and Hofer (2002) do not explicitly subsume theory of mind achievements and epistemological development under the heading of metacognitive development as Kuhn (2000) does, they are agreed about the relation between theory of mind achievements and epistemological understanding. So do Hofer and Sinatra (2010) who presume that epistemic metacognition emerges after the development of theory of mind somewhere around the age of 4 or 5.

Theory of mind research does not only examine children's awareness that people have beliefs and false beliefs about the world (Astington, Pelletier, & Homer, 2002). The main development that theory-of-mind researchers have examined so far, is children's ability to deal with doubly embedded representations, referred to as second-order beliefs (ibid.). A child who can form an attitude construction containing an embedded proposition has the prerequisite for mentally representing and for attributing a *first-order mental state* (as expressed in the sentence: John knows that (the teacher is arriving)) (Perner, 1989, Chapter 14). A child who realizes the recursive nature of this construction and can form doubly embedded propositions has the prerequisite for representing and attributing *second-order mental states* (as expressed in the sentence: John knows (Mary doesn't know [the teacher is arriving]) (ibid.).

Astington et al. (2002) argue that children's ability to attribute second-order beliefs facilitates their understanding of evidence, as seen in their ability to distinguish between causes and reasons. Astington et al. also claim that "second-order false-belief understanding is fundamental to children's epistemological development because it underlies their understanding of the epistemic concepts of evidence, inference, and truth" (ibid., see p. 142). "By 7 yr of age children can attribute second-order representations

and appropriately answer second-order questions about evidence, inference, and truth" (Astington et al., 2002, p. 142).

In sum, Burr and Hofer (2002) and Hofer and Sinatra (2010) relate theory of mind to epistemological understanding like Kuhn (2000) does and Kuhn and Park (2005) do. They do not explicitly head these two constructs under the concept of meta-knowing, as opposed to Kuhn (2000). The same seems to apply to the work of Astington et al. (2002) who relate theory of mind to epistemological development without heading them under the umbrella of metacognitive development. However, Olson and Astington (1993) argue in a footnote, in terms of admitting, that a set of concepts that is used to talk and think about the world (later TOM-achievements), may make up a part of what others describe as metacognitive abilities.

As noted above, the work on epistemological understanding by Deanna Kuhn and colleagues is applied to a fair amount to the inquiry after the requirements of critical thinking, as conceptualized in this book. Therefore, Kuhn's (2000) proposal to head theory of mind and epistemological understanding under the umbrella of metacognitive competencies is accepted. It follows that the main theorized cognitive requirements of critical thinking can be categorized as "metacognitive competencies". What particular achievements in theory of mind and the development of epistemological understanding would be specifically related to critical thinking? And what particular language competence? These questions are explored in the remainder of this chapter.

4.2 On the Requirements of "assigning appropriate illocutionary force to other people's *oral* speech acts"

4.2.1 Being Competent with the Say-Mean Distinction

Olson and Astington (1993) again provide an empirically grounded idea about what is involved in critical thinking. Critical thinking, regardless any specific definition, is related, it is argued, to what is phrased as "higher order forms of thinking" (ibid.). It is held that 'higher order forms of thought are embodied in the set of concepts evolved for making increasingly fine distinctions in talking about talk and talking about thought' (Olson & Astington, 1993, see p. 8).

These concepts are regarded as later achievements of theory of mind (ToM) ability. That which develops after pre-schoolers' understanding of false beliefs is meant by later ToM-achievements. What is involved is a set of concepts that is used to talk and think about the world and that may be used to bring aspects of that talk and thought into consciousness so as to permit analysis of and reflection on statements and beliefs" (Olson & Astington, 1993, see p. 9).

One of the 'concepts' for making distinctions in talking about talk and thought is the relation between saying and meaning (Olson & Astington, 1993). In Searle's (1969) framework this relation is presented as the distinction between propositional content and illocutionary force. The propositional content, expressed in an utterance, captures 'what is said' and the illocutionary force of an utterance captures 'how it is meant to be taken' (Olson & Astington, 1993, see p. 11).[17] The utterance "dinner is at eight" expresses the propositional content – the time for dinner - and the illocutionary force of an invitation (ibid.). However, the force is ambiguous for the same utterance could be a factual description, a social norm or even an admonition, if spoken to someone who arrives at nine (ibid.). Even assertives, as one type of speech acts, such as "Grass is green", admits of great variability in illocutionary force (ibid.). That is, "Grass is green" could be offered as a logical premise, an accepted truth, a personal opinion or hearsay (ibid.).

The definition of critical thinking, offered in this book, includes the mental activity to assign appropriate illocutionary force to other people's speech acts. This described activity indicates, almost by definition, that understanding the relation between 'what is said and what is meant' could be a particular property of critical thinking competence. When do children become able to distinguish between the propositional content and the illocutionary force of an utterance? What cognitive function does this competence have? Why exactly could competence with this the say-mean distinction correlate with the competence to assign appropriate illlocutionary force to others' oral speech acts? These questions are dealt with in the remainder of this subsection.

First of all, social scientist Gary Bonitatibus underscores Searle's assertions on natural language by arguing that "although language is used to express a speaker's intention, that intention is often only partially present in the words themselves, and in some cases (e.g., indirect speech acts, irony) may be almost totally absent" (Bonitatibus, 1989, see p. 326). "To understand an utterance, children must recover the mental state or intention of a speaker; a speaker has some idea in mind, and is attempting to

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[17] Would John Searle accept 'distinguishing between what is said and how it is meant to be taken' as a *valid* paraphrase of his original "distinguishing between the illocutionary act and the propositional content of the illocutionary act" (Searle, 1969)? Perhaps not. Especially the paraphrase "what is meant" by another social scientist (Bonitatibus, 1989) creates problems as this suggests that *meaning* is separate from propositional content or "what is said". Searle's discussion of "meaning" in response to Paul Grice's classic article *Meaning* clarifies how Searle discusses the characteristics of illocutionary acts; it has meaning and it means something. "Characteristically, when one speaks one means something by what one says; and what one says, the strings of sounds that one emits, is characteristically said to have a meaning" (Searle, 1969, see 2.6). What is clear is social scientists' borrowing of Searle's distinguishing between that which constitutes the truth conditions (reference and predication) of a speech act and the act the speaker intends to perform (questioning, criticizing, promising etc.) when uttering propositional content. For this reason several paraphrases of Searle's distinction by social scientists, as can be found in this subsection, are accepted and used interchangeably.

communicate this idea. From a very early age, children are capable of knowing that speakers have a meaning or mental state behind their utterances, and that the apprehension of that meaning is the goal of comprehension (Bonitatibus, 1988)" (Bonitatibus, 1989, p. 326). Children must learn that a message may not capture one's intended meaning very clearly or accurately; that is, one can intend one thing and say something else. In addition, children must learn that the message has a "literal meaning" all its own, which is somewhat independent of what the speaker means by it (Beal, 1989).

When do children become able to distinguish the propositional content from the illocutionary force of an utterance? Children who are aware that speakers' intentions are not always adequately expressed in their words make the distinction between what is said and what is meant by it (Bonitatibus, 1989). "These children attend to and represent the literal meaning of a speaker's utterance and are therefore able to assess the exact state of their understanding more accurately" (Bonitatibus, 1989, p. 327). There is evidence indicating that children younger than 5 or 6 years old, do not make the distinction between what a speaker means and what is actually said (Beal & Flavell, 1984; Bonitatibus, 1988; Bonitatibus & Flavell, 1985; Mitchell & Russell, 1989; Robinson, Goelman, & Olson, 1983). Young children, below the age of 7, are primarily concerned with speaker's intentions (what is meant) rather than their expressions (what is said) (Beal, 1989; Beal & Flavell, 1984; Bonitatibus, 1988; Mitchell & Russell, 1989; Robinson et al., 1983; Robinson & Robinson, 1977; Torrance & Olson, 1987). Development of the ability to distinguish between literal and intended meaning, seems to occur around the age of 6-8 years (Ackerman, 1983; Mitchell, Robinson, & Thomson, 1999; Mitchell & Russell, 1989; Winner, Rosenstiel, & Gardner, 1976). Astington (1992, as cited in Olson & Astington, 1993) claims to have shown that it is not until children are after 6 or 7 years old that they can judge the truth of sentences independently of their agreement with speakers.

There has been discussion about the exact age at which children acquire the ability to make the "say-mean distinction", as it is also phrased (e.g. by Mitchell, 1996). Mitchell and Russell (1989) responded to Ackerman (1979) who showed that young children *do* appreciate the say-mean distinction. Mitchell and Russell investigated whether young children genuinely *understand* intended meaning as distinct from message meaning. They concluded from their replication of Ackerman's (1979) study, with the inclusion of a condition where children were asked if the found object was the one that the speaker had in mind, that 6-year-olds understand that say-mean discrepancies can occur. "However, they may be less effective at recognizing the circumstances in which such discrepancies are likely to ensue. One consequence of this is that their judgments of whether an approximate object is the one intended by a speaker

will be uninfluenced by information relating to the speaker's quality of memory for the referent" (Mitchell & Russell, 1989, p. 490). Hedelin and Hjelmquist (1998) conclude from their study into preschoolers' mastery of the "form/content distinction", as they phrase it, that even young children master aspects of this distinction though applies to a minority of the 3 and 4 year olds in their study. It coud be argued, Hedelin and Hjelmquist acknowledge, that "this moderate figure actually confirms the earlier conclusion that the say-mean distinction develops late in childhood".

Mitchell (1996) rejects the claim that children below the age of 7 lack an understanding of the say-mean distinction. Mitchell grounds this assertion by referring to results obtained with a test known as the "message-desire discrepant task", a procedure he devised together with Elizabeth Robinson. Mitchell does not deny studies, mentioned above, showing young children's difficulty in interpreting and evaluating ambiguous verbal messages. Rather, Mitchell rejects this difficulty as *evidence* for the claim that children below the age of around 7 years know little about the difference between what people say and what they mean. Mitchell suggests that young children have a specific problem with the concept of ambiguity. Even so, Mitchell acknowledges that further developments of 4-5 year olds involve coming to understand how speech might not provide an adequate clue to what the speaker wishes to communicate. Perhaps the following reflects the state of arts. Where some researchers, including Peter Mitchell in a later publication, think in terms of the ability to distinguish between literal and intended meaning, occurring around the age of 6-8 years (Mitchell, Robinson, & Thomson, 1999), Mitchell (1996) thinks in terms of understanding "ambiguity which children seem not to be attuned to until about 7 years of age"...

What cognitive function does the ability to distinguish between speaker's meaning and sentence meaning have? Olson and Astington (1993) suggest that being able to make the say-mean distinction allows one to judge a proposition as true or false independently of agreeing or disagreeing with what is asserted as believed by a speaker. "In learning to distinguish the meaning of a statement (its semantics) from the intentions of a speaker or writer (its pragmatics), children are learning to understand "authorless" texts, texts of the sort they encounter in teacher's talk and in school texts" (Olson & Astington, 1993, p. 17). Encouraging pupils to make analyses in which one parses propositional content from illocutionary force is required for children to acquire textual knowledge (ibid.). In sum, developing this ability may be an essential part of cognitive development.

Beal and Flavell (1984) seem to share Olson and Astington's (1993) idea about the cognitive function of the say-mean distinction. Beal and Flavell suggest, on the basis of their obtained results, that what may develop between first and second grade is a quite *general* ability to distinguish literal meaning from communicative intent, an ability

not limited only to the analysis of messages of the familiar, natural-language variety (spoken or written). It is possible that the developing skill of analyzing representations of communicative intention is part of a more general metacognitive acquisition (Beal & Flavell, 1984, see p. 927). Bonitatibus (1989) and Flavell (1989) seem to make similar proposals, thereby referring to Piaget's notion of decentration. "Moral realists, like poor message-evaluators, feel that there is but one interpretation of a rule or sentence. More mature children realize that both rules and sentences are approximate representations of some underlying intention and that both the intention and the representation need to be attended to" (Bonitatibus, 1989, p. 335-336).

Apart from the function understanding the say-mean distinction has for 'general' cognitive development, remember Olson and Astington's (1993) earlier noted assertion about scaffolds for thinking about talk or thought. Understanding a concept like the say-mean distinction can be used, purposefully, to bring aspects of talk or thought about the world into consciousness so as to permit analysis of and reflection on statements and beliefs (Olson & Astington, 1993). This brings us at the final question of this subsection: Why exactly could mastery of this ability correlate with the competence to assign appropriate illlocutionary force to others' oral speech acts?

First of all, operationalizing this part of the critical thinking definition could involve that participants are presented with a speaker who utters a statement, e.g. "The birthday party began at 14.00!" This brief sketch of an operationalization of one part of the critical thinking definition, serves the sake of argument so is presented in a simplified form. The statement about a birthday party could be expressed with the illocutionary force of an admonition towards a character who arrived after 14.00. The participant will be asked what was meant by what was said. The participant who says that the speaker said the message with a blaming intention, or of the same tenor, could be coded as having assigned appropriate illocutionary force to the statement presented in this task. Why would competence with this, here still simplified described and partial critical thinking task, correlate with competence with the say-mean distinction?

Suppose our participant would not distinguish between the sentence meaning (that "the birthday party began at 14.00") and the possibly intended meaning by the speaker (e.g. that the listener should have come in time). The consequence of not distinguishing the two levels of communication could be that the participant only or primarily attends to the literal sentence meaning. This participant's answer may be that the speaker *informs* that the birthday party began at 14.00. As the research task would be to interpret how the statement was meant to be taken, this answer can be coded as incorrect or inappropriate.

Thus, the task to assign appropriate illocutionary force to another's oral statement, seems to require, inherently, distinguishing between 'form and content'.

That is, not distinguishing the two levels of communication, e.g. by only attending to the content or by conflating form and content, will likely result in inappropriate interpretations. This applies in particular to indirect speech acts in which one illocutionary act is performed (*asserting* that the party began at 14.00) indirectly by way of performing another (*admonishing* someone for being late). As we have learned from Bonitatibus (1989), children who make the distinction between what is said and what is meant by it are aware that speaker's intentions are not always adequately expressed in their words.

It is theorized that competence with the say-mean distinction is one of the requirements of critical thinking. However, the task to assign appropriate illocutionary force to an oral speech act, seems to require more than mastery of the say-mean distinction. Individuals for example need to express their idea of appropriate illocutionary force in order to communicate (and possibly at all produce) their answer. Doing this may require a metalanguage, a vocabulary to, in this case, talk about talk. The next subsection deals with this matter.

4.2.2 Having Acquired Metarepresentational Terms and Being Competent to Apply them Appropriately in Different Contexts

In this subsection the idea is explored that understanding metarepresentional terms may be another requirement for the activity to assign appropriate illocutionary force to others' oral speech acts. This requirement was classified, earlier on in this chapter, as language competence, although there is reason to believe that this particular language competence develops in relation to Theory of Mind development. This idea is grounded in the fact that many specific relations between language development and development of children's theories of mind have gained empirical evidence (see e.g. Astington & Baird, 2005).

What are metarepresentational terms? Metacognitive and metalinguistic terms are used to refer to thought and talk (Olson & Astington, 1993). The "language of mind", as denoted by Astington and Pelletier (1996), refers to the explicit use of semantic terms to refer to people's mental states. All taxonomies of mental states, Astington and Pelletier (1996) found, acknowledge three states; belief, desire and emotion. Examples of this terminology are: *think*, *know*, *believe*, *understand*, *guess*, *remember* and the more sophisticated terms such as *infer*, *assert*, *assume*, *conclude* (Olson & Astington, 1993). These are terms which are used in most subject areas to discuss types of propositional attitude and illocutionary force or, more simply, to discuss the processes of *thinking* and *saying*; terms such as *infer, imply, assume, interpret* (Astington & Olson, 1990).

The terminology to refer to thought and talk is metarepresentational. Talking about cognition is metacognitive talk and talking about language is metalinguistic talk (Astington & Olson, 1990). Metacognitive and metalinguistic terms, from now on abbreviated as metapresentational terms, provide both a language *for* thinking and a language *about* thinking (Olson & Astington, 1993, see p. 9). "When used in the first person, these terms are a language *for* thinking – for reflecting on things in the world and perhaps changing one's opinions about things in the world" (ibid., p. 9, italics added). In addition, metalinguistic and metacognitive terms provide a language for reflecting on things in the *mind*, allowing us to reflect on our own or another's thought. In this latter application, they are a language *about* thinking (ibid., italics added).

Metarepresentational terms, denoted by Olson and Astington (1990) as "speech act" and "mental state" verbs, have a twofold function. One is to characterize others' mental states, e.g. 'John thinks that it will rain'. "The basic function of a speech act verb like *say* is simply to permit a reporter to pass on a proposition without appending his own warrant to its truth" (Olson & Astington, 1990, p. 714). Using a speech act verb, such as *think*, allows the reporter to report what was said without commenting on the speaker's mental state (ibid.). The second (basic) function of using metarepresentational terms is specifiying the attitude of the *reporter* as well (ibid., italics added). Speech act and mental state state verbs mark the reporter's attitude to the reported speech (ibid.). A speaker can say 'Today is Sunday'. The reporter may report that John *knows* what day it is if he thinks it true (ibid.). The reporter may also report that John *thinks* today is Sunday if he takes it to be false (ibid.). "It is the reporter, who, in choosing a speech act verb, declares his own attitude to the speech act being reported whether agreement, disagreement or abstention" (Olson & Astington, 1990, p. 715).

When do children start to utter metarepresentational terms? Children use metarepresentational terms when they are only two years old (Olson & Astington, 1993; Shatz, Wellman, & Silber, 1983). *Think, know* and *remember* are the most frequent used metacognitive ones and *say, tell* and *ask* are the most frequently used metalinguistic ones (Olson & Astington, 1993). *Think* and *know* do not usually appear until the end of the third year of life and are not well distinguished from one another in comprehension until around age four (Papafragou, Cassidy, & Gleitman, 2007). When children are about 4 or 5 years old they understand that the sentence "John knows the mitten is blue" implies that the mitten is blue. And they understand that the sentence "John thinks the mitten is blue" does not imply that the mitten is blue (Olson & Astington, 1993, see p. 14). At the time their formal education begins, children can represent and reason from people's first-order beliefs: *X believes p* (Astington & Pelletier, 1996).

Elaboration of the set of terms for thought and talk is important because it allows distinctions to be made between related but different processes (Astington & Olson,

1990). Examples of these distinctions, Astington and Olson (1990) give, are distinctions between forms of thinking, e.g. *guess* versus *infer*, forms of remembering, e.g. *recognize* versus *recall*, and forms of telling, e.g. *describe* versus *explain*. "The acquisition of an elaborate set of metacognitive and metalinguistic terms may lead to increased awareness of one's own processes of representing, to reflection on them, and to greater mastery of them" (Astington & Olson, 1990, p. 84). In sum, Astington and Olson (1990) suggest that knowledge of metacognitive and metalinguistic language will facilitate thought and talk about mental states and speech acts. "Use of these terms will help children recognise the distinctions between different mental states, and different speech acts, and between a speech act and its corresponding mental state" (Astington & Olson, 1990, p. 84).

If it is true that knowledge of metarepresentational terms plays a role in thought and talk about mental states and speech acts, this knowledge is likely to be equally important to critical thinking. After all, our critical thinking task includes the requirement that participants express their understanding of illocutionary acts. Examples of illocutionary verbs are: *describe* to mark the illocutionary point of an assertive, *order* to mark the illocutionary point of a directive, *promise* as a marker of a commissive, *apologize* to mark an expressive and *pronounce* to indicate the illocutionary point of a declaration (Searle, 1979).

Research that points to the plausibility of the idea that knowledge of metarepresentational terms correlates with critical thinking competence, is provided by Astington and Olson (1990). Astington and Olson assessed students' understanding of metacognitive and metalinguistic terms. Participants were asked to choose appropriate metacognitive and metalinguistic verbs to replace the simple verbs *think* and *say* in 12 stories. Given the context of the story, the simple verb, *say* or *think*, could be replaced by a more complex metalinguistic or metacognitive verb (Astington & Olson, 1990). Test scores for the 13-year-olds correlated with their critical thinking test scores (and vocabulary test scores). Not irrelevant, however, is that the Cornell Critical Thinking Test, designed by Ennis and Millman in 1982, was used in Astington and Olson's study.

To what extent can Astington and Olson's (1990) found correlation between knowledge of metarepresentational terms and critical thinking test scores expect to be replicated when measuring critical thinking according to the concept this book offers? First of all, participants in a critical thinking task, based on this dissertation's model, will be asked to characterize the communicative intention of another's speech act.
This requires using an illocutionary verb, or an appropriate paraphrase of it. In other words, a critical thinking task, based on this dissertation's model, implies the requirement of using metarepresentational vocabulary. Above all, we know from the empirical data, described above, that *reflecting* on others' (and one's own) beliefs

involves competence with second-order reasoning. Children who can attribute second-order representations also can appropriately answer second-order questions about evidence, inference, and truth" (Astington et al., 2002, see p. 142). Both the reasoning task of the (logical) sort that can be found in the Cornell Critical Thinking Test and a task to assign appropriate illocutionary force to another's speech act, seem to share a similar requirement; applying second-order understanding to think about other people's statements. Thus, some extrapolation of Astington and Olson's (1990) conclusion that metarepresentational vocabulary is important for critical thinking, seems justified.

The careful reader may have noticed that the correlation between critical thinking, as measured with the Cornell Critical Thinking Test, and knowledge of meta-representational terms applies to 13-year-olds. How does this age relate to the earlier mentioned preschoolers' knowledge of metarepresentational terms like *know, think, guess, remember, say, tell, ask* (Shatz, Wellman, & Silber, 1983)? And, more importantly, what does this age imply for theorizing the correlates of critical thinking performance, thereby exploring the age at which individuals can expect to be competent with critical thinking at all?

Firstly, although *remember* is a verb known by three-year-olds, 40% of the grade 6 students (mean age: 11 years and 8 months) inappropriately chose the verb *hypothesize* in Astington and Olson's (1990) task, instead of *remember*. This result is explained by pointing to the difference between *knowing* and using a verb on the one hand and *applying* metarepresentational verbs appropriately in different contexts, on the other. That is, the *remember* story of the Astington and Olson's multiple choice task is set in a science class. Participants read the following story: Last week in science class Mr. Jones showed Dave that acid solution turns litmus paper pink. This week there's a test. The first question says: What colour will litmus paper be when you dip it in acid solution?" *Dave thinks that it will be pink* (Astington & Olson, 1990). Given three distractors (Dave *hypothesizes*, *infers, observes* that it will be pink) participants need to choose the right alternative for the simple verb *think* by choosing that Dave *remembers* that it will be pink. Participants knew that *hypothesize* is a 'science word' but they did not know precisely what it meant (ibid.).

One of the conclusions Astington and Olson (1990) draw from their obtained results is that a significant development of understanding metacognitive and metalinguistic terms occurs during the high school years. At the beginning of students' secondary education, students' knowledge of an important set of metarepresentational verbs is not systematically applied in the different contexts in which these terms appear (ibid.). By the end of high school, individuals' understanding of them is much improved (ibid.).

Where does this information leave us? Although not having to choose an explicit metarepresentational verb, participants in our imaginary critical thinking task do need to *apply* an illocutionary verb or give a paraphrase of it rather than to just know the meaning of such a verb. So, will our individual who is competent to apply an appropriate illocutionary verb for expressing assigned intention have reached the end of high school like Astington and Olson's (1990) research participants?

An important specification needs to be made. Astington and Olson (1990) assessed individuals' understanding of the following verbs: *assert, concede, imply, predict, interpret, confirm* (as alternatives for the simple verb *say*) and *remember, doubt, infer, hypothesize, conclude* and *assume* (as alternatives for the simple verb *think*). These sophisticated verbs do not necessarily need to be applied in our critical thinking task. Moreover, Astington's and Olson's (1990) assessed metarepresentational verbs may not be comparable in all respects with a set of illocutionary verbs, or implicit references to them, needed to express assigned illocutionary force.

Answering that the speaker who said that "the birthday party began at 14.00!" was meant to say that "being late is not okay", instead of using the illocutionary verb *admonishing*, would count as an appropriate assigned intention. Using the simple metarepresentational verb *think* to express this answer is fine too. After all, what is aimed to assess is competence to interpret the mental state behind illocutionary acts appropriately, rather than to apply metarepresentational terms in the most specific form.

Thus, children who are competent to express their idea of the communicative intention implicitly, may very well be much younger than Astington and Olson's (1990) participants. However, what has become clear in this subsection is that asking participants to express their answer to a question about how a statement was meant to be taken, is asking to *apply* metarepresentational terms rather than to just *know* them.

On the basis of processed empirical information, described in this subsection, the following is theorized. There is reason to believe that knowledge of metarepresentational terms, the class of illocutionary verbs in particular, and competence to apply these verbs appropriately in different contexts, can be considered to be another requirement of the task to assign appropriate illocutionary force to others' oral speech acts.

4.2.3 Understanding the Concept of Interpretation

When we are asked to assign appropriate illocutionary force to an oral speech act, we are asked to make an interpretation. That is, although language is used to express a speaker's intention, that intention is often only partially present in the words themselves, and in some cases, such as indirect speech acts and irony, may be almost totally absent (Bonitatibus, 1989, see p. 326). "The speaker's meaning is represented internally by the

speaker and is therefore not directly accessible to a listener" (Bonitatibus, 1989, p. 329). Using our theory of mind, we are attempting to gain access to a speaker's mental state which underlies the speech act. Thus, while thinking of how the sentence "The birthday party began at 14.00!", uttered by a speaker with an admonishing intention, was meant to be taken, we are attempting to provide a correct interpretation. Hence, the task to assign appropriate illocutionary force to others' oral speech acts is believed to require an understanding of interpretation.

When do children have acquired an understanding of interpretation? Carpendale and Chandler (1996) have shown after examining 5 to 8-year-olds that only the 7 and 8-year-old children gave evidence of recognizing that ambiguous stimuli especially allow for warrantable differences of interpretation. While 5-year-olds easily pass a standard test of false belief understanding, only children of 7 or 8 ordinarily evidence an appreciation of the interpretive character of the knowing process (Carpendale & Chandler, 1996). Lalonde and Chandler's (2002) aim was also to investigate young children's earliest insights into the interpretive nature of knowing. This insight would need to encompass an understanding that it is possible for two persons to be exposed to *precisely the same* information or stimulus event and yet to arrive at *different* opinions about what is still the self-same reality (Lalonde & Chandler, 2002, see p. 192). The understanding that minds not only capture and record information about an external reality, but also work in the other direction by creatively constructing and uniquely interpreting reality, is characterized as an understanding of the "interpretive character of the mind" (ibid.).

The results of their research program, Carpendale and Chandler (1996) conclude, are consistent with the hypothesis that understanding the interpretive nature of knowledge is neither equivalent to nor achieved at the same time as understanding the possibility of false beliefs. "The understanding of interpretation is also distinct from the superficially similar issue of differences in taste. When subjects of any age so far tested discussed matters of taste they assumed that the locus of responsibility for such differences was to be found within the persons making such different judgments. By contrast, when older subjects of 7 or 8 discussed contrasting matters of interpretation they laid responsibility for such differences on the ambiguous nature of the message or the picture in question" (Carpendale & Chandler, 1996, p. 1703).

However, even though the 8–year-old subjects were competent at explaining differences in interpretation on simple tasks, they were still not equally competent at drawing the implication that it is difficult to predict how another person will interpret an ambiguous stimulus (Carpendale & Chandler, 1996). The competence demonstrated in the study by Carpendale and Chandler (1996) indicates, it is concluded, only a fledging insight into the interpretive nature of the knowing process – a developmental process that very likely continues through adolescence and probably early adulthood as well.

A simple understanding that different persons may differently interpret droodles ('puzzle parts' of a picture) is still a very long way from a more mature and thorough-going appreciation of the idea that *knowledge* is a personal construction (Lalonde & Chandler, 2002, italics added).

Having a concept of the "interpretive character of the mind", as Lalonde and Chandler (2002) phrase it, is likely to help when asked to assign appropriate illocutionary force to our admonishing speaker who utters that the birthday party began at 14.00. In our imaginary (partial) critical thinking task, we, participants, do not have to show understanding that different persons can interpret one and the same *picture* differently, as in the task to assess individuals' understanding of interpretation. What we do need to show is understanding that the speaker uniquely constructs a communicative intention which may not be represented literally in the very words of the message. Understanding that minds construct and uniquely interpret reality, includes individuals' understanding of interpretation as can be found in Lalonde and Chandler (2002). That is why understanding interpretation is believed to be one of the requirements of the task to assign appropriate illocutionary force to oral speech acts.

Interestingly with regard to theorize the age at which (one part of) critical thinking can be learned, is the following. The age of 7 or 8 at which children show an appreciation of the interpretive character of the knowing process, as found in Carpendale and Chandler (1996) and in Lalonde and Chandler (2002), coincides with the finding that children in the early school years, being 7 or 8 years old, understand that a message has a literal meaning all its own, somewhat independent of what the speaker means by it (Beal, 1989).

When an "interpretive theory of mind" starts to develop, the multiplist level of epistemological understanding begins to take hold: perhaps all knowing is only opinion (Kuhn et al., 2000). This concerns, as was explained earlier in this chapter, the first important shift in epistemological development. Initially, the objective dimension of knowing dominates to the exclusion of subjectivity and subsequently, the subjective dimension assumes an ascendant position and the objective is abandoned (Kuhn et al., 2000). The multiplist relocates the source of knowledge from the known object to the knowing subject, hence becoming aware of the uncertain, subjective nature of knowing (Kuhn et al., 2000). Thus, having a concept of interpretation and/or ambiguity seems to play a role in developing a concept of subjectivity.

There seems to be agreement about the age of 7 or 8 years at which children show an understanding of subjectivity, especially in matters of taste (Kuhn et al., 2000; Rowley & Robinson, 2007; Wainryb, Shaw, Langley, Cottam, & Lewis, 2004). This age coincides, similar to the aforementioned co-occurrance of understanding interpretation and understanding the distinction between literal and intended meaning,

with the finding that 7 and 8 year old children evidence an appreciation of the interpretive character of knowing process, as shown by Carpendale and Chandler (1996) and Lalonde and Chandler (2002). Rowley and Robinson (2007) do add that the understanding of subjectivity, demonstrated by 6- to 9-year-olds, is rather shallow and qualitatively different from that of the adolescents and adults. This nuance seems supported by other research (see e.g. Mansfield & Clinchy, 2002; Wainryb et al., 2004). All in all, regardless of debates about what *kind* of subjectivity understanding school age children have, there seems consensus about the age of 7 or 8 at which children show (at least some) understanding of subjectivity.

An understanding of subjectivity is important in epistemological development; once subjectivity is accepted and becomes dominant, objectivity is reintegrated and the highest level of evaluative epistemological understanding can be achieved. Hence, Kuhn and coleagues' (2000) drawn developmental relation between the start of developing an interpretive theory of mind and development of multiplist epistemological understanding seems plausible.

To summarize, having achieved an understanding of the subjective dimension of the knowing process, as reflected in understanding the interpretive character of the mind and in having achieved the level of multiplist epistemological understanding, seems important for the first part of our critical thinking definition. Paradoxically however, this achievement seems to obstruct performance of another part; examining the grounds of assigned intention. Kuhn (1999) expresses this paradox by explaining that at the multiplist level of epistemological understanding, assertions are understood as *opinions*, freely chosen according to the owner's tastes and wishes and accordingly, not subject to criticism. Critical thinking, in Kuhn (1999) 'defined' as the evaluation of assertions, is deemed irrelevant by 'the multipist'.

Although a start of the development towards multiplism can be found in children from about 7 or 8 years old, most adolescents have consolidated the transition to the multiplist level as can be found in Kuhn et al. (2000) and Kuhn (1999; 2008). Progression to the evaluativist position, in which assertions are understood as *judgments* that can be evaluated and in which the critical evaluation of statements is valued (Kuhn, 1999), seems dependent on the preceding multiplist position. Lalonde and Chandler (2002) seem to share Kuhn's and colleagues' (2000) developmental story. "(...) Children begin their careers as theorists of the mind by recognizing that others can 'get things wrong' (simple false beliefs); they progress to the realization that there is more than one way to be wrong (interpretation); then to more sophisticated notions of interpretation that include the possibility that there is (perhaps) more than one way to be 'right'; and eventually to the view that any and all claims to knowledge rest upon finding the best

available warrant for what must remain fundamentally doubtable knowledge claims" (Lalonde & Chandler, 2002, p. 196).

Knowing this all incited the present writer to analyze the requirements of one part of the critical thinking definition separately from those of the other parts. That is, so far, being competent to assign appropriate illocutionary force to *oral* speech acts have been ascribed to several competencies and cognitive understanding primary school age children (here referring to the age between 7 and 11) have acquired. How about the requirement(s) of attempting to assign illocutionary force to *written* speech acts and *examining the grounds* of assigned authorial or speakers' intention?

To anticipate one of the conclusions, the requirements of interpreting illocutionary force of oral speech acts seem the same as interpreting the force of written speech acts, though do not seem sufficient conditions. An additional requirement of interpreting illocutionary force of other people's use of language, in *writing*, is explored in the final section. We will find that the *additional* requirement of interpreting illocutionary force of written speech acts can be considered a *prerequisite* for the evaluating component of critical thinking; examining the grounds of assigned speakers' or authorial intention.

4.3 On the Requirement of "assigning appropriate illocutionary force to *written* speech acts and examining the grounds of assigned speakers' and authorial intention"

4.3.1 Having Attained the Level of Evaluative Epistemological Understanding

In the previous subsection a paradoxical process in the development of mature epistemological understanding was described. One level of epistemological understanding in which the evaluation of assertions is deemed irrelevant is a precondition of developing the next level in which the opposite belief is established. That is, once subjectivity is accepted and becomes dominant, objectivity is reintegrated (Kuhn et al., 2000).
The evaluativist reintegrates the objective dimension of knowing into the subjective dimension by acknowledging uncertainty of knowledge without forsaking evaluation (Kuhn, 1999; 2008; Kuhn et al., 2000). At this level, the evaluation of assertions, phrased as "critical thinking", is valued as a vehicle that promotes sound assertions and enhances understanding (Kuhn, 1999; 2008; Kuhn et al., 2000).

A similar representation of a paradoxical process in cognitive development is offered by Olson and Astington (1993). Olson and Astington argue that for learning "autonomous" texts, or objective knowledge, children have to learn to set aside the pragmatics (the intentions of a speaker or writer) in order to focus on the semantics

(the meaning of a statement). Understanding textbooks requires children to find relations among propositions expressed in the text (Olson & Astington, 1993). "Management of the semantics of these statements is both fostered and required in dealing with objective knowledge. But it is this very stance that makes some aspects of critical thinking difficult or impossible. Critical thinking about texts and beliefs requires that the thinker again come to see textual statements as expressions of some author's beliefs. The thinker must come to see (or imagine) the author as holding those beliefs for some reasons. Those reasons may be valid or invalid, relevant or irrelevant, decisive or indecisive. Critical thinking and critical reading are based on just this ability to recover the putative intentions of the writer and to examine their grounds" (Olson & Astington, 1993, p. 18).

Learning to take objective statements as expressions of belief, so one can evaluate statements, requires a reversal of the first stage in which children set aside the pragmatics of statements (ibid.). Understanding statements of cultural knowledge as the expression of an author's intentions, requires children to see through the semantics of expressions to the pragmatic functions of those expressions (ibid.).

Thus, Deanna Kuhn described a paradox in developing the belief that 'critical evaluation' is relevant. Similarly, Olson and Astington (1993) describe the paradox that setting aside the pragmatics of statements at one stage of cognitive development is important for learning critical thinking about texts and beliefs in which focusing on the pragmatic function of statements is *central*. What also can said to show resemblance is the finding of adolescence in which the transition towards multiplism occurs in most cases (Kuhn, 1999; 2008; Kuhn et al., 2000; Mason et al., 2006) and Olson and Astington's (1993) statement of children of the middle school years, that is between 11 and 14 years old, whose conspicuous failure is in criticizing and otherwise evaluating texts that they read. Perhaps the following applies. Young adolescents might receive no incentive to 'otherwise evaluate statements' because they are multiplists who understand assertions as *opinions* rather than *judgments* or still are absolutists for whom "assertions are *facts* that are correct or incorrect in their representation of reality" (Kuhn, 1999; 2008; Kuhn et al., 2000; Kuhn & Park, 2005).

Two suggestions can be derived from the above-described empirical data. The first regards the idea that the assignment of illocutionary force to *written* speech acts may require having attained the level of evaluative epistemological understanding.
To complicate matters, this requirement seems best to regard as an *additional* requirement of interpreting illocutionary force of *written* speech acts because the requirements of interpreting illocutionary force of oral speech acts seem necessary for interpreting written speech acts all the same. It just may not be a sufficient condition.
The second suggestion regards the idea that examining the grounds of assigned authorial and speaker's (communicative) intention also calls for evaluative epistemological

understanding. What is more, it seems a prerequisite. Argumentation for these suggestions is set out in the remainder of this subsection.

First of all, assigning illocutionary force to *written* speech acts seems more difficult than the assignment of illocutionary force to *oral* speech acts. This can be derived from Olson and Astington's (1993) statement that children between 11 and 14 years old are quite competent in comprehending the texts that they read, in recalling them, paraphrasing them and extracting the gist. "Their conspicuous failure is in criticizing and otherwise evaluating the texts that they read. Their respect for the official knowledge of the culture, conveyed, for example, in textbooks, leads children to an undue respect for cultural knowledge and a lack of respect for their own beliefs. Knowledge is identified with the official view. The result is the absence of critical analysis of "objective" knowledge" (Olson & Astington, 1993, p. 17). Haas and Flower (1988) equally hold that many students can paraphrase the propositional content of a text. "What they often *fail* to *do* is to move beyond content and convention and construct representations of texts as purposeful actions, arising from contexts, and with intended effects. "Critical reading" involves more than careful reading for content, more than identification of conventional features of discourse, such as introductions or examples, and more than simple evaluation based on agreeing or disagreeing" (Haas & Flower, 1988, p. 170).

Separating propositional content and illocutionary force is grasped by school-age children when speech occurs in context (Winner & Leekam, 1991). Or, when children grasp an understanding of ambiguity like Mitchell (1996) perhaps would reason. However, the problem again becomes significant when dealing with language out of context, as occurs with written texts (Olson, 1977, as cited in Olson & Astington, 1993).

Olson and Astington (1993) hold that the possibility of criticism of 'official knowledge' depends on coming to see the lapidary statements of cultural knowledge as the expression of an author's intentions. A crucial question now arises. What, in cognitive development, could support the acquirement of understanding objective statements as expressions of an author's intentions? It can be held that one can very well be a multiplist if one understands that the knowledge statements a culture provides, are the expressions of an author's intentions. After all, at the multiplist level, the subjective dimension of knowing dominates (Kuhn, 1999; 2008; Kuhn & Park, 2005; Kuhn et al., 2000). At the multiplist level, assertions are understood as opinions, reality is deemed not directly knowable and knowledge regarded as generated by human minds (Kuhn, 1999; Kuhn et al., 2000).

An opinion may said to have a different (epistemic) status than human *intentions*. A multiplist is likely to recognize the author(s) behind a text but to also regard authors' intentions as a purely subjective matter. Hence, those who find themselves at the

multiplist level, conceive no basis for judging the strength of an assertion, except possibly its power to persuade (Kuhn, 1999).

This line of reasoning may imply that Olson and Astington's (1993) idea that coming to see the statements of cultural knowledge as the expression of an author's intention is the requirement of understanding that 'criticism is possible', lacks an important feature. That is, applying Deanna Kuhn's model, the principal thing for coming to understand that the 'official statements' a culture provides allow of critical evaluation, might be the understanding of assertions as *judgments* rather than *opinions* (or purely *subjective* communicative intentions...).

Understanding assertions in terms of judgments rather than opinions reflects the crucial difference between the level of multiplist epistemological understanding and the evaluative level. The multiplist and the evaluativist share their understanding of reality as not directly knowable and of knowledge as being uncertain (Kuhn, 1999; Kuhn et al., 2000). The crucial difference between them, again, is the following. Multiplists understand assertions as opinions which makes the critical evaluation of assertions irrelevant; "You can't prove an opinion to be wrong because an opinion is something somebody holds for themselves" (Kuhn, 1999). Evaluativists on the contrary understand assertions as judgments which makes critical evaluation relevant. For this reason it seems plausible that assigning appropriate illocutionary force to *written* speech acts that provide no explicit indication of authorial intention, requires the level of evaluative epistemological understanding. The same may hold for the *examination* of assigned speaker's and authorial intention. The latter deserves closer attention.

One element in Deanna Kuhn's model of epistemological understanding might be problematic in applying to this dissertation's model of critical thinking. In Kuhn's model critical thinking refers to the evaluation of *assertions* (Kuhn, 1999) and its understood value, at the evaluativist level, is described as a vehicle that promotes sound assertions and enhances understanding (Kuhn, 1999; 2008, Kuhn et al., 2000; Kuhn & Park, 2005). Kuhn et al. (2000) do distinguish judgment domains. They distinguish judgments of *pleasingness* (personal taste), *beauty* (aesthetic judgments), of *good* (value judgments) and of *truth* as differentiated into truth judgments about the social world and about the physical world (Kuhn et al., 2000).

However, despite distinguishing different judgment domains, judgments in all of them do seem to concern *assertives* to use Searle's (1979) framework for referring to just one of the things people do with words. To reiterate, critical thinking in this dissertation is not limited to attendence to *assertives*. Critical thinking, as conceptualized here, includes attendence to other possible illocutionary acts such as attending to (oral or written) *directives*, *commissives, expressives* and *declaratives* which follows Searle's (1979) classification of the number of things we do with language. The problem is now:

Can we expect to need evaluative epistemological understanding in order to appropriately assign illocutionary force to *directives, commissives, expressives* and *declaratives* and to examine the grounds of the assigned intention to these classes of illocutionary acts?

Suppose we attend to an *expressive*, for example in a class of English literature, uttered by Cordelia in Shakespeare's *King Lear*. "Unhappy that I am, I cannot heave my heart into my mouth" (Shakespeare, ed. by Foakes, 1997). This is what Cordelia, one of Lear's three daughters, says when asked to testify her love for her father who intends to determine which share of his kingdom each of his daughters should get. Imagine we interpret the illocutionary force as expressing the attitude of not feeling comfortable with expressing love as a daughter for a father as a way to get something for it in return. Suppose our English teacher credits this as an appropriate interpretation.[18] Suppose the critical response that arises from this way of taking Cordelia's *expressive* occurs in the form of asking: To what extent is asking to testify one's love on demand asking for *love*? Through a whole line of reasoning we could end up with the judgment that we 'agree with' Cordelia's attitude of not feeling comfortable with giving her testimony because it may not be about love.

The task to assign appropriate illocutionary force to Cordelia's *expressive* requires to regard the text in which it is uttered as one that is full of (implicit) judgments of the author. Having this insight may help to be aware that although Cordelia is presented as a character, interpreting Cordelia's utterance is a way of interpreting what *Shakespeare* wants his readers to think of. Understanding Cordelia's utterances as assertions that Shakespeare presents as opposed to understanding them as opinions or private preferences of an imaginary individual, thus seems to call for evaluative epistemological understanding. Looking at it this way, the task to assign appropriate illocutionary force to Cordelia's *expressive* may ultimately concern the task to assign appropriate illocutionary force to one of Shakespeare's *assertives*.

Be this as it may, if we were multiplists, we might have a hard time to see Cordelia's utterances as a form of Shakespeare's 'authorial intentions' that must be interpreted because they do not provide explicit indication of how to take them.

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[18] The sentence about not being able to 'heave my heart into my mouth' (see 1.1.91-93), is followed up, as also noted in the previous chapter, by the sentence: "I love your majesty according to my bond, no more nor less" (Shakespeare, ed. by Foakes, p. 164). The word use of 'I love your majesty according to my *bond,* no more, nor less' (italics added) may indicate feeling uncomfortable to express the love in the (blood) bond between fathers and daughters. In Cordelia's asides she wonders what to testify (1.1.62) which indicates some form of reflection and says "my love's more ponderous than my tongue" (1.1.78) which indicates the 'presence' of love and some conflict with putting it into words. In 4.4.28-29 she utters: "But love, dear love, and our aged father's right: soon may I hear and see him" (ibid., p. 323). These example's of the context in which Cordelia performs an expressive at least make the other considerations less likely to meet conditions of appropriateness.

The same seems to apply to the task of examining the grounds of assigned authorial intention. Being multiplists this task may pose difficulties to us because we might think: it is all in the eye of the beholder. Who am I to judge? "Whatever" is what the adolescent multiplist is likely to say now (Kuhn, 2008). Hence, understanding complete speech acts, whether *assertives, directives, commissives, expressives* or *declaratives*, as containing judgments, subject to critical evaluation, seems required for evaluation of them.

It is time to update the project of 'visualizing' the critical thinker in terms of acquired competencies and age. Our critical thinker in section 4.2 was hypothesized to be competent with several competencies of which most of them are likely to be acquired in the school years by children between 7 and 11 years old. We can now add to the theorizing that the appropriate assignment of illocutionary force to *written* speech acts and *examination* of assigned speaker's and authorial intention require the level of evaluative epistemological understanding.

How old can we expect our critical thinker to be now? The answer may be surprising. "By adulthood, many, though by no means all, adolescents will have reintegrated the objective dimension of knowing and achieved understanding that while everyone has a right to their opinion, some opinions are in fact better than others, to the extent they are better supported by argument and evidence. Justification for a belief becomes more than personal preference. "Whatever" is no longer the automatic response to any assertion – there are now legitimate discriminations and choices to be made" (Kuhn & Park, 2005, p. 113-4). "The pure multiplist pattern was shown by 29% of the total sample (37 of 129 participants), which attests to the strength of this form of thought among adolescents and adults in our culture" (Kuhn et al., 2000, p. 324).
The developmental transition from multiplism to evaluativism is characterized as "fragile" by Kuhn and Weinstock (2002) and "the one most likely never to be achieved".
In her later work Kuhn (2008) still holds that many adults remain multiplists for life, never progressing to the evaluativist level.

Thus, the individual who is competent with *every* mental activity that is included in the critical thinking definition this book offers, is expected to be a young or even older adult, as theorized in this chapter. However, critical thinking was treated within a developmental framework. This means there is a basis now for theorizing how individuals acquire critical thinking competence. It is expected, as will be shown in the next chapter, that individuals can learn critical thinking during the course of their cognitive development with the appropriate scaffolds schools can provide.

Concluding Remarks

In this chapter the correlates of critical thinking performance have been hypothesized. The task was to theorize the requirements of critical thinking, as defined in this dissertation, from a cognitive developmental perspective. The approach was to depart from the mental activities that are referred to in the critical thinking definition; assigning appropriate illocutionary force to another person's speech act and examining the grounds of assigned speakers' or authorial intention. Anticipating measuring critical thinking, as conceptualized here, the central question was: What could be the correlates of critical thinking performance?

Concentrating on one part of the critical definition, assigning appropriate illocutionary force to an *oral* speech act, it was found that this part of critical thinking may require (at least) three competencies. These are (i) competence with the say-mean distinction, (ii) having acquired metarepresentational terms, the class of illocutionary verbs in particular and being competent to apply these terms in different contexts and (iii) having a concept of interpretation. For the sake of argument, an operationalization of the activity to assign appropriate illocutionary force to an oral speech act was imagined in a simplified format. An individual, participating in a critical thinking task (henceforth CTT), could be presented with a person or a puppet who utters towards another creature that "the birthday party began at 14.00!", expressed with the illocutionary force of an admonition. The participant can be asked how the statement was meant to be taken in terms of: What do you think Billy (as referring to the speaker in the form of a puppet or real person) *meant* by what he said?, emphasizing the word "meant".

Participants who distinguish two levels of communication, literal and intended meaning (say-mean), are likely to answer this CTT question in terms of responding that the speaker meant to say that being late is not okay or something of the same tenor. That is, more likely than participants who do not make this distinction. An application of available empirical data on children's ability to make the say-mean distinction, led to the expectation that participants between 6 to 8 years old pass this part of the CTT.

Those participants who are competent to express their answers with 'fancy' illocutionary verbs, like *admonishing*, can expect to have reached the late high school years as can be derived from results of a study by Astington and Olson (1990). Participants' implicit references to the speaker's intention or use of a simple 'meta-verb', can still be judged to meet conditions of appropriateness. After all, the task aims to assess competence to interpret communicative intention, or put differently, ability to infer mental states from other people's use of language. The task is not to assess the use of sophisticated illocutionary verbs. Thus, our participant is still expected to be a school age child between 6 to 11 years old. What became clear though is that answering

questions of how utterances are meant to be taken, requires the competence to *apply* meta-representational terms in different contexts rather than to just know them.

Asking participants what a speaker meant by what was said is asking, almost by definition, for an interpretation. Participants need to understand that speakers uniquely construct a communicative intention which may not be represented in the very words of the message. Applying literature on children's understanding of the 'interpretative character of the mind' learned that a 'fledging insight' of this understanding can be found in children who are 7 or 8 years old (Carpendale & Chandler, 1996; Lalonde & Chandler, 2002). It was concluded that competence with the concept of interpretation may be the third requirement of this part of critical thinking.

Theorizing required competence for the other parts of the critical thinking definition, assigning appropriate illocutionary force to *written* speech acts and *examining the grounds* of speakers' or authorial intention, resulted in a major shift of hypothesized age. It turned the critical thinker of section 4.2, roughly being between 7 to 11 years old, into a(n) (young) adult. In section 4.3 children's difficulty to deal with language out of context, as occurs with written texts (Olson and Astington, 1993), was applied to the theoretical questions of this chapter. The same applies to referring to research, indicating that children between 11 and 14 years old fail to "criticize and otherwise evaluate the texts that they read" (ibid.). The insight started to take root that interpreting written speech acts is likely to pose far more difficulty to individuals than interpreting oral speech acts in which the context provides explicit clues of how to take utterances.

However, competence with: the say-mean distinction, metarepresentational terms and the concept of interpretation still seem requirements of interpreting illocutionary force of written speech acts. It is suggested to consider these requirements to be necessary and sufficient (within this theoretical framework) for interpreting illocutionary force of *oral* speech acts and necessary but not sufficient requirements for interpreting illocutionary force of *written* speech acts. In the next and final chapter this suggestion is illustrated by the use of examples.

Applying Deanna Kuhn's model of epistemological understanding, the idea was proposed that children who show problems to interpret texts that provide no explicit indication of authorial intention and who fail to 'critically evaluate' written statements, maybe absolutists or multiplists. Why evaluate assertions if they just reflect personal opinions or preferences? Who am I to judge other people's opinions to which they have all the right? Or why evaluate statements if we believe, like we do at the absolutist level of epistemological understanding, that assertions are *facts* that are correct or incorrect in their representation of reality (Kuhn, 1999)? Do not the facts speak for themselves?

It is suggested that school age children will show difficulty with the other activities of critical thinking because they receive no incentive to interpret intentions of invisible authors and who, on average, do not see much point yet in the evaluation of utterances.

Understanding assertions as *judgments*, at the evaluative level of epistemological understanding (Kuhn, 1999), may be the important requirement of the other parts of critical thinking. Applying Deanna Kuhn's model of epistemological understanding, led to draw the following conclusion. Understanding written speech acts, whether *assertives*, *directives*, *commissives*, *expressives* or *declaratives*, as containing 'authorial judgments', may require the level of evaluative epistemological understanding. This level is attained by many adolescents, though by no means all, at adulthood (Kuhn & Park, 2005).
What is more, having attained the level of evaluative epistemological understanding may be considered to be the *prerequisite* for examining the grounds of speakers' and authorial intention.

At this point of the present study a hypothesis on the correlates of critical thinking performance can be derived from the above-noted theoretical statements.
It is hypothesized that critical thinking performance may correlate with performances on tasks assessing competence with the say-mean distinction, metarepresentational terms, concept of interpretation and evaluative epistemological understanding.

Suppose empirical researchers grant plausibility to the hypothesis on the correlates of critical thinking performance and schools adopt this dissertation's paradigm of critical thinking. What could schools, being one of the environmental factors that influences cognitive development, do to support the learning of critical thinking by their pupils?

The final chapter examines the instructional dimension of critical thinking. However, it is not that simple. Aside from exploring potentially effective instruction methods that support the learning of critical thinking, it must also pay attention to the school culture in which instruction methods are offered. A school culture that may or may not (at all) contribute to their effectiveness.

Chapter V

#

Exploring Ideas on Scaffolding the Learning of Critical Thinking in the Context of School

Introduction

Good and bad news for schools. The good news is that schools do not need to insert another subject, titled "critical thinking", into their already overstuffed curricula. That is, when accepting this dissertations' conceptualization of it and when granting plausibility to the related hypothesis on the correlates of critical thinking performance.

Why would critical thinking be embeddable within the regular curriculum? Suppose, for the sake of theory building, that the hypothesis which was offered in the previous chapter gains empirical support. What would it mean for supporting in schools what now are words on paper? It implies that schools regard the learning of it as founded on a metacognitive *process*, starting at primary school. A process that is embedded within individuals' cognitive development. Scaffolding acquirement of critical thinking competence then needs educational support of its requirements. This support, partly in the form of instruction methods, can be integrated in regular subjects. Potentially effective instruction methods, that is, effective with regard to influencing the learning of critical thinking, are presented in this chapter. High and lower level pupils in the adolescent years are addressed and readers served with level-appropriate examples.

The bad news for schools is saved for the end of this introduction. First, how is this chapter built up? In section 5.1 it is proposed what schools, working with children, can do to support their pupils' learning of one part of critical thinking; interpreting illocutionary force of oral speech acts. We will find that supporting the theorized requirements of this part of critical thinking is perfectly suitable at this age. These requirements, to repeat, are competence with: the say-mean distinction, metarepresentational terms and the concept of interpretation.

In section 5.2, an intermezzo, it is argued that the instruction methods that were described for supporting childrens' learning of this part of critical thinking are also suitable to use with adolescents and (young) adults. That is, provided they are adapted

age appropriately and meet the interest of the adolescents or young adults a teacher works with.

In section 5.3 the question of how and when to support individuals' learning to interpret illocutionary force of *written* speech acts and to *examine* the grounds of assigned speakers' or authorial intention is addressed. The reader will discover why these parts of critical thinking are argued to be most appropriate to offer to pupils from the age of (early) adolescence and not before. Thus, what works for children will work for adolescents and (young) adults but not the other way around. Justification for this belief can also be found in the third section. When it comes to supporting the development of mature epistemological understanding for example, children may first need to progress to the multiplist level, *preceding* evaluative understanding. Individuals, to repeat, appear to attain the multiplist level of epistemological understanding at adolescence (Kuhn, 1999; 2008; Kuhn et al., 2000; Kuhn & Park, 2005). For this reason, it makes sense to offer extra educational support in order to help pupils attain the evaluative level of epistemological understanding, *once* they have become multiplists. Evaluation is irrelevant for multiplists as assertions, understood as opinion*s*, are believed to be freely chosen by and accountable only to their owners (Kuhn, 1999). What can teachers do to support adolescents' transition towards evaluativism in which evaluation *is* deemed relevant?

Last and least... What about the bad news for schools? The bad news may be that while it does not seem necessary to add another subject into the regular curriculum, the regular school culture may need to change dramatically. That is, aside from educational influences stemming from the regular curriculum, there also exist influences that stem from what others have called "the hidden curriculum". The hidden curriculum describes what is "implicit and embedded in educational experiences in contrast with the formal statements about curricula and surface features of educational interaction" (Sambell & McDowell, 1998). Theoretically, it is possible that schools, aiming to scaffold critical thinking, as conceptualized here, already provide a school culture which contributes to the effectiveness of proposed instruction methods. In section 5.4 an ideal school culture is presented as one in which teachers of adolescents for example tacitly transmit valuing rationality for intrinsic reasons and have attained evaluative epistemological understanding themselves. These ideal schools also organize panels in order to make teachers and pupils partners in making sense of education. Realistically, it is likely that schools at least need to make some arrangements to effect the *beneficial* powers of the hidden curriculum.

The concluding remarks summarize proposed ideas on both levels of the educational intervention, instruction and school culture, to scaffold critical thinking.

5.1 How to Support Children in Learning to Interpret Illocutionary Force of Oral Speech Acts

5.1.1 Using Metarepresentational Terms Explicitly by Teachers

In this subsection it is suggested that one of the ways in which to support the learning process of critical thinking by children could be to explicitly use metarepresentational terms by teachers in the classroom. The argument for believing that this idea may be effective for supporting a part of children's learning process of critical thinking, revolves around the phenomenon of modeling. Using metarepresentational terms that allow to think about thinking (or talk) may provide pupils with a model of how to think about thought and talk *themselves*. And how to take someone's statement, e.g. as a claim, a guess, or a 'quote' (e.g. of mum's statement), *themselves*. Available empirical research which points to the (un)tenability of this first idea, comes up for discussion in 5.1.2.

Tishman, Perkins and Jay (1995) also plead for modeling and exemplifying a language of thinking in the classroom and to provide explanations about the purpose and use of language of thinking terms and concepts. For example, teachers who explain to their pupils what the word *conclusion* means, also need to explain how to appropriately draw their own conclusions and identify the conclusions of others (Tishman et al., 1995). Or, explain the purpose of the word *claim* in a news report that states: "witnesses claim to have seen a blond man running from the scene of the crime" (ibid., see p. 15).

By articulating teacher's thinking and reflecting upon it, teachers may encourage children between the ages of 6 and 11 to do the same. Teachers *articulate* their thinking by using metarepresentational terms like *think, know, expect, remember, wonder about, have decided on, guessed, inferred, concluded* (Olson & Astington, 1993). Teachers *reflect* on their thinking by saying to a class for example: "At first I *thought* that the mouse would enter the hole in which there was some cheese, but then I *remembered* the mouse had spotted his sister who came out of the hole with a big piece of cheese. Hohh, when I follow my sister, the mouse could have thought, she may share a piece with me!"

The narrative character of the previous example leads to Astington (1990) who refers to a study of Kirkwood and Wolfe of 1980, in which it was found that there are three or four times as many metarepresentational terms (denoted here as "propositional attitude verbs") in stories than in science texts. In addition, there is a greater variety of propositional attitude verbs in, what was called, "language arts texts" (ibid., see p. 166). Terms like *advise, assure, convince, demand, doubt, fear, forget, guess, intend, request, suggest* and *wish* all occur in stories and not in science texts (ibid.). It may be likely, as Astington holds, that children acquire competence with these verbs and their presuppositions from reading stories (ibid.). It equally may be the case that teachers

who read stories and let children read stories themselves in which a lot of metarepresentational terms are used, facilitate children's acquiring competence with "the language of mind". "The development of narrative skill is accompanied by increasing competence with metacognitive terms [Astington, 1990]. Preschool children's theory of mind is implicit, embedded in their social understanding. Metacognitive language helps make it explicit" (Astington, 1998, p. 37).

In the previous chapter it was hypothesized that knowledge of and competence with metarepresentational terms is required for critical thinking as conceptualized here. When participants are asked to interpret illocutionary force of a speech act, they need a language to communicate their answer. When a child understands that a speaker *meant to say* that being late late is not okay by *saying* "the birthday party began at 14.00!", expressed by a speaker who utters this sentence with an 'admonishing intention', the child needs a vocabulary to express this understanding. Younger children may not have acquired a word like "admonishing" to refer to the illocutionary act of this mental state. Yet they are believed to be competent to express their understanding of illocutionary acts all the same. For example by using simple metarepresentational words like 'Billy *thinks* that the other puppet should have come to the party in time'.

Thus, educational efforts to help children express their understanding of illocutionary acts and to elaborate their metarepresentational vocabulary, could be employed by modeling this 'language of mind'. What empirical data are available to examine the (un)tenability of this idea? The next subsection addresses this question.

5.1.2 Potential Effectiveness

Do we have empirical data that points to potential effectiveness of the above-described idea? Yes and no. In 1992, Moore, Furrow, Chiasson and Patriquin held, as cited in Olson and Astington (1993), that preschool children whose mothers use more metacognitive terms when the children are two years of age are themselves more likely to use them at four years of age. They perform better on tasks assessing their comprehension of the terms (ibid.). In 1990, Moore, Pure and Furrow showed, as cited in Olson and Astington (1993), that performance on tasks that assess comprehension of metacognitive terms correlates with measures of children's understanding of their own and others' belief.

From the above-mentioned studies Olson and Astington (1993) infer the hypothesis that the same effects will occur in the classroom. Teachers who make more use of metacognitive and metalinguistic language will have students who do the same (ibid., see p. 20). Moreover, these students will be better able to understand their own and others' beliefs and intentions (ibid.).

Through a one-year longitudinal study, Hughes and Dunn (1997) have shown that frequency of metacognitive talk predicted children's theory-of-mind task performance, independent of general verbal ability. More recently, Taumoepeau and Ruffmann (2006) claim to have demonstrated that "mothers' use of desire language with 15-month-old children uniquely predicted a child's later mental state language and emotion task performance, even after accounting for potentially confounding variables such as earlier child language, mother SES, mothers' own emotion understanding". To Taumoepeau and Ruffmann, their study is the first to examine, in very young children, the effects of mental state language beginning before children use any desire, emotion or other mental state language themselves.

It should be noted that there also exists research that can be interpreted as, not so much *refuting* the idea that using metarepresentational terms facilitates theory of mind understanding, but at least as raising questions about the *independent* effect of it. Lohmann and Tomasello (2003) performed a training study about improving false-belief understanding by 3-year-olds, interpret their results, *inter alia*, as yielding evidence that the main effect (of improving false belief understanding) in one of the research conditions of their experiment, was primarily tied to the structure of sentential complement syntax[19] instead of to the semantics of mental verbs. To complicate matters, Lohmann and Tomasello's main conclusion is that both engaging in perspective-shifting discourse using contentful linguistic symbols (not necessarily mental state language) and the ready availability of sentential complement syntax as a representational format seem to make independently important contributions to children's development of false-belief understanding. More on this issue can be found in subsection 5.1.4.

Similarly, Turnbull, Carpendale, and Racine (2008) deem the view of language and mental states, assumed by most of the research concerned with counting mental state terms, problematic. Turnbull et al. (2008) claim to have demonstrated that "mothers' talk about the psychological world predicts their children's false-belief understanding, even when controlling for the use of mental state terms". Their data are interpreted as showing that talk about the psychological world is not reducible to a

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[19] De Villiers and de Villiers (2000) explain what is meant with the "language of complementation" which is a central notion in their theory. "Sentences involving mental states require an embedded proposition called a *complement* in linguistics: He thought *it was a lion*. Complements appear under verbs of desire (*want*), communication (*say, ask*) and mental state (*know, think, forget*). Some of these verbs can take a simple NP (She wants *a ride*) but they can also take a whole embedded proposition (We forgot *that he lost the key*). Complements provide a way to discuss lying or mistakes: He said *he had salad for lunch* (but he really had pizza)*;* He thought *he left the door open*" (De Villiers & de Villiers, 2000, p. 196). The overall sentence can be true, though the embedded complement can refer to a proposition that is false, e.g. in this latter case he shut the door (ibid.). Complementation provides a means for representing someone's mental world, and that mental world could be distinct from our mental world (ibid.).

mental state lexicon. Turnbull et al. even argue that although they have "focused on false-belief understanding, the same processes involved in learning the meaning of words referring to the psychological world should be involved in the development of children's understanding of emotion, mind, and morality".

These results may indicate that using metarepresentational terms explicitly in the classroom, may not yield an *independent* effect on pupils' own competence with these terms. However, false-belief understanding, the core focus of research on the relation between using mental state terms and theory of mind (ToM) competence, should perhaps be viewed as distinct from the type of ToM competence we seek to improve to support *critical thinking*. A result which may point to the tenability of this consideration, is that test scores on understanding meta-representational terms of students between 13 and 17 years old were correlated with their critical thinking test scores; this vocabulary thus seems important for critical thinking (Astington & Olson, 1990). As noted in the previous chapter, critical thinking in Astington and Olson (1990) was measured with the Cornell Critical Thinking Test. The established correlation between critical thinking and competence with metarepresentational terms in Astington and Olson's study may not hold when critical thinking is operationalized according to this dissertation's conceptualization of it. Reasons why some extrapolation can be expected can be found in the previous chapter.

What studies by Lohmann and Tomasello (2003) and Turnbull et al. (2008) suggest is that 'talking about the psychological world', whether using explicit mental state terms or not, plays a role in children's developing theories of mind. The latter considerations prompt to go to the next idea that perhaps in combination with the above-described idea may have their effects on the teaching of critical thinking.

5.1.3 Talking About Misunderstandings

As we know, one part of critical thinking skill in this dissertation is defined as: attempting to assign appropriate illocutionary force to the (oral and written) speech acts of others. To reiterate, interpreting the illocutionary force of others' speech acts does not call for interpreting psychological motives for saying or writing the things others do. Rather, interpreting illocutionary force calls for recovering the force *as intended by the speaker or writer*, e.g. as a request, a prediction, a question. In the sequence of utterances, Searle, Kiefer, and Bierwisch (1980) illustrate, "Please leave the room", "You will leave the room" and "Will you leave the room", the same proposition, that you will leave the room, is expressed in the performance of three different illocutionary acts; one is request, one is prediction and one is a question. Critical thinkers attempt to assign appropriate illocutionary force by looking for indicators of how an utterance is meant to

be taken; sometimes the force is indicated by the explicit use of a metalinguistic verb like "I *ask* you to leave the room". But the force may be communicated simply by gesture and intonation (Astington, 1994).

It is Tomasello (1999) who considers the process of communicative breakdown and repair as a kind of discourse that may be important in children's coming to understand others as mental agents. Tomasello (1999) describes talking about misunderstandings as discourse about the *form* of what the speaker has just said. Sometimes the adult, Tomasello (1999) explains, fails to comprehend the child's utterance, or vice versa, and so asks for a clarification. Asking for clarification, specifically, is described as discourse about the *form* of what the speaker has just said. The experience by children of misinterpretations of their communicative intentions and clarification requests of their intentions, put children in the situation in which they formulate an utterance with some more or less coherent hypothesis of the informational needs of the listener (Tomasello, 1999). Then that hypothesis is demonstrated to be either accurate or faulty (ibid.). These situations lead children to discern why the adult does not comprehend the utterance; perhaps the listener did not hear it, perhaps the listener is not familiar with this specific linguistic formulation and so forth (ibid., see p. 178). "In all, it would seem that these kinds of misunderstandings and repairs are an extremely rich source of information about how one's own understanding of a linguistically expressed perspective on a situation may differ from that of others" (Tomasello, 1999, p. 178).

Applying the latter to the aim of scaffolding children's learning of critical thinking, teachers may take up the role as mediators of recovering the putative intentions of speakers. The occasion pre-eminently for talking about illocutionary force, or *form*, as Tomasello (1999) denotes it, is when the teacher senses that misunderstanding is at hand. Teachers of children from the age of 7 or 8 years old can effectively do this. See the previous chapter for the justification of this developmental statement. Before children are about 7 to 8 years old, children do not recognize the fact that the communicative quality of messages can explain misunderstandings (Beal, 1989).

When a child comes home from school and says "He hit me" and her interlocutor responds with "Who?" or else assumes it was Jimmy when it was not, by asking "Who" the interlocutor signals her limited knowledge of the situation (Tomasello, 1999). With these questions the child is helped to understand why one of the interactive partners understands a situation or utterance in a way that the other does not (ibid.).

When the teacher is not sure (s)he understands what the child is trying to communicate, (s)he can ask for clarification e.g. in the form of: "Amy, are you saying that it *will* freeze tonight which could have us on the ice tomorrow or are you *hoping* that it will freeze tonight?". In other words, is the speaker performing an illocutionary act of

predicting or of expressing hope? When the teacher senses that one child may not properly understand the illocutionary act another child performs, (s)he can mediate understanding by asking to the listener: "What do you think Peter meant by what he said?". The teacher can then mediate a metatalk between two children about the communicative intentions of speakers and encourage reflection upon the reasons why listeners sometimes do not understand or misunderstand the illocutionary force. Maybe it was the message itself that did not meet the listener's (just) informational needs? Talking about *mis*understandings is talking about *understanding* communicative intention and underlying mental states implicitly. Doing this may also help children to develop a *standard* of appropriateness in each other's attempts to understand the things we do with words. That is, experiencing that another person could not understand what we tried to communicate because we did not use particular words, may raise awareness of the linguistic character of sending effective messages.

When we talk about what speakers said and what was meant by it, we make the say-mean distinction. Competence with the say-mean distinction was theorized in the previous chapter to be one of the requirements of critical thinking. Understanding an utterance requires from children to recover the mental state or intention of a speaker (Bonitatibus, 1989). Are empirical indications available to expect that talking about misunderstandings in the classroom bears effectiveness to enhance children's understanding of mental states?

5.1.4 Potential Effectiveness

Two views with regard to the process which facilitates children's understanding of mental states (false belief understanding in particular) can be seen as conflicting. The first view is that discourse that emphasizes different points of view with regard to the same event or object is crucial for developing the child's understanding of mental states. Harris (2005) adopts this discourse-based model. Harris argues that conversational discourse can be a vehicle for conveying the fact that people differ in their point of view and in the information they have available to them, irrespective of whether a particular party to the conversation makes any explicit lexical reference to any given mental state.

The second view, adopted by De Villiers and de Villiers (2000), proposes that the syntax, that is, the *grammatical* form (sentential complement syntax), of the way adults talk about beliefs and related mental states provides children with a necessary representational format for dealing with false beliefs. Perhaps the complex syntax, De Villier and de Villiers propose, that is used for describing mental events makes possible the representational changes that allow for understanding false beliefs.

Lohmann, Tomasello, and Meyer (2005) conclude on the basis of a training study about false belief understanding performed by Lohmann and Tomasello (2003), that the hypothesis of De Villiers and de Villiers (2000) that sentential complement constructions provide children with a convenient (if not necessary) representational format for conceptualizing and talking about false beliefs, can be supported.

Ironically, Harris (2005) also refers to Lohmann and Tomasello (2003), and other studies, but regards obtained results as *support* for the 'discourse view'. Harris suggests that mastery of complement structures is neither sufficient nor necessary for performing well on false-belief tasks. It is true that Lohmann and Tomasello's (2003) training study supports the, by Harris (2005) adopted, discourse view. Though this is not the whole story. Lohmann et al. (2005) interpret the results of the training study in which four hypotheses were tested ('language plays no special role', the 'mental state terms view', the 'syntax view' and the 'discourse view') as providing evidence for the following. Both perspective-switching discourse that uses contentful linguistic symbols (not necessarily using mental-state terms) such as saying: "First it is a flower, and now it is a pen" and sentential complement syntax make relatively independent contributions to children's false-belief understanding (Lohmann et al., 2005).

Is there a conflict between the 'syntax view' and the 'discourse view' like Harris (2005) believes? Lohmann et al. (2005) argue that there is no conflict between the view that discourse is crucial for developing an understanding of false beliefs and the view that mastering propositional attitude constructions (e.g. *Peter thinks mommy's home*) is crucial. Syntactic constructions are nothing other, Lohmann et al. (2005) hold, by refering to the work of J. Bybee and T. Givón, than grammaticalized (compressed and automated) strings of discourse and so looser discourse interactions and tighter syntactic constructions are all part of the same process. "It is thus natural that some kinds of syntactic constructions – specifically those that automate and compress *reflective* discourse - would be especially helpful in encouraging children to see both a state of affairs and a psychological attitude toward it all in one glance, as it were" (Lohmann et al., 2005, p. 262).

This line of argument seems similar to a problem, and perhaps implicitly suggested solution, Astington (2000) expresses. Perhaps it is not clear that a distinction can be made between the 'mental state terms view', explicitly held by David Olson in 1988 and 1994 and the 'syntax view' as held by De Villiers e.g. in 2000 (Astington, 2000). Both semantics and syntax are implicated in mental state reports (ibid.). "Having a full semantic understanding of any term involves understanding the syntactic constructions in which the term appears (Astington, 2000, p. 273).

In conclusion, Lohmann et al. (2005) give rise for believing that a combination of several means, stemming from seemingly contrasting theoretical positions, may support

children's understanding of mental states. Based on the findings from the training study on false belief understanding, performed by Lomann and Tomasello (2003), there is reason to believe that several forms of *discourse,* of which talking about misunderstandings is a form, support children's understanding of mental states.

To understand that other persons have beliefs about the world that differ from their own, children need to engage them in discourse, either in a disagreement, a misunderstanding, a request for clarification or reflective dialogue, in which these different perspectives are clearly apparent (Tomasello, 1999). Linguistic discourse, Tomasello argues, provides a particularly rich source of information about other minds. Elaborating on this idea, supplied with empirical evidence, about the learning opportunities of discourse, we move on to explore another instruction method in which *reflective dialogue* is integrated.

5.1.5 Watching Audio-Visual Fragments with Oral Speech Acts and Joint Reflection Upon it

The idea that is set out in this subsection shares with the former that it aims to support children's understanding of mental states. One of the aims of watching audio-visual fragments with oral speech acts is providing occasions to children in which they can apply their idea of what determines an appropriate assignment of illocutionary force to a speaker's utterance. Moreover, they can share their thoughts with other children and the teacher because all of them have seen the same. The latter may support children's concept of interpretation. Further, being exposed to this kind of exercise, children may experience that other people's utterances can be considered an object of cognition at all.

Imagine a teacher of 10-year-olds who shows an item from the news for young people to the class that was originally broadcast on national TV. To illustrate how teachers can show children audio-visual fragments containing oral speech acts and lead a reflective discourse about it afterwards, an available item on the internet is addressed.[20] In 2009 the Dutch news for young people paid attention to Richelle, a 16-year-old girl, who had cancer and had started a campaign against using the word "cancer" as a swearword. In an interview Richelle was asked to explain about her just started campaign. In the item (duration of 02:49) we can see Richelle and hear her utter words of the following purport: "When you walk on the street or are in school, the word is everywhere. And even though, people say: 'using that word allows to say something rough, but we do not mean it in a bad way, so why would it be painful', it is painful.

[20] Dutch readers can view this item in the form of an internet video at: http://www.nos.nl/jeugdjournaal/artikelen/2009/11/23/richelle16overleden.html

Not only because I am ill but also for people who have lost someone who had the disease it is painful. But they feel frightened to say that, and I think it is about time to speak up against it." A reporter explains that the aim of all the buttons, flyers and posters is to communicate the message to lots of people: do not swear with the word cancer.
The title of the campaign was (translated into English): "Cancer is wasting your language!!"

A teacher may ask the class, after showing this oral speech act: "When we turn to what Richelle said, what do you think Richelle wanted to say by what she said?"
Giving several children the opportunity to interpret illocutionary force simply gives children the chance to practice this interpreting skill. Reflection upon it provides opportunity to discuss – more or less explicitly - what may count as an appropriate assigned illocutionary force. When one child proposes: "Richelle is telling people off for swearing with the word cancer", a teacher can respond in the form of: what makes you think this? and, if necessary, can rewind the video so the exact words and used intonation by Richelle can be seen and heard, by all, again. Another child may say: "I do not really think she is telling people off so much, but she seems sad." The teacher might say: Do others also feel Richelle is a bit sad when she said "it is painful"? After some reflection upon it as a class the teacher may end the discourse by concluding: "We have said that it was striking that Richelle did not use the word cancer herself; she talked about "being ill", "having the disease", "using the word". We have heard her say the word "painful" and most of us agreed that it was said in a sad way. So maybe Richelle was trying to express what it does to her when people swear with a word that is the name of her very serious disease." Put more formally, Richelle may have performed an "expressive" or an illocutionary act of expressing as Searle (1979) would denote it.

Another aim for showing children an oral speech act and have a joint talk about it, is making children familiar with the 'activity of reflecting' in which multiple perspectives can be taken. If we wish to scaffold children's learning of critical thinking, children must be given exercises that help to take another person's perspective. After all, in dealing with interpreting illocutionary force, one is attempting to take another person's point of view. When one starts reflecting upon one's own assigned illocutionary force, one is shifting from one perspective (What is this speaker/writer trying to communicate?) to another (What do I think of it?).

Going back to our previous example, one way of encouraging reflective discourse after watching Richelle's speech act, is that the teacher will ask pupils: "What do you think of Richelle's chosen campaign title: "Cancer is wasting your language!!"? When we think back to Richelle's aim to stop people from using cancer as a swearword, do you think the campaign title expresses this aim?". An exchange of children's own ideas about this question can be encouraged so long as the teacher structures discourse in which

view on view is built up. Keeping the research results of the study by Lohmann and Tomasello (2003) in mind, teachers may do well to highlight differing perspectives by saying things like: "Tom thinks Richelle is right about how swearwords sort of waste our language, so thinks the title is a right title. Anne, on the other hand, thinks that although Richelle may be right about swearwords that spoil language, if the title would have been something like: Stop cursing PEOPLE with cancer!, maybe the message she wanted to get across would have been more clear."

In talking about Richelle's utterance, it is very likely, as illustrated above, that several children propose differing interpretations of what she said/meant. As we know from the previous chapter, 7 or 8-year-olds "evidence an appreciation of the interpretive character of the knowing process" (Carpendale & Chandler, 1996). Understanding interpretation by children from about 7 years old means realizing that two different persons may differently and legitimately interpret (or misinterpret) one and the same thing (Lalonde & Chandler, 2002).

Do empirical results point towards plausibility of the idea that watching and analysing oral utterances have a potential effect on children's understanding of mental states which includes making the say-mean distinction and understanding interpretation? In other words, would it effect children's learning of critical thinking?

5.1.6 Potential Effectiveness

First of all, at what age can children reflect on their own and others' beliefs? The ability to reflect on one's own and others' beliefs occurs when children are 6 or 7 years old (Astington & Pelletier, 1996). This competence to think about one's own and others' thinking is reflected, Astington and Pelletier reason, in children's ability to deal with embedded or second-order representations: *X believes that Y believes that p.*
Results from assessing children's understanding of second-order beliefs suggest unexpected early competence around the age of 6 and 7 years, shown under optimal conditions when inference of second-order beliefs was prompted (Perner & Wimmer, 1985).

Perner (1989) concludes on the basis of empirical investigations on children's higher-order understanding of beliefs and intentions, that children become proficient at understanding second-order mental states at around the age of six and nine years old. This is much earlier, Perner (1989) stresses, than previous research indicated, performed e.g. by Flavell, Miller, Selman and Shulz and Cloghesy, where such proficiency would have been expected during the teens. Thus, reflecting with children on their own and others' beliefs is something for which empirical support is available.

As we already know from the previous subsections, linguistic experience in the study by Lohmann and Tomasello (2003) appeared a strong facilitator in the development of children's false belief understanding. The effect of language in Lohmann and Tomasello's training study had to do with using conventionalized symbols, mainly in the form of common nouns, to highlight the differing perspectives. Thus, based on Lohmann and Tomasello's (2003) study there is reason to believe that the linguistic experience to which children are exposed in the instruction method described in 5.1.5, supports their understanding of other people as "mental agents" as Tomasello (1999) denotes it. Especially reflective discourse, Lohmann et al. (2005) suggest, would be specifically helpful in encouraging children to see both a state of affairs and a psychological attitude toward it all in one glance, as it were.

Tomasello (1999) refers to reflective discourse as discourse about the *content* of what the speaker has said as opposed to discourse about misunderstandings, it is recalled, which Tomasello regards as discourse about the *form* of what a speaker has said. Tomasello describes discourse about the *content* as the situation in which the child expresses a view on something and then her interactive partner expresses a view about that view. In comprehending an adult's communicative intentions, the child must understand the adult's expressed view on her own expressed view (Tomasello, 1999, see p. 172). "This kind of discourse about previous discourse is very special because as the child comprehends it she is led to examine her own thinking from the perspective of the other" (Tomasello, 1999, p. 172). Because the meta-views that are expressed are couched in the very same natural language terms as the original view, reflection can help the child to create coherence and systematicity in thinking about things in the world all in a single representational medium (ibid.).

Lomann and Tomasello (2003) give reason to believe that both forms of discourse addressed in this section, talking about the *form* (misunderstandings) and talking about the *content* of oral utterances, facilitate children's understanding of mental states. Competence with the say-mean distinction and with the concept of interpretation, called for in both instruction methods in which discourse plays a role, are aspects of children's understanding of mind, also denoted as Theory-of-Mind (ToM) competence. Because both ToM competencies were hypothesized to be requirements of critical thinking, instructional support of them is believed to support children's learning of critical thinking.

5.2 Intermezzo

5.2.1 What Works for Children Will Work for Adolescents and (Young) Adults

The above-proposed instruction methods to support the learning of one part of critical thinking by children can also be applied for teaching adolescents or (young) adults. All three 'methods' were chosen in order to support aspects of theory of mind (ToM) competence and language competence. All three 'methods' also allow pupils to practice with their ability to reflect on their own and other people's talk or thought. Put in theory of mind parlance, the instruction methods of section 5.1 may allow pupils to practice with attributing second-order beliefs. That is, seeing the other's belief from his or her point of view, reflected in the ability to deal with embedded or second-order representations: *X believes that Y believes that p* (Astington & Pelletier, 1996).

There does not seem to be an endpoint in one's development of theory of mind competence (see e.g. Flavell, 2004 and Kuhn, 2000). Therefore, there is no reason to believe that these methods will not yield the intended outcome when offering them to *older* individuals. Furthermore, they may help them to become advanced critical thinkers.

Teachers of adolescents or (young) adults in secondary and post secondary education are advised to use verbs during their teaching like *remember, assert, doubt, concede, imply, infer, predict, hypothesize, interpret, conclude, assume* and *confirm* explicitly. After all, Astington and Olson (1990) demonstrated that an elaboration of metacognitive and metalinguistic verbs occurs during the high school years. Talk about misunderstandings that occur in a history class for example. Imagine pupils who misrepresent each other's communicative intentions when discussing differing historical explanations for the fact that a socialist revolution, led by Pieter Jelles Troelstra, was not forthcoming in the Netherlands. Show the documentary *The Wouter Tapes* for example in which a Dutch socialist politician records his diary stories into a dictaphone in teaching journalism students to write features. The teacher may inform that "[it] is the reporter, who, in choosing a speech act verb, declares his own attitude to the speech act being reported whether agreement, disagreement or abstention" (Olson & Astington, 1990, p. 715). The teacher may help to analyze why two characterizations of one of Wouter's speech acts, while being distinct, could both be suitable for writing features. The function of metarepresentational terms, after all, is both to characterize others' mental states (e.g. "Wouter *thinks* that he needs to say that he does not dream of politics") and to mark the reporter's attitude to the reported speech act (Olson & Astington, 1990).

In sum, adjust instruction methods, proposed in section 5.1, to the learning material and interest of adolescents or young adults if you wish to scaffold their learning of interpreting illocutionary force of oral speech acts.

5.3 When and How to Support Pupils' Learning to Interpret Illocutionary Force of *Written* Speech Acts and *Examination* of Assigned Speakers' and Authorial Intention

5.3.1 What Works for Adolescents and (young) Adults Won't Work for Children

Thus far it was argued that the instruction methods in teaching children in order to scaffold the learning of interpreting illocutionary force of oral speech acts are also applicable to teaching adolescents and (young) adults. In what follows the opposite applies. That is, what works for adolescents and (young) adults will not work for children. The forthcoming proposals are specifically designed for individuals *from* the age of 11/12 and do not seem appropriate to use with children. Furthermore, the forthcoming proposed instruction methods are specifically designed to support (acquiring) competence with interpreting illocutionary force of *written* speech acts and the *examination* of both assigned speakers' and authorial intention. In the remainder of this section education to adolescents, specifically, is addressed. The 'method' described in 5.3.2 regards teaching pupils rhetorical reading strategies and to lead conversation about text. The other, described in 5.3.4, regards scaffolding pupils' coordination of three perspectives: self's perspective, other's perspective and external information, in order to support the evaluative part of the critical thinking definition, as conceptualized here.

Asking from children below the age of 11/12 to see through the semantics of *textual* statements in order to understand the pragmatic/rhetoric function of those statements, may be overasking. More importantly, doing this may even harm the cognitive process in which children between 6 and 11 years old find themselves. That is, in the early school years children need to find relations among propositions that are expressed in a text in order to understand textbooks (Olson & Astington, 1993). Asking children to find relations between propositions on the one hand and the author's intentions and beliefs on the other, as needed for critical thinking, could 'mess up' their process of learning to understand "authorless" or "objective" texts like textbooks. For more on this developmental matter, see the previous chapter, subsection 4.3.1.

Equally, asking from children below the age of 11/12 to *examine* others' speech acts, whether expressed orally or in writing, in terms of evaluating the grounds of the (possible) way an utterance was meant to be taken, amounts to overasking. As hypothesized in chapter IV, this part of critical thinking requires evaluative epistemological understanding. Attainment of this level of epistemological understanding can be expected at the end of adolescence, if attained at all (see Kuhn, 1999, see p. 22; Kuhn & Park, 2005, see p. 113; Kuhn & Weinstock, 2002). For more on this, see again the previous chapter, subsection 4.3.1.

5.3.2 Teaching Rhetorical Reading Strategies and Talking About Text with High and Lower Level Pupils

In the present subsection the proposed instruction method concerns teaching pupils rhetorical reading strategies, followed by leading a talk about text. This instruction method aims to support pupils' transition from the multiplist level of epistemological understanding to the evaluative. Further, this instruction method allows to practice with interpreting illocutionary force of *text* as opposed to interpreting the force of *oral* speech acts. Arguments for potential effectiveness can be found in the next subsection.

What are rhetorical reading strategies? A rhetorical reading strategy refers to an attempt by readers at constructing a rhetorical context for a text as a way of making sense of it (Haas & Flower, 1988). A rhetorical reading is a set of inferences the reader draws which interpret the text by turning it into an act of discourse which includes but goes beyond the information contained in the text (Flower, 1987). Reading, any reading, is seen by Haas and Flower (1988) as a constructive rather than a receptive process. Meaning does not exist in a text but in readers and the representations they build (ibid.). Readers construct meaning by building multifaceted, interwoven representations of knowledge (ibid.). In this view, it is emphasized that it is the *reader* who must integrate information into meaning (Haas & Flower, 1988).

Aside from viewing reading as a constructive act, reading can also be seen as a discourse act (Haas & Flower, 1988). "That is, when readers construct meaning, they do so in the context of a discourse situation, which includes the writer of the original text, other readers, the rhetorical context for reading, and the history of the discourse" (Haas & Flower, 1988, p. 167). In the act of discourse, readers and writers construct *an image of a given discourse* in their own minds (Flower, 1987). Observation shows that readers and writers appear to be *constructors* who mediate the forces which impinge on interpretation (by readers) and production (by writers) (Flower, 1987). Examples of such forces are the context of reading, their knowledge of the author's intention and writers' and readers' own goals (Flower, 1987).

Readers who adopt a rhetorical reading strategy take a step back beyond the text itself (Haas & Flower, 1988). In creating a rhetorical reading, the reader often constructs scenarios in which readers and writers interact, observe, and have designs on one another (Flower, 1987). As opposed to reading for information, paraphrazing rather than analyzing, summarizing rather than criticizing texts, critical reading involves understanding texts as purposeful actions, arising from contexts and with intended effects (Haas & Flower, 1988). Rhetorical readers are concerned with constructing a rhetorical situation for the text (ibid.). These readers try to account for the author's purpose, context and effect on the audience (ibid.). Adopting a rhetorical reading

strategy involves constructing a representation of a *unique* discourse with a real author, a specific purpose and actual effects (ibid.).

What does rhetoric have to do with critical thinking? Peskin (2000) holds that the rhetorical stance to a text *facilitates* critical interpretation. Looking more closely at this argument may clarify the relation between rhetoric on the one hand and critical thinking on the other. Rhetorical form is that aspect of the text which concerns itself with how the text is taken by the reader (Peskin, 2000). "This concern with rhetorical form involves increasingly recursive questions such as: Who is the author? Who is the author addressing? What does the author want the reader to think? When do readers think what the author believes? And when do readers consider what the author intends the reader to believe? These questions form part of the very foundation of critical thinking about the written word" (Peskin, 2000, p. 81).

Consciousness of two levels of interpretation, that is the rhetorical and the semantic level, separates the critical reader from the naive reader (Peskin, 2000). "The naive reader attends to what the text is saying, accepting the written statements as objective facts. The sophisticated reader focuses not only on what the text is saying, but also on what the author wants the reader to believe" (Peskin, 2000, p. 81). In text interpretation this critical reader is concerned with interpreting apparent facts as authorial beliefs and distinguishing between the two (ibid.). Rhetorical reading, Flower (1987) also suggests, is related to the reader's ability to find claims in the text.
The rhetoric stance facilitates critical interpretation because wearing the rhetoric glasses, so to speak, helps one to become or stay aware of the fact that "texts are expressions of some author's belief" (Olson & Astington, 1993). "Advanced readers evaluate and judge knowledge while novices merely absorb it" (Peskin, 2000, p. 82).

Now, imagine, for English readers, a class, filled with high level pupils, within the subject "language arts" which can include reading, writing, speaking, listening, and viewing. Today pupils' reading competencies are practiced. Dutch readers can imagine a class within the subject English with a focus on understanding written English. The text to discuss is an article Stephen Fry, the British comic, actor/presenter and writer, wrote for The Guardian on April 30 in 2009. In 1973 Fry wrote a letter, being 16 years old, addressed to his future self. In 2009 Fry replies to the letter he wrote to himself 35 years ago.

The purport of Stephen Fry's text can be represented thus: Fry explains, from a 'future' perspective, to his young 16-year-old self in 1973, that sexual availability, for straight people and homosexuals, like Fry, becomes the norm in the late 1970s and early 1980s. Homosexuality becomes more accepted in Britain. However, "For millions of teenagers around Britain and everywhere else, it is still 1973" ("Stephen Fry's Letter", 2009). "(...) [T]he entire achievement of the Enlightenment (which led inter alia to gay

liberation) is under threat like never before. The cruel, hypocritical and loveless hand of religion and absolutism has fallen on the world once more" (ibid.). Fry holds that his younger 16-year-old self wanted to stay where he was back in 1973, in "the Republic of Pubescence, where feeling has primacy and pain is beautiful" (ibid.). Fry concludes from his matured position in 2009 that he thinks he was right.

Language teachers can give pupils an assignment to create a scenario in which the author under discussion, the reader and the topic of the text interact. "Scenarios of this sort appear to help readers deal with their interpretive difficulties by constructing a rhetorical event" (Flower, 1988, p. 547).

To adapt the teaching of rhetorical reading strategies to a lower level of education, history or language teachers could choose to let pupils read *The Wave*, the book by Todd Strasser (pen name Morton Rhue), first published in 1981[21], on which the movie *Die Welle* of 2008 is based.

In discussing different rhetorical readings by pupils, as reflected in their created scenarios, teachers would do well to use metarepresentational terms as argued earlier in this chapter. Responding to a pupil who is struggling to make sense of Fry's text, a teacher can ask questions, intended as a scaffold to pupils' thought, like: What do you think about the context in which Fry says that "gay people sometimes believe that the preponderance of obstacles and terrors they encounter in their lives is intimately connected with the fact of their being gay?" "Is it meant as *rejecting* how he thought himself, when he was younger, about the misery felt to gays' lot? Or as a way of *reflecting* lessons learned during the course of his life? When Fry wrote about "the rugger-playing ordinaries" who surrounded the younger Fry, holding that they have souls too which "he knows the younger Fry cannot believe", was it meant as *implying* criticism of the way he felt about straight and 'ordinary' men when he was young? Or as *understanding* that he was not able to understand these men when he lacked 35 years of life experience?

Responding to a lower level pupil who made the assignment of constructing a rhetorical situation for the end of the novel *The Wave* a teacher can say: You have done so well with the assignment. Good work, really good. I was wondering, you wrote that the writer of *The Wave* wants to show how people in our time can become part of a movement that they actually do not like through the character of the teacher. Do you think Strasser, the writer, wants the reader to think: becoming part of a movement we actually do not like, can happen to all of us, to *set* the *reader's mind at ease*? Or, to *alert*

[21] Taking the lower educational level of pupils in this example into consideration, a Penquin Reader, a simplified text of the original novel of *The Wave*, is used. See the reference list for details of this version.

the reader to think about how such group processes can unfold the next time the reader is in a similar situation as the characters in the book?

You also wrote, a teacher can remark, that Todd Strasser is critical on the blog of his website about issues of censorship and freedom of speech. You view some posts you read on this blog as an indicator of him being honest about the message he wanted to get across in *The Wave.* Very interesting. Aside from being honest or dishonest about the writer's motives for writing *The Wave*, what, do you think, would Strasser think about real teachers who want to conduct an experiment like one of his characters did? When Strasser made the teacher in the book say "I didn't want to be your 'Hitler'. But that's what happened and I'm very sorry. Perhaps we *all* learned something from the Wave", and that he is "not going to teach the Wave again next year", what is expressed? Would Strasser think that the teacher is responsible for the fact things had become out of hand? Or would Strasser like to show the reader that even teachers in real life cannot separate experiment from reality once teachers play a part in the experiment themselves?

In leading a talk about text after an assignment like constructing a rhetorical situation for a text, teachers are advised to follow the suggestions by their pupils in the first instance. When, for whatever reason, hardly any response follows from a teacher's question about the pupils' rhetorical readings, the above-noted *suggestive* questions can be considered as scaffolds, no more, no less, to think about text. It is well possible that pupils come up with an entirely different interpretation than two options for example a pupil is presented with. Following pupils, as a teacher, is likely to offer them the necessary space to develop pupils' own ways of critical evaluation of textual statements.

It is good to bear in mind that one of the underlying aims with exercises as described in this subsection is coming to understand text as containing authorial *judgment* as opposed to 'mere' subjective *opinion* or personal preference. In other words, this exercise aims to promote pupils' transition from the multiplist level of epistemological understanding to the evaluative level in which assertions are understood as judgments rather than opinions and hence critical evaluation of them is deemed relevant (Kuhn, 1999).

5.3.3 Potential Effectiveness

Claims about what separates the critical reader from the naive reader seem based on available empirical evidence. Wineburg (1991) performed an expert-novice study on the way professional historians and high school seniors evaluate primary and secondary sources when considering questions of historical evidence. "A group of working historians

and high school seniors "thought aloud" as they reviewed a series of written and pictorial documents about the Battle of Lexington" (Wineburg, 1991, p. 73).

What is relevant to the concern of this section is Wineburg's idea on the historians' and high school pupils' conception of text, that is, their understanding of what a text, at all, is. Students seemed, Wineburg (1991) suggests, to view texts as vehicles for conveying information to be added to other bits that had been gathered. In contrast, historians seemed to view texts not as vehicles but as people, not as bits of information to be gathered but as social exchanges to be understood (Wineburg, 1991, see p. 83). Historians used the 'method' of sourcing heuristic 98% of the time. Sourcing heuristic can be defined in terms of an advice to historians: When evaluating historical documents, look first to the source or attribution of the document (Wineburg, 1991). Students used this way of looking at historical documents 31% of the time (Wineburg, 1991, see p. 79). The sourcing heuristic can be viewed as the manifestation of a belief system in which texts are defined by their authors (ibid.). When texts are defined by their authors, what is said becomes inseparable from who says it (ibid.).

To take a side-track for a moment, it may seem that taking the rhetorical stance when dealing with text, or, put more generally, the focus on 'authorial intention', is exclusively tied to the disciplines of the humanities; history, philosophy, languages, law and so forth. It is Geisler (1994) who illuminates that scientists of all disciplines understand something about scientific texts, novices do not yet. Geisler (1994) refers to a study, performed by Charney in 1993, who analyzed how seven evolutionists read and react to a particular article in their field of research. The mature professionals declined to read the article straight through and described this decision as their normal procedure (Geisler, 1994). One of the scientists said: "I think if you go right into an article, and you read it word for word from the beginning, what happens is that you'll be pulled along by the author and you're not going to be critical... As opposed to, if you have an overview, then you can keep your critical facility alive" (Geisler, 1994, p. 21).

Now, to what age group can the instruction method of teaching rhetorical reading strategies be offered with reasonable expectations for its effectiveness to influence the learning of critical thinking? Haas and Flower's (1988) think-aloud reading study compared reading strategies of two groups: experienced readers who were graduate students between 26 and 31 years of age and students from college level aged between 18 and 19. Haas and Flower (1988) were interested in how readers go about "constructing" meaning and in the strategies they use to do so. "While the groups of readers employed content and function/feature strategies similarly, there is a dramatic difference in their use of the rhetorical strategy category. Less than 1% (in fact, one statement by one reader) of the students' protocols contained rhetorical strategies, while 13% of the experienced readers' effort went into rhetorical strategies" (Haas & Flower,

1988, p. 176). The expert-novice study by Wineburg (1991) revealed, *inter alia*, that 16-year-old high school students did not accord much importance to the source or to whom a particular historical document was attributed. This in stark contrast to the professional historians for whom the attribution was not another bit of information but the 'bit' from which all else emanated (Wineburg, 1991).

Thus, offering rhetorical reading strategies to adolescents between the ages of 11/12 and 18, as proposed in the previous subsection, cannot be expected to be effective? This would be an invalid conclusion as the above-mentioned results do not rule out the possibility that younger age groups can be taught, in short, to regard texts as expressions of someone's belief. Moreover, the results as reported in Haas and Flower (1988) and Wineburg (1991) do not show that their inexperienced participants are not capable of *learning* rhetorical reading strategies at school.

Furthermore, Haswell et al. (1999) replicated the results by Haas and Flower (1988). However, Haswell et al. *also* found that undergraduates who got to read about a topic which was more familiar to undergraduates than the passage participants in Haas and Flower (1988) were to read, increased their reliance on rhetorical strategies. That is, an increase compared with having to read the passage that was used in Haas and Flower (1988). "What appears to be a lack in reading strategy may have been a lack of prior knowledge needed to activate strategies that the undergraduates did have but therefore did not use" (Haswell et al., 1999, p. 12-13). The results Haswell et al. obtained support this hypothesis. When the undergraduates of Haswell et al. interpreted a text on a topic familiar to them, they used rhetorical and personal reading strategies at about the same rate as did their graduate students (Haswell et al., 1999, see p. 17). Admittedly, Haswell et al. still dealt with 18/19-year-olds, rather than the age group we have in mind in this section; adolescents between roughly 11/12 and 17 years old.

One of the aims with teaching rhetorical reading strategies is to allow pupils to practice with interpreting illocutionary force of *text*. The theorized requirements for interpreting illocutionary force of *oral* speech acts were, to repeat, competence with: the say-mean distinction, metarepresentational terms and the concept of interpretation. These seem equally required for interpreting illocutionary force of *text*. After all, in constructing a rhetorical situation for Fry's and Strasser's text, pupils needed to distinguish what was literally said and what may be meant by it. That is to say, understanding that Fry's words "the Republic of Pubescence where feeling has primacy and pain is beautiful" express a metaphor of what (the start of) puberty is like to Fry, demonstrates understanding that Fry's intention was not fully present in the words themselves. Further, expressing an understanding of the teacher's illocutionary act in

The Wave, required metarepresentational terms. One of the pupils communicated an understanding of Strasser's intention with the teacher's character in terms of *showing* how all of us can become part of and attached to a movement we rejected in advance.

Lastly, interpreting the context in which Fry holds that "problems arise from love and love alone and scarcely from being gay" as *his own life-experience*, demonstrates an interpretive understanding of the mind. This interpretive understanding is reflected in grasping that "minds not only capture and record information about an external reality, but also work in the other direction by creatively constructing and uniquely interpreting reality" (Lalonde & Chandler, 2002).

However, as suggested in the previous chapter, the above-mentioned requirements seem a necessary though not sufficient condition for interpreting illocutionary force of text. The additional requirement for interpreting *written* speech acts is theorized as having attained evaluative epistemological understanding. Receiving the incentive, at all, to think about Fry's or Strasser's intentions and to understand text as containing authorial judgments, calls for the level of evaluativism. After all, understanding assertions as judgments rather than opinions results in regarding critical evaluation of assertions as something valuable (Kuhn, 1999; Kuhn et al., 2000; Kuhn, 2008). Suppose we are multiplists who understand assertions as opinions freely chosen by and only accountable to their owners (ibid.). Or, suppose we are still absolutists who understand assertions as facts that are correct or incorrect in representing reality (ibid.). Were we asked to begin a discourse between an author and ourselves, we would have a hard time. Why evaluate textual statements if these just reflect *Fry's* or *Strasser's* opinions? Who am I to judge, the multiplist may wonder. Why evaluate textual statements if these are just a matter of fact; correct or incorrect when compared with reality, the absolutist may wonder.

To summarize, teaching rhetorical reading strategies is believed to support pupils' competence with interpreting written speech acts, calling for competence with the say-mean distinction, metarepresentational terms and the concept of interpretation, as theorized in chapter IV. The requirements for interpreting illocutionary force of *oral* speech acts seem the same for interpreting the force of *written* speech acts. But unlike interpreting oral speech acts, interpreting illocutionary force of *written* speech acts, practiced through rhetorical reading, was theorized to also call for evaluative epistemological understanding. Because evaluative epistemological understanding can be expected to occur during or after adolescence (Kuhn, 2008; Kuhn et al. 2000; Kuhn & Park, 2005), this instruction method would appear to be unsuitable to use with children.

5.3.4 Scaffolding the Coordination of Three Perspectives by High and Lower Level Pupils

The evaluative component of the critical thinking definition offered in this book is theorized in the previous chapter to require the level of evaluative epistemological understanding. Rhetorical reading, as described in the previous subsections, seems to call for evaluative epistemological understanding. Rhetorical reading thus might promote pupils' transition from multiplism to evaluativism. What other didactic instruments can teachers apply to promote this crucial development for acquiring competence with critical thinking?

The proposed exercise in this subsection is based on the way Kuhn (2008) describes what must be done in order to allow a pupil to construct relations between any two of three perspectives; self's perspective, other's perspective and external information. Coordination of these three perspectives is required for evaluating tasks (Kuhn, 2008). Critical thinking, as defined in chapter III, contains an evaluating component. Thus, scaffolding pupils' coordination of three perspectives may contribute to support individuals' learning of critical thinking. Potential effectiveness of this complex undertaking comes up for discussion in the next and final subsection.

Interestingly, the way Kuhn's (2008) model of coordinating three perspectives is applied in this subsection, may reflect a difference between critical thinking according to the 'American conception' and how it is conceived in this dissertation. That is, the skill of critical thinking in many North American accounts is described in terms of assessing the probative strength of reasons (Bailin & Siegel, 2003). With respect to assessing reasons, the primary attention is directed on the logical structure of an argument and/or the (degree of) truth of assertions. Hence, practicing *this* critical thinking skill involves attending to explicit arguments, regardless so it seems, the way a person espouses a belief. Pupils, for example, can be asked to choose which of two arguments for the question why teenagers start smoking is the stronger and to justify why, as Kuhn (2008) suggests.

What pupils think about the content of the argument themselves and what illocutionary force the assertive may have, may be deemed irrelevant in the paradigm of 'critical thinking is good reasoning and being disposed to do so'. Yet the "class of *assertives* admits of great variability in illocutionary force" (Olson & Astington, 1993). An assertion, in this case about motives for teenagers to start smoking, could be offered as "a logical premise, an accepted truth, a personal opinion, or hearsay" (ibid.). Even so, in the American account of critical thinking, the quality of reasoning *per* se and being disposed to reason is paramount. That is, critical evaluation regards assessing

whether an argument contains assumptions, is free of contradictions, whether the conclusion of an inductive argument follows with some degree of probability etc..

Following this dissertations' definition of critical thinking, the evaluating element of this account regards an examination of the *grounds* of, one's own assigned, speakers' or authorial intention and is not limited to assessing *assertives*; statements in which a claim is made. As we do not have direct access to people's minds, we will have to interpret their use of language which, in short, can be seen as representations of what they intend to communicate. Therefore, attending to the illocutionary act in which propositional content functions, any evaluation of the grounds of intention is necessarily tied to the critical thinker's *own* assigned intention of speakers or writers.

As argued in chapter III, "critical" in the account offered in this book primarily refers to examining one's own thinking about another's thinking rather than critical in terms of examining one's own or others' quality of reasoning *per se*. While interpreting illocutionary force of *another person's* speech act, I am determining my *own* mental state or, in other words, my own stance toward other people's mental state. Being aware of the way I take other people's statements, e.g. as *warning*, creates a possibility to think about thinking. And yet the funny part of this story has not been mentioned. The funny part is that in both '*argument* evaluation' and '*intention* evaluation', three perspectives are at hand; one of the other person, one of the self and one in the form of external information.

Now, the rest of this subsection illustrates how Kuhn's (2008) model of coordinating three perspectives is applied for the purpose of allowing pupils to practice with 'intention evaluation'. Imagine a language arts class with 15 or 16-year-old high level pupils. Today, pupils get to read a column, consisting of two pages in print version, originally published on September 14, 2009, in *The New York Times*. The column is titled "When a Parent's 'I Love You' Means 'Do as I Say'". It was published within *The New York Times'* section of regular science columns and written by Alfie Kohn, MA in the social sciences, author of books about behavior and education. Dutch readers can think of a Dutch language class, imagining discussing a similar column in Dutch. Pupils need to read this column in the classroom after which an exercise follows.

The purport of the column can be described as follows. Psychologist Carl Rogers advocated, Kohn (2009) holds, that parents must love their children unconditionally, as in loving them for who they are, not for what they do. Talk show hosts like 'Doctor Phil' and 'supernannies' like Jo Frost advocate the opposite; turn up the affection when children are good, withhold affection when they are not'. The problem with praise is that it might be just another method of control, analogous to punishment, Kohn (2009) suggests. The message of all types of conditional parenting is that children must earn their parents' love (Kohn, 2009). Rogers, the psychologist, predicted 50 years ago, that

children who had a "steady diet of conditional parenting" would need a therapist to provide unconditional acceptance people did not get when it counted.

Kohn (2009) provides recent research data in his column that point to the truth, Kohn (2009) claims, of Rogers' idea and prediction. Studies, performed in 2004, replicated in 2009, found that positive conditional parenting (using praise) sometimes succeeded in getting children to work harder on academic tasks but at the cost of feeling internal compulsion. Negative conditional parenting did not even work in the short run; it just increased teenagers' negative feelings towards their parents. Kohn (2009) concludes by advocating unconditional acceptance of children by parents as well as teachers, accompanied by "autonomy support"; explaining reasons for requests, maximizing opportunities for the child to participate in making decisions, being encouraging without manipulating and imagining how things look like from child's point of view.

Having read the column, pupils have the exercise of rendering three perspectives in a diagram explained; Kohn's perspective, external information perspective and their own on two levels; their own perspective on Kohn's perspective and their own perspective on the external information. Concerning the external information, it would be constructive if teachers provide photocopies of a text by Carl Rogers in which the belief Kohn (2009) attributes to Rogers is found. The same applies for the papers Kohn (2009) refers to. High level pupils can be offered photocopies of the original papers which often do not consist of too many pages and often give results on one page.

For the sake of argument, we assume that all the information Kohn (2009) provides is true and represented adequately.[22] The teacher can decide to tell pupils whether given information in a text is true and paraphrased well him or herself, after having checked it carefully at this (adolescents') level of education.

To leave the privileged pupils for who they are for a moment, imagine another language arts class. Suppose, the pupils in this class are also 15 or 16-year-olds but work on a lower educational level. Imagine pupils have had to watch a documentary about the Dutch rapper Ali B., born in 1981 in the Netherlands, of Moroccan descent.[23] The teacher addresses one fragment of the documentary in which Ali B., together with his band, is performing the rap: *Where's this going?* in a theatre show of 2004. Ali B.'s

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[22] Unlike information about Bruno Bettelheim and Albert Bandura, Kohn (2009) is transparent about the study by Assor et al. (2004). The information attributed to this research was checked by the present writer and found a correct representation of it.

[23] The documentary can be found on the dvd-set: *Ali B. vertelt het leven van de straat* (Ali B. is talking street life). Produced by SPEC in 2006.

full name is Ali Bouali. "Ali B." is an implicature of the way criminal Moroccans are designated in the media.[24] The teacher hands out the lyrics of *Where's this going?* to all pupils and gives the assignment of coordinating three perspectives.

Ali B. is a proper rapper. This means that no external information is provided to back up statements on traffic aggression and violence for example. In order to make the material of this rap suitable for the aim of learning to distinguish three perspectives and to maintain this distinction, a teacher can decide to provide material of the 'external information perspective' him or herself. On the internet sufficient reliable and recent figures can be found through websites that provide public information. It is to be recommended to provide the sources on which information is based to the pupils.
It would also seem prudent to remark that it is always possible that one reliable source of information is contradicted by another reliable source. Moreover, no information can ever reach the status of being immutable. See table 5.3.1 for an illustration of how a supposedly lower level pupil could perform on this task.

[24] This information, including the lyrics of *Waar Gaat dit Heen* (*Where's This Going?*), is based on the content of the official website on Ali B.: http://www.alib.nl/. The lyrics of *Waar Gaat dit Heen* is translated, loosely, not literally, into English by the present writer.

Table 5.3.1 Example of coordinating three perspectives by a supposedly lower level pupil

Ali B.'s views	Extra information provided by the teacher	Your own idea about Ali B.'s views	Your own idea about the extra information
Ali B. wonders where things are going. Everybody's doing mean which is making him tired. He wants to stop it but does not know how. He says: most people don't give a fuck about animals or the environment. They party but think food for an African child is too expensive. He is rapping that there's violence, traffic aggres-sion. People who make a fuss about nothing. He is fat up with it. Mankind is loosing its mind and he's sitting on his bum. But it all needs to stop. So he stands up. Demonstrates, protests against the one who is fucking around. Like is the media who is twisting his words. For sensation. "Everybody is equal" sucks. Fuck discrimination. Countries shed blood for oil. Junks look for foil. World leaders declare war. Lying to their people. Look at Iraq and the US that only talk war. Who's going to stop the soldiers who don't give a fuck about mothers, children, grand-ma's & grandpa's. Most people want peace. Sadly, we don't call the shots.	The teacher gave us figures about the money Dutch people give to charity. In 2007 the mean amount donated per household in the Netherlands was €270. Also, 80% of the non-western immigrants donate to charity in the Netherlands.[25] In 2009 almost 6% of all inhabitants were victoms of one or more acts of violence. This percentage does not really differ from that of the year before. The percentage of victoms by violence from 2005-2008 was also +/- 6%.[26] In the print, coming from the Public Prosecutor or something, it says that 2% of road-users feels unsafe on the motorway. Some kind of research, from 2008, said that 1/3 of road-users was involved in a form of traffic aggression.[27] There's a Dutch report that says that the reason why Iraq was attacked was to bring democracy, peace, and safety.[28]	I know what Ali means when is he's worrying about all the shit in the world. I also know how it's like to feel you can't do things about it. I know some people who have dogs or a cat and they care! Some people just throw a can on the floor and want to print everything they download. I don't know. I guess not everybody is the same. Maybe Ali's seeing bad stuff in HIS scene or on the roads HE'S driving. It's only logical he feels a bit on a rough side. People from the papers definitely twist Ali B.'s words. Just because he is Moroccan. Moroccans are discriminated all the time. Ali is angry with politicians and all that who say: we are on war. I don't know. I don't feel angry about those kind of things. Ali is wondering about how we stop the soldiers. But what about the soldiers? They just do what they are told to do.	80% can give to charity. That does not mean they care about the things they put their money in. Violence and aggression cannot be stopped. It's always there. Look at the extra information we got: maybe it's not worse than before, it's not really less and it's not gone. Some say this about Iraq. Some say that. So, I don't know.

[25] This information is based on the website of a working party, affiliated with Amsterdam University (VU): http://www.geveninnederland.nl/file/64/highlights_en1.pdf

[26] This information was retrieved from the website of Centraal Bureau voor de Statistiek (CBS): http://www.cbs.nl/NR/rdonlyres/90D122AD-C7AB-4D2D-B190-FE97A72298F6/0/2009integraleveiligheidsmonitorlandelijkerapportage.pdf

[27] This information is based on the website of the Dutch Public Prosecutor: http://www.om.nl/onderwerpen/verkeer/overtredingen/agressie/

[28] This information is based on the Dutch report by the "Commission Davids" on the political decision making Iraq: http://media.wereldjournalisten.nl/media/uploads/rapport_commissie_irak.pdf

5.3.5 Potential Effectiveness

Aiming to support pupils' development towards mature epistemological understanding seems a complex undertaking. As noted in the previous chapter, Kuhn et al. (2000) found that the pure multiplist pattern was shown by 29% of the total sample, consisting of children, adolescents and adults. Mason et al. (2006) also found that multiplism was the strongest position among their participants. Mason at al.'s participants included 881 5th graders (attending the final year of Italian elementary school), 8th graders (attending the final year of Italian middle school), 11th graders (attending the third year of Italian high school) and 13th graders (attending the fifth and final year of Italian high school).

The transition from the multiplist level to the evaluativist level of epistemological understanding is helping people climb out of the multiplist well. This requires the concerted attention of parents and educators (Kuhn, 2008). Especially as it is this progression that is critical to the development of intellectual *values* (Kuhn, 2008, italics added). "Intellectual values (...) cannot be instilled by exhortation – by telling students that a particular kind of activity is valuable, or even how or why it is valuable. Only their own experiences can lead them to the conviction that inquiry and argument offer the most promising path to deciding between competing claims, resolving conflicts, solving problems, and achieving goals. The more fruitful adult role is that of introducing young people to activities that have a value that becomes self-evident as the youths engage them and develop the skills they entail. An essential aspect of the adult's role is conveying his or her belief in the value of the activity and commitment to it. As students' skills and commitment and self-direction increase, the adult's role fades" (Kuhn, 2008, p. 35-36).

For both *reasoning* and *evaluating* tasks, pupils need to coordinate the three perspectives addressed in the previous subsection: self's perspective, other's and external information (Kuhn, 2008). This appears to be no easy task. Kuhn (2008) describes what difficulties students, of the average age when they apply for university, showed when they had to perform an argumentative reasoning task. Mind you, no *evaluation* of arguments is required yet. The assignment Kuhn (2008) analyzed here, regards writing a short essay for which students had to state claims in a short text and explain how data in two accompanied graphs support and/or contradict those claims. Students failed to distinguish their own perspective from that of the writer making the claims (Kuhn, 2008). The student becomes one with the writer (ibid.). "Students were not able to step into the writer's shoes temporarily and then step back and resume their own perspective. Hence, everything that students knew or inferred was attributed to the writer" (Kuhn, 2008, p. 136).

In so doing, students lost the opportunity to treat the writer's text as an object of cognition (Kuhn, 2008). As a result, students had problems to construct relations between the text and evidence that might bear upon it (ibid.). If students are not able to construct and maintain representations of each of the three perspectives, it becomes impossible to construct relations among them (ibid.). "As a worst case, the three points collapse into a single representation of "what is", which then becomes the student's only basis for making an argument of any sort" (Kuhn, 2008, p. 136).

When 8th graders, 13-14 year-olds, had to *evaluate* arguments, within a study Deanna Kuhn performed in 2000 together with M. Felton, pupils exhibited similar difficulties to those they showed in the above-described reasoning task (Kuhn, 2008). "Their own perspective dominated, and the perspective of the individual making the argument was subsumed to it. Hence they expressed their own evaluation of the claim itself rather than undertaking what the task required – evaluating the *relationship* between a claim made by another person and the support that person has offered for it. (...) The quality of the argument itself – its epistemic strength as an argument – does not enter into the judgment" (Kuhn, 2008, p. 139). To summarize Kuhn's (2008) results, when having to *reason about* claims, pupils had problems to distinguish between the writer's and their own perspective; the pupil dissolved into the writer. When having to *evaluate arguments*, pupils had problems to keep the person making the claim intact and to understand they had to attend to the relation between what is claimed on the one hand and what someone offers in support of it on the other.

Like inquiry, argument has the virtue of revealing its value in the course of being practiced (Kuhn, 2008, see p. 113). Several experiences, such as practicing the coordination and maintenance of three perspectives, together may support pupils' transition from the multiplist to the evaluative level of epistemological understanding. Offering pupils *experiences* with evaluating assertions in which the 'point' of doing this, at all, can become self-evident seems crucial.

Based on Deanna Kuhn's empirical results, there is a modest reason to expect that scaffolding pupils' coordination of three perspectives has potential to contribute to promote the transition from the multiplist level of epistemological understanding to the evaluative level. The evaluative level was theorized to be a *prerequisite* for the evaluative component of critical thinking, as conceptualized here. Thus, offering instruction methods that may promote this developmental transition may also support the learning of critical thinking. Holding modest expectations seems appropriate. The transition from multiplism to evaluativism, to repeat, is characterized, based on empirical findings, as "fragile and the one most likely never to be achieved" (Kuhn & Weinstock, 2002). Many adults remain multiplists for life (Kuhn, 2008).

5.4 How to Provide a School Culture Which Contributes to the Effectiveness of Proposed Instruction Methods?

5.4.1 Scaffolding Children's Learning of Critical Thinking and School Culture

Offering instruction methods, aimed at scaffolding the learning of critical thinking by children, is one thing. Encouraging children to take an interest in responding to teachers who talk to them by using metarepresentational terms, in talking about misunderstandings in the classroom and to participate in joint reflection, is another. From sociocultural approaches to human development, e.g. the one employed by Rogoff (2003), it has become evident that the cultural and social context exerts a strong influence on parenting, teaching and learning. Delgado-Gaitan (1994), also taking a sociocultural approach, argues for example that the assumption in the United States that practice and stimulation in, what is phrased as "critical speaking", will ultimately be internalized, independent of age, is false. That is, "critical thinking can collide headlong with the value of respect brought by immigrants from Mexico" (ibid.). "To raise questions is to be rebellious" (Delgado-Gaitan, 2003, p. 64).

It is not expected that primary schools in the West, aiming to support children's learning of critical thinking, as conceptualized here, will face a huge discontinuity between home and school values. However, many Westerners, taking an interest in education, will likely see problems when imagining an educational practice they know. One can justly ask: How can instruction methods, proposed in this chapter, be effective if the school culture for example does not breathe the educational ideal of critical thinking? This problem is complex. Space to deal with it in this dissertation is limited. Therefore, just a few suggestions are made in this final section. It primarily intends to open a discussion about the school culture which as a variable, influencing effectiveness of proposed instruction methods, cannot be denied. This is returned to in the general discussion of this book.

What school culture would be ideal of we were to scaffold the learning of critical thinking by children as proposed in this chapter? It could be a school in which all teachers know from their teaching education that children are able to reflect on their own and others' beliefs from the age of about 6 or 7 (Astington & Pelletier, 1996; Perner & Wimmer, 1985). That is, knowing that asking children to reflect on what another child said about Santa Claus is not overasking. These teachers also know that children will likely have attained the level of absolutist epistemological understanding. At this level, these teachers know, assertions are understood as facts, knowledge as coming from an external source and evaluation of assertions deemed as an instrument for comparing assertions to reality and for determining their truth or falsehood (see e.g. Kuhn, 2008).

That is, these teachers know that asking a child to evaluate the author's intentions of a textbook on religion for example is overasking. After all, the early school years are devoted, in part, to helping pupils to treat statements as facts (Olson & Astington, 1993). Understanding textbooks requires children to find relations among propositions in a text, not to draw relations between propositions expressed in a text on the one hand and the author's intentions and beliefs on the other (ibid.). This idea about an ideal school culture can be characterized as the aspect of the teacher's knowledge.

Next, what else could count as an ideal school culture for scaffolding children's learning of critical thinking? Another environmental factor that may have an impact on the effectiveness of proposed instruction methods may be the organizing of meetings with representatives of the children (so inclined), teachers and the school board.
In these meetings one of the returning questions can be: Our school aims to enhance perspective-taking competencies. That is, we are investing energy into enhancing children's and teachers' competence to understand what a speaker meant by what he said. How are we doing? What is on the right track and what can be improved? Let us denote this as the encouragement of collective participation to accomplish school aims.

The last proposed ideal is truly classic: the teacher's attitude. In the particular context of the present study, what is the appropriate teacher's attitude that will influence effectiveness of proposed instruction methods? Without reflecting at length on this question, the answer may revolve around the most famous word in the land of education: modeling. Teachers who intrinsically embrace the value of critical thinking themselves may be inspiring to their children. This inspiration may encourage children to develop and maintain their own motivation for putting mental energy into taking perspective of another's mind. Who does not want a teacher who models the point of paying attention to one child who misunderstood another and then start a discourse about the *form* of what a speaker has just said? Or a teacher who evidently enjoys opening and leading reflective discourse about the *content* of an utterance after one child argued something about Santa Claus which evoked a critical response by another.

The above-described ideal provides indications for its realization. Think of looking closely at what is being taught about children's ability to 'think about thinking' at teacher programs. Think of looking closely – as an applicant who is looking for a teaching job or as a school board, being self-critical - to the extent to which schools make a conscious effort to make all parties work for accomplishing school aims. Lastly, schools holding interviews with applicants, applying for a job at their school, can examine whether an applicant displays the appropriate teacher's attitude for effecting the learning of critical thinking.

5.4.2 Scaffolding Adolescents' Learning of Critical Thinking and School Culture

The question to start with in this subsection is: What could count as an ideal school culture in which the instruction methods that aim to scaffold *adolescents'* learning of the other parts of critical thinking contributes to their effectiveness? The other parts, to repeat, are: attempting to assign appropriate illocutionary force to *written* speech acts and *examining the grounds* of assigned intention. Later on in this subsection can be read to what more specific question the following considerations lead.

First of all, cross-cultural findings about epistemological understanding and the development of intellectual values, obtained by Kuhn and Park (2005), imply "that educational reform, in all cultures, stand to enhance their potential by attending to students' intellectual values, as well as their intellectual skills". Key to this enterprise is epistemological understanding (ibid.). "In the absence of sufficient development of epistemological understanding, students are unlikely to be willing to invest the effort that sustained intellectual engagement entails" (Kuhn & Park, 2005, p. 123).

Luckily, in this regard, epistemological understanding and intellectual values are not primarily located at the individual level (ibid.). "Intellectual values are embedded in cultural meaning systems and refer to the perceived value of intellectual activity to a cultural group as a whole" (Kuhn & Park, 2005, 115). The hypothesis of intergenerational transmission at the group level received empirical support (ibid.). "Comparison of the Asian and Asian-American samples (...) is illuminating in this respect. Children's levels remain below those of the parents in the Asian samples. In the Asian-American samples, in contrast, children have moved beyond their parents' levels in the direction of their new culture" (Kuhn & Park, 2005, p. 121).

In sum, the above referred to research indicates that education is capable of supporting the development of epistemological understanding which, at the same time, enables pupils to understand the intellectual value of activities like evaluating assertions. After all, one of the characteristics of mature epistemological understanding is regarding assertions as judgments rather than opinions and critical evaluation of assertions as relevant (see e.g. Kuhn, 1999). However, this educational achievement will not be enough to *sustain* motivation for the activity of 'evaluating assertions'. That is, if the relevance of evaluating assertions for example is transmitted in a school culture which attributes an *instrumental* value to this intellectual activity, "the risk then looms large that, sooner or later, one may become sceptical" of this instrumental value, "at which point the activity loses its purpose" (Kuhn, 2008). If an activity becomes identified as merely a means to an end, it tends to be devalued as unimportant in its own right (ibid.).

In contrast, the value of an intrinsically valued activity lies in the activity itself (Kuhn & Park, 2005). Applied to this dissertation's concern this means that performing

the mental activities of critical thinking, as conceptualized here, is experienced as valuable in its own right. Continued commitment of an intrinsically valued activity becomes likely (Kuhn & Park, 2005). This is why Kuhn and Park (2005) believe that the development of intrinsic valuing of intellectual activities provides the firmest basis for sustaining intellectual motivation through childhood and adolescence and into adulthood.

At this point of imagining an ideal school culture which contributes to the effectiveness of earlier proposed instruction methods, the real important question gains in clearness. What can schools do to not only scaffold adolescents' attainment of mature epistemological understanding by which intellectual values are supported (Kuhn, 2008; Kuhn and Park, 2005), but to also provide a social context in which *intrinsic* valuing of critical thinking, as conceptualized here, is transmitted?

Values, we learn from Kuhn (2008), derive from the thinking and feeling of the valuer. Educators cannot introduce themselves as a presence in adolescents' lives, determined to educate them, whether they like it or not (ibid.). Pupils will decide what is worth learning and knowing (ibid.). Therefore, the pupils' experience is important in education. Although pupils "hold all the cards" with regard to their idea of what education and learning are about (Kuhn, 2008), it is evident that education exerts influence on 'their cards'. To conclude this subsection, three ideas on transmitting intrinsic valuing of critical thinking, summed up for clarity, are suggested.

1. **Valuing Reason by Teachers for Intrinsic Rather than Instrumental Reasons**

Teachers of any subject, whether history or physics, have been presented in this chapter as potentially capable of scaffolding their adolescents' learning of critical thinking. Thus, teachers are expected to be one of the important determinants of effecting critical thinking performance. They are believed to effect the learning of critical thinking by offering instruction methods, proposed earlier in section 5.3, within their own lessons.

One of the teachers' influences, other than providing certain instruction methods, regards the teacher's, more or less explicit, attribution to the value of reason. It can be expected that the more implicit way a teacher relates to rationality - here also termed "reason" - forms a part of what others have called "the hidden curriculum". The hidden curriculum can be referred to as a "metaphor to describe the shadowy, ill-defined and amorphous nature of that which is implicit and embedded in educational experiences in contrast with the formal statements about curricula and the surface features of educational interaction" (Sambell & McDowell, 1998, see p. 391).

Without enlarging upon it, imagine a teacher who attributes an instrumental value to reason. This teacher considers the ability to reason primarily as a means to an end and connects the two *arbitrarily*. That is, once the hammer, to use a metaphor, is used to

fix the job, the hammer *as such* loses further relevance. This imaginary teacher may have a detrimental effect on scaffolding critical thinking, as conceptualized here. This teacher may transmit, probably subconsciously, the idea that evaluating tasks for example, as one of the proposed scaffolds, are important because it helps to produce strong arguments which can be used to convince others of our stance in debates. However, this instrumental value is at odds with the value that is attributed to critical thinking as reinterpreted here. Why valuing reason for instrumental reasons is at odds with this dissertations' concept of critical thinking can best be explained by turning to the attachment of intrinsic value to critical thinking.

Suppose a teacher attributes an intrinsic value to reason. How can this belief contribute to the effectiveness of proposed instruction methods and be one of the beneficial effects of the hidden curriculum? First of all, what does the belief that reason is a good thing for intrinsic reasons involve? This belief can be described by returning to Hannah Arendt's concept of judgment, worked out in more detail in chapter III. As noted in the general introduction of this book, Arendt (1971) made a distinction between thinking and judging. Thinking as such, Arendt held, does society little good. Thinking does not have political relevance unless, Arendt reasons, special emergencies arise. Thinking becomes critical, Arendt argues, when it goes through a Socratic questioning and answering process in which I am both the one who asks and the one who answers. Thinking now transforms into judging which "one may call with some reason the most political of man's mental abilities" (Arendt, 1971).

Arendt (1964) attributes a positive value to the above-described non-instrumental form of thinking. We know from the total collapse of respectable society during the Hitler regime, Arendt argues, that moral norms and standards can be changed overnight and that all that then will be left is the mere habit of holding fast to something. Much more reliable are people who are used to examine things and to make up their own minds (ibid.).

Would this non-instrumental form of thinking be not a prerogative of the few? This is what a teacher, especially those who work with lower level pupils, can wonder. And how can its value be transmitted, also by teachers do not think much of their own 'reflective qualities'? To Arendt (1964; 1971) "thinking in its non-specialized sense is not a prerogative of the few but an ever-present faculty in everybody". [B]y the same token, inability to think is not a failing of the many who lack brain power but an ever-present possibility for everybody – scientists, scholars, and other specialists in mental enterprises not excluded" (Arendt, 1971, p. 191). "The precondition for this kind of judging is not a highly developed intelligence or sophistication in moral matters, but rather the disposition to live together explicitly with oneself, to have intercourse with oneself, that is, to be engaged in that silent dialogue between me and myself which, since Socrates

and Plato, we usually call thinking. This kind of thinking, though at the root of all philosophical thought, is not technical and does not concern theoretical problems. The dividing line between those who want to think and therefore have to judge by themselves, and those who do not, strikes across all social and cultural or educational differences" (Arendt, 1964, p. 45).

Evident, though important to emphasize, is that Hannah Arendt makes no empirically grounded claims. Her idea about "the precondition for this kind of judging" (Arendt, 1964) is part of her philosophy about judgment and its value. Interesting will be the empiricist who refutes Arendt's 'intuitions'. The message to teachers who wish to transmit the intrinsic value of reason is simple. Internalize Arendt's philosophy, or a similar thought about the intrinsic value of reason yourselves. Then do not worry about transmitting this value towards your pupils. Model it. Trust on the hidden curriculum to take care of its tacit transmission.

2. **Teaching as 'Evaluativists'**

The teacher's job in a school that wishes to scaffold the learning of critical thinking, as conceptualized here, is to support adolescents' transition from the multiplist level of epistemological understanding to the evaluative level. Two instruction methods which bear effectiveness for achieving this aim have been proposed. 1. Giving pupils an assignment in which a rhetorical situation for a text needs to be constructed.
2. Scaffolding the coordination of three perspectives, e.g. by making pupils complete a form in which an author's perspective, external information perspective and their own perspective (on both the other perspectives) need to be distinguished and described.

It is likely that teachers who have attained the level of multiplist epistemological understanding will not contribute to achieve the aim that pupils make the "fragile developmental transition" (Kuhn and Weinstock, 2002) from multiplism to evaluativism. Imagine teachers, 'being multiplists', who understand assertions as opinions, freely chosen by and accountable only to their owners and, hence, for whom the evaluation of assertions is irrelevant (Kuhn, 1999). By definition almost, these multiplist teachers will not see much point in evaluating tasks such as coordinating three perspectives. After all, if assertions, made by Ali B. for example as rapper of certain text (see 5.3.4), are regarded as private opinions which only need to be accounted for by Ali himself, why make the pupil evaluate Ali's statements?

Granting little value to evaluating tasks will likely result in a tacit transmission of this belief and hence will decrease potential effectiveness of scaffolding critical thinking. Even if multiplist teachers put their best foot foremost and just offer evaluating tasks,

regardless their (deepfelt) belief in them, the power of the hidden curriculum may win from the explicit one.

What can be expected from teachers that have attained the level of evaluative epistemological understanding themselves? We might see teachers who interact with their, probably, multiplist pupils who are prone to respond by saying: "whatever" to any oral or written speech act they are confronted with. These teachers do not take the "whatever response" as a reflection of pupils' lack of motivation for learning *per se*. Rather, these teachers take the "whatever"-attitude of their pupils as reflecting a multiplist level of epistemological understanding. In response to the "whatever", expressed by an adolescent, an 'evaluativist teacher' can tell the adolescent what judgments (s)he found in a speech act at hand. Further, sharing with adolescents what evaluating question is used to examine the grounds of these judgments may encourage pupils to do the same. And to regard speech acts as an object of cognition at all.
But above all, evaluativist teachers will tacitly model the relevance of evaluating speech acts, aside from offering evaluating activities to pupils of which the value may become evident in the course of engaging them as Kuhn (2008) believes.

Research about the relation between teachers' epistemological world views and teaching style for example is available. See e.g. Olafson, Schraw, & Vander Veldt (2010) for a review. However, what is understood by "epistemological world view" does not seem (enough) compatible with (levels of) "epistemological understanding", as originating from Kuhn's (1999) model. It might be interesting for educational researchers to find out whether there is a correlation between teachers who are evaluativists - following Kuhn's model of epistemological understanding - and effecting critical thinking performance by adolescents.

3. **Making Educators and Pupils Partners in 'Making Sense of Education'**

Kuhn (2008) teaches all who are engaged in education a profound lesson. Values, to repeat, derive from the thinking and feeling of the valuer, Kuhn (2008) holds. They are not imposed from without (ibid.). "We can require that students attend school, but we cannot dictate what sense they make of what goes on there. The one thing we can be sure of is that students make *some* sense of the school life that absorbs so much of their time. They figure out what is going on. The danger is that the meaning students construct may end up quite different from what educators would like it to be" (Kuhn, 2008, p. 16).

A lot of weight is put on intellectual values in questions of education because "people are likely to employ more demanding thinking skills", such as critical thinking, "only to the extent that they appreciate their value" (Kuhn, 2008). Values, in other

words, govern the extent to which thinking skills will be applied and practiced (Kuhn, 2008). Thus, as earlier expressed in more implicit ways in this section, encouragement of motivation for critical thinking, can be undertaken, in part, by transmitting, at school, corresponding values, such as valuing reason for intrinsic rather than instrumental reasons.

So far, the role of the individual teacher in transmitting intrinsic valuing of critical thinking has been examined. Teachers have been imagined who value reason for intrinsic reasons and have attained the level of evaluative epistemological understanding themselves. They have been presented as potential contributors of achieving the aim to transmit intrinsic valuing of critical thinking and hence increase potential effectiveness of earlier proposed instruction methods.

However, on an institutional level things can be done too. To conclude this section, one proposal, derived from Kuhn's (2008) work, is sketched. This proposal regards an element of school organization. One of the central themes in Kuhn's *Education for Thinking* seems based on the profound insight that values cannot, not even with the best intentions, be imposed on other people. From this insight the statement follows that education must be seen as a "sense-making partnership" (Kuhn, 2008). Applied to this section's concern, pupil panels could be organized which centres on the question what pupils think they are doing in school. After all, [w]hat students think they are doing is much more important than what we think we want to teach them" (Kuhn, 2008, see p. 198-199). Pupils' responses, during these panel discussions, to questions on their perceptions of "what *they* think they are learning and why they think it might make sense to learn it" (Kuhn, 2008) can be reported without writing down pupils' names. After all, if pupils are to be honest about what they think they are doing in school, they must feel free to speak up their minds without fearing to be told of for it in the classroom later.

Some representative of the school who leads the panel discussions with pupils and who draws up a report on what has been said can now feedback this to the teachers and school administration. Teachers and school managers can be asked to participate in an educators' panel and jointly reflect on their pupils' responses to the question what they think they are doing in school. If there happens to be a huge cap between the pupils' perceptions and the school's aims, e.g. to transmit intrinsic valuing of critical thinking, educators must be asked to think about their role in changing pupils' perceptions. "Based to a large extent on their own school experiences, children form conceptions of what learning is about that may well last a lifetime" (Kuhn, 2008, p. 17). Therefore, it seems essential to begin with pupils' "own ideas about schooling and learning, especially if we think these may be worthy of change" (Kuhn, 2008, see p. 17).

Concluding Remarks

In this chapter ideas on how to scaffold children's and adolescents' learning of critical thinking were put forward. Three instruction methods were believed to be potentially effective for supporting one part of critical thinking: using metarepresentational terms explicitly by teachers, talking about misunderstandings in the classroom and watching audio-visual fragments containing oral speech acts and joint reflection upon it.
These didactic tools have the overall aim to teach pupils to interpret illocutionary force of other people's *oral* use of language. This part of critical thinking was hypothesized to require competence with: the say-mean distinction, metarepresentational terms and the concept of interpretation. Offering pupils exercises that call for these requirements was argued to have a potential effect on learning one part of critical thinking.

Two proposed instruction methods were argued to be suitable to offer to pupils *from* (early) adolescence and unsuitable to use with children: teaching rhetorical reading strategies and scaffolding pupils' coordination of three perspectives. Moreover, teaching pupils how to construct a rhetorical situation for a text was specifically designed to support acquiring competence with interpreting illocutionary force of *written* speech acts. Receiving help from teachers to coordinate an author's, self's and external information perspective was argued to have a potential effect on individuals' transition from the multiplist level of epistemological understanding to the evaluative level. The latter level was hypothesized to be the prerequisite for the evaluative component of this book's critical thinking definition and *additional* requirement of interpreting illocutionary force of *written* speech acts. Thus, this variable, implying the understanding that written speech acts contain 'authorial judgments', also seems needed to construct a rhetorical situation for a text.

Despite arguments which point to potential effectiveness of proposed instruction methods, forces of the hidden curriculum may spoil the game. Examples of these forces are a teacher's: tacit transmission of valuing reason for instrumental reasons, lack of knowledge about cognitive development and teachers who 'are multiplists' themselves. What to think of schools that underestimate the power of adolescents' perceptions of what *they* think they are doing in school? On the bright side, imagined detrimental forces indicate potential beneficial forces. An ideal school culture has been presented as one in which the opposite of the detrimental forces is at hand. Teachers of adolescents e.g. tacitly transmit intrinsic valuing of reason and teach as 'evaluativists'. Schools organize panels in order to make teachers and pupils partners in making sense of education. These are considered to be beneficial forces of the hidden curriculum.

Aside from all this, proposed ideas in this chapter aimed to illustrate what critical thinking, as conceptualized and hypothesized in this book, entails when endorsing it.

Discussion

Reiterating Questions and Answers and Discussing Possible Problems

The present study has come to an end. It is time to reiterate research questions and to summarize earlier provided research answers. The answers to the three research questions can also be refound in the concluding remarks of the five chapters that precede this general discussion. After questions and answers have been reiterated in this general discussion, consequences of putting proposals of the present study in practice are considered. Pondering possible consequences, we are going to meet possible problems.

Critical Thinking Reinterpreted

The first research question, to reiterate, was: To what linguistic meaning of the phrase "critical thinking" does an analysis lead that connects to Olson and Astington's (1993) ascribing of the ability to recover the putative intentions of writers and to examine their grounds, to critical reading and critical thinking?

Searle (1969; 1979) helped, in part, to clarify that critical thinking, as understood in the present study, refers to the assessment of the "complete speech act". In Olson and Astington's (1993) words, the critical response comes from analyzing how an author wants a text to be taken – or how a speaker, as is added by the present writer, wants an utterance to be taken - not merely from comprehending its propositional content.
By the "complete speech act" Searle (1969) means the act of performing illocutionary acts; the things we *do* with words. We have seen that Searle (1979) argues there are a limited number of things we do with language: we tell people how things are (*assertives*), we try to get them to do things (*directives*), we commit ourselves to doing things (*commissives*), we express our feelings and attitudes (*expressives*) and we bring about changes through our utterances (*declaratives*).

Making the distinction between propositional content and illocutionary force of others' utterances and reflecting upon the force ourselves was associated, by the present writer, with critical thinking. "Illocutionary force", to repeat, refers to the way a proposition is meant to be taken or, as Searle (1969) explains it, what illocutionary act the speaker is performing in the utterance of a sentence. When people raised a question, did they really perform an illocutionary act of questioning? When they said that they *assert* X, were they performing an *assertive* in which they expressed their commitment to the truth of X? Or would they perform an indirect speech act in which the utterance "I claim the critical thinking movement has much to gain from a developmental conceptualization of its subject matter" (Kuhn, 1999) may be meant, not merely as an

assertion but is also a *commissive* in which Kuhn (1999) is committed to change future research in critical thinking. She might have done so...

Wondering how an utterance is meant to taken by us, as receivers, creates the possibility to come to a "meeting of minds" (Golinkoff, 1993) rather than to practice one's general criteria of good thinking. Assessing utterances this way is critical in that we evaluate our own thinking about another's thinking. Doing this, we do not only invest in our understanding of others. We also invest in self-understanding because to think about another's mental state is to become aware of our own.

To further clarify the critical response to which assessing another person's complete speech act can lead, Gadamer's (1977) notion of "critical self-consciousness" was applied. Further, Hannah Arendt's concept of judgment was applied to clarify why critical thinking, as reinterpreted here, addresses particular speech acts, always performed in particular contexts. Arendt (1970), like Gadamer (1979), also explained that "the trick of critical thinking does not consist in an enormously enlarged empathy through which one can know what actually goes on in the mind of all others". As if she had not done enough, Arendt (1970) helped to discuss the question of conditions of appropriateness and adequacy when we are to judge critical thinking performance.

Backed up with a conceptual framework, using both empirical and (mostly) philosophical literature, at the end of chapter III, the phrase "critical thinking" could be defined in one sentence. Critical thinking is attempting to assign appropriate illocutionary force to the oral or written speech acts of others and examining the grounds of assigned intention.

The Correlates of Critical Thinking Performance Hypothesized

The second research question was: What hypothesis on the correlates of critical thinking performance can be derived from theorizing the cognitive requirements of critical thinking from a cognitive developmental perspective? Requirements of the first part of the critical thinking definition, that is the attempt to assign appropriate illocutionary force to others' *oral* speech acts, have been analyzed distinct from the requirement of the others parts of the definition.

Attempting to assign appropriate illocutionary force to the *oral* speech acts of others seems to require competence with: (i) the say-mean distinction, (ii) meta-representational terms and (iii) the concept of interpretation. These competencies regard aspects of Theory-of-Mind (ToM) competence (i and iii) and a form of language competence (ii). The ToM competencies are headed under the umbrella of metacognitive competencies. Whether competence with metarepresentational terms – referring, here, to having acquired metarepresentational terms and being competent to apply them

appropriately in different contexts - may also be subsumed under the heading of metacognitive competencies remains an open question.

Attempting to assign appropriate illocutionary force to *written* speech acts seems to require the same competencies as interpreting *oral* speech acts. However, it has been suggested to consider these requirements to be necessary and sufficient - within this theoretical framework - of interpreting *oral* speech acts and necessary but not sufficient requirements of interpreting *written* speech acts. The additional requirement of attempting to assign appropriate illocutionary force to *written* speech acts and prerequisite for the examination of assigned intention seems the attainment of evaluative epistemological understanding. Epistemological understanding has been regarded, on the basis of theoretical arguments given in chapter IV, as a metacognitive competence, likewise the ToM competencies noted before.

From these theoretical statements the following hypothesis has been derived. Critical thinking performance may correlate with performances on tasks assessing competence with the say-mean distinction, metarepresentational terms, concept of interpretation and evaluative epistemological understanding. To embed this hypothesis into theory, it has been concluded that critical thinking, as conceptualized here, is believed to rest on metacognitive competencies and language competence.

This hypothesis implies that children between 7 and 11 years old seem perfectly capable to pass a task in which the first mental activity of the critical thinking definition, here offered, needs to be performed; attempting to assign appropriate illocutionary force to the *oral* speech acts of others. It equally implies that individuals who can handle both mental activities of the critical thinking definition are expected to be (young) adults. The most important consideration for drawing this conclusion on expected age is that evaluative epistemological understanding is attained by many adolescents, though by no means all, at adulthood (Kuhn, 2008; Kuhn et al. 2000; Kuhn & Park, 2005). This result seems corroborated, to add a Poperean term to the mix, by results obtained by Mason et al. (2006).

Ideas Proposed on Scaffolding the Learning of Critical Thinking at School

The third research question was: How could the learning of critical thinking by children, adolescents and (young) adults be scaffolded in the context of school? Even though competence with both mental activities of the critical thinking definition is expected to find in (young) adults, critical thinking has been approached from a cognitive developmental perspective. It is thus likely that individuals can learn critical thinking during the course of their cognitive development. The third question has been answered

on two levels. The first regards an instructional level in the form of proposing instruction methods to scaffold the learning of critical thinking by teachers in the classroom.
The second level regards the school culture which may, or may not at all, contribute to the effectiveness of proposed instruction methods.

Three instruction methods were believed to be potentially effective for supporting one part of critical thinking for children and adolescents: using metarepresentational terms explicitly by teachers, talking about misunderstandings in the classroom and watching audio-visual fragments containing oral speech acts and joint reflection upon it. These didactic tools have the overall aim to support pupils in learning to interpret illocutionary force of other people's *oral* use of language.

Two proposed instruction methods were argued to be suitable to offer to pupils *from* (early) adolescence and unsuitable to use with children: teaching rhetorical reading strategies and scaffolding pupils' coordination of three perspectives. These instruction methods have been designed to scaffold the learning of the other parts of the critical thinking definition; interpreting illocutionary force of *written* speech acts and *examination* of assigned intention. Both instruction methods have been argued to call for evaluative epistemological understanding or require, at least, the level of multiplism which may evolve into evaluativism with the scaffolds teachers provide. Based on available research (Kuhn, 2008; Kuhn et al. 2000; Kuhn & Park, 2005; Mason et al., 2006) there is little reason to expect that children will attain the level of evaluative epistemological understanding. Nor will children be on the verge of this attainment. This explains why teaching rhetorical reading strategies and scaffolding the coordination of three perspectives are regarded as suitable to use with adolescents and (young) adults and not with children.

The level of school culture complicated matters. That is, a certain school culture, as part of the hidden curriculum, may impact effectiveness of proposed instruction methods in beneficial or detrimental ways. Imagining beneficial impact of the hidden curriculum on the proposed instruction methods of chapter V, and hence effect on the learning of critical thinking, leads to describe an ideal school culture. Schools working with children, providing an ideal school culture, have teachers who know that asking children, between 6 and 11 years old, to reflect on their own and others' beliefs is not a matter of overasking. What is more, these 'ideal schools' encourage collective participation, by children, teachers and members of the school board, to accomplish school aims. They do this, for example, by organizing meetings which centre around the question whether the aim to enhance perspective taking competencies, by all in school, is on the right track. This ideal school also works with teachers who tacitly transmit their own commitment to the value of critical thinking to their children and, with that, model motivation for (parts of) critical thinking.

Schools working with adolescents, providing an ideal school culture which may contribute to the effectiveness of proposed instruction methods to scaffold critical thinking, do similar things. They have teachers who tacitly transmit their own valuing of rationality for intrinsic reasons and who have attained the level of evaluative epistemological understanding themselves. What is more, these ideal schools organize panels in order to make pupils and teachers partners in making sense of education.

Pondering Possible Consequences of Putting this Book's Proposals in Practice

Whereas it can be held that the present study contributed to gaining insight into questions of critical thinking and education, undoubtedly, new problems have been created too. One of these problems might regard the extent to which proposed ideas in this dissertation are feasible in the reality of today.

One of the consequences regards future empirical research in critical thinking, based on the present study's work. One can wonder to what extent the intended empirically testable hypothesis about the correlates of critical thinking performance is actually testable to social scientists. Is it expected that too many confounding variables for example make testing for it a needlessly costly and pointless venture?

Another kind of consequence of carrying this book's proposals into effect, regards educational practice and the current culture in which this practice is embedded.
In the remainder of this general discussion possible consequences come for up discussion. We will see that once the question is addressed to what extent proposed ideas are realizable, things start to become a bit grim. Let us start on the bright side first by considering what *endorsement* of this book's concept of critical thinking by schools and/or the Ministry of Education and Science could involve.

Endorsement of the Present Study's Concept of Critical Thinking

It is not unthinkable that some people who are engaged in education, whether on the practical level or on the level of educational policy, endorse the conceptualizion of critical thinking which is offered in this book. What could this endorsement involve?

People who endorse the present study's concept of critical thinking may envision the implementation of this concept into the schools and realize to what extent it differs from the implementation of the dominant concept of critical thinking. Aside from this, these people may believe in the importance of scaffolding this form of thinking for society at large. And perhaps even believe this form of thinking will yield more reliable outcomes for society than outcomes from programs that focus on the improvement of pupils'

reasoning quality. Both elements of what the endorsement of this book's concept of critical thinking may involve are discussed in turn.

Implementing this book's concept of critical thinking into a school, say within secondary education, may be envisioned in line with the ideas that are proposed in chapter V. All teachers of the regular curriculum make sure that the activity of assigning illocutionary force to oral speech acts can be learned in their own lessons. They do this by using metarepresentational terms themselves, by sometimes talking about misunderstandings that occur in discussing certain matter and showing audio-visual fragments now and again, suitable with the topic at hand, which is followed up by a joint reflection on a certain speech act. To scaffold the other parts of critical thinking, aiming to support pupils' transition 'from multiplism to evaluativism', all teachers provide certain exercises. Exercises, proposed in chapter V, like constructing a rhetorical situation for a text or coordinating three perspectives when their regular program allows for it.

Educators who envision these proposals to scaffold the learning of critical thinking may realize that this approach differs from implementing the paradigm of 'critical thinking is good reasoning and being disposed to do so'. Learning critical thinking as understood in the 'dominant paradigm' will obviously entail paying explicit attention to the rules of good reasoning. Aside from this, attention will be paid to intellectual values, derived from the various sciences. This attention will serve the educational aim to encourage pupils to develop a disposition to "engage in reason assessment" (Siegel, 1988). Developing a critical attitude, refers in the 'reasons conception' Siegel (1988) offers, to the inclination to "seek reasons and evidence; to demand justification; to query and investigate unsubstantiated claims".

People who are attracted to the mental activities this book considers as critical thinking may have good hopes that scaffolding the learning of these 'activities' has importance for society at large, aside from its importance to individuals. Some of them may even go as far in expecting that this book's concept yields more promising outcomes for the maintenance of democratic society than outcomes from pupils' improvement in reasoning quality and enhanced inclination to "engage in reason assessment" (Siegel, 1988). They may be impressed, likewise the present writer, with some of Hannah Arendt's philosophy which allowed to argue for the social difference critical thinking, as conceptualized here, can make.

Arendt (1964), to repeat and to return to the general introduction of this book, drew a conclusion about reliable people for democratic societies, after attending to the Eichmann trial in 1961 and thinking about the relation between thinking and judging. In times of societal crises, Arendt (1964) suggests, people who are used to examine things and to make up their own minds are much more reliable than those who hold fast to moral norms. The kind of judging to which Arendt (1964; 1971) attributed a positive

value concerns the judging of "*particulars* without subsuming them under general rules which can be taught and learned until they grow into habits that can be replaced by other habits and rules" (Arendt, 1971).

Arendt's perceived danger of 'thinking in an instrumental/bureaucratic way' resembles a problem, perceived by the present writer, with promoting in education to apply rules of good reasoning and, if possible at all, instill a disposition in pupils to engage in reason assessment under the banner of "critical thinking". Conversely, Arendt's belief in the political importance of "judging particulars" (Arendt, 1971) and "to be engaged in that silent dialogue between me and myself, which is not technical, does not concern theoretical problems and does not call for a highly developed intelligence or sophistication in moral matters" (Arendt, 1964), resembles the present writer's concern with assessing "complete speech acts", always performed in particular contexts.

If critical thinking involves applying rules of logical reasoning validly and doing this from a *love of reason* (Siegel, 1988, quoting R. W. Binkley), the one who detected that two propositions are mutually exclusive is properly called a critical thinker. The one who understood that the propositions were *literally* mutually exclusive but the complete speech act was *meant* to express a dilemma and who reflected on the reasons for having this particular dilemma, is properly called a critical thinker in this dissertation.

Some members of the Critical Thinking Movement believe that democracy can flourish to the extent that its citizenry is able to reason well regarding political issues and matters of public policy and to scrutinize the media (Bailin & Siegel, 2003). But will the focus on reasoning quality not have the danger that individuals who were trained in applying rules for good reasoning do so, almost unthinkingly? Being taught that we need to look for flaws in reasoning, can make us blind for the context in which people utter statements. Some logical principles such as the *principium non contradictionis* can said to be generalizable across different contexts. Even so, examining other people's reasoning can obstruct acquiring a proper understanding of what people *do* with words. The one who is being criticized for violating the principle of contradiction, may actually be the one who performs an *expressive* in which a dilemma is being shared. In a clumsy way.

Understanding of what people *do* with words and reflection upon it may help, in part, to sense threats to democratic society. To connect with Arendt's (1964; 1971) line of reasoning, will not those who have learned in school to assess *complete* speech acts be more reliable when it comes to the maintenance of democratic society?
Those who endorse this book's concept of critical thinking may answer in the affirmative. However, to what extent can implementation of this concept into the schools of today be realized?

Discussing Possible Impeding Forces From Schools' Hidden Curriculum

Time will tell whether educational policy makers and schools will endorse the, in this dissertation offered, concept of critical thinking. Suppose, for the sake of argument, there will be endorsement and educators' willingness to work for its realization. It is likely that endorsement and willingness will not be enough to yield success. Impeding forces can spoil the game. One type of impediment may come from the schools themselves and is likely to stem from the hidden curriculum. Possible impeding forces, stemming from a school's hidden curriculum, are discussed in this subsection.

In chapter V, to reiterate, an ideal school culture which contributes to the effectiveness of proposed instruction methods, has been imagined. The school culture has been presented as part of a school's hidden curriculum. The development of intrinsic valuing of intellectual activities provides the firmest basis for sustaining intellectual motivation through childhood and adolescence and into adulthood (Kuhn & Park, 2005). The attainment of mature epistemological understanding may be key to the development of intrinsic valuing of intellectual activities because intellectual values are supported by an epistemological belief system as Kuhn and Park (2005) hold. However, intellectual values are not only simply attributes of individuals but also exist at a group level (Kuhn & Park, 2005). Thus, the environment, such as school, seems potentially capable of playing a role in transmitting intrinsic valuing of critical thinking at the group level.

Discussing the chances of realizing the contextual conditions of *primary* education in contributing to scaffold critical thinking will be left out of consideration in this discussion. Primary schools are seen, to reiterate, as capable of supporting just one part of critical thinking; interpreting illocutionary force of oral speech acts. Not too many problems are envisioned with putting the proposals of creating a supportive school culture in practice. Making sure teachers know about children's ability to reflect on their own and others' beliefs for example can be realized by making this knowledge part of teacher education or by transmitting this knowledge in training for working teachers. The same seems to apply to the proposal to organize meetings with children, teachers and school board members to encourage collective participation to accomplish school aims.

Modeling the value of critical thinking, through a teacher's attitude, may be harder to realize than realizing the other two noted proposals. However, the value of the part of critical thinking that primary school teachers are 'asked' to tacitly transmit, may already be 'in the value repertoire' by most of them. That is, the importance of 'trying to understand what is meant by what is said' will probably not be perceived as a very abstract mental activity. Above all, its social relevance, as in increasing chances to come

to a "meeting of minds" (Golinkoff, 1993), will likely be evident to many primary school teachers.

Three ideal conditions, addressing *secondary* education, have been imagined in chapter V. Conditions in order to reach the educational aim of providing a social context in which intrinsic valuing of critical thinking is transmitted. And conditions in order to elicit and sustain motivation for critical thinking and enhance effectiveness of proposed instruction methods. These contextual conditions, to repeat, were: 1. valuing reason by teachers for intrinsic rather than instrumental reasons; 2. teaching as evaluativists and; 3. making educators and pupils partners in making sense of education by organizing panels. In the remainder of this subsection possible impeding forces to create these conditions in the reality of today's schools come up for discussion.

Ad 1. How many teachers will value rationality for intrinsic rather than instrumental reasons? That is, how many teachers will be inspired by philosophers like Hannah Arendt who perceived a danger in subsuming the assessment of particular statements, norms or values "under general rules which can be taught and learned until they grow into habits that can be replaced by other habits and rules" (Arendt, 1971)? Who believes, with Arendt, or another thinker holding similar beliefs, that "thinking as such or the thirst for knowledge which uses thinking as an instrument for other purposes does society little good"? Who believes that the ability to judge, presented by Arendt in Kantian parlance as "the faculty that judges *particulars* without subsuming them under general rules" is capable of "preventing catastrophes when the stakes are on the table"?

Imagining teachers who were educated themselves in the field of science, like mathematics, physics, biology or in economics, results in the impression that these teachers may value rationality, pre-eminently, for instrumental reasons. Rationality, these teachers may hold, helps to solve problems. Solutions, provided by scientists, favor society, witness increased prosperity and welfare, partly due to developments since the Scientific Revolution of the 17th century of the Western world.

That these teachers may, at the same time, attribute a positive and intrinsic value to humans' ability to reflect is imaginable. But will they think of reflection as understood in Arendt's (1971) terms for example? Arendt refers to Socratic questioning "in which I am both the one who asks and the one who answers and whereby we constantly raise the basic Socratic question: *What do you mean when you say...?* This dialogue of *dialegesthai,* in Arendt's translation, is a "traveling through words" (*poreuesthai dia tōn logōn)*. This representation of reflection, by the way, holds well with the reinterpretation of critical thinking as assessing complete speech acts. Or put in less theoretically charged terms, in assesing other people's use of language in which distinguishing between 'what is said and what may be meant by the speaker or the writer' plays a central role.

It is possible that teachers who primarily attach an instrumental value to reason, though *at the same time* value humans' ability to reflect, do contribute to transmit intrinsic valuing of critical thinking. However, individuals who are educated in the (hard) sciences may often be less talented 'with words' or less inclined to attend to the way communicative intentions, both in formal and informal contexts, are expressed in word and intonation. To conclude, when teachers subordinate reflection to the importance of 'instrumental rationality' and are no 'language artists' (and no ToM masters...) themselves, they might not necessarily be an impeding force of the hidden curriculum. But to think of them as being a part of the *beneficial* forces of a school culture in which intrinsic valuing of critical thinking is transmitted may be too good to be true.

Ad 2. How many teachers will have attained the level of evaluative epistemological understanding themselves? Taking the study by Kuhn et al. (2000) as a guide to form a supposition about this question, one particular finding needs explicit attention. To repeat, in their study about the development of epistemological understanding Kuhn et al. took a sample of seven groups of children, adolescents, and adults varying in age, education, and life experience. "Adults of all backgrounds are highly likely to make the transition from absolutism to the multiplist acceptence that knowledge is uncertain and divergent claims legitimate. The more informative, and troubling, finding is that no more than half of adults of any background and in any judgment domain make the subsequent transition to the evaluativist position. (...) [I]n any of the domains half or more of the adult population, across a range of educational and experiential backgrounds, continue to believe that one cannot make discriminations among different claims – every claim has legitimacy equal to any other" (Kuhn et al., 2000, p. 324-325). This finding led Kuhn et al. to conclude that increasing age and education are not sufficient to effect the transition to an evaluativist level of epistemological understanding.

Based on the above-referred to finding, it may not be too speculative to suppose that half of the teachers, in secondary education, may have attained the level of evaluative epistemological understanding. If this is so, those who teach as 'multiplists' may have a detrimental effect on pupils' chance to make the (developmental) transition from the mutiplist level of epistemological understanding to the evaluative. As already argued in chapter V, section 5.4, 'multiplist teachers' may not see the point in instruction methods like like scaffolding the coordination of three perspectives. Multiplist teachers will regard Ali B.'s statements for example, as uttered in his raps, as private opinions. Evaluativist teachers, in contrast, will regard the same statements as *judgments* that can be evaluated. What is more, they think it is important to evaluate judgments in order to make up one's own mind and to participate in public debates.

Thus, teaching as multiplists may count as an impeding force of realizing the aim to transmit intrinsic valuing of critical thinking. Teaching as multiplists, further, may also

decrease potential effectiveness of the instruction methods, proposed in chapter V, to support pupils' transition from multiplism to evaluativism. However, assuming, for discussion's sake, that half of the secondary school teachers *will* have attained the level of evaluative epistemological understanding, these teachers might compensate for their multiplist colleagues. Looking at it this way, we might conclude that the supposition that half of the teachers, in today's schools, will teach as multiplists and the other half as evaluativists implies that both beneficial and impeding forces are at work.
Taken together, the impeding forces might not 'win from' the beneficial ones because of the compensating effect evaluativist teachers might bring about.

Ad 3. How many teachers will make a contribution in changing some pupils' perception of education as "obstacles to their agendas", as only needed "to qualify for more schooling" or who conclude, at an early age, education "isn't for me" (Kuhn, 2008)? As argued in chapter V, part of an ideal school culture in which intrinsic valuing of critical thinking is transmitted regards Kuhn's (2008) idea to make educators and pupils partners in making sense of education. One of the ways to put this idea in practice, it was argued, is to hold pupil panels in which pupils are asked what they think they are doing in school.

It is likely that some pupils express perceptions as indicated above. Suppose pupils' responses in a panel on the meaning of education represents the belief that education is primarily needed to qualify for more schooling. Suppose, also, that this belief, in all its colors, is feedbacked to the teachers in an educators' panel. This idea on the meaning of education reflects an instrumental attitude towards rationality which, as we have seen above, stands in sharp contrast to intrinsic valuing of critical thinking. Thus, changing this instrumental attitude towards education may contribute to transmit intrinsic valuing of critical thinking.

What seems key to change pupils' perception of education as only important for effecting their future social status and material well-being, is educators' realization that values derive from the thinking and feeling of the valuer (Kuhn, 2008). A profound lesson for educators is that values, such as the importance of becoming a critical thinker through education, cannot be imposed on other people. This is not only intended for authoritarian or impatient educators who simply reason that the school decides what goes on whether pupils like it or not. It equally is intended for educators who are in good faith and for example explicitly tell pupils why education, or critical thinking, matters. But again, transmitting the value of intellectual activities is not achieved by exhortation, by telling pupils that certain activities are valuable (Kuhn, 2008).

Will many teachers realize that values cannot be imposed, not even with the best intentions? Will many teachers adjust their attitudes and instruction methods when pupils of their school perceive education primarily as needed to qualify for further schooling? Perhaps not many for very understandable reasons. "Peer judgments gain increasing

importance in adolescence" (Santrock, 2008, p. 143). "The pressure to conform to peers becomes very strong during the adolescent years. Conformity to peer pressure in adolescence can be positive and negative" (Santrock, 2008, p. 322). One of the negative conformity behavior regards making fun of parents and teachers (ibid.).

No one will be surprised that some researchers describe competent teachers of adolescents as teachers who "have a good understanding of their development and who know how to create instruction materials that are appropriate for the developmental levels of the adolescents in their classroom" (e.g. Darling-Hammond & Bransford, 2005, as cited in Santrock, 2008). How about *staying* a competent teacher who, among other things, wholeheartedly transmits the belief in education as not only important for future social status? No one will be surprised that transmitting this belief in a positive mood by teachers, is challenged when pupils, often, make fun of them.

Challenges such as peer conformity behavior may result in a small amount of teachers who manage to make themselves partners of pupils in making sense of education. However, between being a strong partner of pupils one day and being a weak partner on another day lies a field of gradation. Furthermore, when one teacher is a strong partner one day (s)he might compensate for a colleague who happens to be less strong that day. Vice versa on another.

To summarize, transmitting valuing reason for intrinsic rather than instrumental reasons may not particularly come from teachers who were educated in the (hard) sciences. However, as long as teachers attribute a positive value to man's ability to reflect in Socratic fashion and have good hopes this use of reason can benefit society at large, they may not be an impeding force of a school's hidden curriculum. They may, however, not be part of its *beneficial* forces. A force which strongly supports pupils' motivation for learning critical thinking, as conceptualized here, and to sustain the motivation to perform what has been learned later in life or outside the context of school.

Secondly, the extent to which teaching as evaluativists can be realized in today's schools, has been discussed. The supposition that half of all teachers will be 'multiplists' and the other half 'evaluativists', does not justify the conclusion that this reality regards an impeding force of a school's hidden curriculum. Evaluativist teachers may compensate the impeding force which may come from their colleagues who teach as multiplists.

Thirdly, a challenge to the proposal to make educators and pupils partners in making sense of education may come from negative conformity behavior by adolescent peer groups. Such as making too much fun of teachers. Compensating behavior, by one and the same teacher on different days of this life as a teacher and by one teacher who compensates a colleague may justify the expectation that this proposal has a chance to succeed. In sum, though not easy at all to put proposed ideas about a supportive school culture in practice, it does seem realizable to a greater or lesser extent.

Discussing Possible Impeding Forces From Current Western Culture

At the end of this dissertation we are back at one of the suggestions made in the general introduction of this book. An explanation for the strength of multiplist thought among adolescents and adults in our culture (Kuhn, 2008; Kuhn et al., 2000; Kuhn and Park, 2005) has been considered. Kuhn et al. (2000) suggested that the Western values of social tolerance and acceptance, paradoxically, currently overpower the value of reasoned argument. This cultural trend, it is suggested, forms an inhibition to individuals' development beyond the multiplist level of epistemological understanding.

When relatively new political movements in the Netherlands are addressed, summarily denoted as the Fortuyn and Wilders movements, it is hard to apply Kuhn's (2008) suggestion. That is, one of the prevailing values in democratic societies, reinforced by multiplist thinking, Kuhn notes regards the belief that tolerance can only be a good thing. The Fortuyn and Wilders movements cannot said to represent a growing popularity for this belief. On the website of Geert Wilders' political party (PVV) it can be found that "the Islam must be combatted", "mass immigration [is] a money wasting hobby for left wingers" and when it comes to fighting crime "the PVV chooses for *zero tolerance*, rabble must be expelled" ("PVV Visie", n.d.). In 2011 the PVV introduced the (into English translated) term "rabble towns" as referring to the location where rabble must be concentrated.

Citizens who voted for the PVV in 2010 did so in great numbers, reflected in the fact that the current Dutch government is formed with political support of the PVV.
In this light, Kuhn's (2008) impression of ruling multiplism in current Western culture is shared by the present writer but for different reasons. These reasons come up for discussion further on in this subsection.

The point for now is the following: What if a current trend in Western culture indeed works as an impeding force against individuals' attainment of evaluative epistemological understanding? The latter has been hypothesized to be one of the correlates of critical thinking performance. Suppose that having attained the level of evaluative epistemological understanding turns out, after empirical testing, to correlate with test scores on a critical thinking task which is based on this dissertation's concept of critical thinking. If so, does it imply that this cultural variable has an impeding effect on educators' efforts to scaffold the learning of critical thinking? Yes and no.

May not the support of critical thinking at school, both at the instructional level and by transmitting its value within a certain school culture, gradually change trends in the culture at large? An empirical indication that supports this idea has been provided by Kuhn and Park (2005). Their cross-cultural findings about epistemological understanding and the development of intellectual values imply, to Kuhn and Park (2005),

that educational reform, in all cultures, stand to enhance their potential by attending to students' intellectual values, as well their intellectual skills. Kuhn (2008) even argues that "education is the primary social institution that can function as a force against the cultural tide" of ruling multiplism.

However, assuming that culture and society's educational system are interactive variables, cultural trends will also influence educational efforts. In this respect it is believed that the cultural tide of ruling multiplism will work as an impeding force against educational efforts to promote critical thinking. One of the powerful mechanisms in which this impeding force might operate, may be a growing number of multiplist teachers who are effected by multiplist culture. Multiplist teachers, as argued earlier, have to be compensated by colleagues who teach as evaluativists if it is to increase chances to transmit intrinsic valuing of critical thinking.

Back to the reasons for believing that current Western culture can be characterized by multiplism. A belief, to repeat, which is supported by empirical findings obtained by Deanna Kuhn and colleagues. Kuhn (2008) seems to emphasize 'distorted understandings of tolerance' as one of the prevailing values in democratic societies which undermines the ability and disposition to make discriminations. Or, put differently, which reinforces multiplist thinking in which critical thinking is deemed irrelevant (Kuhn, 1999).

Keeping a current Dutch and perhaps broader European political movement in mind, the present (European) writer thinks it important to point to individualistic tendencies in Western culture. Think of the current absence of broadly shared ideological and religious beliefs and the tendency for example to celebrate or defend freedom of speech, purely, from a *individual* point of view. These phenomena may co-explain a lack of evaluativists in our culture perhaps better than a supposedly prevailing value that tolerance can only be a good thing. Perhaps not distorted views on tolerance inhibit individuals' development beyond the multiplist level of epistemological understanding so much. Rather, growing Western individualism may be the pivotal cultural variable which reinforces the multiplist belief that "knowledge consists of opinions, freely chosen by their holders as personal possessions and accordingly not open to challenge" (Kuhn, 2008).

Two other possible impeding forces in current Western culture which may spoil the game to learn, value and keep motivation for critical thinking are sketched below.
The first concerns meritocratic pressures of Western societies. The second concerns a frequently chosen life style in the West which may be a distractor or even a sly demotivator to "stop-and-think" (Arendt, 1971).

Firstly, though education as a social institution may be capable of influencing a culture at large, "the pressures of a meritocratic, competitive society are not the ones that schools can erase or ignore" (Kuhn, 2008). Nicholls (1989, see p. 41) argues that a "competitive, meritocratic society depends for its smooth functioning upon individuals'

readiness to accept positions of varying status, power, and wealth". "The normative conception of ability seems important for the functioning of such a society. Yet there is a price to pay for the individuals who discover that they are below average on valued skills. (...) Children might escape some of the negative consequences of unfavorable comparisons of academic accomplishments by devaluing academic skills and seeking accomplishment and satisfaction in other activities" (Nicholls, 1989, p. 41-42).

As argued earlier, attributing a mere instrumental value to reason at school, in line with the demands of meritocratic society, may be an impeding force of school efforts to scaffold the learning of critical thinking. Nicholls (1989) may agree with this as he argues that schools prepare students to accept and maintain a society that values mathematics and the hard sciences for example over the humanities. A society that trusts technocrates who trust mathematical models to determine what we should invest in and how we should live (Nicholls, 1989, see p. 162).

There are teachers who strive to minimize competitive pressures and nurture a passion for learning in all students within meritocratic society (Nicholls, 1989). Even so, this striving, it must be acknowledged, is hard to maintain when the role of education in Western society is seen more and more in terms of economic development. However, [i]f we want other things more than we want economic democracy, chances are that we will get the other things" (Nicholls, 1989, p. 199). In other words, cultures do not have to be ruled by economic determinism. Resisting claims e.g. that using reason for instrumental reasons is superior to using reason to reflect on our social world might "seem like an attempt to resist Nature" (ibid.). But it is not. There are choices to make.

Secondly, could the way many Westerners live their lives explain something about refraining from engagement in reflective thought, even though people are capable of reflective thinking? Arendt (1971) realized well, leaning on Heidegger here, that "every reflection that does not serve knowledge and is not guided by practical needs and aims is *out of order*. "It interrupts any doing, any ordinary activities, no matter what they happen to be. All thinking demands a stop-and-think" (Arendt, 1971, p. 78).

When it comes to thinking about the complete speech acts of others, Arendt's idea of the precondition for thinking, *she* seems to argue applies to *any* thinking, may apply *particularly*. Arendt argues that for thinking withdrawal from the world of appearances, read: the physical world in which people live, is the only essential precondition. "In order for us to think about somebody, he must be removed from our presence; so long as we are with him we do not think either of him or about him; thinking always implies remembrance; every thought is strictly speaking an after-thought. It may, of course, happen that we start thinking about a still-present somebody or something, in which case we have removed ourselves surreptitiously from our surroundings and are conducting ourselves as though we were already absent" (Arendt, 1971, p. 78).

The latter quote serves to realize that thinking requires an "existential state of solitude" in Arendt's (1971) words which she distinguishes from "loneliness where I am also alone but now deserted not only by human company but also by the possible company of myself". This existential state of being seems particularly applicable to reflective thinking which is an element of critical thinking as conceptualized here.
The latter quote about withdrawal from the world of appearances as a precondition for thinking, also points to one of the reasons why perhaps many people refrain from reflective thought. Or, put differently, co-explains why people display a reluctance to judge as also noted in the general introduction. The quote also almost prescribes that when we are with people, participate in the world of appearances, we ought to stay in the present. At that moment, we might need to refrain from critical reflection. This is another thought to which Hannah Arendt inspires. It seems a profound moral insight.

Suppose we have been taught how to think critically at school and even its intrinsic value has been transmitted to us by many in our social surroundings. Then we grow older, marry the one we love, have kids, walk the dog, do sports twice a week, see our friends when diaries allow and work a fulltime job. Although this representation of a life style is of course simplified for the sake of argument, it may represent a frequently chosen life style of Westerners. When can we stop and think when there are always people around? We may be distracted when we just started a critical reflection and then somebody or something interrupts. We are now present again in the world of appearances and, as a social being becomes, do not remove ourselves surreptitiously as though we were already absent... We may start to feel content with this way of life which is also happier than a life with too much solitude. Then, we gradually lose motivation for critical thinking.

Sometimes we read things or see a movie that remind us of a certain value.
It is hoped that the present study about critical thinking regards a reading that meets this quality. A reading that reminds one of a form of thinking which may prevent catastrophes when the stakes are on the table, at least for the self (Arendt, 1971).
Then, we may regain motivation for critical thinking?

References

Ackerman, B. P. (1979). Children's understanding of definite descriptions: Pragmatic inferences to the speaker's intent. *Journal of Experimental Child Psychology, 28,* 1-15.

Ackerman, B. P. (1983). Form and function in children's understanding of ironic utterances. *Child Psychology, 35,* 487-508.

Arendt, H. (1964). Personal responsibility under dictatorship. In J. Kohn (Ed.), *Responsibility and judgment* (pp. 17-48). New York: Schocken Books.

Arendt, H. (1965-66). Some questions of moral philosophy. In J. Kohn (Ed.), *Responsibility and judgment* (pp. 49-146). New York: Schocken Books.

Arendt, H. (1970). Lectures on Kant's political philosophy. In R. Beiner (Ed.), *Hannah Arendt. Lectures on Kant's political philosophy* (pp. 7-77). Chicago: The University of Chicago Press.

Arendt, H. (1971). Mental activities in a world of appearances. In *The life of the mind* (pp. 69-125). One-volume edition. San Diego, New York, London: Harcourt Brace & Company.

Arendt, H. (1971). What makes us think? In *The life of the mind* (pp. 129-193). One-volume edition. San Diego, New York, London: Harcourt Brace & Company.

Assor, A., Roth, G., & Deci, E. (2004). The emotional costs of parents' conditional regard: A self-determination theory analysis. *Journal of Personality, 72,* 47-88.

Astington, J. W. (1990). Narrative and the child's theory of mind. In B. K. Britton & A. D. Pellegrini (eds.), *Narrative thought and narrative language* (pp. 151-171). Hove and London: Lawrence Erlbaum Associates Publishers.

Astington, J. W. (1994). *The child's discovery of the mind*. London: Fontana Press. Published in conjunction with Harvard University Press.

Astington, J. W. (1998). Theory of mind, humpty dumpty, and the icebox. *Human Development, 41,* 30-39.

Astington, J. W. (2000). Language and metalanguage in children's understanding of mind. In J. W. Astington (Ed.), *Minds in the making. Essays in honor of David R. Olson* (pp. 267-284). Oxford, UK: Blackwell Publishers.

Astington, J. W., & Baird, J. A. (2005). *Why language matters for theory of mind*. Oxford: Oxford University Press.

Astington, J. W., & Olson, D. R. (1990). Metacognitive and metalinguistic language: Learning to talk about thought. *Applied Psychology: An International Review*, *39*, 77-87.

Astington, J. W., & Pelletier, J. (1996). The language of mind: Its role in teaching and learning. In D. R. Olson & N. Torrance (Eds.), *The handbook of education and human development. New models of learning, teaching and schooling.* Blackwell Publishers.

Astington, J. W., Pelletier, J., & Homer, B. (2002). Theory of mind and epistemological development: the relation between children's second-order false-belief understanding and their ability to reason about evidence. *New Ideas in Psychology, 20,* 131-144.

Austin, J. L. (1971). *How to do things with words*. Edited by J. O. Urmson. London, Oxford, New York: Oxford University Press.

Ayto, J. (1990). *Bloomsbury dictionary of word origins*. London: Bloomsbury.

Bailin, S., & Siegel, H. (2003). Critical thinking. In N. Blake, P. Smeyers, R. Smith, & P. Standish (Eds.), *The Blackwell guide to the philosophy of education* (pp. 181-193). Blackwell Publishing.

Baxter Magolda, M. B. (2004). Evolution of a constructivist conceptualization of epistemological reflection. *Educational Psychologist, 39,* 31-42.

Beal, C. R. (1989). Children's knowledge about representations of intended meaning. In J. W. Astington, P. L. Harris, & D. R. Olson (Eds.), *Developing theories of mind* (pp. 315-325). Cambridge University Press.

Beal, C. R., & Flavell, J. H. (1984). Development of the ability to distinguish communicative intention and literal message meaning. *Child Development, 55,* 920-928.

Blakemore, S. J., & Frith, U. (2005). *The learning brain*. Blackwell Publishing.

Bonitatibus, G. (1988). Comprehension monitoring and the apprehension of literal meaning. *Child Development, 59,* 60-70.

Bonitatibus, G. (1989). What is said and what is meant in referential communication. In J. W. Astington, P. L. Harris, & D. R. Olson (Eds.), *Developing theories of mind* (pp. 326-338). Cambridge University Press.

Bonitatibus, G., & Flavell, J. H. (1985). Effect of presenting a message in written form on young children's ability to evaluate its communication adequacy. *Developmental Psychology, 21,* 455-461.

Bor, J., & Petersma, E. (eds.). (1995). *De verbeelding van het denken. Geïllustreerde geschiedenis van de westerse en oosterse filosofie*. Amsterdam/Antwerpen: Contact.

Burr, J. E., & Hofer, B. K. (2002). Personal epistemology and theory of mind: deciphering young children's beliefs about knowledge and knowing. *New Ideas in Psychology, 20,* 199-224.

Call, J., & Tomasello. M. (2008). Does the chimpanzee have a theory of mind? 30 years later. *Trends in Cognitive Sciences, 12,* 187-192.

Carpendale, J. I., & Chandler, M. J. (1996). On the distinction between false belief understanding and subscribing to an interpretive theory of mind. *Child Development, 67,* 1686-1706.

Cassel, J. F., &, Congleton, R. J. (1993). *Critical thinking. An annotated bibliography*. Metuchen, N. J., & London: The scarecrow Press.

Cooper, J. M. C. (1997). Introduction to Plato's Sophist. In J. M. Cooper (Ed.), *Plato: Complete works* (pp. 235-236). Indiapolis/Cambridge: Hackett Publishing Company.

Dam, G., ten, & Volman, M. (2004). Critical thinking as a citizenship competence: teaching strategies. *Learning and Instruction, 14,* 359-379. doi: 10.1016/j.learninstruc.2004.01.005

Delaney, C. F. D. (1999). John Dewey. In R. Audi (gen. ed.), *The Cambridge dictionary of philosophy* (pp. 229-231). Cambridge University Press.

Delgado-Gaitan, C. (1994). Socializing young children in Mexican-American families: an intergenerational perspective. In P. M. Greenfield & R. R. Cocking (Eds.), *Cross-cultural roots of minority child development* (pp. 55-86). Hillsdale, New Jersey: Lawrence Erlbaum Associates.

De Villiers, J. G., & De Villiers, P. A. (2000). Linguistic determinism and the understanding of false beliefs. In P. Mitchell & K. J. Riggs (Eds.), *Children's reasoning and the mind* (pp. 191-228). Hove, UK: Psychology Press.

Dewey, J. (1958). *Experience and nature*. New York: Dover Publications.

Eemeren, F., van, & Grootendorst, R. (2000). *Kritische discussie*. Amsterdam: Boom.

Egeth, M., & Kurzban, R. (2009). Representing metarepresentations: Is there theory of mind-specific cognition? *Consciousness and Cognition, 18,* 244-254. doi: 10.1016/j.concog.2008.07.005

Ennis, R. J. (1962). A Concept of critical thinking. A proposed basis for research in the teaching and evaluation of critical thinking ability. *Harvard Educational Review*, *32*, 81-111.

Facione, P. A. (1990). *Critical thinking: A statement of expert consensus for purposes of educational assessment and instruction*. Executive summary. "The Delphi Report". California: The California Academic Press.

Flavell, J. H. (1989). The development of children's knowledge about the mind: From cognitive connections to mental representations. In J. W. Astington, P. L. Harris, & D. R. Olson (Eds.), *Developing theories of mind* (pp. 244-267).

Flavell, J. H. (2004). Theory-of-mind development: Retrospect and prospect. *Merrill-Palmer Quarterly, 50*, 274-290.

Flower, L. (1987). Interpretive acts: Cognition and the construction of discourse. *Poetics, 16,* 109-130.

Flower, L. (1988). The construction of purpose in writing and reading. *College English, 50,* 528-550.

Fortuyn, W. S. P. (1997). *Tegen de islamisering van onze cultuur. Nederlandse identiteit als fundament.* Utrecht: Bruna.

Friedman, A. A. (2004). The relationship between personality traits and reflective judgment among female students. *Journal of Adult Development, 11,* 297-304.

Gadamer, H. G. (1972). Semantics and hermeneutics. In D. E. Linge (Ed.), *Philosophical hermeneutics* (pp. 82-94). London: University of California Press.

Gadamer, H. G. (1979). *Truth and method*. London: Sheed and Ward.

Geisler, C. (1994). *Academic literacy and the nature of expertise: Reading, writing, and knowing in academic philosophy.* Hillsdale: Lawrence Erlbaum Associates.

Golinkoff, R. M. (1993). When is communication a 'meeting of minds'? *Journal of Child Language, 20,* 199-207.

Gopnik, A., & Wellman, H. M. (1994). The theory theory. In L. A. Hirschfeld & S. A. Gelman, (Eds.), *Mapping the mind. Domain specificity in cognition and culture* (pp. 257-293). Cambridge University Press.

Groot, A. D., de (1961). *Methodologie. Grondslagen van onderzoek en denken in de gedragswetenschappen.* Den Haag: Uitgeverij Mouton.

Haas, C., & Flower, L. (1988). Rhetorical reading strategies and the construction of meaning. *College Composition and Communication, 39,* 167-183.

Hadot, P. (2003). *Filosofie als een manier van leven*. Amsterdam: Ambo.

Halford, G. S. (2005). Concept of mind. Chapter 22: Development of thinking. In K. J. Holyoak & R. G. Morrison (Eds.), *The Cambridge handbook of thinking and reasoning* (p. 547). New York: Cambridge University Press.

Hammermeister, K. (2002). *Gadamer*. Translated by Marc van den Bossche. Rotterdam: Lemniscaat.

Hans-Georg Gadamer (2003, revised 2005). Found on January 15, 2008 at: http://plato.stanford.edu/entries/gadamer

Harnish, R. M. H. (1999). John R. Searle. In R. Audi (gen. ed.), *The Cambridge dictionary of philosophy* (pp. 823-824). Cambridge University Press.

Harris, P. L. (2005). Conversation, pretense, and theory of mind. In J. W. Astington & J. A. Baird (Eds.), *Why language matters for theory of mind* (pp. 70-83). Oxford: Oxford University Press.

Hassan, K. H., & Madhum, G. (2007). Validating the Watson Glaser Critical Thinking Appraisal. *Higher Education, 54,* 361-383. doi: 10.1007/s10734-006-9002-z

Haswell, R. H., Briggs, T. L., Fay, J. A., Gillen, N. K., Harrill, R., Shupala, A. M., & Trevino, S. S. (1999). Context and rhetorical reading strategies.

Haas and Flower (1988) revisited. *Written Communication*, *16,* 3-27.

Hedelin, L., & Hjelmquist, E. (1998). Preschool children's mastery of the form/content distinction in communicative tasks. *Journal of Psycholinguistic Research, 27,* 421-452.

Hofer, B. K. (2002). Personal epistemology as a psychological and educational construct: An introduction. In B. K. Hofer & P. R. Pintrich (Eds.), *Personal epistemology. The psychology of beliefs about knowledge and knowing* (pp. 3-14). New York and London: Routledge.

Hofer, B. K. (2004). Introduction: Paradigmatic approaches to personal epistemology. *Educational Psychologist, 39,* 1-3.

Hofer, B., & Sinatra, G. M. (2010). Epistemology, metacognition, and self-regulation: musings on an emerging field. *Metacognition and Learning, 5,* 113-120. doi: 10.1007/s11409-009-9051-7

Hughes, C., & Dunn, J. (1997). "Pretend you didn't know": preschoolers' talk about mental states in pretend play. *Cognitive Development, 12,* 477-499.

Ikuenobe, P. (2001). Questioning as an epistemic process of critical thinking. *Educational Philosophy and Theory*, *33*, 325-341. doi: 10.1080/00131850120064063

Informal logic (1996, revised 2007). Found on October 31, 2007 at: http://plato.stanford.edu/entries/logic-informal/

Kant, I. (1787, trans. 1998). *Critique of Pure Reason*. Translated and edited by Paul Guyer and Allen W. Wood. Cambridge University Press.

Kant, I. (1790, transl. 1952). *The Critique of Judgement*. Translated by James Creed Meredith. Oxford: Clarendon Press.

Kidd, I. G. (1994). Socrates. In J. M. Day (Ed.), *Plato's Meno in focus* (pp. 73-87). London and New York: Routledge.

King, P. M., & Kitchener, K. S. (1994). *Developing reflective judgment. Understanding and promoting intellectual growth and critical thinking in adolescents and adults.* San Francisco: Jossey-Bass Publishers.

King, P. M., & Kitchener, K. S. (2004). Reflective judgment: Theory and research on the development of epistemic assumption through adulthood. *Educational Psychologist, 39,* 5-18.

Kitchener, K. S. (2002). Folk epistemology: An introduction. *New Ideas in Psychology, 20,* 89-105.

Kohn, A. (2009). When a parent's 'I love you' means 'do as I say'. Published on September 14, 2009 by the New York Times. Found on January, 1st, 2010 at: http://www.nytimes.com/2009/09/15/health/15mind.html

Kuehn, M. (1999). Scepticism before Kant. In R. Popkin (Ed.), *The Pimlico history of western philosophy* (pp. 487-490). London: Pimlico.

Kuhn, D. (1999). A developmental model of critical thinking. *Educational Researcher*, *28*, 16-26.

Kuhn, D. (2000). Theory of mind, metacognition, and reasoning: A life-span perspective. In P. Mitchell & K. J. Riggs (Eds.), *Children's reasoning and the mind* (pp. 301-326). Hove: Psychology Press Ltd.

Kuhn, D. (2008). *Education for thinking.* Harvard: Harvard University Press.

Kuhn, D., Cheney, R., & Weinstock, M. (2000). The development of epistemological understanding. *Cognitive Development*, *15*, 309-328.

Kuhn, D., & Dean, D. (2004). Metacognition: A bridge between cognitive psychology and educational practice. *Theory into Practice, 43,* 268-273.

Kuhn, D., & Park, S. H. (2005). Epistemological understanding and the development of intellectual values. *International Journal of Educational Research, 43,* 111-124. doi: 10.1016/j.ijer.2006.05.003

Lalonde, C. E., & Chandler, M. J. (2002). Children's understanding of interpretation. *New Ideas in Psychology, 20,* 163-198.

Leezenberg, M. (2000). John R. Searle. In M. Doorman & H. Pott (Eds.), *Filosofen van deze tijd* (pp. 299-312). Amsterdam: Bert Bakker.

Leslie, A. M. (1987). Pretense and representation: The origins of "theory of mind". *Psychological Review, 94,* 412-426.

Leslie, A. M. (1994). ToMM, toBY, and agency: Core architecture and domain specificity. In L. A. Hirschfeld & S. A. Gelman (Eds.), *Mapping the mind. Domain specificity in cognition and culture* (pp. 119-148). Cambridge University Press.

Leslie, A. M., & Thaiss, L. (1992). Domain specificity in conceptual development: Neurological evidence from autism. *Cognition, 43*, 225-251.

Liddell, H. G., & Scott (1996). *An intermediate Greek-English Lexicon*. Founded upon the seventh edition of Liddell and Scott's Greek-English Lexicon. New York: Oxford University Press.

Linge, D. E. (1977). *Philosophical hermeneutics*. *Hans-Georg Gadamer*. Translated and edited by David E. Linge. London: University of California Press.

Lipman, M. (1991). *Thinking in education.* Cambridge Univerity Press.

Lohmann, H., & Tomasello, M. (2003). The role of language in the development of false belief understanding: a training study. *Child Development, 74,* 1130-1144.

Lohmann, H., Tomasello, M., & Meyer, S. (2005). Linguistic communication and social understanding. In J. W. Astington & J. A. Baird (Eds.), *Why language matters for theory of mind* (pp. 245-265). Oxford: Oxford University Press.

Magno, C. (2010). The role of metacognitive skills in developing critical thinking. *Metacognition and Learning, 5,* 137-156.

Mansfield, A. F., & Clinchy, B. M (2002). Toward the integration of objectivity and subjectivity: Epistemological development from 10 to 16. *New Ideas in Psychology, 20,* 225-262.

Mason, L., Boldrin, A., & Zurlo (2006). Epistemological understanding in different judgment domains: Relationships with gender, grade level, and curriculum. *International Journal of Educational Research, 45,* 43-56. doi: 10.1016/j.ijer.2006.08.003

McPeck, John E. (1981). *Critical thinking and education*. New York: St. Martin's Press.

McPeck, John E. (1990). *Teaching critical thinking. Dialogue and dialectic.* New York: Routledge.

Mey, J. L. (2001). *Pragmatics*. *An introduction.* Blackwell Publishing.

Mitchell, P. (1996). *Acquiring a conception of mind*. *A review of psychological research and theory.* Hove: Psychology Press.

Mitchell, P., & Robinson, E., & Thompson, D. E. (1999). Children's understanding that utterances emanate from minds: using speaker belief to aid interpretation. *Cognition, 72,* 45-66.

Mitchell, P., & Russell, J. (1989). Young children's understanding of the say-mean distinction in referential speech. *Journal of Experimental Child Psychology, 47,* 467-490.

Montgomery, D. E. (1992). Young children's theory of knowing: The development of a folk epistemology. *Developmental Review, 12,* 410-430.

Morson, G. S. & Emerson, C. (1990). *Mikhail Bakhtin. Creation of a prosaics.* Stanford, California: Stanford University Press.

Nicholls, J. G. (1989). *The competitive ethos and democratic education.* Harvard University Press.

Norris, S. P. (1990). Thinking about critical thinking: philosophers can't go it alone. In J. E. McPeck (Ed.), *Teaching critical thinking. Dialogue and dialectic* (pp. 67-74). New York: Routledge.

Norris, S. P. (Ed.) (1992). *The generalizability of critical thinking*. *Multiple perspectives on an educational ideal*. New York: Teachers College Press.

Norris, S. P., & Ennis, R. H. (1989). *Evaluating critical thinking*. In R. J. Schwartz & D. N. Perkins (Eds.), *The practitioners' guide to teaching thinking series.* Pacific Grove, CA: Midwest Publications.

Olafson, L., Schraw, G. & Vander Veldt, M. (2010). Consistency and development of teachers' epistemological and ontological world views. *Learning Environments Research, 13,* 243-266. doi: 10.1007/s10984-010-9078-3

Olson, D. R., & Astington, J. W. (1990). Talking about text: How literacy contributes to thought. *Journal of Pragmatics*, *14,* 705-721.

Olson, D. R., & Astington, J. W. (1993). Thinking about thinking: Learning how to take statements and hold beliefs. *Educational Psychologist*, *28*, 7-23.

Olson, D. R., Astington, J. W., & Harris, P. L. (1989). Introduction. In J. W. Astington, P. L. Harris, & D. R. Olson (Eds.), *Developing theories of mind* (pp. 1-15). Cambridge University Press.

Onions, C. T. (gen. ed.) (1966). *The Oxford dictionary of English etymology*. Oxford: Clarendon Press.

Online Etymology Dictionary (n.d.). Found on October 3rd, 2008 at: http://www.etymonline.com/index.php?search=critical&searchmode=phrase

Papafragou, A. Cassidy, K., & Gleitman, L. (2007). When we think about thinking: The acquisition of belief verbs. *Cognition, 105,* 125-165. doi: 10.1016/j.cognition.2006.09.008

Passmore, J. (1967). On teaching to be critical. In R. S. Peters (Ed.), *The concept of education* (pp. 192-211). London: Routledge & Kegan Paul Ltd.

Paul, R. (1993). *Critical thinking. What every person needs to survive in a rapidly changing world.* California: Foundation for Critical Thinking.

Paul, R. (1990). McPeck's Mistakes. In J. E. McPeck (Ed.), *Teaching critical thinking. Dialogue and dialectic* (pp. 102-123). New York: Routledge.

Pearsall, J. (Ed.) (2001). *Concise Oxford dictionary*. Tenth (revised) edition. Oxford: Oxford University Press.

Perner, J. (1989). Higher-order beliefs and intentions in children's understanding of social interaction. In J. W. Astington, P. L. Harris, & D. R. Olson (Eds.), *Developing theories of mind* (pp. 271-294). Cambridge University Press.

Peskin, J. (2000). Rhetorical and aesthetic form: Poetry as textual art. In J. W. Astington (Ed.), *Minds in the making. Essays in honor of David. R. Olson* (pp. 80-97). Oxford, UK: Blackwell Publishers.

Perner, J., & Wimmer, H. (1985). "John *thinks* that Mary *thinks* that...". Attribution of second-order beliefs by 5- to 10-year-old children. *Journal of Experimental Child Psychology, 39,* 437-471.

Philosophy for children (2002, revised 2009). Found in 2010 at: http://plato.stanford.edu/entries/children/

Premack, D., & Woodruff, G. (1978). Does the chipanzee have a theory of mind? *The Behavioral and Brain Sciences, 4,* 515-526.

Popkin, R. (1999). Sceptics. In R. Audi (general ed.), *The Cambridge dictionary of philosophy* (pp. 850-851). Cambridge University Press.

Popper, K. R. (1979). *Objective knowledge*. *An evolutionary approach*. Oxford: Clarendon Press.

PVV Visie (n.d.). Found on February 19, 2011 at: http://www.pvv.nl/index.php/visie.html

Rhu, M. (2008). *The Wave*. Level 2. Retold by Kieran McGovern. Published by Pearson Education Ltd in association with Penquin Books Ltd.

Robinson, Th. M. (1999). The Pre-Socratic Philosophers. In R. H. Popkin (Ed.), *The Pimlico history of Western philosophy* (pp. 6-20). London: Pimlico.

Robinson, E., Goelman, H., & Olson, D. R. (1983). Children's understanding of the relation between expressions (what was said) and intentions (what was meant). *British Journal of Developmental Psychology, 1,* 75-86.

Robinson, E. J., & Robinson, W. P. (1977). Children's explanations of communication failure and the inadequacy of the misunderstood message. *Developmental Psychology, 13,* 156-161.

Rogoff, B. (2003). *The cultural nature of human development*. Oxford University Press.

Rokeach, M. (1960). *The open and closed mind. Investigations into the nature of belief systems and personality systems*. New York: Basic Books.

Rowley, M., & Robinson, E. J. (2007). Understanding the truth about subjectivity. *Social Development, 16,* 741-757. doi: 10.1111/j.1467-9507.2007.00405.x

Ryan, R. M., Kuhl, J., & Deci, E. L. (1997). Nature and autonomy: An organizational view of social and neurobiological aspects of self-regulation in behavior and development. *Development and Psychopathology, 9,* 701-728.

This Week's Citation Classic (1979). Found in December 2008, at: http://www.garfield.library.upenn.edu/classics1979/A1979HJ26700001.pdf

Tishman, S., Perkins, D. N., & Jay, E. (1995). *The thinking classroom. Learning and teaching in a culture of thinking.* MA: Allyn and Bacon.

Sambell, K. & McDowell, L. (1998). The construction of the hidden curriculum: messages and meanings in the assessment of student learning. *Assessment & Evaluation in Higher Education, 23,* 391-402.

Santrock, J. W. (2008). *Adolescence*. Twelfth edition. McGraw-Hill International edition.

Sartre, J. P. (1943, trans. 1969). *Being and nothingness.* Translated by Hazel E. Barnes. London: Routledge.

Saxe, R., & Kanwisher, N. (2003). People thinking about thinking people. The role of the temporo-parietal junction in "theory of mind". *NeuroImage, 19,* 1835-1842. doi: 10.1016/S1053-8119(03)00230-1

Schommer-Aikins, M. (2004). Explaining the epistemological belief system: Introducing the embedded systemic model and coordinated research approach. *Educational Psychologist, 39,* 19-29.

Searle, J. R. (1969). *Speech acts. An essay in the philosophy of language.* Cambridge: Cambridge University Press.

Searle, J. R. (1979). *Expression and meaning. Studies in the theory of speech acts.* Cambridge University Press.

Searle, J. R., Kiefer, F., & Bierwisch, M. (1980). *Speech act theory and pragmatics.* Dordrecht (Holland): D. Reidel Publishing Company.

Seifert, T. L. (2004). Understanding student motivation. *Educational Research, 46,* 137-149. doi: 10.1080/0013188042000222421

Shakespeare, W. (+/-1608). *King Lear*. Edited by R. A. Foakes, first published in 1997. London: Thomas Nelson and Sons Ltd.

Shatz, M. (1983). Illocutionary knowledge. Entry: "Communication". In P. H. Mussen (Ed.), *Handbook of child psychology* (pp. 864-865).

Shatz, M., Wellman, H. M., & Silber, S. (1983). The acquisition of mental verbs: A systematic investigation of the first reference to mental states. *Cognition, 14,* 301-321.

Shaughnessy, M. E. (2004). An interview with Deanna Kuhn. *Educational Psychology Review, 16,* 267-282.

Siegel, H. (1988). *Educating reason. Rationality, critical thinking, and education.* New York and London: Routledge.

Siegel, H. (1990). McPeck, informal Logic, and the Nature of critical thinking. In J. E. McPeck (Ed.), *Teaching critical thinking. Dialogue and dialectic* (pp. 75-85). New York: Routledge.

Snik, G. L. M., & Zevenbergen, J. K. (1995). Kritisch leren denken: posities en problemen. *Pedagogisch Tijdschrift, 20*, 101-116.

Solomon, R. C. (1999). Jean-Paul Sartre. In R. Audi (Ed.), *The Cambridge dictionary of philosophy* (pp. 812-813). Cambridge University Press.

Stephen Fry's letter (2009). Found on December 28, 2009 at: http://www.guardian.co.uk/media/2009/apr/30/stephen-fry-letter-gay-rights

Sternberg, R. J. (1981). Intelligence and nonentrenchment. *Journal of Educational Psychology, 73,* 1-16.

Stokhof, M. (2000). *Taal en betekenis. Een inleiding in de taalfilosofie.* Amsterdam: Boom.

Taumoepeau, M., & Ruffman, T. (2006). Mother and infant talk about mental states relates to desire language and emotion understanding. *Child Development*, *77*, 465-481.

Teachings (n.d.). Found on September 27, 2010 at: http://www.thebuddhistsociety.org/recources/Teachings.html

The Critical Thinking Community (n.d.). Found on September 18, 2008 at:http://www.criticalthinking.org/

Thinking Skills Assessment (2003). Found on August 12, 2008 at: http://www.admissionstests.cambridgeassessment.org.uk/adt/digitalAssets/103026_TSA_Specification.pdf

Thornton (n.d.). *Critical consciousness and liberal education*. Found on January 8, 2008 at: http://www.isi.org/books/content/379chap1.pdf

Tomasello, M. (1999). *The cultural origins of human cognition*. Cambridge, Massachusetts, London, England: Harvard University Press.

Torrance, N., & Olson, D. R. (1987). Development of the metalanguage and the acquisition of literacy: A progress report. *Interchange, 18,* 136-146.

Tsui, L. (1999). Courses and instruction effecting critical thinking. *Research in Higher Education, 40,* 185-200.

Turnbull, W., Carpendale, J. I. M., & Racine, T. P. (2008). Relations between mother-child talk and 3- to 5-year-old children's understanding of belief. *Merill-Palmer Quarterly, 54,* 367-385.

Wainryb, C., Shaw, L. A., Langley, M., Cottam, & Lewis, R. (2004). Children's thinking about diversity of beliefs in the early school years: Judgments of relativism, tolerance, and disagreeing persons. *Child Development, 75,*687-703.

White, N. P. (1997). Sophist. In J. M. Cooper & D. S. Hutchinson (Eds.), *Plato: complete works* (pp. 235-293). Indianapolis and Cambridge: Hackett Publishing.

Wineburg, S. S. (1991). Historical problem solving: A study of the cognitive processes used in the evaluation of documentary and pictorial evidence. *Journal of Educational Psychology, 83,* 73-87.

Winner, E., & Leekam, S. (1991). Distinguishing irony from deception: Understanding the speaker's second-order intention. *British Journal of Developmental Psychology, 9,* 257-270.

Winner, E., Rosenstiel, A. K., & Gardner, H. (1976). The development of metaphoric understanding. *Developmental Psychology, 12,* 289-297.

Young-Bruehl, E. (2006). *Why Hannah Arendt matters*. New Haven and London: Yale University Press

Summary

Dominant accounts of critical thinking primarily refer to the phenomenon of reason assessment and to individuals who display a disposition to reason. The strong association of critical thinking with the phenomenon of reason assessment results in quite a technical concept in which "critical" refers to meeting relevant *standards* or *criteria* of acceptability.

The focus on reasoning *per se* in the dominant account of critical thinking raised concerns in the present writer. Will the focus on the reasoning of statements not easily lead to misunderstandings of what people intend to express with words? Speech act theory, the version of philosopher of language John Searle particularly, teaches that referring, say to a person, and predicating, e.g. predicating the person to "walk slowly", can be detached from what is called the "complete speech act", such as asserting, questioning, commanding, promising. That is, the *same* reference and predication can occur in the performance of *different* complete speech acts, also called "illocutionary acts". The illocutionary force indicator shows how a proposition is to be taken by the receiver. Thus, uttering that Jim walks slowly can be meant as an assertion (Jim walks slowly), a question (Does Jim walk slowly?), a command (Jim, walk slowly!) or a promise (Jim will walk slowly). These are just a few examples of possible illocutionary acts.
In each case the same reference (Jim) and predicate (walks slowly) occur as part of a complete speech act which is different from any of the other three.

Will the focus on the reasoning or propositional content of statements not also primarily serve the confirmation or practicing of *a priori* rules of good reasoning? Judging well for example that a particular statement holds a generalization from the particular (*secundum quid*) seems to mainly serve the practicing of once learned rules of good reasoning. This form of assessment may cut ourselves off from the social world.

A critical response can come from many different places. Associating critical thinking with judging the reasoning quality and/or truth claims in the dominant paradigm regards a legitimate conceptual choice. However, the etymological origin of the adjective "critical" (derived from the verb "to decide" and connected to the words "judge" and "discern") and different associations with the phrase "critical thinking" allow for other conceptual choices. Making the distinction between propositional content of an utterance and its illocutionary force was associated, by the present writer, with critical thinking.

Clarifying the critical response, coming from assessing the complete speech act, whether uttered orally by a speaker or in writing by an author, Hans-Georg Gadamer's description of critical self-consciousness was applied. Assessing complete speech acts is critical in that we evaluate our own thinking about another's thinking. Doing this, we do not only invest in our understanding of others. We also invest in self-understanding because to think about another's mental state is to become aware of our own.

Hannah Arendt's concept of judgment served to clarify other aspects of a reinterpreted concept of critical thinking. She also helped to argue why critical thinking has social value for society at large. The conceptual analysis in this dissertation led to the following definition. Critical thinking is attempting to assign appropriate illocutionary force to the oral or written speech acts of others and examining the grounds of assigned intention. Searle illustrated that people cannot refer and predicate without performing an illocutionary act. Arendt and Gadamer illustrated that thinking cannot become critical without starting a dialogue in which I am both the one who asks (for meaning) and the one who answers. All things considered, this may be the essence of all critical thinking.

What would be required of individuals to perform the mental activity of assigning appropriate illocutionary force to other people's *oral* speech acts? An answer to this question has been given in the form of theoretical statements, based on available empirical data. This part of critical thinking may require: (i) being competent with the say-mean distinction, (ii) the concept of interpretation and (iii) having acquired meta-representational terms and being competent to apply them appropriately in different contexts. The first two competencies regard what is denoted in empirical literature as Theory of Mind (also: ToM) competencies. The latter seems to regard a form of language competence, though may also concern an aspect of ToM competence. This is considered because many specific relations between language development and ToM development have gained empirical evidence. Competence with these theorized requirements is expected to be traceable in children, roughly being between 7 and 11 years old.

What about the requirements of the other mental activities of critical thinking; assigning appropriate illocutionary force to *written* speech acts and *examining the grounds* of speakers' or authorial intention? From an application of empirical data two theoretical suggestions were derived. 1. Competence with interpreting illocutionary force of *written* speech acts may require the same as interpreting the force of *oral* speech acts. However, this may be a necessary though not sufficient condition. Having attained, what is phrased in empirical literature "evaluative epistemological understanding" in which assertions are understood as judgments which makes *evaluation* of assertions relevant at all, may be considered to be the additional and sufficient requirement of interpreting the force of *written* speech acts. 2. Having attained evaluative epistemological understanding might be regarded as the prerequisite for *examining the grounds* of assigned speakers' or authorial intention. On the basis of empirical findings so far, we can expect this level to be traceable in (young) adults and, on average, not in children and (young) adolescents.

Theorizing the cognitive requirements of critical thinking led to formulate a hypothesis. Critical thinking performance may correlate with performances on tasks assessing competence with the say-mean distinction, metarepresentational terms, concept of interpretation and evaluative epistemological understanding. The individual

who performs well (enough) on tasks that assess these variables is expected to be a(n) (young) adult. It is hoped future research will submit this hypothesis to empirical testing.

As critical thinking is thought to rest on a metacognitive (and possibly partly language developmental) process, supporting the learning of critical thinking can start at primary school. Three instruction methods were argued to bear effectiveness for scaffolding the learning of interpreting illocutionary force of *oral* speech acts at school. This part of critical thinking is believed to be learnable by primary school age children. These instruction methods are: (i) using metarepresentational terms like *think, know, expect, remember, guessed* etc. explicitly by teachers; (ii) talking about misunderstandings in the classroom; (iii) watching audio-visual fragments containing oral speech acts and joint reflection upon it. Arguments for potential effectiveness for scaffolding the learning of this part of critical thinking have been based on empirical data.

Two instruction methods, addressing secondary education, were argued to bear effectiveness for scaffolding the learning of interpreting illocutionary force of *written* speech acts and *examination* of assigned intention. These are: (i) teaching rhetorical reading strategies and talking about text and (ii) scaffolding pupils' coordination of three perspectives; author's perspective, external information perspective, self's perspective (on both the author's perspective and external information perspective). The underlying aim with these instruction methods is to promote pupils' developmental transition from the multiplist level of epistemological understanding to the evaluative level.

An ideal school culture has been presented as one which may contribute to the effectiveness of proposed instruction methods. Within this supportive school culture teachers of adolescents for example tacitly transmit intrinsic valuing of reason rather than valuing reason for mere instrumental reasons. Further, in this supportive school culture teachers of adolescents have attained the level of evaluative epistemological understanding themselves. Furthermore, supportive schools organize panels in order to make teachers and pupils partners in making sense of education. This ideal school culture especially aims to increase chances that pupils develop sustained motivation for critical thinking, also for outside the context of school.

Whether this supportive school culture is realizable in the schools of today has been discussed. Impeding forces can spoil the game. Forces stemming from the schools themselves e.g. and from current trends in Western culture such as 'ruling multiplism' in public debates, meritocratic pressures in the battle of economic competition and busy Western life styles. Reflecting on possible impediments, coming from schools, led to the prudent expectation that realization of this dissertation's educational proposals is possible to a greater or lesser extent. Being reminded as adults of the value of critical thinking for the self and society at large may be indispensable. Indispensable to regain motivation for critical thinking when daily life gradually intruded on attempts to stop and think.

Samenvatting (Summary in Dutch)

Dominante beschrijvingen van kritisch denken verwijzen voornamelijk naar het fenomeen van argumentatie-onderzoek en naar individuen die een dispositie om te redeneren aan de dag leggen. De sterke associatie van kritisch denken met het fenomeen van argumentatie-onderzoek resulteert in een nogal technisch concept waarin "kritisch" verwijst naar het voldoen aan relevante normen of criteria van aanvaardbaarheid.

De gerichtheid op redeneren als zodanig in de dominante beschrijving van kritisch denken, verontrustte schrijver dezes. Leidt de gerichtheid op de argumentatie van uitspraken niet snel tot misverstanden over wat mensen met woorden proberen uit te drukken? Taalhandelingentheorie, met name de versie van taalfilosoof John Searle, leert dat verwijzen, bijvoorbeeld naar een persoon, en prediceren, zoals de persoon het predicaat "loopt langzaam" toekennen, gescheiden kunnen worden van de "totale taalhandeling", zoals beweren, vragen, bevelen, beloven. Dat wil zeggen, *dezelfde* verwijzing en predicaat kunnen optreden in het uitvoeren van *verschillende* totale taalhandelingen, ook wel illocutionaire handelingen genoemd. De illocutionaire kracht indicator laat zien hoe een propositie opgevat moet worden door een ontvanger.
Dus, uiten dat Jim langzaam loopt kan bedoeld zijn als een bewering (Jim loopt langzaam), een vraag (Loopt Jim langzaam?), een bevel (Jim, loop langzaam!) of een belofte (Jim zal langzaam lopen). Dit betreffen slechts enkele voorbeelden van mogelijke illocutionaire handelingen. In elk van de genoemde voorbeelden treden dezelfde verwijzing (Jim) en predicaat (loopt langzaam) op als onderdeel van een totale taalhandeling die verschilt van de andere drie.

Zal de gerichtheid op de argumentatie of propositionele inhoud van uitspraken ook niet voornamelijk de bevestiging of het oefenen met *a priori* regels van goed redeneren dienen? Correct oordelen dat een bepaalde uitspraak bijvoorbeeld een overgeneralisatie (*secundum quid*) betreft, lijkt voornamelijk het oefenen met eens geleerde regels van goed redeneren te dienen. Deze vorm van onderzoek kan zorgen voor vervreemding van de sociale wereld.

Een kritische reactie kan uit verschillende 'plekken' voortkomen. Het associëren van kritisch denken met het beoordelen van argumentatiekwaliteit en/of waarheids-aanspraken in het dominante paradigma betreft een legitieme conceptuele keuze. Evengoed staan de etymologische oorsprong van het bijvoeglijke naamwoord "kritisch" (afgeleid van het werkwoord "beslissen" en verbonden met de woorden "oordelen" en "onderscheiden") en andere associaties met de frase "kritisch denken" het maken van andere keuzes toe. Onderscheid maken tussen propositionele inhoud van een uitspraak en haar illocutionaire kracht werd door schrijver dezes met kritisch denken geassocieerd.

Voor het verhelderen van de kritische reactie die voort kan komen uit het onderzoeken van de totale taalhandeling, ook wel illocutionaire handeling genoemd, hetzij mondeling geuit door een spreker danwel op schrift door een auteur, werd Hans-Georg Gadamers beschrijving van kritisch zelfbewustzijn toegepast. Het onderzoeken van totale taalhandelingen is kritisch in de zin dat we ons eigen denken over andermans denken evalueren. Hiermee investeren we niet alleen in het begrijpen van anderen. We investeren ook in zelfbegrip aangezien het denken over andermans mentale staat met zich meebrengt dat we ons bewust worden van die van onszelf.

Hannah Arendts oordeelsbegrip stond toe om andere aspecten van een geherinterpreteerd concept van kritisch denken te verhelderen. Zij hielp ook beargumenteren waarom kritisch denken sociale waarde heeft voor de samenleving als geheel. De conceptuele analyse van "kritisch denken" in dit proefschrift leidde tot de volgende definitie. Kritisch denken is de poging gepaste illocutionaire kracht toe te kennen aan de mondelinge of schriftelijke taalhandelingen van anderen en het onderzoeken van de gronden van toegekende intentie. Searle illustreerde dat mensen niet kunnen verwijzen en prediceren zonder het uitvoeren van een illocutionaire taalhandeling. Arendt en Gadamer illustreerden dat denken niet kritisch kan worden zonder het beginnen van een dialoog waarin ik zowel degene ben die vraagt (naar betekenis) als degene ben die antwoord. Alles wel beschouwd, dit mag gelden als de essentie van welk kritisch denken dan ook.

Wat zou van individuen vereist zijn om gepaste illocutionaire kracht toe te kennen aan andermans *mondelinge* taalhandelingen? Een antwoord op deze vraag is gegeven in de vorm van theoretische uitspraken die gebaseerd zijn op empirische gegevens. Dit deel van kritisch denken zou het volgende kunnen vereisen: (i) competent zijn met het zeggen-bedoelen-onderscheid, (ii) competent zijn met het concept van interpretatie en (iii) metarepresenterende termen hebben verworven en competent zijn om deze correct toe te passen in verschillende contexten. De eerste twee competenties betreffen, wat in empirische literatuur wordt aangeduid als, Theory of Mind (ook wel: ToM) competentie. De derde lijkt te gaan om een vorm van taalcompetentie, maar zou ook een aspect van ToM competentie kunnen inhouden. Deze overweging wordt ingegeven door het bestaan van (recent) empirisch bewijs voor vele specifieke verbanden tussen taalontwikkeling en ToM ontwikkeling. Competentie met deze getheoretiseerde vereisten kan in kinderen, grofweg tussen de 7 en 11 jaar, zo laat empirisch onderzoek zien, worden aangetroffen.

Hoe zit het met de vereisten voor de andere mentale activiteiten van kritisch denken; het toekennen van illocutionaire kracht aan *schriftelijke* taalhandelingen en het *onderzoeken van de gronden* van toegekende intentie van de spreker of schrijver? Uit een toepassing van empirische gegevens werden twee voorstellen afgeleid.

1. Het interpreteren van illocutionaire kracht van schriftelijke taalhandelingen zou hetzelfde kunnen vereisen als het interpreteren van illocutionaire kracht van mondelinge taalhandelingen. Toch zouden deze vereisten voor het interpreteren van illocutionaire kracht van schriftelijke taalhandelingen kunnen gelden als noodzakelijk maar niet voldoende. Het bereikt hebben van, wat in empirische literatuur "evaluerend epistemologisch begrip" wordt genoemd, waarin beweringen begrepen worden als oordelen in plaats van meningen en het evalueren van beweringen überhaupt relevant maakt, kan gelden als de *aanvullende* – en binnen dit raamwerk *voldoende* - vereiste voor het interpreteren van illocutionaire kracht van schriftelijke taalhandelingen.
2. Het bereikt hebben van het niveau van evaluerend epistemologisch begrip zou beschouwd kunnen worden als de eerste vereiste voor het *onderzoeken van de gronden* van toegekende intentie van de spreker of schrijver. Op basis van empirische bevindingen tot nu toe, kan verwacht worden dat dit niveau kan worden aangetroffen bij (jong) volwassenen en, gemiddeld genomen, niet bij kinderen en (jonge) adolescenten.

Het theoretiseren van de cognitieve vereisten van kritisch denken leidde tot het formuleren van een hypothese. Kritisch denken-prestatie zou kunnen correleren met prestaties op taken die competentie onderzoeken met: het zeggen-bedoelen-onderscheid, metarepresenterende termen, concept van interpretatie en evaluerend epistemologisch begrip. Het individu dat goed (genoeg) scoort op taken die deze variabelen onderzoeken wordt verwacht een (jong) volwassene te zijn. Hopelijk zal deze hypothese in toekomstig onderzoek worden onderworpen aan empirische toetsing.

Aangezien kritisch denken voorgesteld wordt als berustend op een metacognitief (en mogelijk deels taalontwikkelings) proces, kan het ondersteunen van het leren van kritisch denken beginnen op de basisschool. Drie didactische werkvormen werden beargumenteerd potentieel effectief te zijn voor het op school ondersteunen van illocutionaire kracht leren interpreteren van *mondelinge* taalhandelingen. Dit onderdeel van kritisch denken is naar verwachting te leren door kinderen van de basisschool-leeftijd. Deze didactische werkvormen zijn: (i) het expliciet gebruiken van meta-representerende termen zoals *denken, weten, verwachten, herinneren, gissen* etc.; (ii) praten over misverstanden in de klas; (iii) kijken naar audio-visuele fragmenten die mondelinge taalhandelingen bevatten en gezamelijke reflectie daarop. Argumenten voor potentiële effectiviteit van deze werkvormen voor het 'onderwijzen' van dit onderdeel van kritisch denken zijn gebaseerd op beschikbare empirische gegevens.

Twee didactische werkvormen, bedoeld voor voortgezet onderwijs, werden beargumenteerd effectief te zijn voor het ondersteunen van het leren illocutionaire kracht interpreteren van *schriftelijke* taalhandelingen en *onderzoeken van de gronden* van toegekende intentie. Deze zijn: (i) retorische leesstrategieën onderwijzen en praten over tekst en (ii) het ondersteunen van de coördinatie van drie perspectieven door leerlingen;

auteurs-perspectief, externe informatie-perspectief en eigen perspectief (op zowel auteurs-perspectief als op externe informatie-perspectief). Het onderliggende doel van deze didactische werkvormen is het bevorderen van de ontwikkelingsovergang van het multiplistische niveau van epistemologisch begrip naar het evaluerende niveau.

Een ideale schoolcultuur is in dit proefschrift gepresenteerd als een schoolcultuur die kan bijdragen aan de effectiviteit van voorgestelde didactische werkvormen.
In deze ondersteunende schoolcultuur dragen leraren van adolescenten bijvoorbeeld het intrinsiek waarderen van de rede over in plaats van de rede te waarderen om louter instrumentele redenen. Voorts, in deze ondersteunende schoolcultuur hebben leraren van adolescenten zelf het niveau van evaluerend epistemologisch begrip bereikt. Bovendien organiseren dergelijk ondersteunende scholen panelbijeenkomsten teneinde leraren en leerlingen partners te maken in het betekenis verlenen aan onderwijs. Deze ideale schoolcultuur beoogt met name de kansen te vergroten dat leerlingen aanhoudende motivatie voor kritisch denken ontwikkelen, ook voor buiten de context van school.

Besproken werd of deze ondersteunende schoolcultuur realiseerbaar is op de scholen van vandaag. Belemmerende krachten kunnen roet in het eten gooien. Krachten bijvoorbeeld die voortkomen uit de scholen zelf en uit huidige trends in de westerse cultuur zoals een ‘heersend multiplisme’ in publieke debatten, meritocratische druk in de strijd van economische concurrentie en drukke westerse levensstijlen. Het reflecteren op mogelijke belemmeringen die de scholen zelf voortbrengen, leidde tot de voorzichtige verwachting dat realisatie van de educatieve voorstellen in dit proefschrift in meer of mindere mate mogelijk is. Herinnerd worden als volwassene aan de waarde van kritisch denken voor het Zelf en de samenleving als geheel zou wel eens onontbeerlijk kunnen zijn. Onontbeerlijk om motivatie voor kritisch denken te hervinden als het dagelijks leven geleidelijk pogingen ondermijnde om stil te staan en te denken.

About the Author

Heleen Torringa was born in 1973 in Nijmegen, the Netherlands. After completing secondary education in Nijmegen, she attended drama teaching school within Higher Education. After auditioning for it, she got to play Shakepeare's *Hamlet*, the part of Hamlet himself, in the graduation production. Heleen graduated in 1995 as a first degree drama teacher, specialized in directing. She taught drama at several places and to all age groups. During the time she was a drama teacher, she also worked as an actress in a kids theatre. After six years of working as a drama teacher she decided to comply with an internal request, gradually developed, to (further) explore her intellectual abilities.

In 2001 she started a fulltime philosophy program at Amsterdam University. In 2004 she graduated *cum laude* in the philosophy of science and received a master's degree as a philosophy teacher. Her master thesis, titled (translated into English): *Who is affraid of hopeful monsters?*, was, in part, about philosophy education. Just before she graduated in philosophy, she was offered a job as a philosophy teacher at a program within vocational education in Amsterdam. She taught philosophy to young adults for two years.

In 2006 she started a PhD-project, on a parttime basis, on critical thinking at Utrecht University. She combined doing this doctoral research with teaching work. In the year she started the PhD-project, supervised by (full) Professor Micha de Winter and distinguished Professor Willem Koops, she also came to work as a seminar teacher at the Pedagogical Sciences of Utrecht University.