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Brodin, Eva

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PO Box 117
221 00 Lund
+46 46-222 00 00

Eva Brodin

Critical Thinking in Scholarship:

Meanings, Conditions and Development

Lund University
Department of Education
2007

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Abstract

The purpose of this thesis is to explore the phenomenon of critical thinking in scholarship as regards its meanings, conditions, and development using a hermeneutic-phenomenological approach. This exploration takes its departure in ancient Greece, following a historical movement of the phenomenon up to present day perspectives on critical thinking, revealing a range of different meanings and conditions. Thus, the reader is invited to follow my synthetic meaning constitution of the phenomenon of critical thinking as it appears in different philosophical and educational texts. Through this gradual process of meaning constitution it is shown that the scholarly critical thinker is in one way or another concerned with abstract relationships, in order to either master, understand, or change the world. These underlying interests may, in turn, be derived from the critical thinker's sense of responsibility towards God, nature, society, and humanity as a whole. It also appears that even though critical thinking in scholarship is traditionally framed within rational and principle based thinking, the development of the meaning of critical thinking is on its way to new dimensions. Besides rationality, other qualities of critical thinking are highlighted, such as reflective thinking, emotions, creativity, imagination, and intuition. Despite the fact that research on critical thinking has started to move in new directions, educational policy documents implicitly conceptualize critical thinking in traditional terms. This means that the phenomenon is captured within its own instrumentality, with no further concern for its possible ends. The same circumstance can be noted in relation to contemporary perspectives on critical thinking, which tend to focus on the process of critical thinking, since critical thinking is implicitly understood as an assurance of attaining normatively good ends. However, critical thinking is a phenomenon that is future oriented, involving its intention and possible ends. Against this background, it is therefore argued that critical thinking receives its most critical feature when intention, process and end constitute a constructive interrelated whole.

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To Philip and Amanda
with the hope that you will
see the possibilities of life…

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Introduction

Outlining the Field of Research

The topic of this work is critical thinking within the frame of scholarship. The meaning of scholarship is not clear, however, and became a topic of debate in the early 1980s (Sullivan, 1996). Writers often use scholarship in a two-fold manner, describing it as an activity and as an outcome of that activity at the same time (Trigwell & Shale, 2004). This could derive from the fact that scholarship has traditionally been associated with the advancement and discovery of knowledge (Dauphinee, 1998; Hathaway, 1996; Nora et al, 2000). Another conventional way of describing scholarship is to classify academic work as consisting of research, teaching, and service (Kreber, 2000). With reference to these three activities, however, Boyer (1990) pointed out that the activity of research has a higher status than the other two, since teaching and service related activities are not equally qualifying for the scholar's career. He therefore made a great effort of redefining scholarship in order to increase the values of the other scholarly activities beyond the domain of research. Through his work, Boyer identified four forms of scholarship, which are all interrelated activities: the scholarship of discovery, the scholarship of integration, the scholarship of application, and the scholarship of teaching. The scholarship of discovery corresponds to the act of creating new knowledge within a discipline, whereas the scholarship of integration refers to knowledge resulting from the encounter between different disciplines and areas of knowledge. The scholarship of application embraces the pragmatic facet of scholarship, posing questions regarding how new knowledge is used in practice. Finally, the scholarship of teaching refers to the act of implementing new knowledge in education. Hence, against the background of Boyer's redefinition, scholarship is a complex activity that inferentially involves students and teachers, as well as researchers, in one way or another. All the referred forms of scholarship will be manifested in different ways throughout the forthcoming work.

The struggle to discover the conditions for critical thinking

Critical thinking has always been – and still is – a fundamental part of scholarly knowledge. Even though it plays a central role in scholarship, the meanings and the conditions that underlie critical thinking have been implicit throughout history, embedded in a range of epistemological viewpoints and scholarly methods. Eventually, in the twentieth century, critical thinking became a phenomenon of educational

concern, due to the fact that students in higher education do not manage to develop their critical thinking ability to the extent that is expected from them (Persson, 1996; Rolf, 2004; Walters, 1994). Furthermore, the existence of critical thinking in individuals is regarded as fundamental for maintaining a democratic society (Brookfield, 1987; Siegel, 1988; ten Dam & Volman, 2004; Thayer-Bacon, 2000). These circumstances have led to a range of empirical studies, searching for the conditions underlying critical thinking. In some cases, these conditions are considered to be mainly an individual matter, such as the importance of having a questioning approach (Ikuenobe, 2001b; Sloffer, Dueber & Duffy, 1999). Critical thinking is also often regarded as dependent upon certain character traits in the individual who is to be moulded by education (Brookfield, 1987; Elder & Paul, 1998; Siegel, 1988). For example, Elder and Paul (1998) hold that critical thinking is not only a set of skills, but entails intellectual traits, such as "intellectual integrity, intellectual empathy, intellectual humility, intellectual courage, intellectual perseverance, and so on" (ibid., p. 34). Furthermore, the importance of autonomy is repeatedly emphasized, as in Kreber's study (1998), showing a significant relationship between self-directed learning[1] and critical thinking. Although critical thinking is usually associated with autonomous individuals, displaying the 'proper' character traits, attitudes and skills, some scholars stress the point that positing these faculties is not sufficient to ensure a disposition to think critically (Facione, Facione & Giancarlo, 2000; Siegel, 1988). Hence, something more is needed for critical thinking to be realized, a circumstance that has directed research towards the outer conditions.

Considering the outer conditions needed for critical thinking, one important factor seems to be whether the individual is socially integrated in the academic community (Li, Long & Simpson, 1999). Even though social and academic integration is of weight, all academic communities do not optimally reinforce the development of critical thinking. For instance, moving in homogeneous circles with convergent thinking appears to be less beneficial, a conclusion which is supported by Nelson Laird (2005), who showed that experiences of diversity have a significant positive influence on the individual's disposition to think critically. The importance of divergence was also found in Tsui's (2000) studies, in which students coming from institutions that encouraged cooperation and divergence between both teachers and students experienced an increased faculty of thinking critically. Along with the tolerance of cooperative and divergent thinking, Tsui also revealed that such institutions instilled responsibility and self-reflection, as well as social and political awareness, in their students, all factors which appeared to be of benefit for the development of critical thinking. Although the institutional average critical thinking level among

1 With references to Guglielmino, Kreber (1998) used the Self-directed Learning Readiness Scale to measure people's self-estimated scores of their own self-directed learning. This scale involves eight factors: openness to learning opportunities, self-concept as an effective learner, initiative and independence in learning, informed acceptance of responsibility for one's own learning, a love to learn, creativity, future orientation, and the ability to use basic study skills and problem-solving skills.

students has a significant positive influence on the individual's development of critical thinking, the institutional influence significantly declines over time (Serra Hagedorn et al., 1999). This decline could, however, be explained by the fact that senior students have developed the aspired ability to independently make use of their critical thinking. Besides these factors, there are scholars who highlight an additional condition for developing critical thinking in students in higher education: the inclusion of critical thinking into educational policy instruments. However, this educational condition for the development of critical thinking has hitherto largely been missing.

An educational paradox

Despite the fact that critical thinking is essential in scholarship, and that the phenomenon is of immediate interest today, the concept of critical thinking itself is conspicuous by its absence in educational policy instruments. This is evident when considering syllabi (Rolf, 2004), curricula (Siegel, 1988), Bloom's widely used taxonomy of educational objectives, both in its original and revised form (Anderson, L. et al. 2001), and the framework of qualifications for the European Higher Education Area (*EHEA*)[2]. Accordingly, this circumstance could be a contributing factor to why it is difficult to implement critical thinking among students (Rolf, 2004). A closer examination of Bloom's taxonomy and the framework of qualification for the EHEA shows, however, that they provide an implicit discourse on critical thinking, and that this discourse could be derived from certain perspectives of critical thinking. Bloom's taxonomy is initially intended to be a tool for helping "teachers [to] plan and deliver appropriate instruction, design valid assessment tasks and strategies, and ensure that instruction and assessment are aligned with the objectives" (Anderson, L. et al., 2001, Preface, p. xxii). Originally, Bloom's taxonomy consisted of three major domains: the cognitive, the affective, and the psychomotor domain, which were all considered relevant in relation to educational objectives. The borderlines between the domains turned out to be fluid, however, inasmuch as it became evident through the work that "although one could place an objective very readily in one of the three major domains or classes, no objective in one class was entirely devoid of some components of the other two classes" (Kratwohl, Bloom & Masia, 1956, p. 8). Even though all three of the domains seem to be interrelated to one another, Kratwohl, Bloom and Masia (1956) found that teachers at college and secondary levels mainly emphasized objectives encompassed within the cognitive domain. This

2 In 1999, a large-scale political project was initiated: the Bologna process, which entails a voluntary cooperation between 45 European countries. The goal of the Bologna process is to create a common European Area for Higher Education until 2010. The paramount ambition of the Bologna process is to facilitate the mobility and employability between the countries, and furthermore to promote the competitiveness of higher education in Europe. Among the range of agreements reached in the Bologna process, the most important is that higher education should be divided into three cycles: a bachelor level, a master level, and a doctoral level. The framework of qualifications for the EHEA was adopted at the Bergen Conference of European Ministers Responsible for Higher Education in May 2005.

might explain why Bloom's original taxonomy has been stripped of both its affective and psychomotor domain in its recent revised form, so that only the cognitive domain remains (see Anderson, L. et al., 2001). When a process dimension is added to this domain, as in the revised form (in contrast to the original form containing a knowledge domain only), it means that students are supposed to attain an ability to *remember*, *understand*, *apply*, *analyze*, *evaluate*, and *create* different types of knowledge. The point is that nowhere in Bloom's taxonomy, neither in its original, nor in its revised form, exists a category for critical thinking. Accordingly, critical thinking is not considered as a specific learning outcome. The authors of Bloom's revised taxonomy (ibid.) explain their omission of critical thinking by the fact that critical thinking embraces several of the already existing categories:

> ...critical thinking most likely call for cognitive processes in several categories on the process dimension. For example, to think critically about an issue probably involves some *Conceptual knowledge* to *Analyze* the issue. Then, one can *Evaluate* different perspectives in terms of the criteria and, perhaps, *Create* a novel, yet defensible perspective on the issue. (Anderson, L. et al., 2001, p. 311-312)

This circumstance has certain consequences for educational practice, inasmuch as teachers usually refer to Bloom's taxonomy when conceptualizing critical thinking (Paul, Elder & Bartell, 1997). In the long run, this implies that critical thinking becomes a purely cognitive skill, which entails the mastering of certain modes of procedures when approaching problems. In the discussion of the cognitive perspective on critical thinking further on in this thesis, it appears that these modes of procedures tend to let critical thinking coincide with scientific methods for knowledge development. Thus teaching critical thinking means to encourage students to solve problems by making use of scientifically recognized methods, such as hypothesis testing.

As regards the framework of qualification for the EHEA, there is predominantly a palpable emphasis on the above-mentioned cognitive skills, although another perspective and meaning of critical thinking appears in the background as well. Since the EHEA framework consists of three cycles, constituting different degrees in higher education, it is valuable to consider the cycles one by one. It is thereby possible to get a picture of which aspects of critical thinking are required at different educational stages. This analysis reveals an interesting phenomenon, namely that aspects relating to critical thinking are enclosed in the last and most advanced educational level, the doctor's degree in the third cycle. As a matter of fact, the implicit demand for critical thinking at this level corresponds well with the categories of the process dimension in the revised form of Bloom's taxonomy. When extracts of relevance from the framework of qualification for the EHEA are considered as a whole, however, it appears that critical thinking has a wider meaning than that which is implicitly comprehended within Bloom's taxonomy. This is evident, for instance, when scrutinizing some of the EHEA criteria for attaining a bachelor's degree, corresponding to the first cycle:

Qualifications that signify completion of **the first cycle** [bachelor's degree] are awarded to students who:

- can apply their knowledge and understanding in a manner that indicates a professional approach to their work or vocation, and have competences typically demonstrated through devising and sustaining arguments and solving problems within their field of study;
- have the ability to gather and interpret relevant data (usually within their field of study) to inform judgments that include reflection on relevant social, scientific or ethical issues;
- have developed those learning skills that are necessary for them to continue to undertake further study with a high degree of autonomy.
- (Bologna Working Group on Qualifications Frameworks, 2005)

Besides the demand for cognitive skills, such as applying knowledge, solving problems, gathering and interpreting relevant data, there is a call for sound arguments, judgments, reflection, and autonomy as well. These are aspects that are mainly highlighted within the informal logic movement, another perspective on critical thinking that will be discussed further on. With respect to the second cycle, corresponding to a master's degree, the same criteria are presented as in the first cycle, although the student is supposed to make use of his or her skill in new or familiar environments. Furthermore, he or she is assumed to be able to attain a higher degree of complexity and integration of knowledge in his or her thinking. The most important contribution to the meaning of critical thinking in the second cycle is, however, that it inaugurates the aspect of responsibility in relation to the social and ethical consequences of one's judgments and applied knowledge. This is manifest when considering the following quotations from the section on the second cycle in the EHEA document, maintaining certain aspects which could be associated to critical thinking:

Qualifications that signify completion of **the second cycle** [master's degree] are awarded to students who:

- can apply their knowledge and understanding, and problem solving abilities in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their field of study;
- have the ability to integrate knowledge and handle complexity, and formulate judgments with incomplete or limited information, but that include reflecting on social and ethical responsibilities linked to the application of their knowledge and judgments;
- have the learning skills to allow them to continue to study in a manner that may be largely self-directed or autonomous.
- (Bologna Working Group on Qualifications Frameworks, 2005)

In the third cycle, where the student attains a doctoral degree, there is a return to the cognitive domain, in which critical thinking becomes a pure skill, very similar to problem solving (in a wide sense of the concept). Equating critical thinking with

problem solving is, however, something that contradicts the general opinion among philosophers throughout the twentieth century, who agree that critical thinking and problem solving only intersect but do not coincide (Streib, 1992). However that might be, it appears that critical thinking in the third cycle is embedded in a single paragraph, where it is intertwined with scholarly and scientific methods. The earlier requirement of an ability to make sound arguments and judgments is either left out, or implicitly involved in the demand for evaluation, depending on how one interprets the meaning of evaluation. Most striking is, however, that the doctoral student is not exhorted to have a sense of responsibility as regards the social and ethical consequences of his or her research:

> Qualifications that signify completion of **the third cycle** [doctoral degree] are awarded to students who:
> - are capable of critical analysis, evaluation and synthesis of new and complex ideas;
>
> (Bologna Working Group on Qualifications Frameworks, 2005)

Against this background, an intricate paradoxical problem has arisen. On the one hand, there is an urgent request for developing critical thinking in higher education and scholarship as a whole. On the other hand, critical thinking is a concept that is carefully avoided in educational policy documents. Furthermore, the implicit view of critical thinking in these documents seems to be mainly framed within a cognitive perspective, generating a specific meaning of the phenomenon: It is understood as a purely cognitive rational skill.

The struggle to find the meaning of critical thinking

Over the past three decades, however, a range of scholars have struggled with the problem of conceptualizing critical thinking, with the consequence that today there exists a range of different perspectives on critical thinking, which each constitute different meanings of the phenomenon. The scholars concerned with the concept of critical thinking may, roughly speaking, be divided into absolutists, on the one hand, and relativists, on the other. The former are known for their characterization of critical thinking as being a rational skill with general principles (e.g. see Halpern, 1984; Ikuenobe, 2001a; Siegel, 1988). Thus, according to these scholars, critical thinking could be taught and learned by following certain procedures. This suggestion is strongly opposed by relativists, who hold that the character of critical thinking is context-dependent. Hence, it cannot be taught independently of the current context. Furthermore, relativists hold that critical thinking is more than just a rational skill, emphasizing the importance of "irrational" qualities as well, such as empathy, imagination, intuition and emotions (e.g. see Garrison, 1999; Thayer-Bacon, 1998, 2000; Walters, 1990). What the relativists are pointing to at its most general level is that the critical thinker is an embedded and embodied being, moved by certain values due to his or her culture. Accordingly, it is not possible to be completely unbi-

ased in one's rational approach, as the absolutists assert. This is interesting, since the relativists highlight the same notion that was once included in Bloom's taxonomy in the affective domain: values have an impact on the individual's thinking. Still other scholars choose a diplomatic position between the two camps, asserting that a combination of both special courses in critical thinking and an infusion of the subject in ordinary classes is perhaps the best choice for an optimal development among students (Bailin et al., 1999b), understood that critical thinking has some general characteristics, but is context-dependent too.

In this context it can be noted that the empirical evidence supports both sides. According to Wolcott et al. (2002) there is "a significant lack of empirical evidence, in both the accounting education and higher education literature, that any specific instructional method can enhance the critical thinking skills of students" (ibid., p. 85). When examining the field further, it appears that some studies show that specific training in argumentation does in fact enhance critical thinking to some extent (e.g. see Anderson, T. et al., 2001; Sanders, Wiseman & Gass, 1994). This ambiguity in evidence could, however, be traceable to the fact that critical thinking is conceptualized differently by different researchers. For instance, everyone does not agree that critical thinking corresponds to argumentation skills, as in the studies just mentioned. Irrespective of whether critical thinking is considered as a general skill that could be taught in special courses or not, the difficult state of affairs remains: Critical thinking is a fluid concept, conveying a range of different meanings with no conscious horizon relating them to one another. After all, it is maybe not so surprising that the concept of critical thinking is difficult to trace in educational policy documents, inasmuch as it is a phenomenon that is complicated to grasp. Apparently, a first appropriate step would be to explore the different meanings of critical thinking in order to acquire a holistic understanding of the phenomenon, since a more comprehensive and integrated understanding might facilitate the explicit incorporation of critical thinking into educational policy instruments. Furthermore, this manner of proceeding would result in a more complex understanding of critical thinking than that which is implicitly depicted in the current instruments at present.

The Direction of Research

This thesis provides a theoretical study dealing with different meanings of critical thinking in scholarship as it appears in Western thought, with the ambition to attain a multi-faceted and synthetic understanding of the phenomenon. In order to achieve these aims, a hermeneutic-phenomenological approach has been considered appropriate for the purpose. In brief terms, this approach means to be concerned with the subject's intentional directedness to his or her world, which constitutes a range of meanings and different modes of being. Applying this approach also means to have an open-minded attitude, accepting all possible meanings as valid modes of being.

From a hermeneutic-phenomenological viewpoint, no possible meanings should be rejected, since each meaning is considered to contribute to the holistic understanding of the world. Transferred to the current context, this implies a focus upon diverse ways in which critical thinking appears and the different meanings that originate from these "appearances" (in a phenomenological sense of the word). In order to gain knowledge about these meanings, a historical analysis of critical thinking has been carried out and different perspectives on contemporary critical thinking have been explored. Thereby a varied and synthetic picture of critical thinking has been developed, which in turn facilitates comprehension of the conditions, as well as the development of critical thinking in scholarship.

Purpose

Against this background, the purpose of the thesis is to explore the phenomenon of critical thinking in scholarship as regards its meanings, conditions, and development using a hermeneutic-phenomenological approach. The study is delimited to exploring the phenomenon of critical thinking as it appears in different philosophical and educational texts. Based upon these readings, an attempt will be made to clarify the meanings of critical thinking, as well as to investigate the conditional origins and possible directions of development that appear in relation to these meanings.

Disposition of the thesis

In Chapter 1, the hermeneutic-phenomenological approach of the thesis is discussed. On the one hand, a number of characteristic features of the hermeneutic-phenomenological approach are highlighted, in order to clarify the ontological, epistemological, and methodological underpinnings of the current thesis. On the other hand, my own original understanding of critical thinking develops within a hermeneutic-phenomenological approach. According to my understanding, four concepts appear as fundamental for critical thinking: Interpretation, explanation, understanding, and abstraction. Based upon these concepts, an interpretative depiction of how critical thinking in scholarship has made itself manifest throughout history is outlined in Chapter 2. This depiction is delimited to different philosophical texts within the realm of epistemology. Chapter 3 consists of descriptions of four significant perspectives on critical thinking today: The cognitive perspective, the informal logic movement, the developmental-reflective perspective, and the feminist perspective. In Chapter 4, critical thinking is worked out by staging contemporary perspectives on critical thinking in six imaginary classrooms. Against the background of these classrooms, different meanings of critical thinking are constituted, which together with the appearances of critical thinking in history result in a synthetic understanding of the phenomenon. Chapter 5 concludes with a discussion of the results in relation to the conditions and development of critical thinking in scholarship as a whole. Finally, the thesis ends with a self-critical section, in which I make a retrospective reflective review of the work.

CHAPTER 1

Critical Thinking through a Hermeneutic-Phenomenological Approach

Delimitations

When referring to hermeneutic phenomenology as a scholarly approach, it is necessary to explicate its meaning. In very broad terms, hermeneutic-phenomenological approaches could be characterized as intertwining descriptive and interpretative phenomenology. This explanation is, however, not really clarifying, inasmuch as there is a wide range of possible hermeneutic-phenomenological approaches, which are more or less descriptive and interpretive (Cohen, Kahn & Steeves, 2000). Hence, the forthcoming chapter will illuminate the specific hermeneutic-phenomenological approach that forms the foundation of the methodology and results of this thesis. Rather than using a wide hermeneutic-phenomenological approach, I have delimited my approach to including basic aspects of Heidegger, Gadamer, and Ricoeur, in recognition of their foundational work in the hermeneutic-phenomenological movement (Bengtsson, 1999; Ihde, 1993). In addition, some aspects of Arendt's thinking have also been incorporated into my approach, since her work is of relevance for this thesis too. Thus, by drawing on Heidegger, Gadamer, Ricoeur and Arendt, my own hermeneutic-phenomenological approach has developed. This turns out to be an approach that is consistent with my own prejudiced view of critical thinking, which will be clarified further on. Even though Husserl does not belong to the realm of hermeneutic phenomenology, but rather to transcendental phenomenology, one cannot disregard his importance for the hermeneutic-phenomenological movement, since hermeneutic phenomenology has its foundation in Husserl's phenomenology. Thus, in order to understand the phenomenological method used in this thesis, certain aspects of Husserl's phenomenology must first be considered.

Hermeneutic-Phenomenology: An Extension of Husserl's Later Philosophy

The concept of phenomenology

Phenomenology is generally associated with individuals' concrete experience in their life-world, so it could be viewed as troublesome to apply a phenomenological approach to a theoretical framework. Phenomenological approaches can be observed, however, in a range of studies within knowledge sociology, existential philosophy and anthropological philosophy (Bengtsson, 1998). Thus phenomenology is not limited to experiences in the concrete world, but is an all-embracing approach to understand human activity and being in the world in relation to certain phenomena. When using a phenomenological approach in order to understand the phenomenon of critical thinking, we must first understand what phenomenology means. Heidegger (1996) clarifies the definition of phenomenology by deriving it from its conceptual roots in *phenomenon* and *logos* respectively, thereby explaining the composed meaning of *phenomenon* and *logos* into phenomenology. According to Heidegger, *phenomenon* is derived from "*phainomenon*," which has two meanings, structurally related to one another: *phenomenon as self-showing* (what it truly is), and *phenomenon as semblance* (what it seems to be, but is not). Even though both of these meanings of *phenomenon* are relevant for the phenomenologist, focus is put upon the former, *phenomenon as self-showing*. A phenomenon is manifested in different appearances, revealing a range of meanings. The crucial point is, however, that this self-showing is usually concealed in the appearances. In relation to critical thinking in scholarship, the element of concealment is found in that the appearances of critical thinking are embedded in scholarly and scientific frames, or 'systems' as Heidegger expresses it. The danger when a phenomenon is embedded into a system is that the phenomenon seems to be 'clear', with no further need to question its meaning. The results of this thesis suggest that Heidegger's warning is partly justified. In some perspectives, the meaning of critical thinking is not questioned, while other perspectives ponder seriously upon this issue. Irrespective of perspective, however, none of the advocators question their own perspective and the consequences it has for the meaning of critical thinking. Thus, this will be one task of the current thesis.

As regards *logos*, Heidegger points out that it has lost its original meaning. Rather than interpreting *logos* "as reason, judgment, concept, definition, ground, [or] relation" (Heidegger, 1996, §7b: 32, p. 28), *logos* should be understood from its basic meaning, which is speech. Then *logos* means "to make manifest 'what is being talked about' in speech" (ibid., p. 28), which implies that *logos* lets something be seen "straightforwardly" by speech. It is from this point, Heidegger thinks, that *logos* has been possible to modify into reason, judgment and so on. However, combining *phenomenon* with *logos* constitutes phenomenology as being a way of research that

describes and lets "what shows itself be seen from itself, just as it shows itself from itself" (ibid, §7c: 34, p. 30). Thus it seems as if *logos* constitutes the condition for phenomenology to make a phenomenon become manifest in its appearances, since *logos* gives the phenomenon a voice through the individual, intertwining the phenomenon and the individual into a single mutually interacting being. This interactive process is important, inasmuch as it implies that the access to the phenomenon goes through the consideration of its *act of being*, its appearances, which in turn shape themselves in the individual's meaning constitution of the phenomenon. Thus the task of phenomenology is not to "characterize the 'what' of the object of philosophical research in terms of their content but the 'how' of such research" (Heidegger, 1996, §7: 27, p. 24).

The phenomenological experience

In order to understand Heidegger's above-mentioned statement appropriately, one has to consider its source in Husserl, who is the founder of phenomenology in its recent form[3]. It is not an easy task, however, to grasp Husserl's philosophy, since the whole meaning of it cannot be grasped by reading single works of him. Rather, his transcendental phenomenology is fragmentary, extended over all his writings, due to the fact that Husserl himself was in a constant process of developing his transcendental phenomenology. Furthermore, "if one is to follow Husserl in the performance of his phenomenology, one must pay more attention to what he actually does than to what he says about what he does" (Ströker, 1993, p. 16). In the context of this thesis, my readings were limited to Husserl's later work, *The Crisis of European Sciences and Transcendental Phenomenology*, and Ströker's (1993) careful analysis of the development of Husserl's genetic constitutive analysis. The reason for choosing these sources was that they provide the notions needed for understanding the development of Husserl's later philosophy, constituting the foundation for understanding hermeneutic-phenomenology.

If one knows anything at all about Husserl's phenomenology, one probably associates it with his famous call: Go back to the 'things themselves'! Those who expect phenomenology to provide a direct access to the 'things' will, however, be disappointed, since:

> …phenomenology is entirely incapable of finding its "things" immediately and in the direct examination of objects. For the things of phenomenology are nothing other than the acts of knowing and, further, the intentional experiences of consciousness taken altogether in their essential generality. (Ströker, 1993, p. 18)

3 The original concept of phenomenology has its roots in Hegel's work *The Phenomenology of Mind* from 1807, which will be discussed further on. By Husserl's works during the 20th century, however, the meaning of phenomenology changed. Husserl's phenomenology emphasizes that consciousness is characterized by *intentionality*, which means that consciousness is always *directed* to an object, which will be discussed further on.

Thus, phenomenology is basically a matter of exploring the acts of knowing, with an emphasis on the *acts*. Originally, knowledge acts were commonly understood as corresponding to the content of consciousness. Husserl eventually re-construed the meaning of knowledge acts, however, into intentional experiences (Ströker, 1993). By *intentional* experiences, he meant that the experiencing subject's consciousness is *directed* to certain objects in the world, since being conscious is always to be conscious of *something*. Thus, being concerned with the acts of knowing, that is to say the intentional experiences, is to make apparent the "different modes of consciousness in which the intended objectivity appears determined in a particular manner" (ibid., p. 24).

Husserl's phenomenology is also understood as a philosophy, which searches for the beginnings in a two-fold way. On the one hand, Husserl made a great endeavor to make phenomenology a self-grounding philosophy. In order to do that, Husserl had to critically consider its claims of validity by scrutinizing the beginning of phenomenology over and over again. On the other hand, Husserl's original effort was to find the origin of all experiences, by describing the structure of knowledge acts, freed from all presuppositions. Accordingly, Husserl's purpose was at one point to find the essence of the intentional experiences. As his work proceeded, however, Husserl's original concern with finding the essence was superseded by an increased emphasis on the constitution of meaning (Ströker, 1993). This shift is important, inasmuch as phenomenology was no longer a matter of defining knowledge acts in relation to certain phenomena, but rather to consider how knowledge acts are constituted in the subject. According to Ströker (1993), Husserl's altered focus could be explained against the background of a range of insights and modifications of his earlier phenomenology. Most significant for the development of hermeneutic-phenomenology is that Husserl realized that intentional experiences cannot be dissociated from the ego, and furthermore that the ego's experience is always constituted within a horizon. Inasmuch as the horizon settles the frames and possibilities of the subject's meaning constitutions, one cannot disregard its impact on the acts of knowing. Hence, exploring intentionality is to deal with horizontal intentionality. The crucial point is that a horizon entails more than the object which the subject's intentionality is directed to. This implies that the phenomenon, which the subject directs his or her interest to, is related to still other objects, which are co-given and in a sense constitute the condition for the phenomenon to be constituted the way it is. These objects and relationships are, however, not immediately given in the specific moment of approaching the phenomenon in concern. In order to see what is co-given, the phenomenologist has to alter his or her seeing in relation to the phenomenon, letting some aspects come into the forefront, whereas others are put in the background. This is what happens in Husserl's renowned phenomenological method, the epoché, which will be discussed further on. However, all this led Husserl to another important insight: Consciousness has a temporal structure, which reveals itself in the constitution of an object. Thus, objects are temporal objects, which are constituted against the background of

the subject's earlier experiences of them. Accordingly, the constitution of meaning is in fact a genetic constitution:

> …the temporality of the process of constitution is, for its part, constitutive for the product of constitution. This means in particular that formerly produced accomplishments are involved in present constitution. It is in precisely this respect that present constitution is genetic constitution. (Ströker, 1993, p. 147)

At this point, the peak of Husserl's later phenomenology is reached, and the ideas which contributed to the development of the hermeneutic-phenomenological movement. Since the knowledge acts of phenomena are temporarily and horizontally constituted in the ego, they can never be defined. That would be to narrow down the possibility of further meaning constitution of the phenomenon. Hence, only the *modes* as to how the phenomenon appears through the subject's temporal and horizontal meaning constitutions are within reach. Thus, approaching a phenomenon, such as critical thinking, in a phenomenological sense, means to open up a conscious horizon in which the phenomenon is understood in relation to all that which is co-given within the horizon. It also means to be consciously aware of that the meaning of critical thinking will never be complete, inasmuch as the past meaning constitutions of the phenomenon provide still new possibilities as to how it could be further understood. Therefore, the aim of the forthcoming thesis is not to provide a definition of critical thinking. Rather, there will be an exploration of the different meanings of critical thinking that are constituted within my own continually expanding horizon.

Against this background, it is possible to understand Husserl's concern with finding the appropriate method as to how to approach the constitutions of meanings, namely the epoché. It should be mentioned that the epoché has been subject to sharp criticism, which is due to the fact that the epoché has been misunderstood as a privative and eliminating way of describing the world (Moustakas, 1994; Ströker, 1987). According to Ströker (1987), this misunderstanding has its roots in Husserl's earlier philosophy, where he made a marked distinction between existence and content. Against the background of Husserl's later philosophy as discussed above, however, the meaning of the epoché comes into a new light. Before entering upon this developed understanding of the meaning of the epoché, there must be some consideration of its ontological ground. According to Husserl (1970), there is a pregiven world, which constitutes the origin for all human living. Human beings are not aware of this pregiven world, however, due to the fact that they live in their life-world, in which certain interests move them. In order to see the world in its true being, one needs to search for the origin of every experience, beyond the habituated ways of being and thinking, Husserl claims. Hence the development of the epoché, which broadly implies that one releases oneself from one's natural attitude. The natural attitude involves certain values and cultural frames, determining the individual's

perceptions of the world. Furthermore, the natural attitude presumes that the world appears just the way it is. Thus, what happens, when carrying out the epoché, is that the natural attitude is put aside when considering an object in order to attain a transcendental attitude. The transcendental attitude is freed from the assumption that the world is analogous with how it is perceived by the natural attitude. Accordingly, attaining a transcendental attitude means to raise oneself above one's life-world in order to see the world in a new way. Then the world appears as a phenomenon, given that new meanings as to how to understand the world are experienced. Husserl carefully points out, however, that carrying out the epoché is not to abandon the life-world, but only to force oneself to view the world in a new unprejudiced manner:

> ...through the epoché a new way of experiencing, of thinking, of theorizing, is opened to the philosopher; here, situated *above* his own natural being and *above* the natural world, he loses nothing of their being and their objective truths and likewise nothing at all of the spiritual acquisitions of his world-life or those of the whole historical communal life; he simply forbids himself – as a philosopher, in the uniqueness of his direction of interest – to continue the whole natural performance of his world-life; that is, he forbids himself to ask questions which rest upon the ground of the world at hand, questions of being, questions of value, practical questions, questions about being or not-being, about being valuable, being useful, being beautiful, being good, etc. All natural interests are put out of play. But the world, exactly as it was for me earlier and still is, as my world, our world, humanity's world, having validity in its various subjective ways, has not disappeared; it is just that, during the consistently carried-out epoché, it is under our gaze purely as the correlate of the subjectivity which gives it ontic meaning, though whose validities the world "is" at all. [...]...every opinion about "the" world, has its ground in the pregiven world. It is from this very ground that I have freed myself through the epoché; I stand above the world, which has now become for me, in a quite peculiar sense, a phenomenon. (Husserl, 1970, §41, p. 152)

Husserl's claim to 'put all natural interests out of play', in order to consider the world from 'above', reveals his idealistic approach to phenomenology, which is condemned by the hermeneutic movement. Granted, such pretensions are beyond human faculty in a hermeneutic perspective, inasmuch as human beings are irrevocably embedded in a history. This implies that human beings cannot possibly release themselves from their interpretative way of understanding the world. Hence, according to a hermeneutic view, the world is experienced from *within*, rather than from *above*. This is not to say that phenomenology is incompatible with hermeneutics, since "what hermeneutics has ruined is not phenomenology but one of its interpretations, namely its *idealistic* interpretation by Husserl himself" (Ricoeur, 1998a, p. 101). Husserl's description of the epoché should not be judged too rigorously from a hermeneutic viewpoint, however. When keeping in mind Husserl's assertion that the epoché in no way means to deprive oneself of one's life-world, it is possible to interpret his choice of words in another light. To 'put all natural interests out of play'

should rather be understood as an exhortation to find other ways to see the world than those one is used to apply. Thus, it is a matter of careful self inquiry aiming at the emancipation of one's habituated lines of thought. Furthermore, considering the world from 'above' should not be construed as being dissociated from the world. By means of the epoché a range of meaning constitutions are unveiled, which renders it possible to perceive the world beyond one's natural understanding. One could say that one moves to another intellectual plateau, where one understands one's natural attitude as only one possible way of being. In that sense one could construe Husserl's expression of raising oneself above the world, as the abstraction from one's natural being through the manifestation of the manifoldness of possible ways of being. Thus, carrying out the epoché is a reflective way of opening up possibilities – different possible ways of being, different possible ways of seeing, and different possible ways of understanding. In fact, by interpreting the meaning of the epoché in this way, it appears that phenomenology and hermeneutics are dialectically related to one another, as Ricoeur (1998a) asserts: On the one hand, phenomenology needs hermeneutics since the experiences derived from the epoché would otherwise not be possible to reflect upon, inasmuch as all reflection is preceded by interpretation and understanding. On the other hand, the hermeneutic experience is dependent on the interpreter's ability to distance him- or herself from the text and let it speak for itself before making any hasty interpretations of it. Hence, the need for the phenomenological epoché:

> Hermeneutical distanciation is not unrelated to the phenomenological *epoché*, that is, to an *epoché* interpreted in a non-idealistic sense as an aspect of the intentional movement of consciousness towards meaning. For all consciousness of meaning involves a moment of distanciation a distancing from 'lived experience' as purely and simply adhered to. Phenomenology begins when, no content to 'live' or 'relive', we interrupt lived experience in order to signify it. Thus the *epoché* and the meaning-intention [*visée de sens*] are closely linked.
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> (Ricoeur, 1998a, p. 116)

More concretely, the epoché means to reflectively experience something from a range of viewpoints, considering different aspects of the phenomenon. As mentioned earlier, it is a matter of letting some aspects come to the forefront, whereas others constitute the background, and the reverse. Even though these experiences offer a variety of different meaning constitutions of the phenomenon, they are all considered to make manifest varying sides of one and the same phenomenon. This is an including way of approaching a phenomenon, inasmuch as each new side is understood against the background of the previously experienced sides:

> Each side gives me something *of* the seen thing. In the continuous alteration of seeing, the side just seen ceases being actually still seen, but it is "retained" and "taken" together with those retained from before; and thus I "get to know" the thing. [...]...what I attribute to the thing itself – for example, its seen, colored shape in the alteration of near-and-far orientation – is again something which exhibits itself in manifold ways. I am speaking now of the alteration of *perspectives*. The perspectives of the shape and also of its color are different, but each is in this new way an *exhibiting of – of* this shape, of this color. [...] ...the perspectives combine in an advancing *enrichment of meaning* and a *continuing development of meaning*, such that what no longer appears is still valid as retained and such that the prior meaning which anticipates a continuous flow, the expectation of "what is to come," is straightway fulfilled and more closely determined. Thus everything is taken up into the unity of validity or into the *one, the* thing. (Husserl, 1970, p. 158)

Thus the phenomenological experience aims at a holistic understanding of the phenomenon. The understanding can never be complete, however, inasmuch as there are infinite possibilities as to how the phenomenon could be perceived. Approaching a phenomenon is the same as being in the middle of a continuous stream of consciousness directed to this specific being. Some aspects will pass by without one even noticing it, while other aspects call upon one's attention. Due to the fact that one can never seize the phenomenon in its complete wholeness, but only capture some aspects of it in the continuous flow of consciousness, there will always be undiscovered meanings left. Accordingly, an important character of the phenomenologist is to have a humble attitude towards the phenomenon and his or her own understanding of it, at the same time as there is an endeavor to examine the different sides of the phenomenon as far as possible.

The Manifestation of My Hermeneutic-Phenomenological Approach

The variation of appearances

Throughout this thesis, my hermeneutic-phenomenological approach is shown in different ways. Based upon Husserl's phenomenology, there is an attempt to vary the phenomenon of critical thinking as far as possible, in order to show it in its different appearances, and hence meaning constitutions. Furthermore, with reference to the hermeneutic movement, the phenomenon has to be considered against the background of its history. Therefore, the forthcoming exploration of the different meanings of critical thinking takes its start in ancient Greece. By encountering different philosophical texts through history, it appeared that critical thinking has many meanings, dependent on the background. This implies that the history constituted a

wide horizon, offering a range of possible appearances of critical thinking, of which some were depicted through the chosen historical texts. Metaphorically, one could say that I made a historical journey in order to visit different exotic places, which made it possible for me to experience the phenomenon of critical thinking in new ways. At each place, I took some photos of such aspects I found especially meaningful for my purpose, and put them into my photo album. Thereby my understanding of the phenomenon of critical thinking developed continuously. Besides my phenomenological camera, my suitcase was also equipped with some hermeneutic tools (explanation, interpretation, understanding, and abstraction) for describing my experience. These tools reflected my own prejudiced view on critical thinking at the outset of the journey. The background and development of this prejudiced view will be presented below. It appeared through my historical journey that critical thinking had not explicitly become a concept yet, but that the phenomenon made itself manifest in different concealed appearances. Thus, one could say that critical thinking appeared in the background of its different historical contexts. At the end of the journey, however, I arrived at the present time, in which critical thinking has started to become a phenomenon in scholarship, which scholars struggled to understand. Thus, critical thinking was now posited in the foreground.

Since critical thinking itself had come into the forefront in the texts of present times, and due to the fact that my suitcase was full of photos from history, my original hermeneutic tools for understanding my experience of critical thinking were no longer needed. Therefore, I decided to experience the phenomenon in contemporary texts without any explicit tools. Hence, it is possible to see a shift between my approaches to critical thinking in history and critical thinking in present times. The former approach has an emphasis on interpretation, while the latter approach is more descriptive in its character. It turned out that the concept of critical thinking played such a central role in today's scholarly discourse, that it was possible to invent the fictive "University of Critical Thinking". This university was imagined to consist of four departments, which bestowed different perspectives on critical thinking. At the university, I visited six classrooms, which staged critical thinking in practice. The scenes from these classrooms were composed by a combination of my own life experiences and significant meanings derived from each perspective on critical thinking. Thereby, I had the opportunity to experience different appearances of the phenomenon of critical thinking in practical pedagogical contexts too. The experiences from the classrooms were reflectively written down and put together with the photos in my historical album. Thus, by carrying out my investigation in this way, the album of different appearances contains numerous aspects, which could be arranged in different ways. Depending upon how the photos and classroom stories were arranged, the meaning of critical thinking changed. After several such reconstructions, it was possible to discern a set of themes, constituting certain meanings of critical thinking. By providing the impetus to this process, my hermeneutic-phenomenological approach had fulfilled its purpose: A synthetic and new way of understanding critical thinking had emerged.

A beginning horizon

In order to find out my own prejudiced view of critical thinking, I asked myself certain questions such as: When do I start thinking critically? What do I do, when thinking critically? What are the results of my critical thinking? How can the result of my critical thinking constitute the basis for further critical thinking? It is noteworthy that the last question refers back to the first one. The answers of these questions ended up in certain themes, reflecting different fundamental aspects of my approach to critical thinking, such as affection, interpretation, explanation, understanding, abstraction, and responsibility. Although these abilities could be considered to be characteristic for the human species as such, they also seem to be specifically bound to critical thinking in a certain way, which will be explored below.

The origin of critical thinking

The question of "What makes us think?" is treated by Arendt (1978) in relation to the history of philosophy. It involves three related aspects to be answered: the meaning of thinking, the goal of thinking, and the beginning of it. According to Arendt, the original meaning of thinking, if one refers to ancient Greece, was being. Thus to be and to think was considered to be one and the same thing. Thinking was connected to immortality, since the thoughts of a man could live on by means of others, even though he was dead. Immortality was the only thing that differentiated human beings from Gods, so achieving immortality by thinking made it possible for man to become divine. All this resulted in a way of viewing thinking as always being good, since thinking was tantamount to God being inherent in human beings. Against this background, in which thinking was considered to be the same as being, and the goal of thinking was to attain the divine quality of immortality, the beginning of thinking was subject to certain limitations. Inasmuch as thinking was related to immortality, it had its start in the contemplation of everlasting objects, which never change. Contemplating the everlasting objects implied that philosophy had its origin in *wonder*. Stating that philosophy, hence thinking, has its origin in wonder is an idea that also Arendt devotes herself to. In this context, wonder does not mean to be confounded by something unexpected, but rather to be filled with admiration:

> ...wondering is something familiar and yet normally invisible, and something men are forced to *admire*. The wonder that is the starting-point of thinking is neither puzzlement nor surprise nor perplexity; it is an *admiring* wonder. (Arendt, 1978, p. 143)

Further on in history, the idea of the origin of thinking takes a new turn, however. Inspired by the Romans, Hegel emphasizes the need for reconciliation, when human beings are lost from the human unity (Arendt, 1978). Thus the goal of this new way of viewing thinking and philosophy is to create another world, which is more meaningful. This turn is interesting, since thinking is now associated with active changes

rather than with everlasting objects. Accordingly, thinking obtains a constructive quality. Thinking is no longer a matter of preserving what is conceived as good already, but to change that which is not good:

> Practically, thinking means that each time you are confronted with some difficulty in life you have to make up your mind anew. (Arendt, 1978, p. 177)

By the Hegelian turn, thinking is no longer just thinking, but has also got a critical essence, inasmuch as there is an emphasis on the need for reconciliation from dissatisfaction and contradiction. This corresponds well to my own prejudiced view of critical thinking, which has some inherent sense of dissatisfaction in it, striving to reach further. Based upon a sense of dissatisfaction, which challenges me to reach a change, different alternatives are tried out in order to find out a satisfying way of action. The crucial point is, however, that thinking has historically originated in some kind of affect, either in admiring wonder, or in dissatisfaction, or in ethical concerns, as is evident in Arendt's own view of thinking:

> The manifestation of the wind of thought is not knowledge; it is the ability to tell right from wrong, beautiful from ugly. And this, at the rare moments when the stakes are on the table, may indeed prevent catastrophes, at least for the self. (Arendt, 1978, p. 193)

Since Arendt points to the ethical and emotional aspect of thinking, the origin of critical thinking seems not to be delimited to a sense of dissatisfaction only, but also a sense of *responsibility* is apparent.

The process of critical thinking

So far the origin of critical thinking has been pondered upon, but what happens then, in the process of critical thinking? This leads to the next question: What do I do, when thinking critically? Answering this question, cognitive psychology has an advantage, as regards tests and experiments within the frame of mental processes. Although these results are of importance, I choose not to refer to them here yet. Partly, because the process of critical thinking in an educational perspective should not be limited to mental processes (since the context is of utmost importance too), and partly because my view of the critical thinking process can be shown without further details about critical thinking as a mental process. In addition my approach is philosophical, rather than psychological.

I do many things when thinking critically. Basically, I would say that my critical approach is *tentative* – I figure out different reasonable choices as to how to deal with a certain problem – then I judge which of the choices is most appropriate to the problem at hand, by contemplating their meanings and possible consequences. All these fundamental elements of critical thinking would not be possible to carry out without my ability to interpret, explain, understand, and think abstractly, which in turn is dependent upon my earlier experience within my historical tradition that

I am "thrown into", as Heidegger hermeneutically (1996) expresses it. Being thrown into the world implies that human beings are handed over into a historical tradition, in which they have to be together with other people and their ways of living. Hence, Da-sein[4] (being-there) necessarily involves Mitda-sein (being-with). This Mitda-sein determines all human existence, even when the human being is alone:

> Being-with existentially determines Da-sein even when an other is not factically present and perceived. The being-alone of Da-sein, too, is being-with in the world. The other can be lacking only in and for a being-with. Being-alone is a deficient mode of being-with, its possibility is a proof for the latter. (Heidegger, 1996, §26: 120, p. 113)

According to Heidegger (1996), being-in-the-world also implies to be in a world of things that bear traces of human beings. For instance, someone else before me has entered the ground that I enter, and the book that I read has been written by someone else. The things are very important in Heidegger's thinking, since they are part of human existence in the world. This implies that human existence must be understood against the background of how human beings *use* things, a thinking that challenged the contemporary conventional philosophy, which viewed things as objects to observe. Although critical thinking is not a thing, Heidegger's thinking is viable in relation to critical thinking. It seems as if one cannot understand what critical thinking is – or what it means to be a critical thinker – if one does not consider how critical thinking is used. Critical thinking in scholarship could be used in a number of ways, e.g. as a way of solving problems, as an exercise of power, as being the legitimate discourse, or as a collaborative way of communication, and so on. Following this train of thought, it appears that the use of critical thinking in scholarship is highly dependent on the fact that Da-sein also implies Mitda-sein. Critical thinking in scholarship is a matter of thinking critically both in relation to one's own thinking, and, perhaps even more important, in relation to how others might respond to it. Therefore, it might be appropriate to state that critical thinking in scholarship, in some way or another, is a kind of social action, in which critical thinking can be used in many ways dependent on the context.

Considering the meaning of critical thinking when put into a hermeneutic-phenomenological frame, mainly four interrelated concepts spring to my mind: interpretation, explanation, understanding, and, perhaps above them all, abstraction. These concepts, which will be conceptualized as the four cornerstones of critical thinking, seem to be essential for the process of critical thinking, inasmuch as they are fundamental faculties of thinking as a whole. Starting with the concept of in-

4 *Da-sein* is a fundamental concept in Heidegger's thinking. It is rarely translated from German because of its special meaning. In order to distance himself from modern metaphysics, Heidegger does not use concepts as "I", "self-consciousness" or "person" when referring to human beings. Rather, *da-* stands for the idea that the human being is thrown over there (*da-*) into an already existing world. As regards *-sein*, it signifies that the human being is regarded as an existence (*-sein*). Together these two views and concepts constitute what Heidegger's calls *Da-sein* (Filosofilexikonet, 1988).

terpretation, it is a wide concept with different meanings in different contexts. A conventional way of conceptualizing interpretation is that it corresponds to the individual's biased view of something, in which the individual's cultural background and earlier experience determines his or her interpretation. Although this view of interpretation is not rejected, it seems to be insufficient for interpretation to be critical. A further step towards critical thinking could be found in the traditional hermeneutic view of interpretation, as being the clarification of the real meaning in a difficult text (Gadamer, 1988). Interpretation in this sense could be considered as critical with respect to the different alternative interpretations which are tentatively tried out and found to be more or less appropriate in relation to the original meaning of the author. It can be perceived as problematic, however, that the original meaning of the author is never reached, since there is a gap between the reader's and author's historical settings, as Gadamer (1988) and Ricoeur (1998b) both point out. Therefore, one might ask how critical such an interpretation actually is, unless it is coupled with awareness that interpretations are always biased. According to my view, interpretation gets its most critical essence, as conceptualized by Gadamer. Underpinned by the philosophy of phenomenology, interpretation, in Gadamer's (1988) sense, is to go beyond what is already given, in order to find the concealed meaning of the text and clarify the underlying interests that direct the individual's readings. Although interpretation in Gadamer's sense is based upon the interpretation of texts, the idea of his conceptualization of interpretation can be transferred to the interpretations of other types of expression of human intentions too. Thus, in relation to critical thinking, interpretation means to critically see further than what is already manifest, and also to be critically aware of both the speaker's and the reader's intentional view. Interpretation beyond what is already given implies that questions rather than answers are focused (Gadamer, 1966, 1988, 2004). Since questions are in focus, the interpretative process is always in motion. Hence, interpretation can never be definitive, but only approaching, Gadamer points out. It seems as if Gadamer's characterization of interpretation as being a questioning process fits well with critical thinking, since a critical thinker in scholarship can never be completely satisfied with an answer. Thus, granted that the critical thinking process involves an interpretative feature in Gadamer's sense, the answers will always constitute further questions in a way that expands the critical thinking process. Each answer constitutes a horizon from which a range of possible questions could arise. Answering these questions implies in turn that even more questions emerge, hence the expansive character of critical interpretation. However, in relation to this reasoning, critical thinking seems to be a phenomenon that appears *between answers*, and that this *between answers* is constituted by questions.

Perhaps even more interesting in relation to critical thought is that Ricoeur (1998b) has moved one step further, concluding that there is a dialectical relationship between explanation and interpretation. According to Ricoeur, explanation and interpretation constitute different functions in reading:

> ...to explain is to bring out the structure, that is, the internal relations of dependence which constitute the statics of the text; to interpret is to follow the path of thought opened up by the text, to place oneself *en route* towards the *orient* of the text. (Ricoeur, 1998b, p. 162)

Ricoeur points out that structural analysis involves the different units of action within the text, in particular how they can be classified horizontally (how they differ from each other) and hierarchically (how they are integrated to one another at different levels into a whole). These units of action are not experienced (interpreted) directly by the analyst, but they constitute "the switching points of the narrative, such that if one element is changed, all the rest is different" (Ricoeur, 1998b, p. 156). So far, the feature of explanation is evident. Considering the quotation above, Ricoeur stresses a crucial point, saying that there are internal relationships between the units of action in the explanatory structure. This implies that if the specific relationship ceases to exist, the units will not be the same anymore, and the meaning of the text will change (see further about internal relationships in e.g. Bradley, 1908; Moore, 1922; Filosofilexikonet, 1988). Accordingly, since the units of action constitute the structural continuity of the text, and the relationships between the units are internal, they cannot be totally disconnected from meaning. This is because the meaning of the units of action determines their internal relationship. Thus, if one takes a closer look at the meaning constitutive process, it appears that this process is connected to interpretation. It follows that the interpretative structure of the text constitutes the condition for its explanatory structure. In the same way, explanation constitutes the condition for interpretation, inasmuch as the logic of action (explanation) makes sense to the text and its reader. Without such explanatory structural continuity, the meaning of the text at hand would be undecipherable. Hence, explanation and interpretation are two different approaches to a text, yet the relationship between them is internal and dialectical, to use Ricoeur's own terminology.

Ricoeur's (1998b) dialectical reasoning, in this respect, seems to be relevant to critical thinking. There must be some sense of how the units of action are logically related to one another; otherwise critical thinking will not even attempt to understand a question in the first place. Hence the explanatory feature of critical thinking. There must also be some consideration of the meaning of the relationships between the units of action, since the units of action would otherwise make no sense. Granted that an important character of critical thinking is to be aware of the meaning of a subject of scrutiny, it appears that interpretation is also essential for critical thinking. Thus, the phenomenon seems to be twofold in this sense. On the one hand, there are critical assessments of whether the subject of study has a logical continual structure. On the other hand, there are critical assessments of the possible different meanings that appear from this particular structure. Since there is a dialectical relationship between these processes, the critical thinker moves between explanation and interpretation. The critical part of thinking, in this respect, seems to be in the movement itself between explanation and interpretation. Inasmuch as the critical thinker is driven

by a questioning approach, each explanation needs to be interpreted, just as each interpretation needs to be explained. As soon as an answer is perceived as satisfactory, whether it be explanatory, interpretative, or both, the critical thinking process ceases. Accordingly, to think critically is to keep on moving between explanation and interpretation, which implies that critical thinking appears *in between relationships*, such as between explanation and interpretation.

Upon a closer scrutiny of the meaning of interpretation and explanation, it appears that they both aim at understanding. Beyond the fact that understanding has features of both interpretation and explanation, Ricoeur's reasoning reveals another aspect of understanding as well. Understanding seems to be a matter of holistic thinking, where parts are put together into a whole. By revealing the relationship between the parts, such as Ricoeur does with explanation and interpretation, a holistic understanding emerges. This seems to be an overly simple explanation of the meaning of understanding, however, so I will now discuss Gadamer, who has made a more penetrating inquiry of its meaning. According to Gadamer (2004), all processes of understanding appear in the 'fusion' of two horizons, one of them being familiar and the other one being alien to the person who tries to understand. Based upon Husserl's (1970) as well as Heidegger's (1996) conceptualizations of horizon, Gadamer explains the notion in the following terms:

> The horizon is the range of vision that includes everything that can be seen from a particular vantage point. Applying this to the thinking mind, we speak of narrowness of horizon, of the possible expansion of horizon, of the opening up of new horizons, and so forth ... A person who has no horizon does not see far enough and hence over-values what is nearest to him. On the other hand, "to have a horizon" means not being limited to what is nearby, but being able to see beyond it. (Gadamer, 2004, p. 301)

In contrast to traditional hermeneutics, where misunderstandings were supposed to be avoided as far as possible (inasmuch as the reader was expected to understand the author's original intention perfectly), Gadamer (1966) states that misunderstandings are essential for understanding. Misunderstandings exist due to the gap between the familiar horizon and the alien one. When the two horizons come into contact, some confrontation of misunderstandings necessarily appears between them, since it is in the misunderstandings that the alien becomes manifest. If there were no alien, or expressed in other words, no other horizon to encounter, everything would be familiar and understood already. Thus, due to the gap between horizons, where misunderstandings exist, people are compelled to further dialogue and questions:

> There would be no speaker and no art of speaking if understanding and consent were not in question, were not underlying element; there would be no hermeneutical task if there were no mutual understanding that has been disturbed and that those involved in a conversation must search for and find again together. (Gadamer, 1967, p. 25)

Accordingly, the misunderstandings could be construed as constituting a bridge between the two horizons, thereby making it possible for understanding to appear. Assumed that understanding is fundamental for critical thinking, this involves that one part of critical thinking is to find oneself in such a gap, where one confronts one's misunderstandings and attempts to transform them into an understanding of that which is alien. Gadamer (1966; 2004) holds that the gap of misunderstandings could be overcome by the fact that the human being's existence in the world is constituted by his or her prejudices. Thus, the existence of prejudices could be construed to be the condition for a connecting link between the human being and the world in a relational manner. This implies that the prejudices render it possible for a human being to encounter that which is alien, and to be open to new experiences:

> Prejudices are not necessarily unjustified and erroneous, so that they inevitably distort the truth. In fact the historicity of our existence entails that prejudices... constitute the initial directedness of our whole ability to experience. Prejudices are biases of our openness to the world. They are simply conditions whereby we experience something – whereby what we encounter says something to us. [...] The nature of the hermeneutical experience is not that something is outside and desires admission. Rather, we are possessed by something and precisely by means of it we are opened up for the new, the different, the true. (Gadamer, 1966, p. 9)

So far it has been manifest that understanding appears in the fusion between familiar and alien horizons. It is also evident that a gap of misunderstandings arises when the familiar horizon encounters an alien one, although this gap is overcome by the individual's prejudices, his or her "fore-meanings". The question remains, however, exactly when the misunderstandings are turned into understanding in the fusion of horizons. According to Gadamer (2004), this appears when the individual has a raised awareness of how his or her fore-meanings encounter and are compatible with the alien horizon:

> A person who is trying to understand is exposed to distraction from fore-meanings that are not borne out by the things themselves. Working out appropriate projections, anticipatory in nature, to be confimed " by the things" themselves, is the constant task of understanding… [U]nderstanding realizes its full potential only when the fore-meanings that it begins with are not arbitrary. (Gadamer, 2004, p. 270)

Against this background, it seems as if understanding, and hence critical thinking, must start out from prejudices. With references to Husserl, and all those scholars who strived for attaining objective knowledge, a person might ask how critical such critical thinking is, if it is based upon prejudices. Well, the point is that one may probably never be critical in the way that traditional science advocates, but to be a critical thinker gets another meaning. When a person is aware of his or her prejudiced view, critical thinking means to be critical in relation to both the subject of scrutiny

as well as one's own critical thinking. Thus critical thinking involves a feature of critical self-awareness, which renders it possible for the process of understanding to appear. Without such self-awareness, the essential gap between the critical thinker and the subject of scrutiny will not appear. In order to attain a raised self-awareness, however, there is a need for the other, who is not a part of oneself. This is due to the fact that one can only see and understand oneself as being a certain self in relation to another self[5].

There seems to be an internal relationship between understanding and critical thinking, since both of them apparently presuppose one another. Assuming that critical thinking is partly a matter of having a raised awareness of both the self and that which is alien, this awareness promotes the development of understanding. On the other hand, critical thinking is dependent upon understanding in two ways. As Gadamer points out, there must be some prejudiced understanding for new understanding to have a chance to appear. Accordingly, the critical thinker must have at least some current knowledge of a phenomenon if he or she shall be able to think critically about it. This is also supported by Bailin et al. (1999a), who emphasize that critical thinking about a certain phenomenon is dependent on having earlier experiences of it. Furthermore, critical thinking in scholarship aims at further understanding, from present understanding to new understanding.

So far it has been made manifest that critical thinking appears in the gap between the familiar and the alien horizons. Thus, the crucial task for the critical thinker is to go beyond his or her own horizon, encountering that which is alien. Otherwise he or she will not get into the gap where critical understanding has its act of being. By encountering an alien horizon, one's own familiar horizon becomes alienated from itself. One could say that the alien horizon opens a range of possibilities for seeing the familiar horizon from another viewpoint. Accordingly, one aspect of critical thinking is to *turn that which is familiar into something alien*. Thereby it becomes possible for the scholar, who is very familiar with his or her research field, to be able to see the weak points of his or her own paradigm. Furthermore, this new way of seeing renders it possible for the scholar to speak about his or her horizon with other words and concepts than he or she is used to. Thereby the whole meaning of his or her paradigm could change. What occurs in this developing process is that the alienating process becomes mutual, inasmuch as that which is experienced to be alien from the beginning will, by the progressing understanding, be turned into something familiar. Hence, the possibility of making the phenomenon (the alienated familiar paradigm) manifest in speech. This is, in fact, what happens in the epoché, where a critical and synthetical understanding appears in the fusion of horizons.

Against the background of the previous reasoning, it is possible to grasp the fourth cornerstone in the process of critical thinking, namely abstraction. Interpretation, explanation, and understanding are human activities that human beings pursue

5 This reasoning will be developed in the next chapter in relation to Hegel's work, *The Phenomenology of Mind*.

in everyday life, even though they do not necessarily need to do so in a critical manner. Hitherto, I have argued for interpretation as being critical when it means to go beyond what is already given and when the interpreter becomes aware of his or her own intentional view. Critical interpretation is also to be moved by a questioning approach, rather than an answering one. Critical explanation, on the other hand, means to consciously capture the logical continuing structure of an occurrence, theory, method, and so on. As regards critical understanding, it appears in the gap between the familiar horizon and the alien one, when the critical thinker uses his or her interpretational and explanatory ability to understand him- or herself in relation to the subject of scrutiny. Pondering upon what makes interpretation, explanation and understanding become critical in the way mentioned above, it appears that their common critical essence is abstraction.

The feature of abstraction shows itself in the fact that the critical thinker is positioned between two intellectual states between which he or she moves by the power of abstract thinking. In critical interpretation, the critical thinker uses abstraction in the form of imagination, leading him or her beyond what is already given. Hence, the critical thinker moves from the direct experienced meaning of a phenomenon to imaginative alternative meanings, which are embedded in the surplus of meaning in the direct experienced meaning. Inasmuch as the imaginative possible meanings are not immediately given, the critical thinker has to make use of his or her abstract thinking, staging them in his or her mind. In critical explanation, abstract thinking is evident in that the critical thinker uses his or her analytical ability in order to understand the constitution of an already existing whole. This entails that the critical thinker discerns the underlying parts and the logical relationships between them, even though these parts are not immediately given. Accordingly, there is a need for abstract thinking, inasmuch as the critical thinker would otherwise not be able to intuitively visualize the parts and their relationships. Furthermore, abstract thinking is also fundamental for critical understanding. Critical understanding is not only to be in the gap between two horizons, encountering that which is alien. It is also a matter of becoming aware of the fact there exist other horizons than one's own, which implies that there is a range of alternative ways of being. Moreover, the individual becomes aware that a person's own horizon makes itself manifest differently, dependent upon which alien horizon one encounters in the process of critical understanding. Thus the critical thinker, who tries to critically understand something, raises him- or herself to another intellectual plateau, from which he or she realizes the existence of different possible ways of being, even though he or she cannot perceive them directly. Thereby the critical thinker has liberated him- or herself from his or her immediately given horizon, and turned into a state where it is possible to move between different ways of being. This movement appears at another intellectual level by means of abstract thinking. Pondering upon what is needed for abstract thinking, it seems as if there are certain qualities, such as imagination, which are of importance. This is interesting inasmuch as relativistic scholars, who are concerned

with critical thinking today, emphasize abilities such as imagination, intuition, and creativity when discussing critical thinking (e.g. see Garrison, 1999; Thayer-Bacon, 1998, 2000; Walters, 1990). Assumed that the aforementioned scholars are right in their assertions, this supports my claim that abstract thinking is fundamental for critical thinking. This is due to the fact that imagination, intuition, and creativity involve abstraction in themselves, since in all cases it is a matter of liberating oneself from what is immediately given.

A parallel to Ricoeur's (1998b) reasoning about interpreting texts could be drawn here. According to Ricoeur, the text is abstracted from the world, constituting an imaginary world with references to be accomplished by the reader. By 'references' Ricoeur means the range of possibilities that the text points to. Thus the text, as being an imaginary world, is a world full of different possible ends that do not exist *concretely*. Only the reader can make the possible end concrete by using his or her abstract thinking. The same task is evident in critical thinking. Critical thinking is to face something in order to abstract it from its concrete context, making its different concealed possibilities appear. Then, choosing among the different directions for further thinking and action, the chosen possibility is put back into the concrete again. Hence, critical thinking seems to be an oscillation between the concrete and the abstract. Apparently, there must be at least some imaginative *representations*, rather than merely concrete presentations if critical thinking is to occur. This implies that critical thinking appears in referentially incomplete situations. In scholarship, such referentially incomplete situations appear when dealing with theories, for instance. Widening Ricoeur's reasoning, all theorizing involves intercepted references. By approaching the general and abstract rather than the specific and concrete, theories are never finished references, but unavoidably have to be signified concretely by those who use them.

Reflecting upon this issue further, it seems as if critical thinking appears in *between* – between answers, between different horizons, between the concrete and the abstract, and so on. Following this train of thought, critical thinking implies to think in an including manner, rather than in an excluding way. One cannot think critically about a phenomenon without relating it to something else, which it is not. This type of reasoning is frequently seen in the sciences – "this school system relies on democratic principles rather than authoritarian", or "this theory is relativistic rather than absolutistic", and so on. Working critically with what, at first glance, seem to be irreconcilable opposites, it appears that the opposites do not exclude one another, but are dialectically related to each other. Ricoeur has masterly showed this circumstance over and over again in his works, for instance, when dialectically connecting the oppositions between "ethics versus politics, ideology versus utopia, [and] discourse versus action" (Ihde, 1993, p. 67). Another example is Ricoeur's treatment of the opposition between interpretation and explanation discussed above. Since Ricoeur views oppositions dialectically, he works in an including way, which is very fruitful in relation to critical thinking. Rather than excluding conflicting approaches

from one another, Ricoeur shows how they precondition each other. Ricoeur's proceedings seem to be crucial for critical thinking in the sciences. By preserving different, although conflicting, views of a certain phenomenon, it is possible to make it appear in its manifoldness, which in turn generates a better understanding of how the parts in fact constitute a synthetic whole. Therefore, the task of this thesis is not to exclude any approaches to critical thinking, but rather to include them, in order to show critical thinking in its abundance of varieties, all of them being appearances of the phenomenon itself.

The result of critical thinking

Hitherto the origin and process of critical thinking have been discussed, yet the result of these aspects has not been treated, which is why some attention is given to it here. Considering the result of critical thinking, one should turn back to Heidegger (1996) and his statement that one cannot understand a thing if one does not consider how it is used. Hence, the results of critical thinking cannot be understood either if one does not reflect upon how critical thinking is used in practice. In spite of this unspecified answer, I believe the purpose of critical thinking in scholarship should be the creation of new knowledge, and thereby using critical thinking as a tool for knowledge development. Inasmuch as knowledge development has certain implications for human living, it follows that the creation of new knowledge involves a huge responsibility. Thus critical thinking is not only to be critical in relation to the past and present, but more importantly, it also means to be critical in relation to the future, encompassing the consequences of one's thoughts. In that sense, critical thinking is a phenomenon that stems from the future. This implies that the critical thinker cannot live in present only, but he or she must encounter the future with an awareness of its possible ends. This in turn involves a responsibility for what choices are made, and also that everything has a certain end, just as Heidegger (1996) points out as characteristic for the authentic way of living. In contrast to inauthentic living, authentic living means to be aware of that life has an end. The authentic being takes care of his or her possibilities in life, viewing it from a future perspective, rather than indifferently living in presence only, as is evident in inauthentic living. Someone might have objections to my asserted relation between critical thinking and authentic living, pointing out that Heidegger emphasized the importance of realizing one's approaching death if one is authentic, understanding that death is the necessary possibility of life. As I see it, Heidegger underlined that life has an end, and without death, Da-sein is not complete. Do I say then, that critical thinking is dependent on the awareness of one's approaching death, as Heidegger points out as significant for authentic living? No, I do not, since it seems as if one of the main points in Heidegger's awareness of one's own death is that the authentic being *takes care of his or her possibilities as far as he or she can*, whereas the inauthentic being does not, just letting all possibilities disappear in an empty nothingness. Against this background, it appears that we are carried back to the origin of critical thinking. The sense of

responsibility, that seemed to be fundamental for the origin of critical thinking, is still evident when the critical thinker considers the possible consequences of his or her thoughts and action. Hence, it appears that the sense of responsibility follows the critical thinker throughout the critical thinking process. This, in turn, has certain consequences for critical thinking, inasmuch as it no longer becomes an individual matter, but rather it appears to be a kind of social action. When both the origin and result of critical thinking are connected to responsibility, it becomes a phenomenon that intertwines the individual with the collective. A person is not only responsible in relation to him- or herself, inasmuch he or she realizes that the result of one's critical thinking might have consequences for others as well. Thus, the individual is affected by his or her responsibility in relation to the collective, or as Heidegger would say: Da-sein is also Mitda-sein.

CHAPTER 2

The Historical Development of Critical Thinking in Scholarship

Delimitations

Given the fact that there are different ways to describe the historical development of critical thinking in scholarship, the crucial question is where to start. Is it better to start with the very first time the concept of critical thinking was mentioned as such in scholarly history? Or should one try to capture the phenomenon of critical thinking from its very beginnings in scholarship, even though critical thinking was not yet literally referred to in those terms? In this thesis, the latter alternative was preferred, since the fact that the *concept* of critical thinking is almost entirely absent in the historical discourse[6], does not necessarily imply that critical thinking *itself* did not exist until the present times. Rather, the absence of explicit mention points to the fact that the phenomenon of critical thinking has been concealed in its appearances throughout history, at least in the historical texts that have been treated in this thesis. Unfortunately, there is no space for giving an all-embracing depiction of the historical development of critical thinking in scholarship here. Therefore, I have chosen to delimit the scope by investigating the phenomenon within the frame of philosophy, following the philosophical movement from ancient Greece until today. This choice certainly does not mean that I consider that critical thinking in scholarship is vouchsafed philosophy alone, but there is no doubt that scholarly critical thinking as well as scholarship itself (as it appears today) have their origins in philosophy. Delimiting the historical development of critical thinking in scholarship to the historical development of philosophy, thereby offers a certain continuity, in which the phenomenon can be captured from its scholarly beginnings until today. Inasmuch as the historical development of philosophy is still a too wide scope, the depiction of the different appearances of critical thinking has been further delimited to the realm of epistemology. Hence, the forthcoming account is based upon different philosophical texts, which in different ways put focus on epistemological issues, inasmuch as these issues are highly relevant for critical thinking in scholarship.

6 It will be clear further on, however, that Dewey is an exception in this respect.

Besides the delimitation to philosophical epistemological texts, from the point of view of content, there are also delimitations as regards the perspective from which the historical development of critical thinking in scholarship is depicted. The different meanings of critical thinking throughout history are characterized in the light of my hermeneutic-phenomenological approach. Hence, the characterizations of critical thinking will be more or less understood against the background of critical thinking seen as explanation, interpretation, understanding and abstraction, corresponding to the aforementioned four cornerstones of critical thinking. Of course, this is not the only way to approach the phenomenon of critical thinking, but just one possibility among many. According to Gadamer, the process of understanding appears when the individual's prejudices are no longer arbitrary in relation to the alien horizon. This implies that by increasing my awareness of my own "fore-meanings", my understanding of the appearances of critical thinking in the historical texts was facilitated. Furthermore, without my conscious "fore-meanings", I would not know what to look for when attempting to capture the meaning of critical thinking in these texts, since the phenomenon of critical thinking is almost exclusively concealed in its appearances throughout history. Thus, I have strived to consciously make use of my prejudices when approaching the alien horizons that appeared to me in respect to each historical text. This implies that using another approach to the texts, other meanings of critical thinking would have been constituted. Accordingly, my results should not be viewed as an all-comprehensive panorama of critical thinking, but rather as illuminating certain aspects. There will always be still other appearances to discover, constituting new meanings, no matter how many times one approaches the phenomenon. This is due to the fact that each moment delivers a range of possible meaning constitutions of the phenomenon. Thus, the possible meaning constitutions change from one moment to the next, depending on my own development, both in relation to life as a whole and in relation to my increased understanding of critical thinking. Hence, I do not claim to find the meaning of critical thinking in an absolute sense, inasmuch as absolute meaning does not exist from a hermeneutic-phenomenological standpoint. Rather, the hermeneutic-phenomenological approach renders it possible to attain *increased understanding*, which can then be infinitely enhanced in a continuous process.

About the selection of literature

Approaching the history of philosophy could be compared to stepping into the jungle. There are as many interesting philosophers and ideas as there are species and tortuous paths in the forest. Therefore, in an attempt to avoid being trapped in the thickets of the philosophical jungle, this chapter was worked out in a certain manner. Using Hamlyn's (1990) compilation of the history of Western philosophy in combination with a philosophical dictionary[7], it was possible to select certain philosophers

7 *Filosofilexikonet* (1998). Red. Poul Lübcke. Stockholm: Bokförlaget Forum.

and certain works of relevance from each era. Hamlyn's work was especially preferred to other similar compilations, since he is mainly concerned with "the argument, and that means a concentration on what philosophers have written", rather than "providing facts – facts about the philosophers concerned and about what they said", or "fitting philosophers into the history and culture of their period", because such compilations give "no sense of what is philosophically important and why" (Hamlyn, 1990, p. 12). Accordingly, my literature selection was based upon the content of the historical works, rather than giving precedence to certain philosophers. Some works were chosen beyond the frame of these reference books, if they turned out to be relevant in relation to this thesis. The chosen works were selected using three criteria. Firstly, the philosopher should have a great impact on the development of scholarship in his specific time period, and on scholarship as a whole. Secondly, the specific works were picked out for the philosophers' emphasis on epistemological concerns. Finally, my intention was to provide a depiction of critical thinking in its manifoldness, granted that I was searching for philosophers who contributed to the meaning of critical thinking in different ways. Of course, it would be possible to give a historical depiction of the development of critical thinking by analyzing other philosophers or works than those I have referred to. My selection of philosophers and works is only one possible selection. With the exception of the philosophies of Nietzsche and Wittgenstein, which are difficult to grasp and hence required an enlarged reading, a single key work was read from each philosopher. Facilitated by the reference books, it was possible to choose the work that seemed the most relevant among the range of works that each philosopher had written. Many times, the philosopher's magnum opus was selected. Irrespective of work, however, I always kept my readings to English translations of the original texts.

Since I chose to focus on a line of thought expressed in the works, rather than on the philosophers themselves, the following discussion should by no means be considered as an all-embracing and balanced view of the philosophers discussed. Neither should the forthcoming be understood as a covering depiction of the meaning critical thinking had at different time periods. Each period offers a range of possibilities as to how critical thinking can appear. In the same way, the different philosophers treated below almost certainly offer other meanings of critical thinking that go beyond those referred to here, if all their works were considered. Furthermore, the specific works themselves open up for still other meaning constitutions than those, which are shown in this thesis. Thus, it is clearly a difficult and hazardous task to refer to certain time periods, philosophers, and works when characterizing the different meanings of critical thinking. Although I admit such limitations and difficulties, I believe that each time period, each philosopher, and each work offers not only a range of possibilities of appearances of critical thinking, but limits as well. For instance, it is difficult to imagine Nietzsche's philosophy appearing in ancient Greece, just as it is difficult to envisage a philosopher like Augustine in the positivistic era. This is due to the fact that the time period in which a philosopher lives, constitutes a

vital part of his or her horizon, providing the limits as well as the possibilities for his or her thoughts. Hence, it seems feasible to claim that the different meanings derived from each era belong in some sense to their specific time periods, philosophers and works, although with the reservation that still other meanings could be constituted.

Critical Thinking in Ancient Greece

Explanation as a tool for searching for the truth

The most prominent feature of the pre-Socratic philosophy is its emphasis on the physical reality, and how it is composed by different substances into a uniform whole (Hamlyn, 1990). The Ionic philosophers of nature initiated a number of important ideas, such as of the conformity of laws, the idea of explaining nature in terms of mathematics, the idea that the true world and the experienced world were two different things, and that theories are qualitatively discerned from observations in the real world. Knowledge was supposed to be deep and penetrating, and these qualities were attained by means of critical discussions (Hansson, 1993). With reservations for some schools such as the Pythagorean School, in which the teacher's knowledge could not be questioned, in several schools the teacher's task was not to transfer his knowledge to his pupils, but to make the pupils question their master's words. In such schools knowledge was not seen as a fixed phenomenon, but as something that had to be developed through a collective critical dialogue between the teacher and his pupils (Stenbock-Hult, 2004). Critical thinking itself was not questioned, however, inasmuch as it was the expected way to develop new knowledge. Rather, the ancient Greeks were concerned about how to *activate* critical thinking, something that was achieved in critical discussions. Apparently, the type of science and scholarship we see today could be derived from the pre-Socratic era (Hansson, 1993).

Among the range of pre-Socratic philosophers, Parmenides is of special interest in relation to critical thinking. In contrast to his forerunners and contemporaries, who gratuitously draw conclusions, Parmenides was the first to impose deductive arguments on his thinking (Hamlyn, 1990), something that was almost certainly influenced by mathematic deduction (Tarán, 1965). By means of his deductive reasoning, Parmenides concluded that it was only possible to scrutinize that which exists:

> Come then, I shall tell you, [...] the only ways of inquiry that can be conceived; the one [says]: "exists" and "it is not possible not to exist," it is the way of persuasion (for persuasion follows upon truth); the other [says]: "exists-not" and "not to exist is necessary," this I point out to you is a path wholly unknowable. For you could not know that which does not exist (because it is impossible) nor could you express it. (Parmenides, fragment II. In: Tarán, 1965, p. 32)

Since Being always exists, Parmenides argues that there cannot be any differences, because differences involve both being and not-being (in relation to what it is not) at the same time. Furthermore, Being cannot arise or develop, but always has to be. Neither can Being cease to exist. Thus Being is an ever-lasting and non-changing phenomenon that stems from one and the same source:

> ...the decision rests in this: is or is not. Therefore, as it is necessary, the decision has been taken to leave one way unthinkable and unnamable (for it is not the true way) and the other way to be and to be true. How could Being be hereafter? How could it have come into being? If it was it is not, nor if it is going to be in the future. So, coming into being is extinguished and perishing is unheard of. Nor is it divisible, since it is all alike. Nor is there somewhat more here and somewhat less there that could prevent it from holding together; but all is full of Being. Therefore it is all continuous, for Being is in contact with Being. But motionless in the limits of mighty bonds it is without beginning and never-ending, since coming into being and perishing have been banished far away, driven out by true conviction. (Parmenides, fragment VIII. In: Tarán, 1965, pp. 85-86)

Parmenides' reasoning is quite fascinating, since it gives a special character to critical thinking. The most prominent argument against Parmenides' thinking is probably that his erroneous premises necessarily lead him to false conclusions (Hamlyn, 1990). Assuming that the premises must be true, and hence that the conclusions must be equally true, is not really tantamount to critical thinking, which is why there could be some doubt as to whether Parmenides was thinking critically. There is a feature of critical thinking in Parmenides' thinking, however, inasmuch as he tries to found his reasoning upon one premise leading to another: if so....then it should be so. Thus there is a logical continuity in his thinking that stands up to criticism. Recalling my hermeneutic-phenomenological approach to critical thinking, it is clear that Parmenides' use of critical thinking emphasizes in critical explanation, whereas the qualities of critical interpretation and critical understanding are absent. Asserting that Being cannot be anything other than Being, creates a problem as regards critical interpretation and understanding, since Being then becomes deprived of its alien horizon. It cannot be anything beyond itself, and cannot be understood in relation to something, which it is not. This could be seen as an obstacle in relation to critical thinking, inasmuch as critical thinking seems to be a phenomenon that appears "in between", as I have argued earlier. Furthermore, without a position of being "in between", critical thinking cannot be dialectical, a character that it clearly benefits from.

Some decades after Parmenides, the sophists entered into history, and with them Socrates, although he is personally rather opposed to sophism. With the sophists' progress, the theoretical interest of nature was not so dominating anymore, but an increasing interest for discussing ethics and norms in the name of politics developed (Hansson, 1993; Taylor, 1996). This development is well represented in a dialogue

between Protagoras, one of the greatest sophists, and Socrates[8]. The main theme in their dialogue is the issue of excellence (*arete*), what it truly is and whether it could be taught. Protagoras argues that he can teach excellence, and the ways in which a man can contribute to the welfare of his own and his city by word and action. Socrates, on the other hand, is skeptic to Protagoras' statement, claiming that we do not exactly know what excellence is and, therefore, it cannot be taught. Throughout their dialogue, Socrates asks Protagoras questions aiming at a definition of the different characteristics of excellence, and wondering whether all these characteristics are required to be a man of excellence. At first glance, Socrates might seem to be a terrific critical thinker in relation to Protagoras, who cannot defend himself against Socrates' conclusions that one cannot be sure what excellence is. Scrutinizing their dialogue further, however, it appears that Protagoras' thinking has a critical feature, although in another way.

Recalling Gadamer's words, that critical interpretation is developed by never-ending questions, Socrates has an advantage indeed, since he brings forth knowledge by asking questions to his counterpart. But even though Socrates is moved by a questioning approach, his thought cannot be characterized as critically interpretative, since he does not search beyond what is already given. He does not ask for the underlying intentions, embedded in different views. Rather, he is satisfied with manifesting that Protagoras' idea (or should I say Socrates' indirect interpretation?) of excellence is based on nothing but prejudices, without striving for further understanding of the prejudices themselves. Furthermore, the character of the Socratic dialogue is not so much a mutual exchange of ideas, but a rather one-sided questioning, in which Socrates' asks his counterpart to answer his questions with yes or no. This method leads to a very simple analysis, in which the whole discussion starts from Socrates' premises only (as is necessarily the case when he is the only one who formulates the questions), with no space for other perspectives than Socrates' own. Either a certain quality of excellence means to be x or else not, and the issue is then verified by asking questions, which cannot be answered otherwise than yes or no by his counterpart. Hence, there is no space for any relational answers that appear in between, where excellence has many meanings depending on what one relates it to. If there is no opportunity to relate the phenomenon of excellence to something other than Socrates' own premises of what it might be or not (even if he admits that he does not really know what excellence truly is), the view of excellence is captured within one and the same horizon – namely Socrates' own. The phenomenon of excellence is then deprived of its alien horizon, which can only be encountered be-

8 This dialogue cannot be read literally, inasmuch as it is totally dependent on Platon's rendering and representation. Since it is widely known that Platon tended to disparage the sophists to Socrates' advantage (Hamlyn, 1990; Taylor, 1996), one cannot be sure whether Platon's biased characterizations of these philosophers were adequate in relation to what actually happened and was said at the time. Yet, his representation of their dialogue does at least give a hint of Protagoras' and Socrates' thinking, and makes it possible to imbibe the atmosphere in which these critical discussions appeared.

yond Socrates' perspective, by means of a theory, for instance, or through another individual, such as Protagoras, if Socrates would only let him speak. Accordingly, the Socratic dialogue confines critical thinking into quite narrow frames. In one passage of the dialogue, where Socrates and Protagoras discuss what actions and things are beneficial to human beings and justice, Protagoras' answers to Socrates' premises result in that also things which are not beneficial to people are good too. Protagoras objects to this conclusion, however, by pointing out that goodness cannot be simplified, since it is a complex and relational phenomenon:

> "I know many things which are harmful to humans, food and drink and drugs and a thousand other things, and of some which are beneficial. Some things have neither effect on humans, but have an effect on horses; some have no effect except on cattle, or on dogs. Some have no effect on any animal, but do affect trees. And some things are good for the roots of the tree, but bad for the growing parts, for instance manure is good if applied to the roots of all plants, but if you put it on the shoots and young twigs it destroys everything. Oil, too, is very bad for all plants and most destructive of the hair of animals other than man, but in the case of man it is beneficial to the hair and to the rest of the body. So varied and many-sided a thing is goodness, that even here the very same thing is good for the outside of the human body, and very bad for the inside. That is the reason why doctors all forbid sick people to use oil in their food except in the smallest quantities, just enough to cover up any unpleasant smell from the dishes and garnishes." (Protagoras. 334a3-c6. In: Plato, 1996, p. 33)

This passage is interesting, since it clearly distinguishes Protagoras' way of thinking from Socrates'. In Protagoras' view, one and the same thing can be both good and bad dependent upon the context, in contrast to Socrates' way of arguing, where things are either good or bad. In that sense, Protagoras' reasoning has a critical quality that Socrates' thinking lacks. It should be noticed, however, that also Protagoras founds his thinking within one and the same horizon, although he allows the phenomenon to be context dependent. More precisely, Protagoras "relativism" does not involve the idea that different individuals perceive and value one and the same thing differently (see Taylor, 1996, in Explanatory notes 334a-c, pp. 80-81). In contrast to Protagoras, who is very comfortable with his "true" knowledge, Socrates pays attention to the supposition that what one thinks one knows is nothing but prejudices. Scrutinizing one's prejudices ends in a resignation to the fact that one cannot know anything for sure. Thereby, one might say that Socrates approaches critical understanding in his thinking, inasmuch as critical understanding is based upon self-awareness of one's own horizon as being biased. Socrates does not go the whole way in his critical understanding, however, for two reasons. Firstly, as mentioned above, he deprives himself of the opportunity to abstract the phenomenon of excellence into the bridge between the familiar and alien horizons, which is a condition for critical understanding. Secondly, in order to reach critical understanding, it is not enough to be satis-

fied with the manifestation of prejudices, but, also, one has to deliberately use one's prejudices when considering a certain phenomenon. Socrates delivers no answers to how he explicitly views excellence himself. In that sense, Protagoras could be considered to be more close to critical understanding, although he does not admit that his knowledge is prejudiced. Accordingly, Protagoras lacks explicit awareness of his view being biased. Hence, both Socrates and Protagoras approach critical understanding, although in different ways. Neither Socrates' nor Protagoras' critical thinking could, however, be completely characterized as understanding in a critical sense.

Even though the picture of Socrates' critical thinking, as described above, constitutes a criticism of the Socratic dialogue, Socrates contribution to the development of critical thinking is important. Whereas the sophists were gratuitously concerned with teaching rhetoric and excellence, Socrates turned focus to the meaning of these concepts and found that they did not deal with the serious things of life. Hence, "... the main criticism of the claim of rhetoric to be a fundamental art is that it is not concerned with the serious things of life; and knowledge, Socrates says, does have that concern." (Hamlyn, 1990, p. 39). Accordingly, both the content and form of critical thinking changed with Socrates' philosophy.

In the wake of Socrates, Plato develops his own thinking in his later works, among which *Theaetetus* will receive attention here. This work was chosen partly because its content is especially relevant in relation to critical thinking, and partly because it is commonly regarded as being more congruent to Plato's own thinking, rather than consisting of echoes of Socrates' voice (as is evident in Plato's earlier works). In *Theaetetus* Plato (2004) makes an impressive work of epistemological philosophy, asking how to define knowledge. Through the fictive dialogue between Socrates and Theaetetus, Plato brings up three possible definitions of knowledge: Knowledge as perception, knowledge as true belief, and knowledge as true belief with a rational account[9]. The dialogue results in Plato's conclusion that none of the suggested definitions holds water. As with the dialogue between Socrates and Protagoras, the discussion ends without an answer.

Plato's way of thinking critically does not really differ from his forerunners. In his thinking, there is still an attempt to make certain definitions, which, once they are irrefutable, correspond to the truth. Furthermore, the way to the truth goes through logical reasoning, which implies that critical thinking is once again a matter of explanation. Even though Plato is inspired by Socrates in his thinking, there is a difference between Plato's way of thinking critically and Socrates'. This is due to Plato's complexity in thinking systematically. Whereas Socrates aims at simplicity in his reasoning, Plato affords a quite impressive set of plausible alternatives, trying them all out (Waterfield, 2004). This is evident, for instance, in the passage where Plato (in the role of Socrates) argues about whether it is possible to make false judgments:

9 Plato mentions three kinds of rational accounts. Account could be the mere expression of thoughts in speech. It could also be the enumeration of elements of a certain thing. Finally, account could also be a matter of marking out what differentiates a certain object from other objects (Plato, 2004).

> SOCRATES: It is important to start by sifting out certain cases. If *a* is known (that is, the mind retains its impression in the memory), but is not being perceived, it cannot be confused with *b*, which is also known (that is retained) and also not being perceived. If *a* is known, it cannot be confused with *b*, which is not known (that is, of which there is no impression). If *a* is not known, it cannot be confused with *b*, which is also not known. If *a* is not known, it cannot be confused with *b*, which is known. If *a* is being perceived, it cannot be confused with *b*, which is also being perceived. If *a* is being perceived, it cannot be confused with *b*, which is not being perceived. If *a* is not being perceived, it cannot be confused with *b*, which is also not being perceived [...Another 7 cases are mentioned by Plato...] In all these cases, impossibility is too weak a description for the chances of false belief occurring. But there are some cases left, where, if anywhere, false belief arises. [...Plato goes on with enumerating different cases in which it is possible to make false judgments...]. (Plato, 2004, 192a-d, pp. 100-101)

A closer scrutiny of Plato's systematic reasoning does, however, not hold for philosophical demands, inasmuch as it entails a range of contradictions, omissions and repetitions of cases (Waterfield, 2004). In that sense it is doubtful whether one could call Plato's reasoning a reflection of critical thinking. Assuredly not, if the requirement of a systematic analysis is maintained, but if one looks at Plato's reasoning in another way, it could be viewed as being critical. Although Plato is not consistently systematic in his reasoning, he does illuminate that the possibility of making false judgments must be tested in a range of different cases before a certain answer can be delivered. In that sense, he treats the phenomenon as referentially incomplete and uses imaginative representations, if we were to analyze his reasoning according to Ricoeur's (1998b) conceptualization of interpretation.

When it comes to Aristotle, not only does he reason about what knowledge might or might not be, but he also works out a tool as to how to develop knowledge. Thereby one might say that with Aristotle, a scholarly method for how to think critically was developed. This is evident in his *Prior analytics* and *Posterior analytics*, in which the theory of syllogisms was founded, and thus formal logic (Hamlyn, 1990; Filosofilexikonet, 1988). Even though Aristotle's theory of syllogisms is of great importance for how scholarship and critical thinking have developed subsequently, I will not enter upon this in further detail. Instead, attention will be given to how Aristotle characterizes scientific knowledge, inasmuch as this issue has certain implications for the purpose of critical thinking in scholarship in this period. Granted, Aristotle's thoughts on what constitutes scientific knowledge are not radically different from his forerunners, but he expresses his view in explicit terms, which is why it is interesting to treat his text in this respect. Aristotle (1960) argues that one can try to make manifest the *facts* of a certain thing (its attributes), *that* a certain thing is (its existence), *what* a certain thing is (its essence), and *why* a certain thing is (its cause), when dealing with scholarly knowledge. Proving *that* a certain thing is, by demonstration, is how science "actually" proceeds, according to Aristotle. He exemplifies

this by explaining how a geometrician can prove *that* a triangle exists. The geometrician can, however, not tell *what* a triangle is, inasmuch as he can only assume that it is a figure constituted by three angles connected to one another, Aristotle points out. Grasping *what* a certain thing is quite complicated, if one is to believe Aristotle. The very first thing to do is to make sure *that* the thing of concern really exists. When it is stated *that* a thing is, Aristotle argues that the next question is *why* this certain thing is, which implies that one is asking for the cause of its existence. As soon as the premises are immediate, both the *fact* and the *cause* of the existence of the thing will be apparent. If the premises are not immediate, the cause will be absent, and only the facts will show themselves. However, as soon as one knows *why* a certain thing is, one can also give a response to *what* it is. Thus defining and understanding *what* a thing is, must be done through attaining knowledge of its cause, *why* it is (Aristotle, 1960, book II : VIII). From a contemporary perspective, this reasoning is difficult in relation to critical thinking and what counts as scholarly/scientific knowledge. When it is only possible to think critically in a scholarly sense about *what* a phenomenon might be by knowing its cause, the scope of scholarship is quite limited, and hence the way critical thinking may be used. Among the consequences of Aristotle's position is that scholarly knowledge corresponds to ascertaining cause and effect. Thus, critical thinking in Aristotle's sense can not only be characterized by explanation, as his forerunners were, but also Aristotle delimits the explaining character of critical thinking in scholarship to being valid only in cause-and-effect-relationships. Simply, critical thinking in scholarship becomes a tool for explaining cause and effect.

Against this background, Aristotle's tenet could be viewed as both hampering and developing for the historical development of critical thought in scholarship. On the one hand, he limits the content and purpose of critical thinking to be valid from a scholarly point of view only when why-questions are asked in relation to necessary facts (i.e. things that could not be another way)[10]. On the other hand, Aristotle lays the foundation of formal logic, which could be viewed as historically important for the development of critical thinking. Thereby it is no longer enough to think critically when searching for the truth, but additionally, a *method* for critical thinking is needed, in order to develop scholarly knowledge. In that sense, one might say that Aristotle made critical thinking itself become an alien phenomenon that could be critically abstracted from its familiar form into another shape, that of the syllogism, which ultimately made it possible to think critically about critical thinking.

10 In *Posterior analytics, book I*, Aristotle argues that scientific knowledge is concerned with first/primary principles, which are necessary. Thus scholarly knowledge is a matter of absolute knowledge.

Critical Thinking in the Middle Ages

Explanation as a tool for confirming faith

During the Middle Ages there were no substantial leaps in a philosophical sense, since it was a period that mainly preserved the philosophy of ancient Greece. Even though Medieval philosophy could be regarded as an extension of Greek thinking, it did differ from the philosophy of ancient Greece, in respect to its emphasis on theology. Hence, philosophers in the Middle Ages were not only philosophers, but they were Christian philosophers, who viewed Christianity as being placed above philosophy (Hamlyn, 1990). The fact that philosophy was subordinated to Christianity had certain consequences for the development of critical thinking and scholarly knowledge in this period. In an attempt to illuminate some of the consequences, attention will be given to Augustine[11] and Aquinas: the former representing characteristics of critical thinking in the early Middle Ages, and the latter representing characteristics of critical thinking in the later Middle Ages.

Augustine has written a large number of works, of which one of the earliest *Against the academics* will be discussed here. *Against the academics* is not of any real significance for its contribution to epistemology, nor is it a qualified criticism of skepticism, as Augustine intended it to be (O'Meara, 1950). Rather, "it is a personal work written by Augustine to meet his own needs, and addressed to a friend of his. [...] it bears too deeply the traces of experience to be in any sense an objective discussion of epistemology" (ibid., p. 18). Even though the work in concern is not, epistemologically speaking, of high value, it presents certain advantages for the purpose of this chapter, for two reasons. Firstly, it is possible to involve the skepticism that appeared in ancient Greece after Aristotle into the discussion, since Augustine writes his work as a refutation of that movement. Secondly, some of Augustine's fundamental ideas appear quite clearly in *Against the academics*, which makes it possible to conceptualize the character of his critical thinking.

In *Against the academics*, a dialogue between Augustine (1950) and his pupils is depicted. Just as Socrates and Protagoras explored the meaning of excellence a couple of centuries earlier, Augustine and his pupils discuss the issue of wisdom: What is wisdom, and what does it mean to be a wise man? Augustine and his pupils all agree that there is a relationship between wisdom and happiness, in so far as the wise man must be happy because he is wise. The crucial question is, however, whether man is happy when he has *found* the truth, or when he is *searching* for the truth. On the one hand, one of Augustine's pupils argues that searching for the truth is to be imperfect, and therefore to be in error, which is why a person cannot be wise and

11 Assigning Augustine to the Middle Ages is by no means self-evident, since some would rather reckon him as being a Hellenistic philosopher. Since Christianity has a central position in Augustine's texts, however, I have deemed it appropriate to consider him as a Medieval philosopher, in accordance with Hamlyn (1990).

happy when only searching for the truth. On the other hand, another pupil of him argues that "One who seeks is not in error, because he is seeking precisely that he may not err" (Augustinus, 1950, p. 47), which implies that truth does not have to be found already to be happy. During their discussion, however, they finally conclude that wisdom corresponds to finding the right way of life that leads to truth. Accordingly, searching for the truth is sufficient for being happy. More specifically, wisdom is defined by Augustine as being a union between man and God:

> ....[Wisdom is] not only the knowledge of, but also the diligent search for, those things human and divine which have relation to happiness. If you wish to split up that definition, the first part, in which knowledge is embraced, pertains to God, and the second part which is content with searching, pertains to man. God, therefore, is happy in the former. Man is happy in the latter. (Augustine, 1950, book I : chapter 8 : 23, p. 61)

Reflecting upon this quotation, it is quite plain why Augustine criticizes the skeptic movement of the New Academics. According to the New Academics, truth cannot be found, inasmuch as there is no positive and objective knowledge. Therefore, human happiness is not a matter of finding or searching for the truth, but resides in the peace of mind when human beings realize that they do not need to strive for something unattainable, such as truth (Augustine, 1950; Filosofilexikonet, 1988; Hamlyn, 1990). The approach to knowledge that the New Academics advocates is incompatible with an absolute belief that God possesses the truth, worth striving for. In fact, the consequence of skeptic thinking is that not even the existence of God can be held for certain, something that is unquestionable in Augustine's philosophy. Two such totally different epistemological approaches as the New Academics and Augustine stand for, have certain consequences for critical thinking. Both of them are critical, although in different ways. The skeptic approach to knowledge is critical as regards the characteristic of uncertainty it advocates, a characteristic that is fundamental for further critical thinking. If knowledge is absolute and certain already, there is no need for thinking critically about it. In that sense, one could say that the New Academics, along with Socrates, contributed to the development of critical thinking by incorporating an element of uncertainty into it. On the other hand, Augustine has a point when he criticizes the New Academics for their lack of certainty: if nothing can be certain and no agreement can be obtained, it is hard to think critically about anything. Consequently, the wise man can do nothing but lie back with the conviction that he knows nothing, Augustine points out. This is, however, not really a fair judgment of the New Academics, since they did in fact think critically, and strived for knowledge development, although without the ambition of finding the truth. Rather, they thought critically in an attempt to approach probable truths that were judged to be more or less true (Augustine, 1950; Filosofilexikonet, 1988; Hamlyn, 1990). Hence, they included an element of certainty in their critical thinking concerning their belief that something can be more or less true, as well as in their

conviction that truth is uncertain and, therefore, must be questioned over and over again. Against this background, it is evident that Augustine's criticism of the New Academics is not wholly justified, as O'Meara (1950) points out.

Critical thinking in the sense of the New Academics' could be considered to lead to a more expanded view of truth than Augustine's notion. Truth, in Augustine's sense, is already defined as a reflection of God, and is thereby framed within a certain scope. This implies that no matter which way[12] human beings choose to develop knowledge (as long as it is one of the "right" ways), it will lead to one and the same truth, the one in God. Critical thinking then, is not so much about being critical in relation to knowledge itself, but rather in relation to choosing a way, since not all ways bring human beings to God. In order to find one's way to truth, Augustine holds that one must hand oneself over to philosophy:

> ... you will not see truth itself, unless you give yourself completely to philosophy. (Augustine, 1950, book II: chapter 3: 8, p. 73)

Hence, according to Augustine, philosophy is the only tool for developing true knowledge, although he admits that human beings cannot reach the truth by philosophizing only, but a superior power is also needed:

> No one doubts but that we are helped in learning by a twofold force, that of reason. I, therefore, am resolved in nothing whatever to depart from the authority of Christ – for I do not find a stronger. But as to that which is sought out by subtle reasoning – for I am so disposed as to be impatient in my desire to apprehend truth not only by faith but also by understanding – I feel sure at the moment that I shall find it...(Augustine, 1950, book III : chapter 20 : 43, p. 150)

The character of critical thinking as it is represented in Augustine's work is still essentially a matter of explanation, probably due to the fact that Augustine is highly influenced by the philosophers of ancient Greece. In fact, the whole work of *Against the academics* itself is an expression of critical thinking as an explanatory tool aiming at the refutation of the New Academics, since Augustine and his pupils start from certain premises about the doctrine of the New Academics in order to substantiate the deficiency of the reasoning of this school. There is, however, an essential difference between the qualities of Augustine's thinking and that of his forerunners. Compared to the philosophers of ancient Greece, Augustine presents, in addition, a more explicit element of critical understanding in his critical thinking, which could be derived from his religious perspective. Given the fact that Augustine was contending with his faith quite a long time before he converted to Christianity (Filosofilexikonet, 1988; Hamlyn, 1990; O'Meara, 1950), one can presume that he has an increased awareness of his own horizon. This aspect is eloquently expressed in *Against the academics*, where his own Platonic-religious horizon encounters the horizon of the

12 Augustine asserts that there are several ways that lead to the truth. The crucial question is to differentiate the right ways from the wrong ones (Augustine, 1950).

New Academics. It is also evident that Augustine thinks that he has developed and become more certain about his own position by critically encountering the alien, which partly corresponds to the notion of critical understanding:

> This theory about the Academics I have sometimes, as far as I could, thought probable. If it is false, I do not mind. It is enough for me that I no longer think that truth cannot be found by man. (Augustine, 1950, book III : chapter 20 : 43, p. 149)

However, Augustine does not incorporate the alien horizon into his own, thereby widening it, and does not fully meet the criteria for critical understanding. Rather, he takes a piece to taste the alien, perceives it as unsavory and spits it out.

Pondering further upon what a religious perspective conveys to critical thinking, with respect to developing scholarly knowledge, it seems to me that faith (in God or anything else that is conceived to be the ultimate truth) could be both limiting and liberating for critical thinking and scholarly knowledge development. It is limiting because striving to reach a predetermined ultimate truth is an excluding manner of knowledge development. Those ways and contents of knowledge development that do not fit the image of what truth looks like, will probably be rejected without further ado. Critical thinking then becomes a tool for sifting out pieces of knowledge that do not match the visualized truth. This is evident, for instance, when Augustine rejects the philosophy of skepticism, inasmuch as it cannot bring him to "his" truth. This type of rejecting approach is problematic if critical thinking is intended to include as many perspectives and alternatives as possible, for scrutinizing a certain phenomenon. However, striving for a predetermined ultimate truth can also be liberating for critical thinking for two reasons. Firstly, critical thinking needs at least some degree of certainty, as has been mentioned before. Assuming that critical thinking is a phenomenon that appears "in between", I conclude that critical thinking is, among other things, constituted by a dialectical relationship between certainty and uncertainty, which will be explored further on. Secondly, a predetermined ultimate truth could also be liberating in so far as it becomes the driving force for critical thinking. One does not stop thinking critically until the truth has been attained, so critical thinking becomes a meaningful activity with a certain purpose that could be concretized. On the other hand, critical thinking in this sense leads to an effacement of itself as soon as truth is thought to be found, which is not fruitful for the further development of critical thinking.

In the later Middle Ages, Aquinas had an important impact on the further development of philosophy, and hence critical thinking in scholarship. One of Aquinas' earliest works, *On Being and Essence*, will be treated here, inasmuch as it concisely presents Aquinas' founding metaphysical principles – principles that he never gave up (Maurer, 1949). In *On Being and Essence* Aquinas (1949) alters the metaphysical focus from form and essence, the issues which had lasted since ancient Greece, to esse (act of existing). Aquinas does not deliver any definition of esse, so the reader

is forced to make his or her own interpretation of Aquinas' conception. As Maurer (1949) properly points out, the omitted definition of esse should not be viewed as an oversight, but rather as a conscious choice by Aquinas, since esse is, because of its meaning, an indefinable concept. As soon as one tries to define something, this particular thing will be given essence. Therefore, a definition of esse would be the same as depriving it of its meaning, since esse is constituted only by the act of existence without essence. In order to understand Aquinas' use of the term, Maurer explains esse as being:

> ...an act, the ultimate and most perfect of all acts, grasped not in a concept but in a judgement, and expressed in the copula, which is either some form of the verb *to be* or at least implies some form of that verb. The act of existing is then grasped as exercised..., as possessed potentially or actually by a subject. (Maurer, 1949, in footnote 14)

Aquinas' revolutionary contribution to metaphysics is that esse is both seen as being distinct from and superior to essence, which implies that Aquinas, in this respect, attains an existentialistic view of being (Maurer, 1949). Thus form and matter are no longer considered to be the cause of esse, but God is. According to Aquinas the former idea is a logical impossibility, because then beings would be the cause of their own origin, so the cause must come from something outside that purely consists of esse, namely God:

> ...it is impossible that the act of existing [esse] be caused by a thing's form or its quiddity [essence], (I say *caused* as by an efficient cause) ; for then something would be the cause of itself and would bring itself into existence – which is impossible. Everything, then, which is such that its act of existing is other than its nature must needs have its act of existing from something else. And since every being which exists through another is reduced, as to its first cause, to one existing in virtue of itself, there must be some being which is the cause of the existing of all things because it itself is the act of existing alone. If that was not so, we would proceed to infinity among causes, since, as we have said, every being which is not the act of existing alone has a cause of its existence. Evidently, then, an intelligence is form and act of existing, and it has its act of existing from the First Being which is simply the act of existing. This is the First Cause, God. (Aquinas, 1949, chapter IV, p. 47)

Obviously, Aquinas follows in the wake of his forerunners, as regards the character of his critical thinking. Like them, he clearly uses critical thinking as a tool for explanation and verification of the truth. One might question, however, how critical Aquinas' reasoning is itself, when esse is determined in advance to stem from God, with no other foundations for that conclusion than that God's existence is unquestionable. This is, however, a problem in all ontological starting points, inasmuch as one must be certain of at least some things that cannot be proved if any metaphysical statements are to be made. Therefore, the ontological grounds themselves cannot un-

dergo critical scrutiny beyond the frame of their meaning. Hence, it is only possible to critically consider the logical continuity and consequences of an ontological argument. Against the background of Aquinas' philosophy, it might be viable to ponder upon what consequences Aquinas' metaphysical view has for critical thinking.

Aquinas' metaphysical view could be regarded as being both beneficial and adverse for critical thinking. In order to understand its advantages, let us first consider the concept of essence. Essence, in Aquinas meaning of the word, is a set of qualities, which determines what "a thing is said to be" (Aquinas, chapter II, p. 31). Hence, essence has a quite static character, where the essence of e.g. human beings is determined to be in a certain way, depending on what human beings are conceptualized to be. Consequently, when esse is bound to essence, esse attains a static character too. If critical thinking is seen as being one character of human esse, and esse is bound to essence, critical thinking becomes a fixed phenomenon that is deprived of its possible different acts of existing. Critical thinking cannot be different from what human essence claims it is. This implies that the appearances of critical thinking will not be manifold, but limited, so that critical thinking only appears in certain ways and specific contexts, dependent on the essence it is bound to. Detaching esse from essence, placing it in God, however, liberates a more extensive scope for critical thinking to appear in different ways. This is due to the fact that God has no essence, but only esse, according to Aquinas. When the esse of critical thinking comes from God, it has no limits of its acts of existing, since such limits does not exist in the pure origin of esse, that of God.

Aquinas' metaphysical view has, however, also some less beneficial consequences for critical thinking. As soon as esse is separated from its essence in form and matter, responsibility is as well. Human beings are no longer responsible for their critical thinking, inasmuch as the human being's act of existence is caused by God, and not by human beings themselves. Thus, if critical thinking has its origin in affection and responsibility, as I have argued for before, critical thinking will be undermined, when human beings are not the source of responsibility for their own critical thinking. This explains why God's existence cannot be questioned in a critical manner, inasmuch as the responsibility of such criticism would stem from God, who surely does not question his own existence. Therefore, Aquinas and his fellows are irrevocably bound to thinking critically in affection, and attributing all responsibility to God, which could be seen as a hindrance to liberating critical thinking.

Explanation as a tool for inductive knowledge

Even though the Renaissance was not a period of philosophical revolution (Hamlyn, 1990), an important breach appeared as regards critical thinking in relation to scholarly knowledge development, due to Bacon's introduction of the inductive method. Paving the way for the British Empiricism, Bacon emphasized the need for science to be founded in human beings' perceptions rather than in philosophical ideas. Only then, Bacon says, can human beings approach the true forms of nature. Inasmuch as Bacon believes that truth is to be found in the manifestation of the pure forms, the purpose of his method is to find these forms. Forms, in Bacon's sense, are defined to be:

> ...those laws and limitations of pure act which organise and constitute a simple nature, like heat, light or weight, in every kind of susceptible material and subject. The form of heat therefore or the form of light is the same thing as the law of heat or the law of light, and we never abstract or withdraw from things themselves and the operative side. (Bacon, 2000, Book II : XVII, p. 128)

In his work, *The New Organon*, Bacon identifies two methods for knowledge development: "Anticipation of the Mind" which is applied in philosophy, and "Interpretation of Nature" which Bacon claims to be the preferable method in science. Although Bacon asserts that these different methods for knowledge development should not exclude each other, but be stimulating to one another in a mutual exchange of assistance, it is obvious that "Interpretation of Nature" has a higher scientific status, from Bacon's point of view. It is also evident that not all human beings possess the potential for critical thinking, as it is characterized by Bacon's inductive method for the interpretation of nature. This is clear in Bacon's assertion that only those who are sufficiently excellent, and have the right scientific spirit, are in the possession of the capacity to think critically in a scientific sense:

> Those to whom the first method [Anticipation of the Mind] is preferable and more acceptable, whether because of their haste or for reasons of civil life, or because they lack the intellectual capacity to grasp and master the other method [Interpretation of nature], we pray that their activities go well for them and as they desire, and that they get what they are after. But any man whose care and concern is not merely to be content with what has been discovered and make use of it, but to penetrate further; and not to defeat an opponent in argument but to conquer nature by action; and not have nice, plausible opinions about things but sure, demonstrable knowledge; let such men (if they please), as true sons of the sciences, join with me, so that we may pass the antechambers of nature which innumerable others have trod, and eventually open up access to the inner rooms. (Bacon, 2000, in Preface to *The New Organon*, p. 30)

Hence, the earlier way of approaching knowledge, by means of philosophy, is obsolete in Bacon's view. Aristotle's syllogism cannot lead to certainty, since the premises in syllogisms are abstracted from mere notions, and not from nature itself as it shows itself. Thus the "only hope is true *induction*" (Bacon, 2000, Book I: XIV, p. 35). In order to secure a sustainable development in science, Bacon works out an inductive methodological tool to critically develop scientific knowledge. According to Bacon, there are four kinds of illusions, which prevent scientists from seeing the truth. These illusions are called idols, being: *idols of the tribe*, *idols of the cave*, *idols of the marketplace*, and *idols of the theatre*. *Idols of the tribe* refers to the imperfection of human perception itself. No one can be totally certain of their perceptions since "all perceptions, both of sense and mind, are relative to man, not to the universe" (ibid., Book I : XLI, p. 41). Whereas *Idols of the tribe* is a matter of physical limitations, *Idols of the cave* is rather about subjectivity, every human having individual perceptions:

> ...either because of the unique and particular nature of each man; or because of his upbringing and the company he keeps; or because of his reading of books and the authority of those whom he respects and admires; or because of the different impressions things make on different minds, preoccupied and prejudiced perhaps, or calm and detached, and so on. (Bacon, 2000, Book I: XLII, p. 41)

Idols of the marketplace refers to language as being treacherously misleading, when words we use daily do not adequately capture reality in its true being:

> Men associate through talk; and words are chosen to suit the understanding of the common people. [...] The definitions and explanations with which learned men have been accustomed to protect and in some way liberate themselves, do not restore the situation at all. Plainly words do violence to the understanding, and confuse everything; and betray men into countless empty disputes and fictions. (Bacon, 2000, Book I: XLIII, p. 42)

Idols of the theatre are evident in that human beings are indoctrinated to believe in certain world views, which are not true at all, but only constructed. To put it in Bacons own words, he says that: "...all the philosophies that men have learned or devised are, in our opinion, so many plays produced and performed which have created false and fictitious worlds" (Bacon, 2000, Book I: XLIV, p. 42).

When the scientist has become totally aware of the idols, in an attempt to avoid them, he has to follow several steps in Bacon's inductive method. Firstly, three tables, together called "presentation of instances to the intellect", have to be drawn up. The first is called "table of instances", where the scientist makes a presentation of instances in which the studied nature appear. The second is a table of divergence, connected to the first one. In the second table, the scientist attaches negatives to the affirmatives, which means that each instance from the first table is related to further instances in which the studied nature does not appear. For example, the nature of heat appears in the sun's rays (table 1), but not in the moon's, stars' and comets' rays

(table 2). The third and last table is the table of degrees/table of comparison, in which the different instances are compared to one another as regards their different degrees of appearance of the studied nature:

> ...the first degree of heat, from things which are felt as hot to human touch, seems to be that of animals, which has quite a wide range of degrees. For the lowest degree (as in insects) is barely perceptible to touch; the highest degree scarcely reaches the degree of heat of the sun's rays in the hottest regions and seasons, and is not too fierce to be tolerated by the hand... (Bacon, 2000, Book II: XIII: 8, p. 121)

When the tables are complete, induction itself has to be put into execution in order to:

> ...discover which nature appears constantly with a given nature or not, which grows with it or decreases with it; and which is a limitation ... of a more general nature. (Bacon, 2000, Book II: XV, p. 126)

There are rules as to how to carry out induction itself as well. Firstly, singular natures that do not cause the form of the studied complex nature, must be excluded. This implies that nature does not appear in pure form, but together with such things that today's experimental researchers would call confounding variables. The crucial task is to sort them out. After all this preparatory work, it is eventually time for a first approach to an interpretation. Bacon's conceptualization of interpretation has a special meaning. It implies that the researcher, out of all his or her data, searches for common and divergent aspects in the set of presented instances. In order to facilitate the inductive method in experiments, Bacon presents not less than twenty-seven privileged instances as to how to make good experimental designs, all of them described with practical examples.

There are several crucial points for the characterization of Bacon's critical thinking in his work of *The New Organon*. Even though his method clearly emphasizes critical thinking as a matter of explanation, much of his reasoning, as it appears in *The New Organon*, could be characterized as a contradictory composition of different characteristics of critical thinking. I say contradictory, because the kind of critical thinking that Bacon advocates in his inductive method is inconsistent with how he actually uses his own critical thinking when working out his method in *The New Organon*. Scrutinizing Bacon's presentation of the idols, it appears that he is the first one after Socrates, among any of the aforementioned philosophers, who is explicitly aware of the existence of prejudices and their influence upon human understanding and knowledge development. With reservation for *idols of the tribe*, all of Bacon's idols point to the fact that human beings live within cultural and linguistic horizons. In that sense, Bacon approaches critical understanding in his own critical thinking, although he exhorts scientists to avoid the traps of the idols. Bacon does not, however, realize his critical understanding completely, inasmuch as he lacks an explicit awareness of that his own idols make him develop his inductive method. What he actually carries out in *The New Organon* is an "alien" reaction to something that is

familiar already, namely the conventional way of proceeding in knowledge development. This kind of reaction would not be possible without relating to standpoints stemming from the idols themselves.

As regards Bacon's "interpretation of nature", his method does not really aim at interpretation in the hermeneutic sense of the word. Rather, "interpretation of nature" is a matter of pure explanation, in which a logical continuity between the tables and privileged instances is strived for. Although Bacon does not search beyond what is already given, in the meaning of interpreting the intentional pasts of current knowledge, Bacon does search beyond what is already given in another way. For Bacon, it is not enough to make arbitrary experiments in order to support an already existing theory, as he claims his contemporary scientists do. This manner of proceeding stems from theoretically biased premises, which do not correspond to nature as it shows itself, and moreover, the experiments themselves are not executed critically, since they lack a systematic procedure. Hence, Bacon holds that there is a need for a certain system, allowing scientists to see beyond what is already given (both in theory and observation). Without making accurate notes of the observations, and subsequently, transferring them into categories in order to see certain patterns of importance, the empirical results cannot be critically understood from an experiential basis. Thus Bacon's inductive method could be considered to be a tool for abstracting the concrete, in which critical thinking can appear.

Critical Thinking in Rationalism

Explanation as a tool for deductive knowledge

Whereas Bacon was concerned with rules for an inductive approach to science, Descartes worked in the opposite direction, founding rules for deductive knowledge development. Thus both emphasized the importance of rules for critical thinking, although in totally different ways. In Descartes' philosophy, Ionic philosophy from the pre-Socratic era had a renaissance as regards the idea of explaining the world by means of mathematical principles. In contrast to the Ionic philosophers, however, Descartes (1988) was not satisfied with explaining only nature through mathematical principles, but claimed that he could explain *everything* by the principles of mathematics, even such things as moral conduct and metaphysical issues:

> These long chains of reasonings [referring to Descartes' four rules presented below], quite simple and easy, which geometers are accustomed to using to their most difficult demonstration, had given me cause to imagine that everything which can be encompassed by man's knowledge is linked in the same way... (Descartes, 1988, *Discourse on Method*, Discourse 2, p. 41)

In his work, *Discourse on Method*, it is evident that Descartes' preference for founding all knowledge upon the principles of mathematics stems from his endeavor to attain certainty. According to Descartes, only theology and mathematics can provide certain knowledge. The truth that comes from theology is, however, revealed from God and beyond human reasoning. Therefore, only mathematics can lead human beings to certainty by means of reasoning:

> ...among all those who have already sought truth in the sciences, only the mathematicians have been able to arrive at any proofs, that is to say, certain and evident reasons...(Descartes, 1988, *Discourse on Method,* Discourse 2, p. 42)

Recalling Augustine's epistemological thinking, it is evident that Augustine and Descartes are quite similar to one another, although there are fundamental differences between them too. Both of them believe that knowledge is only attained by reason, and use critical thinking as a tool for explanation, although in different ways. Whereas Augustine calls upon philosophy as the only way of approaching the truth, Descartes rejects philosophy, as it cannot prove anything for certain. Instead Descartes advocates mathematics as the only way of approaching the truth. Hence, both of them are convinced that only one scientific discipline can lead to the truth, although they advocate different disciplines for that. A hasty conclusion might be that their different epistemological approaches are due to Augustine's philosophy being closer to theology than Descartes'. This is, however, only half way true, inasmuch as also Descartes believes that human beings' capability of rational thinking is a gift from God. Furthermore, Descartes' writings contain much reasoning with the purpose of proving God's existence. The epistemological difference between them should rather be understood against their historical time period. Augustine lived in an era, where the philosophy of ancient Greece was still the dominating tool for knowledge development, whereas Descartes lived in the time of scientific revolution. Therefore it is not enough for Descartes to be on the infinite path of searching for the truth, as we see in Augustine's philosophical approach. Assuredly, if one believes Augustine, philosophy leads to the truth in God as long as a person follows the right path, but the truth cannot be split into smaller graspable parts. In the terms that Augustine expresses his conceptualization of truth, one has not found the truth until it is captured in its whole, when complete faith and understanding are achieved. Living in an era where science provides a cumulative approach to knowledge, however, as Descartes did, truth is something that can be understood in its parts, where each part constitutes a truth in itself. Therefore, rather than viewing truth as an indivisible whole, which is only achievable by philosophical contemplation, Descartes needs a tool for knowledge development that helps him to certify the truth, bit by bit. Hence, Descartes uses critical thinking as an explaining tool relying on mathematical rules, which provide him with temporary complete solutions when applied to a problem, rather than using critical thinking as an explaining tool relying on philosophical reasoning, which lacks this quality. Based upon this belief, Descartes presents four rules

stemming from mathematical principles, which he uses himself in order to develop certain knowledge:

> The first [rule] was never to accept anything as true that I did not know to be evidently so: that is to say, carefully to avoid precipitancy and prejudice, and to include in my judgements nothing more than what presented itself so clearly and so distinctly to my mind that I might have no occasion to place it in doubt.
>
> The second, to divide each of the difficulties that I was examining into as many parts as might be possible and necessary in order best to solve it.
>
> The third, to conduct my thoughts in an orderly way, beginning with the simplest objects and the easiest to know, in order to climb gradually, as by degrees, as far as the knowledge of the most complex, and even supposing some order among those objects which do not precede each other naturally.
>
> And the last, everywhere to make such complete enumerations and such general reviews that I would be sure to have omitted nothing.
>
> (Descartes, 1988, *Discourse on Method*, Discourse 2, p. 41)

One might ponder upon what consequences such rules have for critical thinking in comparison with e.g. Augustine's critical thinking. Examining each rule by itself, one finds in the first rule that Descartes refers to the principle of intuition. When a human being encounters something, there are, according to Descartes, features of this certain thing that intuitively cannot be other than it shows itself. Thereby Descartes believes that he has secured himself from biases. The second rule refers to the principle of analysis, where the particular thing at hand shall be divided into as small entities as possible. The third rule refers to the principle of synthesis, in which the analyzed parts will be put together again, rendering the fourth rule possible, in which one checks everything once again to make sure that there is a logical continuity and that nothing important is missing.

Already in the first rule, based on the principle of intuition, there are some obstacles to critical thinking, inasmuch as critical thinking in itself needs a degree of uncertainty in order to proceed. Even though there is a need for certainty as well when thinking critically, it should be possible to question this certainty, which is not the case in Descartes' philosophy. Once Descartes' intuition has told him what is undoubtedly certain at first appearance, there is no need to doubt what shows itself. It is also evident that the first rule excludes any possibilities of characterizing critical thinking as interpretative or as understanding in a hermeneutic sense, inasmuch as there are no openings for something beyond what is already given and no way to encounter the alien. In comparison to Augustine's philosophy, however, Augustine's epistemological approach does not exclude the possibility of critical interpretation or

understanding, although he does not fully realize this opportunity in his thinking. This embedded possibility stems from Augustine's foundation in philosophy, where the nature of things could be pondered upon over and over again. From this point of view, Descartes' second and third rules, embracing analysis and synthesis, could be seen as both beneficial and less facilitating for critical thinking. Descartes states that one should start by analyzing the whole, considering it in its parts. Thereafter, when the different parts of the whole are revealed, one should put the pieces together again, creating a new whole, which fits better with reality. Such thinking is beneficial for critical thinking, inasmuch as the relationships that are embedded in the problem of inquiry then become liberated. As I have argued earlier, seeing relationships is fundamental for critical thinking, since it facilitates abstraction, the fourth cornerstone of critical thinking. The disadvantage with Descartes' way of proceeding is, however, that he does not really reflect upon the premises of his reconstructed whole. Thus, his interplay between analysis and synthesis takes just one loop. Without looping more than one time between analysis and synthesis, Descartes runs the risk of being caught in Parmenides' pitfall, where the wrong premises lead him to the wrong conclusions, or to state the problem in Cartesian terms: where the wrong parts are put together into a deceptive whole. Ultimately, *which* parts are assessed to be important, and *how* these chosen parts are regarded to be related to one another, decide what the whole will look like. An interplay between the parts and the whole, that is to say an interplay between analysis and synthesis, is a way to avoid misleading conclusions. This reasoning is founded in Svensson (2004), who asserts that knowledge development is facilitated by a balance between an analytical and synthetic approach. Finally, considering Descartes' fourth rule, it seems as if it is also a matter of both being critical and being less critical, depending on how one characterizes critical thinking. Not being satisfied with one's first conclusion without scrutinizing its foundations once again, is indeed a manifestation of critical thinking as explanation, where logical continuity is emphasized. The fact that Descartes unquestionably trusts his own perspective to be objectively true, without any concern for what is beyond his own horizon does, however, makes his fourth rule a little bit weaker in respect to the complexity of critical thinking.

Explanation as a tool for self-awareness

During the Enlightenment, epistemology took a new turn, expressed by Kant's most important work, *Critique of Pure Reason* (Filosofilexikonet, 1988; Hamlyn, 1990; Kitcher, 1996). In his *Critique of Pure Reason*[13], Kant (1996) delivers a very complex epistemological theory, with a large number of principles to keep in mind. Unfortunately, there is no space for doing his impressive work full justice here. Besides a brief depiction of the most basic features of Kant's epistemology, only a very small particular part, "On the understanding's logical function in judgments", will be rendered and discussed. This part was chosen, inasmuch as it was considered to be especially fruitful to ponder upon in relation to critical thinking.

Hitherto, the main concern in scholarship had been to attain knowledge of objects, along with the idea that it is possible to achieve knowledge about things as they are in themselves. Instead of inquiring about the experienced objects, Kant turned his focus to experience itself. Probably due to this Copernican reversal (as Kant himself expresses it in his second preface), Kant could liberate himself from both pure empiricism and pure rationalism, although he did not reject these movements totally. Rather, Kant constitutes a dialectical standpoint somewhere in between empiricism and rationalism. Kant agreed with the empiricists that all cognitions (perceptions) start with experience, as long as cognition is limited to the frame of time:

> There can be no doubt that all our cognition begins with experience. For what else might rouse our cognitive power to its operations if objects stirring our senses did not do so? In part these objects by themselves bring about presentations. In part they set in motion our understanding's activity, by which it compares these presentations, connects or separates them, and thus processes the raw material of sense impressions into a cognition of objects that is called experience. *In terms of time*, therefore, no cognition in us precedes experience, and all our cognition begins with experience. But even though all our cognition starts **with** experience, that does not mean that all of it arises **from** experience. (Kant, 1996, B1-2, pp. 44-45)

Stating that not all cognitions arise *from* experience, but only *with* experience, renders it possible for Kant to initiate his idea of *a priori cognitions*. According to Kant *a priori cognitions* are constituted by universal necessary rules that precede experience and facilitate understanding. Examples of such *a priori cognitions* are the forms of time,

13 Kant wrote two versions of the *Critique of Pure Reason*, one in 1781 and one in 1787. I have focused mainly upon the latter edition, yet at some places the first edition is included here, as it facilitates understanding of the second edition. When referring to the first original edition, the page number is preceded by an A. When referring to the second original edition, the page number is preceded by a B. Each reference is concluded with the page number of the new translated edition in which both Kant's versions are included.

space, and cause-effect, in which human beings arrange their impressions. In Kant's view, such forms are inherent in all human beings, and are therefore a priori to all experiences. Kant's point is that without the existence of *a priori cognitions*, the experiential cognitions would not be understood in a meaningful way, but only a mess of incomprehensible impressions would be perceived. In that sense, Kant approaches rationalism, since he asserts that some parts of knowledge are beyond human experience, being located in mind only:

> ...even among our experiences there is an admixture of cognitions that must originate a priori, and that serve perhaps only to give coherence to our presentations of the senses. For even if we remove from our experiences everything belonging to the senses, there still remain certain original concepts, and judgments generated from these, that must have arisen entirely a priori, independently of experience. These concepts and judgments must have arisen in this way because through them we can – or at least we believe that we can – say more about the objects that appear to the senses than mere experience would teach us; and through them do assertions involve true universality and strict necessity, such as merely empirical cognition cannot supply. (Kant, 1996, A 2, p. 44)

Hence, according to Kant, human understanding is facilitated by certain a priori concepts and judgments. Understanding, in Kant's transcendental sense of the word, is not an intuitive (purely empirical) phenomenon, but it is a matter of dealing with concepts:

> ... understanding is not a power of intuition. Apart from intuition, however, there is only one way of cognizing, viz., through concepts. Hence the cognition of any understanding, or at least of the human understanding, is a cognition through concepts; it is not intuitive, but discursive. (Kant, 1996, A 68 and B 93, p. 121)

In contrast to the philosophers discussed so far, Kant is the first to point out that there is no direct relation between understanding and objects, inasmuch as all understanding goes through concepts. Hence, one cannot understand an object beyond its conceptualization:

> ...in such judging [between concepts], a concept is never referred directly to an object, because the only kind of presentation that deals with its object directly is intuition. Instead the concept is referred directly to some other presentation of the object (whether that presentation be an intuition or itself already a concept). Judgment, therefore, is the indirect cognition of an object, viz., the presentation of it. (Kant, 1996, A 68 and B 93, pp. 121-122)

Given the fact that one can only judge by means of concepts, which in turn do not refer directly to an object, has certain consequences for critical thinking. Assuming that critical thinking is partly based upon understanding, Kant's philosophy implies that one cannot think critically about an object itself, inasmuch as one has no direct

access to it other than intuitively. Hence, only one's own thinking about the object at hand can be a subject of scrutiny. Thus critical thinking, in a Kantian sense, is an issue of being critical to one's own critical thinking about an object, rather than being critical to the object itself. Proceeding in this manner, requires a considerable degree of self-awareness. Kant's self-awareness should, however, not be regarded as tantamount to the kind of self-awareness that is apparent in a hermeneutic-phenomenological view, in which one's own horizon is understood against the background of another horizon. Rather, self-awareness in Kant's transcendental conceptualization, is an a priori *I*, called pure apperception, that functions as synthesizing all presentations into one unity. This synthesizing process gives rise to an awareness that all presentations necessarily belong to *the I* (they are *mine* and not yours), and hence that *I think*. Thus, self-awareness in Kantian terms refers back to itself, rather than being directed towards another self[14]. Accordingly, even though there is an emphasis on self-awareness in Kant's philosophy, this form of self-awareness lacks a relation to another horizon. Therefore, the kind of critical thinking that is brought out from Kant's philosophy cannot be characterized as critical understanding in a hermeneutic-phenomenological sense.

Kant calls attention to the relationship between understanding and judgment. According to Kant, understanding can be reduced to judgments, and hence "be presented as a *power of judgment*" (Kant, 1996, A 69 and B 94, p. 122). This reducing process can also function inversely, which implies that when the judgment is abstracted from all its content, only the pure form of understanding is left. Kant holds that the latter form of reduction makes it possible to scrutinize the transcendental function of thought in judgment. Before getting into Kant's depiction of the function of thought in judgment, it is important to keep in mind that Kant equates the function of thought in judgment with logic. Arranged in a table, the function of thought in judgment has four transcendental dimensions, containing three moments each:

14 See further in Kant's *Critique of Pure Reason*, B 132 ff.

Table 1. The function of thought in judgment

1		
Quantity of Judgments		
Universal		
Particular		
Singular		
2		3
Quality		*Relation*
Affirmative		Categorical
Negative		Hypothetical
Infinite		Disjunctive
4		
Modality		
Problematic		
Assertoric		
Apodeictic		

(Kant, 1996, A 70 and B 95, p. 124)

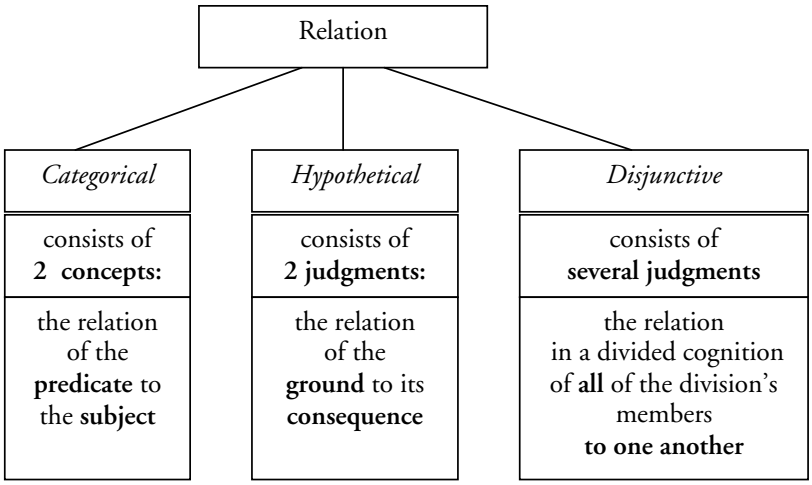
In order to understand the table, some explanation is needed. As regards the first dimension, *quantity of judgments*, Kant refers to syllogistic thinking, in which predicates can present different aspects of quantity (or perhaps one should say generality). On the one hand, there are universal predicates, which function as being valid generally (such as *all human beings are mortal*). On the other hand there are particular predicates (such as *Kant is a human being*). There are also singular predicates, standing for themselves, which do not refer to any intrinsic relationship (such as *human being*).

The dimension of *quality* is a matter of whether a predicate is affirmative, negative or infinite. Affirmative predicates state that something is a fact (such as *Kant is mortal*), whereas negative predicates state what a subject is not (such as *Kant is not immortal*). As regards infinite predicates, however, Kant challenges the general logic, holding that affirmative and infinite predicates should be kept separate from one another when it comes to transcendental logic. The fact that an affirmative predicate, as *the soul is immortal*, is also an infinite predicate (inasmuch as the soul is put into the unlimited range of immortal beings), does not make sense in general logic, yet it does in transcendental logic. This is due to the fact that general logic is not really concerned with the meaning of the content in predicates, only the predicates' logical range is of importance, Kant points out. Positing the soul into the unlimited range of immortal beings implies not only infinity, but also limitations as regards its content, when considered from a transcendental point of view:

> Hence although such judgments [like *the soul is immortal*] are infinite as regards logical range, they are actually merely limitative as regards the content of cognition as such. (Kant, 1996, A 73 and B 98, p. 126)

As regards the dimension of *relation*, it is perhaps of most importance for critical thinking. Kant delivers a quite complex account of this dimension. In order to make it easier to grasp, I have made a separate table representing it:

Table 2. The dimension of relation



If one disregards the fact that all transcendental judgments are abstract, inasmuch as they precede experience (although they do not exist without experience), one could say that the table presents different levels of abstraction, and hence mental effort. Judging the relationship between two concepts, as in a categorical judgment, does not demand as much mental effort as judging between two judgments, as displayed in a hypothetical judgment. This is because the former kind of judgment is closer to the concrete than the latter. The disjunctive judgment is the most complex of them all. It is about keeping several judgments, and their relationships to one another, in mind at the same time. As regards this latter form of relational judgments, Kant carefully points out that the disjunctive judgment is, in spite of its excluding and discerning character, a judgment that works with wholes:

> ...a disjunctive judgment contains a relation of two, or of several, propositions to one another [...] ...it is a relation of logical opposition, insofar as the sphere of the one proposition excludes the sphere of the other; yet it is at the same time a relation of community, insofar as the two propositions together occupy the sphere of the proper cognition involved. Hence the relation of the propositions in a disjunctive judgment is a relation of the parts of a cognition's sphere. (Kant, 1996, A 73 and B 99, p. 127)

The dimension of *modality* is outstanding in relation to the other dimensions. According to Kant, the content of the judgment is completed in its quantity, quality,

and relation. Hence *modality* contributes nothing to the judgment's content, but offers only the value of the judgment's copula[15]. Judgments can be either *problematic*, *assertoric* or *apodeictic*, which meanings are best explained by Kant himself:

> *Problematic* judgments are those where the affirmation or negation is taken as merely *possible* (optional); *assertoric* ones are those where the affirmation or negation is considered as *actual* (true); *apodeictic* ones are those in which it is regarded as *necessary*. (Kant, 1996, A 74-75 and B 100, pp. 127-128)

So far, a summary of Kant's basic ideas and his account of the function of thought have been made. Against this background, Kant's ideas could be seen as both hindering and viable in relation to critical thinking, depending on whether one adopts his idea of transcendental judgments or not. Considering potential impediments to critical thinking in Kant's idea of a priori judgments, one finds that it is the idea of a priori judgments itself. Inasmuch as all understanding, in Kant's view, is limited to a certain set of a priori judgments in the function of thought, understanding cannot go beyond these judgments. Granted that understanding is a fundamental part of critical thinking, this implies that also critical thinking is framed within these certain a priori judgments. Hence, the scope of critical thinking is limited to judgments between certain kinds of quantities, qualities, relations, and modalities, and consequently, the possible appearances of critical thinking are limited as well. Contemplating on Kant's account of the function of thought more attentively, however, it seems difficult to imagine any kind of judgment that could not be characterized within the division of quantities, qualities, relations, and modalities. Therefore, it could be observed that Kant's limitations in the function of thought are more including than they are excluding. One cannot avoid the fact, however, that all definitions convey limits. Accordingly, a definition of the function of thought necessarily sets bounds to critical thinking, irrespective of their extensive width.

It is important to keep in mind that even though critical thinking would be *conditioned* by a priori judgments, critical thinking would not explicitly *appear* at this transcendental level. If critical thinking is to become explicitly critical, it has to express itself on a conscious level. Therefore, it follows that the same judgments could, when raised from their transcendental level to a conscious one, be exceedingly viable for critical thinking. The different types of judgments, such as quantity, quality, relation and modality deliver a range of possible angles of approaches as to how to think critically about a phenomenon. As regards *quantity* of judgment, for instance, scholars are indeed concerned with the generalization of a conclusion. Suppose that someone says that "today's students have trouble with becoming critical thinkers". The critical thinker would not spontaneously agree with that, but he or she would rather question: What students does this statement refer to – all students,

15 Copula: 1. *Logic* and *Gram.* That part of a proposition which connects the subject and predicate; the present tense of the verb *to be* (with or without a negative) employed as a mere sign of predication. (Oxford English Dictionary Online)

or particular students? The critical thinker must also be aware of the *quality* of such a statement. In this case it is an affirmative predicate, but does it also imply that it is infinitive? It is noteworthy that the latter question refers back to generality. In respect to the quantity and quality in a predicate, such judgments are not so strenuous to think critically about. When it comes to the dimension of *relation*, however, it appears that this type of judgment fits best with what is commonly called scholarly knowledge, where relations between cause and effects, and relations between different parts in a whole are of relevance. Since relational judgments demand for a higher degree of abstraction than judging the quantity and quality of a predicate, they could be considered to give a wider scope for critical thinking. The dimension of *modality* is a dimension that provokes critical thinking. Assume for example that "students have trouble with becoming critical thinkers" is meant to be an apodictic judgment. This would mean that becoming a critical thinker is necessarily hard, irrespective of whom you are or how you work to become a critical thinker. In an apodictic judgment of this kind, it is not possible to make any changes of fact, so it might provoke critical thinking as to how to challenge such an obstacle. If the judgment was an assertoric one, however, it would point to an actual situation that does not necessarily have to be that way. This too provokes critical thinking as to how to change the situation into something preferable. The problematic judgment aims at illuminating a possibility, that might or might not be true, and which could be discussed from different perspectives that facilitate critical understanding. Against this background, it seems as if critical thinking is a matter of playing with the moments in the function of thought, resulting in different angels of views for critical thinking.

As with Bacon and Augustine and their works, there is a contradiction between the expression of Kant's own critical thinking and the kind of critical thinking that his work points to. Even though all three show approaches to critical understanding in their own critical thinking, whereas their works propose critical thinking as explanation, it is possible to perceive an increasing emphasis on critical understanding when considering their works in relation to one another. Bacon shows traits of critical understanding in his writings when pointing out the existence of idols, although he is not explicitly aware that he is irrevocably captured within the idols himself. Augustine, on the other hand, goes one step further in his way to critical understanding. Consciously aware of his own horizon, Augustine ventures to confront the alien of the New Academics, although he does not incorporate the alien into his own horizon. Kant realizes his critical understanding fully, however, inasmuch as he does not only encounter the horizons of empiricism and rationalism, but also incorporates some of their ideas into his own horizon. Inaugurating his own position in this way, points to a palpable expression of critical understanding in Kant. Since empiricism and rationalism are conventionally regarded as contradictory to one another, there is also a marked feature of dialectical understanding in Kant's critical thinking. Seeing that Kant's own critical thinking could doubtlessly be characterized as critical understanding, it might seem ambiguous that his *Critique of Pure Reason* emphasizes

critical thinking as explanation. This is probably due to the fact that this manner of characterizing critical thinking follows naturally when dealing with principles and rules, which in themselves entail a logical continuity.

Even though Kant's work could be placed among his forerunners who constituted critical thinking as explanation, Kant contributes to the development of critical thinking in certain ways that his predecessors did not. Kant's main contribution to the historical development of critical thinking is that he was the first to systematically point out that human beings have no direct understanding of their experiences, but all experiences are understood by means of concepts posited in *the I*. Therefore, it is important to have a raised self-awareness and to scrutinize the experiences themselves, when dealing with scholarly knowledge. Otherwise scientists and scholars will be captured within the illusion that it is possible to know anything about the objects themselves – which, according to Kant, is impossible. In order to characterize the kind of critical thinking that is manifest in the *Critique of Pure Reason*, it is probably best described as explanation as a tool for self-awareness. By revealing the existence of a priori principles, which in themselves entail explanation, one can develop one's critical self-awareness. This implies that the critical thinker realizes that he or she is limited to reflect upon merely *presentations* of the objects, or to put it more specifically, that he or she cannot approach other than his or her *own presentations* of the objects into his or her *own synthetic understanding* of the world. Furthermore, by his emphasis on principles, Kant draws attention to the fact that knowledge development entails abstraction. This abstraction is found in concepts, judgments and relations, which are all fundamental for understanding, and hence critical thinking. Accordingly, without the human ability of abstracting experiences into concepts that facilitate understanding, human beings would not understand anything. Neither would they have the ability to think critically. In fact, human beings would probably not even be human beings anymore.

Critical Thinking in German Idealism

Uniting all the cornerstones as a tool for self-awareness

After Kant, we find a range of idealistic German philosophers, who both criticized and developed Kant's philosophy further. Among them was Hegel, whose masterpiece, *The Phenomenology of Mind*[16], will be discussed here because of its emphasis on knowledge development. Hegel (2003) agrees with Kant that understanding has its origin in experience, and that all perception is understood by means of concepts (although not in the same way as Kant asserts). Hegel disagrees with Kant, however, in that there exists a world-in-itself beyond human understanding. According to He-

16 This work is also entitled *The Phenomenology of Spirit* in other English translations. In order to avoid misunderstandings, however, the original title is *Phänomenologie des Geistes*.

gel, there is no such thing as a world-in-itself, inasmuch as the distinction between the world as it appears *for* the individual and the world as it is *in itself* is nothing but a construction of thought. In fact, there is only one world, the true world, and the access to this true world is not to be found somewhere "out there", but in the relationships that individuals bring about in their self-consciousness. The reason for Hegel's claim is that while Kant asserts that there exists both a world in itself and a world as it appears to us, Hegel maintains that both ideas can only arise from consciousness. Accordingly, there is no distinction between object and subject in reality, and hence no world beyond human experience and understanding.

Against this philosophical background, Hegel makes his phenomenological exploration of the historical development of human consciousness. *The Phenomenology of Mind* constitutes an essential breach in the historical development of critical thinking, inasmuch as it explicitly involves all the four cornerstones of critical thinking: interpretation, explanation, understanding, and abstraction. The basis for *The Phenomenology of Mind* is Hegel's revival of the idea from ancient Greece that truth is founded in the whole. This truth is universal, and hence absolute, and is only attainable when human consciousness has passed through certain stages in its self-development by means of reflection. Thus Hegel's conceptualization of the truth is in itself explanatory, since it is developed and understood by means of seeing the logical continuity in the development of human consciousness. Inasmuch as the truth has an explanatory quality, it follows naturally that critical thinking follows the same direction in deducting how each stage in human consciousness lays the foundations for the next, evolving towards a conclusion founded in the whole. In contrast to his forerunners, however, Hegel does not rely on explanation only in his critical thinking. Neither does he exhort other scholars to do so, as we will see further on. Hegel's idea of the truth as being a movement towards the Absolute involves that the result is indistinguishable from its process:

> The truth is the whole. The whole, however, is merely the essential nature reaching its completeness through the process of its own development. Of the Absolute it must be said that it is essentially a result, its nature, which is to be actual, subject, or self-becoming, self-development. [...] It is reflection which constitutes truth the final result, and yet at the same time does away with the contrast between result and the process of arriving at it. (Hegel, 2003, p. 11)

Hence it appears that Hegel delivers an explanation of why human knowledge has not arrived to the truth hitherto, inasmuch as all pieces in the puzzle of the Absolute have not yet been experienced and reflected upon yet. According to Hegel, all kinds of human experience, such as science, art, and religion, constitute supplementary pieces to the puzzle of the Absolute Being, although none of them are sufficient to approach the truth, when considered one by one. It should be highlighted that Hegel's idea is outstanding, inasmuch as he points out that science alone cannot lead to the truth, something that forms a sharp contrast to the Age of Enlightenment's un-

conditional credit to science. From this it follows that Hegel, as Kant, uses dialectical thinking, where apparently irreconcilable experiences constitute a whole. Bringing the irreconcilable experiences into a whole does not, however, mean that they should be mixed up with one another into a harmonious totality, as the romanticists strived for. In Hegel's sense, the split of the whole is a prerequisite for finding the truth. This is because Hegel highlights that the truth appears in *relationships*, which appear plainer when the parts of the whole are distinguishable. Hegel's preservation of the oppositions within the whole implies that he maintains an abstraction of the concrete, as to how the oppositions are related to one another. Thereby Hegel explicitly maintains a need for abstraction in critical thought with the purpose of reaching the truth.

In order to grasp Hegel's philosophy, the different stages in the development of human consciousness have to be considered. Hegel briefly identifies these stages as being Consciousness, Self-consciousness, Reason, Spirit, and Absolute Being, ordered in a hierarchical range, in which Consciousness is the most elementary form of human mind. In his analysis, Hegel divides each of these stages into further sub stages, where each stage is the condition for the next. I will not, however, go into detail with all these sub stages, but keep the discussion at a more comprehensive level. The stage of Consciousness is a matter of mere observation and systematization of the objects in the world. The conscious individual discerns certain objects and classifies them as distinct unities with certain qualities. When the conscious individual starts to reflect upon the observed object, he or she realizes that the object is there *for* him or her, simultaneously with a raised understanding that he or she, as an observer, brings forth the shape of the object by his or her looking at it. In that sense the object reflects the individual's own consciousness, and gives rise to the individual's self-consciousness. Consequently, the individual realizes that there is no real distinction between him- or herself and the object, yet such imaginative distinction is necessary in order to develop self-consciousness, and hence understanding:

> Consciousness is for itself and on its own account, it is a distinguishing of what is undistinguished, it is Self-consciousness. I distinguish myself from myself; and therein I am immediately aware that this factor distinguished from me is not distinguished. I, the selfsame being, thrust myself away from myself; but this which is distinguished, which is set up as unlike me, is immediately on its being distinguished no distinction for me. Consciousness of an other, of an object in general, is indeed itself necessarily self-consciousness, reflectedness into self, consciousness of self in otherness. (Hegel, 2003, pp. 95-96)

Even though the existence of an Ego appears for the individual when seeing him- or herself as united with the object, this kind of self-awareness does not bring forth the Ego itself as being a notion. This is due to the fact that the notion of Ego could only appear in its true shape when being reflected in another object that is an Ego too. Thus, in order to capture the notion of self-awareness, there is a need for at least two selves, mutually recognizing each other. The other self functions as a mirror in

which one sees oneself as being a self both *in itself* and *for* itself. The mutual recognition that appears from the alien selves constitutes the mediating relationship towards self-understanding:

> Self-consciousness exists in itself and for itself, in that, and by the fact that it exists for another self-consciousness; that is to say it *is* only by being acknowledged or "recognized". (Hegel, 2003, p. 104) [...]
>
> Each [self] is the mediating term to the other, through which each mediates and unites itself with itself; and each is to itself and to the other an immediate self-existing reality, which, at the same time, exists thus for itself only through this mediation. They recognize themselves as mutually recognizing one another. (Hegel, 2003, p. 106)

The stages of Consciousness and Self-consciousness are crucial for Hegel's philosophy and critical thinking as well. This is where the explicit relationship between the alien and the familiar horizons arises; hence this is where critical understanding has its origin. The remarkable point in the quotation above is that Hegel shows how the familiar Ego in fact is the alien Ego, and inversely, how the alien Ego actually is the familiar Ego. Thereby the fusion of horizons is totally accomplished at a universal level – inasmuch as all Egos in this process becomes one: "[an] Ego that is 'we', a plurality of Egos, and 'we' that is a single Ego" (Hegel, 2003, p. 104). It appears that the critical explanation of truth as being a universal whole is dependent upon critical thinking as understanding in which the individual's self-consciousness arises; just as critical understanding is dependent on critical explanation for its existence.

The individual's discovery of Ego conveys a certainty that consciousness is all reality, inasmuch as all impressions necessarily belong to what the Ego experiences as being real. In order to understand this perceived reality, the individual turns into the next stage, that of Reason. In Reason, each individual shapes his or her own set of absolute laws as to how reality is constituted and how to live properly. Thus the expression of explanation in Hegel's critical thinking is transferred from its result in attaining the truth, to the process itself, in which the individuals themselves must use their critical thinking in an explanatory way. The rational individuals believe they exist independently of one another, each of them being involved in an action of a self-purposive kind, and accordingly the expression of individuality reaches its peak in the stage of Reason. The Absolute Being is, however, a universal being with universal laws, which is why it cannot rely solely on subjectivity. Therefore, the rational individual is limited to experience merely appearances of the truth, and will never reach the Absolute at this stage. When the individual realizes that the laws he or she has set up for him- or herself to be the truth are not vouchsafed him or her alone, but are in fact a part of the community in which he or she lives, the individual approaches the stage of Spirit. In Spirit, the individual becomes aware of that the laws as to how to live in reality do not *belong* to him or her. The individual does not *have* these laws, but he or she *is* the laws of the community. The individuals within the

community realize that they are only parts of a historical society, which has its own purpose and self-becoming. Thereby the individuals approach critical interpretation, seeing beyond what is already given in their own concrete rational view of the world. Thus, Spirit is in fact the same as Reason, when Reason is no longer individual and implicit, but communitive and explicit:

> Reason is spirit, when its certainty of being all reality has been raised to the level of truth, and reason is consciously aware of itself as its own world, and of the world as itself. (Hegel, 2003, p. 251)

According to Hegel, the highest form of Spirit is Religion, or to put it more specifically, the Revealed Religion (in Christianity). In Revealed Religion, human beings become aware of the existence of Spirit itself. This appears when individuals are self-conscious of existing both *for* themselves and *in* themselves and the individual is in the "immediate present experience, and recognizes God in it" (Hegel, 2003, p. 444). Hence, God, in Hegel's sense, is not an existence from above, but God exists in the very concrete within and between human beings, connecting them together into a whole. Although knowledge of Spirit as being Spirit is a prerequisite for attaining the truth in Absolute Being, Hegel points out that the religious consciousness is still not completely fulfilled in its self-awareness, and is therefore not enough for reaching the truth. This is due to the fact that the religious consciousness is irrevocably caught in the snare of imagination without knowing it. In order to reach the highest form of consciousness, and hence to get released from the snare of imagination, human beings have to realize and be conscious that Spirit is nothing but a notion. When they have come to this insight, human beings attain the truth, the Absolute Being. Against this background, it becomes clear that all the stages of consciousness that human beings have to pass through on their way to Absolute Being, each constitute notions of the Absolute Notion. They all comprise the logical necessity in which they have to develop through human history in a certain way, according to their fate – to become Absolute Notion. Thus the Absolute Notion is consciousness in perfection – about objects, subjects, oneself, spirit, and above all, consciousness that all of these impressions stem from the Absolute Notion itself. If one considers again what all these stages convey to human beings, the Absolute Notion is a purposive, rational, self-developing activity which is pervaded with Spirit arising from the concrete. At this point, it is plain that Spirit is all reality, and that the developing process towards self-realization coincides with the result. The process and result of the Absolute becomes a universal unity in accordance with its inner being – and this is, according to Hegel, true science:

> Spirit is alone Reality. It is the inner being of the world, that which essentially is, and is *per se*; it assumes objective, determinate form, and enters into relations with itself – it is externality (otherness), and exists for self; yet, in this determination, and in its otherness, it is still one with itself – it is self-contained and self-complete, in itself and for itself at once.[...] It has to become self-contained for itself, on its own account; it must be knowledge of spirit, and must be consciousness of itself as spirit. [...] In this way it is in its existence aware of itself as an object in which its own self is reflected. Mind, which, when thus developed, knows itself to be mind, is science. (Hegel, 2003, p. 14)

Putting the pieces together, it appears that if Spirit is all Reality, and Spirit is all Notion, Reality itself is merely a Notion. Hence, in order to find out the truth about Reality, one has to start to reflect upon all those notions that the world brings forth in its appearances. The only discipline that meets to these demands for reflecting upon Notion itself, and moreover, aims at understanding itself as being a Notion is, according to Hegel, philosophy when it is "proper and genuine", keeping its interest in conceptual thinking. This conceptual thinking involves, as discussed above, critical thinking in all its characters of explanation, interpretation, understanding, and abstraction. Hegel's emphasis on philosophy and spirit as being directly related to the truth reminds partly of Augustine's thinking. Inasmuch as Augustine also relied upon the philosophy of ancient Greece, it is not surprising that both of them state that the truth is found in the whole, when spirit, and hence human understanding is complete. Their different approaches to philosophy and divine spirit as well, make them, however, fundamentally different from one another. Augustine would almost certainly not agree with Hegel that God is a Notion (recalling that Spirit is all Notion). That would be to deprive God of his divinity and make him a human creation, which speaks against the clear distinction between human and divine that appears in Augustine's thinking. Thus, Augustine's philosophy could at the most be characterized as an expression of Spirit in Revealed Religion, when submitted to Hegel's analysis. However, Augustine's division between human and divine makes him conclude that human beings do not have the power to reason by themselves, but they need to be endowed with the divine power from the authority of Christ and God. In Hegel's view, this divine power of reasoning does not spring from a divinity, distinct from humanity, but is already inherent in the individual – human being is Reason and Reason is Spirit. This has certain consequences for critical thinking. Whereas Augustine's critical thinker is dependent upon an outer force for his critical thinking, Hegel's critical thinker already has the potential for thinking critically, as soon as he starts to reflect upon his experiences in the concrete world:

> ...everybody understands how to philosophize straight away, and pass judgment on philosophy, simply because he possesses the criterion for doing so in his natural reason... (Hegel, 2003, p. 39)

Because of the different sources of where the power for critical thinking comes from, it appears that Augustine's critical thinker is more exposed to passivity than Hegel's.

The dependence on a divine benevolence for his or her critical thinking might well make Augustine's critical thinker remain passive, until he or she feels endowed with the divine power for thinking critically. Hegel's critical thinker, on the other hand, is already equipped with the potential for critical thinking, in accordance with the human faith to actualize its self-development towards the Absolute, by means of critical thinking.

Against this background, it appears that Hegel realizes the aim of his work completely, since he unites the four cornerstones of critical thinking in his own critical thinking, and simultaneously its appearances through human history (although not with the same conceptualizations as I use to characterize critical thinking). The characterization of critical thinking as explanation can be observed in the logical continuity that Hegel identifies in the different stages of human consciousness. Hegel's interpretative critical thinking is manifest in his attempt to depict the different underlying intentions of human knowledge development. Furthermore, critical understanding appears in both Gadamer's and Ricoeur's sense. In respect to the former, this is clear in that Hegel encounters alien horizons in different historical experiences, in order to make his own horizon apparent. Since Hegel is concerned with keeping opposites together into a whole, there is also a feature of dialectical understanding, which could be related to Ricoeur's thinking. That Hegel applies a well-developed abstraction in his critical thinking as well, is hardly questionable. Since a hermeneutic-phenomenological approach is used to characterize the different kinds of critical thinking that appear throughout history, it is not really surprising that Hegel conjoins all the cornerstones of critical thinking in *The Phenomenology of Mind*. This is due to the fact that both Gadamer and Ricoeur are influenced by Hegel's philosophy (Filosofilexikonet, 1988). Hence, one could say that Hegel appears already in the background of the hermeneutic-phenomenological approach of this thesis. Even though Hegel seems to be the critical thinker in perfection, from a hermeneutic-phenomenological point of view, it is still possible to be critical to his thinking. If one adopts his theory of all Reality being Spirit, and hence his Notion of the Absolute, this idea should be applicable to Hegel's thinking as well. This implies that Hegel's philosophy is an appearance of the Absolute Notion itself, which puts Hegel in a difficult position. On the one hand, Hegel asserts that human development will find the truth when Absolute Being is attained. On the other hand, he makes the same mistake as his, perhaps most obvious, counterpart, Bacon, who does not explicitly realize that it is his idols, his own notions, that make him draw his ontological and epistemological conclusions. Even though Hegel's philosophy is dependent upon his ontological assumptions for its validity, his main contribution to the development of critical thinking is important. Critical thinking is not an issue of being critical in relation to objects anymore. Neither is it a matter of being critical in relation to subjectivity, as Kant proposes. Critical thinking, in Hegel's sense, is about being reflective as regards one's own relationship towards the community, realizing that due to this relationship, the collective and one's own being becomes a single

spiritual mind. Thus Hegel transferred the critical focus from its object as well as its subject into the self-awareness of the relationship between them, inasmuch as neither objects nor subjects would exist in their specific meaning without each other.

Critical Thinking in Positivism

Explanation as a tool for revealing general laws

A few decades after Hegel's publication of *The Phenomenology of Mind*, another analysis of the development of human mind appeared, yet with a quite contrasting approach and focus: Comte in *The Positive Philosophy*[17]. Whereas Hegel starts from the individual's consciousness in his analysis of the development of human mind, Comte (1974) sets out from the community in the development of science. Even though Hegel and Comte have different starting points, the comprehensive aim of their works is the same: ascertaining that humanity will reach the peak of understanding when human beings have passed through certain stages in the development of the human mind. Comte's depiction of the development of the human mind consists of three main stages, the theological, the metaphysical, and the positivistic, which must be accomplished in that consecutive order if the goal of complete understanding is to be attained. The first and most primitive stage is, according to Comte, the theological stage. In this stage, human beings explain phenomena by means of divine powers:

> In the theological state, the human mind, seeking the essential nature of beings, the first and final causes (the origin and purpose) of all effects – in short, Absolute knowledge – supposes all phenomena to be produced by the immediate action of supernatural beings. (Comte, 1974, Introduction: I, p. 26)

The theological stage entails anthropomorphism, in which human beings understand their world by projecting the sense of their own nature onto phenomena. This anthropomorphical tendency decreases, however, concurrently with the progress of theological philosophy. Starting from fetishism, passing over to polytheism, human beings finally reach the theological stage of monotheism, in which the conceptualization of God becomes more abstract and secluded from humanity. When coming to this phase in the development of human mind, human beings pass over to the next main stage, the metaphysical one, in which science has its breakthrough. Theological explanations are no longer satisfactory to understand phenomena, but theoretical concepts and abstractions are developed. Consequently, God is no longer in focus, but nature is:

17 The title of this work is often translated as "Course of Positive Philosophy", a title that corresponds better to the original French title *Cours de philosophie positive*.

> In the metaphysical state, which is only a modification of the first, the mind supposes, instead of supernatural beings, abstract forces, veritable entities (that is, personified abstractions) inherent in all beings, and capable of producing all phenomena. What is called the explanation of phenomena is, in this stage, a mere reference of each to its proper entity. (Comte, 1974, Introduction: I, p. 26)

According to Comte, the problem with the metaphysical stage is that human beings strive for something unattainable, such as absolute notions and knowledge of the causes of phenomena. Instead human beings should look for the relationships, "the natural laws", between phenomena, in order to find out their generality. When human beings have come to this insight, they pass over to the last stage, positivism:

> In the final, the positive state, the mind has given over the vain search after Absolute notions, the origin and destination of the universe, and the causes of phenomena, and applies itself to the study of their laws – that is, their invariable relations of succession and resemblance. Reasoning and observation, duly combined, are the means of this knowledge. What is now understood when we speak of an explanation of facts is simply the establishment of a connection between single phenomena and some general facts, the number of which continually diminishes with the progress of science. (Comte, 1974, Introduction: I, p. 26)

Placing himself between Descartes' credit to reason and Bacon's credit to observation, Comte's utopian goal is to make a scientific system in which all phenomena represent "particular aspects of a single general fact – such as Gravitation, for instance." (Comte, 1974, Introduction: I, p. 26). Comte is, however, aware that attaining such universality by systematizing phenomena in their generality is a difficult task, which is why he emphasizes method as the means for coordinating sciences into a homogenous unity:

> The consideration of all phenomena as referable to a single origin is by no means necessary to the systematic formation of science, any more than to the realization of the great and happy consequences that we anticipate from the positive philosophy. The only necessary unity is that of Method, which is already in great part established. As for the doctrine, it need not to be *one* ; it is enough that it be *homogeneous*. (Comte, 1974, Introduction: I, pp. 37-38)

In order to understand this quotation properly, it is important to know that Comte here makes a distinction between procedure and method (e.g. see Comte, 1974, Introduction: II, p. 48). According to Comte, different sciences require different procedures for collecting facts. Sometimes it is appropriate to make observations, while other times it is better to use experiments or comparisons, for instance. Furthermore, in social sciences, historical analysis is of utmost importance. Mostly, a combination of several procedures is needed, although different sciences emphasize different procedures. For instance, Comte holds that astronomy has its emphasis in observation, whereas complementing observations with experiments is fundamental in physics.

Irrespective of which procedure is applied, however, the comprehensive homogeneous Method (and aim) for all sciences is to "analyse accurately the circumstances of phenomena, and to connect them by the natural relations of succession and resemblance" (ibid., Introduction: I, p. 28)[18]. Comte divides the natural relations of succession and resemblance into two divisions: dynamics, and statics. For instance, in social studies this means that "...social dynamics studies the laws of succession, while social statics inquires into those of co-existence..." (ibid., Book VI: III, p. 464). This is exactly how Comte works out *The Positive Philosophy* himself, analyzing the static and dynamic phenomena of each science, in order to identify the static and dynamic phenomena of the development of the human mind as a whole. Approaching this challenging task, Comte picks out and classifies six supreme sciences: mathematics, astronomy, physics, chemistry, physiology and sociology; arranged in their order of generality, simplicity, and independence to one another. According to Comte, mathematics is the most simple, general and independent of all sciences. In fact, mathematics is as simple and general as it could be considered both as a science in its concrete form (in relation to geometrical and mechanical phenomena) and as a superior instrument in its abstract form (in relation to calculi). Because of its simplicity and independence to the context, Comte establishes abstract mathematics to be the primary foundation of positivism. Abstract mathematics is considered to be the supreme instrument all along the line, because of its power of uncovering concealed relationships and laws (as can be seen in statistical analyses, which are successfully used still today):

> The object of the Calculus, however, indirect or complicated the relationships may be, is to discover unknown quantities by the known. [...] Analytical ideas are, above all others, universal, abstract and simple...Mathematical Analysis is therefore the true rational basis of the whole system of our positive knowledge. (Comte, 1974, Book I: I, p. 57)

With respect to the other sciences, these are presented in an order of progressively increasing complexity, from the simplest, astronomy, considered to be the "only completely positive science" (Comte, 1974, Book III: I, p. 192), to the most complex of them all, sociology, which is the new science. Because of its complexity, and hence the difficulty associated with generalizing social phenomena, sociology has the farthest way to go before it attains a scientific status. Sociology is therefore only in the beginning of positivism. Even though the nature of sociology stands most in opposition to the positivistic principles of simplicity, generality and independence, Comte also nevertheless assesses sociology to be the superior discipline, ranking all other sciences below it. Accordingly, mathematics is, despite of its character, placed under sociology. This is due to the fact that sociology is considered to have logical as

18 Further on in *The Positive Philosophy*, Comte leaves this expressively marked distinction between method and procedures and starts to name procedures by method too. When referring to method as a comprehensive aim, however, Comte signifies it by *Method*, with a capital M.

well as scientific superiority over mathematics, from Comte's point of view. In comparison with the science of mathematics, sociology is logically superior, because it is not restricted to investigating subjects of "extreme simplicity", but grasps the most complex phenomenon, humanity, by means of the historical method. Furthermore, in contrast to the science of mathematics, sociology has its starting point in the "... direct study of the subject; and that direct study must always be the preponderant one." (Comte, 1974, Book VI: XIII, p. 791). Therefore, sociology also has scientific supremacy over mathematics, inasmuch as mathematics is always preceded by formulas. The latter argument for the supremacy of sociology is perhaps the most commonly known character of Comte's whole philosophy – that he was a true advocate of the inductive method. One might then ask why Comte presents Descartes, an advocate of the deductive method, as the founder of the positivistic spirit, rather than Bacon, who worked out inductive thinking itself. Even though Comte acknowledges Bacon as a key figure in the development of positivism, there are several deficiencies in Bacon's philosophy, according to Comte. First of all, Comte criticizes Bacon for working out his inductive method in an arbitrary way with no deductive foundation for his conclusions. This is also valid for Bacon's inductive method itself, where practical activities are placed above rational concerns. Hence, in practice, Bacon's empiricism runs the risk of being a desultory collection of facts, with no overarching idea of how to systematize them, something that Comte very much opposes. The advantages of Bacon's philosophy are, however, that all knowledge has its origin in observed facts, and that Bacon has made an effort to regenerate the view of man and society by understanding the importance of this view for science as a whole. The latter advantage of Bacon is, according to Comte, the main disadvantage of Descartes' philosophy. Descartes limited his mathematical revolution to be applicable to inorganic sciences[19] only, and did not widen his method to the realm of the social sciences. (It should be recalled, however, that Descartes believed that his mathematical thinking could be applicable in all situations, even of a moral or social type, although he apparently did not develop these ambitions further). Even though Descartes did not reach the aspired level of systematizing social phenomena by means of his mathematical method thinking, Comte still considers Descartes to be the supreme philosopher, because of the rational "firmness and precision" (Comte, 1974, Book VI: XI, p. 731) of his mathematical philosophy.

Against this background, it appears that the most striking thing about Comte is that he accomplishes the same thing as Kant once did. He manages to conjoin the two apparently irreconcilable philosophical approaches, empiricism and rationalism, into a single philosophy. Comte's reconciliation is not restricted to a theoretical level, however, as is Kant's conjunction, but Comte puts his empirical-rational philosophy into practice as well, by creating the "positive Method" for how to develop scien-

19 Inorganic sciences is Comte's generic term for mathematics, astronomy, physics, and chemistry, which none of them deal with organic beings – at least not in Comte's point of view. Thence, the only organic, and therefore superior, sciences are physiology and sociology.

tific knowledge. Even though Comte views the process of scientific understanding from a single direction (moving from observations to rational systematization, and never in the other direction), he points out that there exists a dialectical relationship between observation and rational systematization. Observation has no meaning without some rational framework within which it could be understood, and inversely, rational frameworks are groundless without stemming from observation. In these respects Comte attains a dialectical understanding in his critical thinking. The fact that Comte encounters and incorporates two alien horizons into his own also points to a considerable degree of critical understanding, but, ironically, his fusion of horizons does not allow for further critical understanding. Comte does not approach empiricism and rationalism in order to widen his horizon. Rather, the alien horizons are used to secure the existence and extension of a single horizon: the positivistic one. Hence, the ultimate goal of positivism is to get rid of all alien horizons, uniting them into its own familiar horizon. One might ponder upon the consequences of such critical thinking, which aims at developing a uniform way of thinking. An explanation of the declining possibilities of further critical understanding in Comte's positivism is that Comte lacks one of the important characteristics of critical understanding. Along with Bacon, Comte is not expressively aware that his self-understanding is biased. For instance, one might question whether Comte would place sociology above all other sciences if he were not a sociologist himself. Accordingly, Comte is convinced that science would be truly objective if it were only to connect to the positivistic spirit completely. Ultimately, the conditions for critical understanding fade away with the decreasing amount of alien horizons.

Apparently, Comte's critical thinking has its origin in critical understanding and is imbued in the characteristics of critical interpretation and explanation, although in a special way. His work, *The Positive Philosophy*, provides an impressive critical interpretation of the development of the sciences. By interpreting the concealed stages in the historical development of the human mind, Comte justifies his hierarchical classification of the sciences, the one being closer to the primitive stages than the other. Comte also exhorts scientists, especially social scientists, to make use of historical analyses; otherwise they cannot understand the subject of their science. Thus, critical interpretation has a prominent position in Comte's positive philosophy, when related to social sciences. It is important to keep in mind, however, that all interpretations in positivistic forms aim at one and the same goal: to settle the natural laws between phenomena, in the manner Comte uses when identifying the necessary stages of the development of positivism. This point is crucial, because interpreting in order to stipulate natural laws necessarily transforms interpretation into explanation. Consequently, even though Comte's critical thinking could be characterized as critical interpretation, this interpretation ultimately aims at critical explanation, and therefore, critical thinking in Comte's positivism has its emphasis in explanation. The crucial point is, however, that Comte uses both critical understanding and critical interpretation in order to ascertain his deductive reasoning, and hence explanations. Therefore,

considering Comte's positive philosophy as a whole, the basic characteristic is clear: critical thinking is a matter of explanation, aiming at revealing general laws.

Critical Thinking in "Perspectivism"

Interpretation as a tool for achieving exceptionality

In the periods discussed so far, the historical development of critical thinking in scholarship has mainly been a matter of searching for an absolute truth by means of explanations. With Nietzsche's entrance into history, however, the germ of a totally new way of conceptualizing the truth appears, changing the nature of critical thinking quite radically. Even though Nietzsche's highly original philosophy infused a new spirit into critical thought, his thinking was not really appreciated until it received a renaissance in the postmodern movement. This is because Nietzsche was not a man of his time, but a man *before* his time. Whereas other philosophers before him developed their philosophy with at least some attempt to be accepted by their contemporaries, and thereby became parts of certain philosophical streams, Nietzsche strived to become as exceptional as possible. He can therefore not be placed in any named philosophical movement of his time. Against this background, it might be considered improper to label Nietzsche's philosophy as "perspectivism" – or to label his philosophy at all. It was with some hesitation that I finally made this decision, since it facilitates the understanding of his thinking. The concept of "perspectivism" was, however, not coined by me, but by Nietzsche (2002) himself, in an attempt to characterize his own philosophy. Due to the fragmented character of Nietzsche's style of writing[20] and thinking, two works, rather than a single one, will be treated here. Although Nietzsche is probably most famous for his conceptualization of the Übermensch[21] characterized in *Thus Spoke Zarathustra*, this part of his philosophy will not be given attention here. Rather, *Beyond Good and Evil* has been found to be more relevant for this thesis. It should be noted that *Beyond Good and Evil* is often regarded to be one of Nietzsche's most important works (Horstmann, 2002), since Nietzsche's critical view of science and philosophy (among other topics) is highlighted in this specific work. Even though *Beyond Good and Evil* is a significant work, Nietzsche's thinking is better understood if it is combined with a complementary reading of *Ecce Homo*, which depicts Nietzsche's own explanation of his life and

20 This fact is something that Nietzsche points out himself in his *Ecce Homo*, see Essay: Why I Write such Excellent Books: 4.

21 The English translation of the Übermensch is "Superman", a translation that is misleading with respect to the actual meaning of the Übermensch in Nietzsche's writings. The Übermensch has surmounted all his illusions, from religion to the belief that he is free from illusions. Thereby the Übermensch approaches the final interpretation of the world as being a never-ending reiteration of history, in which his will cannot lead him to another state than that which history already has determined for him (Filosofilexikonet, 1988).

works, and thereby facilitates the understanding of his philosophy. Therefore, *Ecce Homo* was used in order to give a more appropriate picture of Nietzsche's philosophy, while the analysis has its emphasis in *Beyond Good and Evil*.

"I am not a man I am dynamite.": This is how Nietzsche describes himself (Nietzsche, 1988, Essay: Why I am a Destiny: 1, p. 126). Nietzsche is indeed dynamite in all conceivable ways, since he not only turns away from his forerunners and contemporaries in every respect, but also demolishes them with his extraordinary critical thinking. Thus the leading concept in Nietzsche's critical thinking is exceptionality – in fact, critical thinking itself becomes a phenomenon of exceptional thinking when considered in the light of Nietzsche. Nietzsche defines his own exceptionality in the circumstance that he was the one who unmasked the illusion of God. God and Christian morality are nothing but illusions for weak people (Nietzsche, 1988). Although Nietzsche identifies an important point of his originality, this is not enough for understanding the entire extent of it. His irregular style of writing, his own relationship to art in all dimensions, his specific view of the truth, and his particular approach to human existence must also be mentioned, as well as Nietzsche's whole being – a man who incorporates *all* his senses, emotions and valuations into his critical thinking.

As has been previously mentioned, it is not an easy task to grasp Nietzsche's philosophy, because of its fragmented character. There is no clear philosophical system or uniform thought to follow, as was evident in the philosophies of his forerunners. Rather, there is no system of principles at all in Nietzsche's philosophy, inasmuch as system thinking was precisely one of the things that he disputed. In an attempt to characterize Nietzsche's writings, one has to be aware that art and culture had an outstanding position in his life. He moved in that kind of circles and also incorporated associations and criticism into the art and culture of his time. This explains why Nietzsche treats his texts as though they were a piece of art themselves, erasing the limit between philosophy and poetry. The point is that Nietzsche's fusion between philosophy and poetry in his style of writing supports his address to the world. It allows him to be unique as well as enabling him to express his interpretation of the truth: an intentionally non-scientific interpretation of the truth. Nietzsche's truth cannot be expressed within the narrow scope of a scientific discourse, because his truth is beyond the frames of science. Thus the truth, in Nietzsche's view, can only be approached when individuals express their interpretative experiences with all those emotions and valuations that experiences convey. Nietzsche does so perfectly well and expresses a range of critical viewpoints, which are indirectly dependent on one another. How these viewpoints fit with each other is, however, up to the reader to find out, inasmuch as Nietzsche does not really offer any rational arguments for his conclusions. Instead of relying on rationality in its conventional meaning, Nietzsche justifies his standpoint by basing it upon his valuations and emotions, because he maintains that in these the true person appears. The stronger valuations and emotions, the stronger is the person and his or her specific perspective. This person is

strong because he or she is exceptional and does not want to become anything beyond his or her specific valuations and emotions. The true person knows that such change is not feasible, because it is his or her historical fate to have the perspective of the world that he or she has. Accepting oneself as being captured within a certain historical fate – *that* is what true rationality is about in Nietzsche's sense of the word: "To accept oneself as a fate, not to desire oneself 'different' – in such conditions this is *great rationality* itself" (Nietzsche, 1988, Essay: Why I am so Wise: 6, p. 47). It will be evident throughout this discussion that Nietzsche's conceptualization of the truth is highly dependent upon the existence of such strong individuals and it is in this way of thinking that the origin of *Beyond Good and Evil* can be found. One is faced with Nietzsche's own perspective of the world and the human beings in it. Nietzsche makes it quite clear for the reader that his perspective is the most powerful one, inasmuch as he believes he is the only one who is not captured in the clutches of modernism. As Nietzsche expresses it himself in *Ecce Homo*, his work of *Beyond Good and Evil* is a genuine critique of modernity, with all that it conveys:

> This book (1886) [*Beyond Good and Evil*] is in all essentials a critique of modernity, the modern sciences, the modern arts, not even excluding modern politics, together with signposts to an antithetical type who is as little modern as possible, a noble, an affirmative type. [...] All the things of which the age is proud are felt as contradictions of this type, almost as bad manners, for example its celebrated 'objectivity', its 'sympathy with all that suffers', its 'historical sense' with its subjection to the taste of others, with its prostration before *petits faits*, its 'scientificality'. (Nietzsche, 1988, Essay: Beyond Good and Evil: 2, p. 112)

It appears that the anti-modern person, and hence Nietzsche himself, is modernity in contradiction. The anti-modern person (in Nietzsche's conceptualization) does not honor compassion, because compassion belongs to the illusion of democracy and equality. The real world – the anti-modern world – is constituted by weaker and stronger persons, who will never be equal, according to their history. Neither does the anti-modern individual believe in objectivity. Objectivity deludes human beings to believe that there is such thing as an absolute truth. Since there is no absolute truth, the anti-modern person knows that progressive cumulative knowledge is just a scientific illusion of how to approach an absolute truth – and one cannot approach that which does not exist. Instead, truth is a matter of *interpretations* of the world, constituting different perspectives, which all participate in the power game of life. Thus Nietzsche's philosophy constitutes a true scope for critical thinking, because of its emphasis on maintaining interpretative perspectives of the truth. However, in order to understand Nietzsche's philosophy in brief terms, some central ideas of his thinking in *Beyond Good and Evil* will be depicted and put together into a whole. This whole is, however, a result of my own thinking, since Nietzsche neither delivers nor strives for such logical continuity himself.

In Nietzsche's view, objectivity is a dangerous pitfall when applied to knowledge, because it leads human beings astray from the truth that is founded in perspectivism, and ensnares them into the toil of dogmatism. So much for Kant, Hegel, Comte and their forerunners, who strived to establish the truth in absolute and objective terms, although in different ways. Ironically, Kant and Hegel, who both emphasized the importance of subjectivity and the content of meaning, become selfless insubstantial beings in light of Nietzsche's perspective, since their objective truths turn them into tools without an inner will to power:

> The objective person is a tool [...] He is not a conclusion – and still less a beginning, begetter or first cause; there is nothing though, powerful or self-supporting that wants to dominate. Rather, he is only a gentle, brushed-off, refined, agile pot of forms, who first has to wait for some sort of content or substance in order 'to shape' himself accordingly, - he is generally a man without substance or content, a 'selfless' man. (Nietzsche, 2002, 6:207, p. 99)

The inner will for power and domination is fundamental in Nietzsche's philosophy. As a matter of fact, the driving force in philosophy – and in life and human actions in general – is not knowledge development, but the will for power. The concept of will has a specific meaning in Nietzsche's conceptualization. It is a matter of hierarchy, in which someone is dominating and commanding, whereas the others are subordinated and obeying (see Nietzsche, 2002, 1:19, p. 20). Against this background, philosophy is not so much a struggle for finding an absolute truth, as it is a manifestation of different volitions for mastery, each of them striving for superiority. Holding that all human actions are driven by an inherent will for power, gives an interesting meaning to critical thinking in scholarship. Then critical thinking is no longer primarily a tool for knowledge development, but rather a tool for mastery, wherein the one who best demonstrates his or her critical thinking gains success. This implies that critical thinking is no longer a phenomenon that appears *within* the individual, but *between* individuals, since more than one person is needed for this battle of mastery to commence. Thus critical thinking becomes a matter of being recognized and acknowledged in order to say the decisive word. This critical interplay between individuals does not, however, aim at agreement, as in the critical discussions in ancient Greece. In Nietzsche, there is a conflict perspective involved, which implies that each person must maintain his or her own perspective in the struggle of power, because human beings are fundamentally different from one another in their nature:

> 'My judgment is *my* judgment: other people don't have an obvious right to it too" – perhaps this is what such a philosopher of the future will say. We must do away with the bad taste of wanting to be in agreement with the majority. [...]...whatever can be common will never have much value. In the end, it has to be as it is and has always been: great things are left for the great, abysses for the profound, delicacy and trembling for the subtle, and all in all, everything rare for those who are rare themselves. (Nietzsche, 2002, 2: 43, p. 40)

Because of Nietzsche's well-defined distinctions between the different conditions and

qualities of human beings, one might assume that the same type of distinction applies to their predisposition for critical thinking. In light of the Nietzschean perspective, not all human beings have the potential for being critical thinkers, since some of them are too weak, according to their nature. This is evident, for instance, in Nietzsche's characterization of women. However, stating that the drive for knowledge is in fact a concealed drive for power in which different perspectives compete with one another, it is possible for Nietzsche to develop his perspectivism. When human beings are driven by a will for power, rather than a will for an absolute truth, the interaction between an individual and his or her surroundings gets a different quality. Ultimately, the world is no longer considered to be an entity to be understood, but to be ruled as far as possible. The will for power re-conceptualizes the world as an entity, inasmuch as knowledge is no longer the goal, but rather domination. Hence, when knowledge is no longer in focus, the truth is not so important anymore, but the different perspectives of the world showing how to control it best become the prime concern. This is, according to Nietzsche, what philosophers and scientists actually do under the mask of knowledge development. Since the driving force in all human actions is the will for power, there is no sense in thinking of knowledge as being absolute, but one should rather think of knowledge in terms of normative and creating perspectives, each perspective being different expressions of the will for power:

> ...*true philosophers are commanders and legislators*: they say 'That is how it *should* be!' they are the ones who first determine the 'where to?' and 'what for?' of people [...]True philosophers reach for the future with a creative hand and everything that is and was becomes a means, a tool, a hammer for them. Their 'knowing' is *creating*, their creating is legislating, their will to truth is – *will to power*. (Nietzsche, 2002, 6:211, p. 106)

Nietzsche's concept of philosophy and knowledge in general fits well with how he works out his *Beyond Good and Evil* himself. The reader is confronted with Nietzsche's own perspective of what philosophers and scientists represent in his time, and what he asks them to be and do in the future. According to Nietzsche, the scientific man lacks the important characteristic of being exceptional, which is essential when carving out reality in its different perspectives. Instead scholars strive for mediocrity, which prevents perspectives to stand out in their full shapes, and therefore counteracts originality:

> ...what is the scientific man? In the first place, he is an ignoble type of person with the virtues that an ignoble type will have: this type is not dominant, authoritative, or self-sufficient. He is industrious, he is patiently lined up in an orderly array, he is regular and moderate in his abilities and needs...[...] The worst and most dangerous thing that a scholar is capable of doing comes from his type's instinct for mediocrity: from that Jesuitism of mediocrity that instinctively works towards the annihilation of the exceptional man... (Nietzsche, 2002, 6: 206, pp. 96-97)

Hence, according to Nietzsche, impeding exceptionality is dangerous for the deve-lopment of scholarship, because it is in exceptionality that the different perspectives can appear in relation to one another, as reflections of one and the same "truth", the will to power. From this it follows that critical thinking in Nietzsche's sense, means to be as exceptional as possible – not to conform. It implies to stand out from the rest and thereby see things that others do not see, just as Nietzsche does himself. The important thing is that Nietzsche not only takes a stand against the ravages of modernism (as he would probably express it himself), but also does so in a certain manner. Since Nietzsche does not argue for his standpoints in a conventional rational way, his critical thinking has a quite different character in comparison with other philosophers. At first glance, it seems as if Nietzsche's critical thinking totally lacks a quality of explanation, since there is no deductive reasoning that precedes his conclusions, if explanation is limited to the realm of deduction, as has appeared so far. Widening the meaning of explanation, however, it is clear that Nietzsche gives the concept of explanation itself a new meaning associated to valuations and emotions. Thus Nietzsche's critical viewpoints are explained and justified against the background of how he interprets his world and what valuations and emotions are conveyed with this perspective. In other words, the explanatory character of Nietzsche's philosophy is in the fact that his perspective is true because it expresses the way he experiences his world. Nietzsche has a point here. Exposing himself in the way that he does could be viewed as true honesty. He is honest both to himself and to his surroundings, expressing exactly what he experiences his world to be, rather than suppressing his emotionally charged perspective in favor of rationality. One might ask what value rational truth has when one's emotions tell you another story? How can one be sure that the rational conclusion is closer to the truth than one's feelings and valuations? This is what Nietzsche points to, holding that scientific and rational conclusions are nothing but mediocre interpretations of the truth.

Nietzsche's interpretation of the world appears to be extremely critical. There is barely anything that escapes Nietzsche's critical view, which implies that he cannot really join with any horizons beyond his own. Nietzsche encounters other horizons in order to make a critical scrutiny of them, yet refuses to incorporate any other horizons into his own, because they are all wrong – they are all captured within the pitfall of dogmatism and illusions. Against this background, it seems as if Nietzsche does not really meet the criteria for critical understanding in his critical thinking. Hence, in an attempt to characterize Nietzsche's way of critical thinking, it is best depicted as predominately interpretative. Interpretative critical thinking, such as Nietzsche's, has certain consequences for self-criticism, an important quality in critical thinking. Conventionally defined, self-criticism has two meanings:

> 1. Criticism of oneself.
> 2. *Pol.* Criticism undertaken publicly by oneself of one's actions, attitudes, or policies, considered as a duty in order to ensure conformity with communist party doctrine. Also *transf.*
> (Oxford English Dictionary Online)

The first meaning of self-criticism is clearly not compatible with Nietzsche's character, such as it is expressed in his works: He consistently praises his own faculties and perspective. Furthermore, if one ponders upon the second meaning of self-criticism, it appears that it resembles with the conformity Nietzsche charges his contemporaries with, but in another context. Given the fact that Nietzsche does not conform to either the first or the second meaning of self-criticism, one might draw the hasty conclusion that he lacks self-criticism. Then one has missed a crucial point in Nietzsche's philosophy, something that he calls attention to more than one time in *Ecce Homo*: His mission is to *revaluate all valuations*. As has been evident throughout this discussion, all concepts such as truth, knowledge, critical thinking, and so on have a totally new meaning in the Nietzschean context. Hence it follows naturally that also self-criticism is re-conceptualized when considered in light of Nietzsche. Nietzsche's self-criticism is perhaps best described as being a conversed version of the second conventional meaning of self-criticism. He is indeed critically aware of his actions, attitudes, and policies, yet in order to comply with his duty of being *uncongenial* to the movements of his time. Apparently, the Nietzschean character of self-criticism does not allow for critical understanding, inasmuch as there are no possibilities for letting other horizons in. The ultimate consequence of Nietzsche's lack of critical understanding, and hence self-criticism in its conventional meaning, is that he contradicts his own purpose of being the most powerful perspective and locks himself out of the power game. Refusing to let other horizons in, deprives Nietzsche's perspective of all its possibilities to be acknowledged, which is fundamental for domination. Inasmuch as Nietzsche makes his perspective so unquestionably repudiated from all others, he annihilates the fundamental relationship to them at the same time. The consequence of proceeding in such manner is that he cannot dominate any others, because there is no power without mutual relationships. Against this background, it appears that Nietzsche was left alone with his critical view, and that he did not manage to say "where to" and "what for" to the contemporary people of his lifetime. There is no doubt, however, that Nietzsche's philosophy is a viable contribution to the historical development of critical thinking. One might, however, ask what value such critical thinking has for the individual himself. In Nietzsche's case, it deprived him of his instinct of self-preservation, as it consumed him. Nietzsche's response to this would probably be that it was his fate to be in conflict with the whole world, and that he therefore preserved himself perfectly.

Nietzsche's contribution to the development of critical thinking appears to be the meaning he gives to perspectivism. Perspectives are important in scholarship, inasmuch as they create the essential scope of "between", in which critical thinking can develop. Too much similar thinking narrows the scope, and hence hampers critical thinking. Too great a distinction between perspectives also hampers critical thinking, as the scope becomes an unbridgeable gulf that does not allow for critical interaction, as was the case in Nietzsche's approach. In the latter case, individuals can see beyond their own horizons, but they cannot reach them, which can be construed as a limitation associated with the Nietzschean perspective.

Critical Thinking in Pragmatism

Explanatory interpretation and understanding as tools for reflection

So far, only European philosophers have been reviewed. Across the Atlantic, in the USA, however, Dewey constituted a landmark in philosophy as well as in education with his pragmatic philosophy. Even though Dewey is not the founder of pragmatism, (but Peirce), Dewey's philosophy was selected for discussion here for two reasons. Firstly, Dewey's philosophy is still an active inspiration source in educational contexts, and secondly, Dewey directly treats the issue of critical thinking. In fact, Dewey is the first, among the philosophers previously discussed, who literally refers to critical thinking, so he has a special position in the historical development of this concept. It should be mentioned, however, that Dewey more often refers to 'reflective thinking' in his texts. Dewey uses the concepts of critical thinking and reflective thinking in an intertwining way, without explicitly distinguishing between them. Therefore, it is possible to construe that critical thinking, in Dewey's sense, is tantamount to reflective thinking. In 1910 Dewey published *How We Think*, a work directed to teachers in order to demonstrate "...that the native and unspoiled attitude of childhood, marked by ardent curiosity, fertile imagination, and love of experimental inquiry, is near, very near, to the attitude of the scientific mind." (Dewey, 1997, Preface, vii). Although *How We Think* aims at facilitating the development of critical thinking in children and young people, Dewey's definition of critical thinking has its foundation in adult critical thinking, in accordance with his pragmatic educational view. Inasmuch as pragmatic educational concerns focus future utility in learning, the process should be determined by its goal. Given the fact that Dewey makes his view of critical thinking explicit in its complete form, it appears that *How We Think* is highly relevant when discussing critical thinking in scholarship, even if the aim of his work is in educating children and young people.

Whereas Hegel and Comte analyze the development of the human mind in a wide historical context, Dewey (1997) delimits his analysis to a narrower scope, delivering a rather cognitive perspective on critical thinking. As it appears in *How We Think*, critical thinking is depicted as a universal skill that could apparently be trained into perfection by following certain guidelines. Accordingly, Dewey offers a more instrumental view of critical thinking, in which the individual proceeds from mere perceptions, to reflective observations, where alternative conclusions arise, and finally one of the conclusions is assessed to be the most appropriate. In order to understand Dewey's conceptualization of critical thinking, his definition of thought as such should be considered. According to Dewey, there are four senses of thought. In its most primitive and common meaning, thought corresponds to anything that crosses the mind. Thought could also mean things that are not directly accessible for the senses at the moment, for instance, thinking of the sun when it is night. In its third sense, thought is tantamount to beliefs, such as believing that the world is

flat. Believing that the world is flat is a sense of thought that could be divided into two categories. On the one hand, one can believe that the world is flat just because it seems credible. On the other hand, one can scrutiny whether one's belief corresponds to the truth before settling it as a belief. Then it will turn out that the world is not flat after all, but round. The latter form of thought, being beliefs supported by reflective reasoning, answers to the fourth, and most aspired, sense of thought: reflective thought. Dewey defines reflective thought, and hence critical thinking, in a certain way:

> Active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it, and the further conclusions to which it tends, constitutes reflective thought. (Dewey, 1997, Part I: I: §I, p. 6)

The different senses of thought are, however, not distinct from one another, but instead coincide with each other. Accordingly, reflective thought involves all the senses of thought. The crucial question is: What drives thinking towards reflective thought? According to Dewey, reflective thinking starts with a state of uncertainty, when one's earlier beliefs are not satisfactory anymore. This state of uncertainty is dependent on the individual's interaction with his or her surrounding, which implies that it has its foundation in immediate experiences. When something occurs that makes the individual react – and act – in a reflective way, he or she starts to reflect upon what facts are of relevance in the given situation, in order to understand it. Guided by these facts, the individual forms alternative explanations to the occurrence, which are based upon non-concurrent facts brought from the individual's earlier experiences and previous knowledge. Weighing the pros and cons, one solution will turn out to be the most appropriate. The chosen solution will appear to be the correct one, if there is a logical relationship between the problem and the solution, in a way that makes the problem determine the end, and makes the end settle the process of thinking:

> ...a question to be answered, an ambiguity to be resolved, sets up an end and holds the current of ideas to a definite channel. Every suggested conclusion is tested by its reference to this regulating end, by its pertinence to the problem in hand. This need of straightening out a perplexity also controls the kind of inquiry undertaken. [...] *The problem fixes the end of thought* and *the end controls the process of thinking*. (Dewey, 1997, Part I: I: § 3, p. 11-12)

There are several important aspects to consider here in order to understand the meaning of Dewey's conceptualization of critical thinking. First of all, critical thinking has always its starting point in immediate experiences of a perplexing kind. Thus critical thinking is dependent on outer forces for its existence, rather than on an inner will or affection for thinking critically. If there is no experienced problem, the individual will not think critically. Hence, to make pupils see problems and experience their beliefs as unsatisfactory is one of the crucial tasks of teaching, accord-

ing to Dewey. Secondly, the immediate perplexing experience that awakens critical thinking makes the individual discern certain facts of relevance. Reflecting upon Dewey's understanding of 'relevant facts', it appears that Dewey refers to objective facts that are preconditioned by the situation itself. For instance, Dewey exemplifies the assessment of facts by pointing to certain occurrences that occur independently of human influence (or at least have the power to occur without human influence), such as changes of weather and physical laws. The crucial point is that Dewey shows the same tendency when discussing the meaning of reflective thinking, and hence critical thinking. He picks out facts, which he considers to be relevant when defining critical thinking – within the frame of *his* horizon. Accordingly, it seems as if Dewey is not aware that his definition of critical thinking is framed within his own perspective, which is not as objective as he probably wants it to be. However, in the next phase of reflective thought, the individual looks for alternative solutions based upon earlier experience and previous knowledge. Dewey stresses an important fact here: that earlier experience and previous knowledge are fundamental for the quality of critical thinking. On the one hand, earlier experience determines whether a situation is apprehended as perplexing at all in relation to what one expects to happen. On the other hand, earlier experience is decisive for how one interacts with an issue in a certain situation, and hence how one thinks critically about it. Given the fact that contemporary relativistic philosophers who discuss the issue of critical thinking, often relate to Dewey, one might consider his philosophy as a "relativistic" approach to knowledge. It will turn out, however, that Dewey's approach to knowledge is rather absolute after all, inasmuch as he argues that there is one correct answer to each question. This fact is something that Dewey points to over and over again in *How We Think*: reflective thought is signified by each question preconditioning the next one, in an organized consecutive order, and this chain of questions will lead to the right answer – on the assumption that the critical thinker has adequate previous knowledge. The process of inquiry must not be over-simplified, however, inasmuch as Dewey points out that the true critical thinker tests as many conclusions as he or she can possibly seize, before any conclusion is considered to be the right one. Even then, when coming to an end of the inquiry, the premises may still be questioned in Dewey's point of view. Therefore, it is rather Dewey's belief in an existing absolute truth that makes him absolutistic in his knowledge approach, than his account of the critical thinking process. This is due to the fact that the question, rather than the answer, is in focus in Dewey's conceptualization of critical thinking, because it is by means of questions that knowledge develops. Hence, the critical thinker is always guided by further questions, because all reflective thoughts involve some lack of understanding:

> All judgment, all reflective inference, presupposes some lack of understanding, a partial absence of meaning. (Dewey, 1997, Part II: IX: §1: II, p. 119)

Accordingly, lack of understanding is due to "a partial absence of meaning", according to Dewey's point of view. In order to capture the meaning of things, one has to consider the "...(*i*) *definiteness* and *distinction* and (*ii*) *consistency* or *stability* of meaning..." (Dewey, 1997, Part II: IX: §2, p. 122). When a meaning is captured in its definiteness and consistency, it has become a concept and thereby an instrument "...(*i*) of identification, (*ii*) of supplementation, and (*iii*) of placing in a system." (ibid., §3, p. 126). Such identification, supplementation and system classification are made differently, dependent on the context and its applied language. For instance, metal is defined in one way in everyday language, but in a quite different way when defined within the realm of science. Whereas definitions of everyday concepts are based upon concrete experiences, the scientific concepts use abstract relations for their definitions. Dewey points to this fact by characterizing scientific definitions by their identification of causal relations in different ways: "Scientific definitions select *conditions of causation*, *production*, *and generation* as their characteristic material." (ibid., §5: 3, p. 133). At this point, the peak of Dewey's reasoning about critical thinking is reached. In order to think critically, and hence scientifically, the concrete must be transferred into abstract concepts that capture the causal relationships. The crucial thing is that, although education aims at developing abstract thinking, theoretical thinking may not be placed above practical thinking. According to Dewey, this is due to the fact that without founding theories in practice, thinking becomes an end in itself, with no other utilities than being a means for further abstract thinking. Abstract thinking should be seen as *one* possible end but not *the* end, as Dewey points out. Hence, the optimal condition for critical thinking to proceed, and hence what education should strive for, is, from Dewey's point of view, a balanced interaction between concrete and abstract thinking. According to Dewey, some people tend to be more concrete in their thinking, whereas others are more disposed to abstract thinking, but everyone has natural capacities for both types. Hence, all human beings have potential for thinking critically. It should be noted, however, that even though Dewey emphasizes a balance between practical and theoretical thinking, his characterization of critical thinking is primarily a movement from induction to deduction, since all reflective thinking originates from perplex concrete experiences.

Against this background, it is appropriate to ponder upon the meaning of Dewey's conceptualization of critical thinking. Critical thinking corresponds to reflective thinking, which implies that the premises of a certain knowledge or belief are considered as well as 'the further conclusions to which it tends'. This implies that there is, on the one hand, an exposition of a belief or piece of knowledge, constituting a "whole", which is supposed to be analyzed by the critical thinker, as regards the 'grounds supporting it'. In this process the critical thinker needs to make use of critical explanation, which can be deduced from the fact that critical thinking appears to be a consecutive reasoning. On the other hand, there is also a quality of critical interpretation in Dewey's conceptualization of critical thinking. This feature is apparent in two respects. In accordance with Gadamer, Dewey highlights the importance of

having a questioning approach. Furthermore, Dewey emphasizes the need for finding the *underlying* causes of a belief or piece of knowledge, as well as the *directions* of the premises towards the conclusions. Hence, Dewey calls for something, which is beyond what is already given, giving the original "whole" a certain meaning:

> All knowledge, all science, ...aims to grasp the meaning of objects and events, and this process always consists in taking them out of their apparent brute isolation as events, and finding them to be parts of some larger whole *suggested by them*, which, in turn, *accounts for, explains, interprets them ; i.e.* renders them significant. (Dewey, 1997, Part II: IX: §1:I, pp. 117-118)

It is noticeable, however, that Dewey does not expressively incorporate knowledge of humanity into the larger whole of concern. If he does, he apparently views human beings as objects rather than subjects. Contemplations of human aspects such as self-image and self-understanding, which are assumed to be important aspects of critical thinking, are totally absent in Dewey's conceptualization of critical thinking. Hence, considered as a whole, Dewey's conceptualization of critical thinking appears to be primarily a matter of causal thinking. Thus, critical interpretation is subordinated to critical explanation. However, the quality of critical understanding is also evident in *How We Think*. It can be found, for instance, in Dewey's assertion that all knowledge development is based upon misunderstandings in some sense. The individual understands some parts of an occurrence, but not the whole of it. Therefore, a gap arises between what is already understood and that which is not yet understood, raising an experienced need for reconciliation. The point is that Dewey emphasizes the importance of a having a sense of perplexity if critical thinking is to appear. This sense of perplexity is posited in the gap between the familiar horizon and the alien one, which entails that critical thinking in Dewey's understanding is a matter of encountering the alien. Otherwise critical thinking will not appear, which also points to critical understanding.

Even though Dewey's conceptualization of critical thinking could be partly characterized as critical interpretation, the interpretative character of his own critical thinking in *How We Think* is proportionately absent. Rather than propounding a questioning approach to his subject of concern, Dewey sets out his view of critical thinking in a quite ready-made manner. It seems as if he is convinced that his own inquiry has led him to the correct answer already, as regards the phenomenon of critical thinking. Of course, Dewey is certainly not the first philosopher in history to present a finite theory of the human mind and knowledge development, since his forerunners have all done the same thing in some way or another. The critical point is therefore not so much that Dewey's conceptualization of critical thinking is rather limited, but that it is already settled. Given the fact that Dewey fixes the meaning of critical thinking, he contradicts his own definition of critical and reflective thinking in *How We Think*, as being a constant questioning movement. Thence, an important consequence when adopting Dewey's conceptualization is that critical thinking itself

cannot be ultimately defined – at least not if one is going to think critically about critical thinking. As soon as critical thinking is defined, and one has arrived at the "correct" conceptualization of it, the critical movement in relation to the meaning of critical thinking itself will cease, just as when the world was not apprehended to be flat anymore, but round.

Even though Dewey explicitly introduces the term of critical thinking into history, and starts to reflect upon it as a phenomenon in itself, the conceptualization of his critical thinking is not really sensational in relation to his historical predecessors. He still holds a belief in an absolute truth, which could be reached by means of deductive reasoning, and this mainly gives critical thinking the nature of explanation. The idea that all critical thinking originates from immediate experience, and hence that critical thinking is a movement from induction to deduction, from the concrete to the abstract, is not historically new either. Among those who emphasize the importance of grounding knowledge in experience, Comte's positive philosophy is not so far from Dewey's thinking. Both Comte and Dewey view knowledge development as a movement from induction to deduction. Furthermore, both of them give the notion of critical thinking mainly an explanatory character, where critical thinking is a matter of identifying the correct relationships in a coherent whole. The difference between them is, however, that Comte does not search for causal relationships, as Dewey does, but Comte rather asks for correlations as such. Moreover, they also differ in that Dewey acknowledges the individual's preceding experience and previous knowledge as decisive for the critical thinking process, a fact that Comte leaves out of account. Dewey's philosophy is partly reminiscent of Hegel's thinking too, which is not so surprising, as it is known that Dewey was, among others, inspired by Hegel (Filosofilexikonet, 1988). Certainly, Dewey and Hegel share more points in common than those mentioned here. In relation to what has been discussed previously, however, the most salient point is that Dewey, like Hegel, views self-development as being both a process and result, while not distinguishing between the two. They have, however, different meanings of what such self-development would look like. Whereas Hegel's self-development is tantamount to the individual's increasing self-consciousness when approaching the Absolute Being, Dewey's self-development is rather a matter of attaining a questioning approach in order to deal with perplexing experiences, which are not immediately understood. Even though the meaning of self-development is quite different in Hegel's and Dewey's philosophies, both of them emphasize reflection as the means for arriving at the truth, true self-development. To conclude, it appears that Dewey's conceptualization of critical thinking is a complex composition of interpretation, explanation, and understanding, as well as abstraction, all the four cornerstones of critical thinking. Inasmuch as explanation is the comprehensive aim of reasoning, from Dewey's point of view, the aspects of interpretation and understanding become subordinated to explanation. Accordingly, critical thinking, in the spirit of Dewey, seems to be primarily and above all, a matter of *explanatory* interpretation and understanding, as tools for reflection.

Critical Thinking in the Later Wittgenstein

Explanatory description as a tool for discovering language games

So far, epistemology, religion, nature, science, and humanity itself have been subjects for scholarly critical thinking. Even though there are some philosophers, such as Nietzsche and Dewey, for instance, who have partly contemplated language as an important factor to consider in relation to human acts, language itself has not been a subject of methodological scrutiny. During the first half of the twentieth century, however, the movement of analytical philosophy[22] made such an effort, which has lasted until today. Among the range of analytical philosophers, Wittgenstein is one of the leading figures. Wittgenstein is usually referred to as the earlier and the later Wittgenstein respectively, since he changed his view of language and meaning quite radically during his lifetime. The earlier Wittgenstein views language as a means for thinking, and as a tool for representing reality. In his first publication, *Tractatus Logico-Philosophicus*, Wittgenstein presupposes that a proposition represents reality by its parts, which each of them, have direct access to reality, when considered in their elementary form. More precisely, the earlier Wittgenstein turns attention to the *relationships* between the parts, stating that in them the truth about reality becomes manifest. The later Wittgenstein abandons his earlier view, however, and develops a new approach to language and meaning. Instead of deducing language from logical principles, as shown in his *Tractatus Logico-Philosophicus*, Wittgenstein searches for language-games, involving a concern for the practical and context-dependent use of the rules of language (Filosofilexikonet, 1988). Hence, by introducing the concept of language-games, the later Wittgenstein turns his focus to how language is *used*, and what different meanings originate from one and the same proposition when considering it in the context of different language-games.

In the following, attention will be given to two of Wittgenstein's works, *The Blue and Brown Books*[23], and *On Certainty*, with a focus on the latter. The former was chosen because it gives a comparatively clear picture of Wittgenstein's conceptualization of language-games, which is fundamental for understanding his reasoning in

22 Even though analytical philosophy is not a homogeneous movement, there are some fundamental ideas that keep this wide philosophical approach together. First of all, analytical philosophy dissociates itself from metaphysical system-thinking. Secondly, focus is turned to the meaning of the expressions used in philosophical problem formulations. Hence, the analytical philosophers were the first ones in history to put emphasis on concept analysis, using it as a method. Thirdly, according to analytical philosophy, the systematic thinking in philosophy is only valid in relation to its method, which is why there is no need for considering the whole when analyzing specific problems. Finally, analytical philosophy is based upon an empirical approach (Filosofilexikonet, 1988).

23 *The Blue and Brown Books* in fact consists of two independent works, *The Blue Book* and *The Brown Book*, respectively, which are put together. They treat the same issue, even though there are some changes in thought between them. In the forthcoming discussion of *The Blue and Brown Books*, it will therefore be noted which one of the books is referred to.

On Certainty and in other later works. On the other hand, *On Certainty* was chosen because of its relevance for this thesis, inasmuch as it treats the issues of knowledge and certainty. More specifically, *On Certainty* is based upon Wittgenstein's response to some aspects of Moore's[24] thinking. With a critical approach, Wittgenstein problematizes Moore's propositions about that of which one can be absolutely certain, such as "here is one hand". Wittgenstein points out that just because it *seems* as if there is a hand, it does not necessarily follow that there *is* a hand. Propositions of this kind are thoroughly analyzed in *On Certainty*, with the conclusion that at least some certainty is needed if one could be reasonably uncertain of anything. Before beginning Wittgenstein's analysis of knowledge and certainty, however, attention will be given to his conceptualization of language-games, while *The Blue and Brown Books* will be discussed first.

According to Wittgenstein, there are "...a number of tendencies connected with particular philosophical confusions." (Wittgenstein, 1984, The Blue Book, p. 17), which could be derived from the philosophical endeavor to achieve generality. The first is founded in the philosopher's inclination to search for common qualities when approaching phenomena, with the intention of classifying them under general terms. There is also a tendency to believe that knowing the general term of something, such as "leaf", is the same thing as possessing a "...general picture of a leaf, as opposed to pictures of particular leaves." (ibid., p. 18). The latter tendency is related to the next one, being the idea that learning general concepts is a matter of confusing two mental states, the one being the general idea of e.g. a leaf, and the other being consciousness of a concrete leaf. The fourth, and last, tendency for thinking in terms of generality has its roots in the method of science. In Wittgenstein's point of view, philosophy should be "purely descriptive", rather than being generalizing or explaining, because a generalizing and explaining approach belongs to science and not to philosophy. Notwithstanding, there is a tendency among philosophers to adopt a scientific approach with its generalizing explanations, which can be observed in metaphysics, for instance:

> Our craving for generality has another main source: our preoccupation with the method of science. I mean the method of reducing the explanation of natural phenomena to the smallest possible number of primitive natural laws; and, in mathematics, of unifying the treatment of different topics by using a generalization. Philosophers constantly see the method of science before their eyes, and are irresistibly tempted to ask and answer questions in the way science does. This tendency is the real source of metaphysics, and leads the philosopher into complete darkness. I want to say here that it can never be our job to reduce anything to anything, or to explain anything. Philosophy really is 'purely descriptive'. (Wittgenstein, 1984, The Blue Book, p. 18)

Stating that philosophy is "purely descriptive" and that it should neither be generalizing nor explaining, paves the way for Wittgenstein's idea that concepts do not

24 G. E. Moore is one of the founders of analytical philosophy.

have anything in common and that it is, therefore, not possible to classify them into general concepts. Thus, the generality of general concepts is an ascribed quality, and, hence, the generality of general concepts is just a myth. Accordingly, rather than thinking in terms of generality, one should think of family likenesses between phenomena, in Wittgenstein's point of view:

> - We are inclined to think that there must be something in common to all games, say, and that this common property is the justification for applying the general term "game" to the various games; whereas games form a *family* the members of which have family likenesses. Some of them have the same nose, others the same eyebrows and others again the same way of walking; and these likenesses overlap. (Wittgenstein, 1984, The Blue Book, p. 17)

This implies that one and the same concept involves an infinite range of meanings, which in some way or another are suggestive of one another. The crucial point is, according to Wittgenstein, that philosophy has a contempt for the specific. Rather than appreciating the value of specific meanings of a concept, philosophers strive for an imaginary generality, which does not exist, Wittgenstein points out. As long as philosophers aspire to generality, they will never understand the meaning of a concept, because only the specific instances will make the meaning of the concept become manifest. This is due to the fact that the meaning of the concept appears only when one considers the different settings in which the concept is *used*. Against this background, Wittgenstein develops his conceptualization of language-games. Language-games, in Wittgenstein's sense, are constituted by certain rules, meanings, expressions and family likenesses. Language-games should not be regarded as being parts of a single language, but as composing complete systems that function independently of one another:

> We are not, however, regarding the language-games...as incomplete parts of a language, but as languages complete in themselves, as complete systems of human communication. (Wittgenstein, 1984, The Brown Book, p. 81)

Basically, what distinguishes any language-game from another is its set of rules. Roughly defined, rules are something that are "applied repeatedly, in an indefinite number of instances" (Wittgenstein, 1984, The Brown Book, p. 96). The rules make people speak and act in certain ways, appropriate to the specific language-game. The rules are implicit, but make themselves manifest in different expressions (both verbally and non-verbally). Thus, the same rule can have a range of different expressions within one and the same language-game. On the other hand, the same expression has different meanings when applied in other language-games, with other rules. Therefore, the meaning of the rules must be understood, if one is to be a part of a language-game. This is due to the fact that "...we should imagine the processes of saying and meaning to take place in two different spheres." (ibid., The Blue Book, p. 33).

Embedded in language-games is also the foundation of what is implicitly regarded as certain knowledge, that which has not to be questioned. Thus to question such knowledge would be to break the rules of the language-game, and hence to be outside of it. Accordingly, the language-game involves rules for what could be considered as uncertain as well. Both that which is known for sure, and that which forms a set of doubts, constitute systems in accordance with the specific language-game (Wittgenstein, 1972). Assuming that critical thinking in scholarship is, in some way or another, an expression of uncertainty, the consequences of Wittgenstein's reasoning are quite interesting. Primarily, it implies that there are limits for what one can think critically about, as well as limits as to how to think critically. Ultimately, the limits are dependent upon the rules of the language game. This fact is, however, not a new incident, inasmuch as the whole history of critical thinking in scholarship legitimizes Wittgenstein's thinking in this respect. Throughout the history of scholarship, different objects and ways of thinking critically have been accepted. On the other hand, other objects and ways have been rejected, while yet others have received no attention at all. Rather, the crucial point is that critical thinking gets a special meaning, when considered it in the light of Wittgenstein. Critical thinking becomes a phenomenon that appears between the maintenance and reconstruction of rules of the language-game. In scholarship the rules are maintained within paradigms, by using certain theories and methods. What constitutes the rules is, however, dependent on the ontological and epistemological underpinnings of the paradigm. Thus, the theories and methods are only different expressions of the ontological and epistemological foundation. As long as the theories and methods are used in the same way, the rules of the language-game will remain unchanged. In that sense, critical thinking becomes a tool for excluding theories and methods that do not match the rules. This kind of critical thinking is caught in the realm of certainty, which arises from the ontological and epistemological grounds. Its aim is not new ways of thinking critically, but rather the maintenance of dogmatic approaches. Therefore, one might ask if it is appropriate to call this approach critical thinking. It will be apparent, however, that the aforementioned kind of thinking is a precondition for thinking critically in an emancipatory way – a kind of critical thinking, which has its origin in dissatisfaction with the existing system. Over time new "facts" are incorporated into the knowledge base of the paradigm. According to Wittgenstein, these newly acquired "facts" rock the rules and thereby give rise to new ways of using theories and methods. When this happens, the meanings of the concepts within the paradigm change, and hence the language-game itself develops into a new shape. This in turn develops new theories and methods, given that there will be new expressions for the changed rules. Accordingly, a new paradigm is born:

61. ...A meaning of a word is a kind of employment of it. For it is what we learn when the word is incorporated into our language.

62. That is why there exists a correspondence between the concepts 'rule' and 'meaning'.

63. If we imagine the facts otherwise than as they are, certain language-games lose some of their importance, while others become important. And in this way there is an alteration – a gradual one – in the use of the vocabulary of a language.

65. When language-games change, then there is a change in concepts and with the concepts the meanings of words change.

(Wittgenstein, 1972, p. 10e)

To summarize this discussion, we may conclude that critical thinking is no longer an excluding phenomenon, but a rather including one. Each "fact" is critically considered and incorporated into the language-game, giving rise to new meanings and a reconstruction of the rules. The incorporation of new "facts" causes a sense of uncertainty, inasmuch as the present knowledge base is no longer satisfactory for understanding phenomena. This movement, from one language-game to another, starts from uncertainty, although it has its foundation in certainty. This is due to the fact that, according to Wittgenstein, human beings are always captured within language-games and cannot go beyond them – and language-games are always based upon a foundation of certainty, which constitutes the limits of meaning. Hence, certainty is the condition for uncertainty, inasmuch as the meaning of something starts from certainty. Without a sense of certainty, there would not be a possibility to grasp the meaning. Neither would understanding be apparent. In fact, the possibility of doubting at all, presupposes certainty:

114. If you are not certain of any fact, you cannot be certain of the meaning of your words either.

115. If you tried to doubt everything you would not get as far as doubting anything. The game of doubting itself presupposes certainty.

(Wittgenstein, 1972, pp. 17e-18e)

Thus, in order to think critically, there must be at least some point of certainty, from which doubt can start, otherwise it will lack meaning. As soon as the new language-game is developed, however, it will enclose itself again. The uncertain movement aims at certainty, and thereby the establishment of new rules. Once again, critical

thinking will be an excluding phenomenon, in order to build up the new language-game. Against this background it seems as if critical thinking is a phenomenon that hovers between certainty and uncertainty, between maintenance and reconstruction of the rules of language-games.

It is a quite difficult task to characterize the kind of critical thinking that appears in relation to Wittgenstein's philosophy. On the one hand, one might say that the most prominent feature in the aforementioned works is critical thinking as critical understanding, when framing critical understanding into a specific meaning. Wittgenstein emphasizes the existence of language-games, and how language-games develop by incorporating new "facts" into their realm of rules and expressions. These "facts" could be viewed as fragments of alien horizons, which are fused into the familiar horizon of the language-game, and thereby give the whole language-game a new meaning. The fusion of horizons appears, however, merely in the language-games, rather than in the individual, when considering the meaning of Wittgenstein's philosophy. Thus, the subject does not hold a prominent position, which is a precondition for critical understanding. As regards critical interpretation, one is left in the same ambiguous position. To a certain extent, one might say that Wittgenstein displays critical interpretation, in that he asks for the meanings of concepts. Regarding Gadamer's criteria for critical interpretation, however, it appears that critical interpretation demands more than that. Critical interpretation means to go beyond what is already given, in order to find the concealed meaning of the text. It also means to be aware of the underlying interests which direct one's readings. Furthermore, the questions should be in focus, rather than the answers. In a sense, one might say that Wittgenstein searches for the concealed meaning of concepts by constantly searching for new ways how concepts are used. Each undiscovered use of a concept then constitutes its concealed meaning. Since Wittgenstein holds that there is an infinite range of possibilities for how a concept could be used, the answer of the meaning of a concept will never be complete. Hence, the questions of still other ways of how a concept is used will drive the inquiry further, in a sense that places the questions prior to the answers. Even though these qualities in Wittgenstein's philosophy are compatible with critical interpretation, the lack of subjectivity interferes with characterizing it as being completely critically interpretative. Without subjectivity, it is not possible to capture the underlying intentions that direct the interpretation of the concepts. It should be mentioned, however, that the issues of intention and interpretation have not been overlooked by Wittgenstein. According to the later Wittgenstein, the application of a rule cannot be preceded by a subjective interpretation, because then the rules would not direct the practice, but instead the individuals would. Thus, the maintenance of rules is governed by the practice itself (Filosofilexikonet, 1988). Hence, the intentions are embedded in the practice rather than in the subject, from Wittgenstein's point of view. However, pondering further upon the meaning of critical thinking in Wittgenstein's philosophy, one starts wondering if it is perhaps best characterized as explanatory. As we have previously argued

with respect to critical understanding and critical interpretation, the answer is partly yes, partly no. If one considers how Wittgenstein conveys his arguments, his critical thinking amounts mostly to critical explanation, where each proposition preconditions the next one (although seldom in a consecutive order). Recalling Wittgenstein's claim that philosophy should not explain anything, but only science should, is, however, an indication of a lack of critical explanation. All these difficulties with characterizing critical thinking, as it appears in Wittgenstein's works, could be understood against the background of Wittgenstein's delimitations. Philosophy in Wittgenstein's sense is a matter of descriptive analysis of concepts within language-games, an analysis dissociated from subjectivity. It appears that the rules of Wittgenstein's language-game exclude the possibility of characterizing critical thinking in hermeneutic-phenomenological terms. Ironically, or perhaps amusingly (depending on the way one looks at it), Wittgenstein would probably nod and say that the meaning of critical thinking in the hermeneutic-phenomenological language-game is not transferable to the meaning of critical thinking in his language-game, due to the fact that there is no such thing as general features of critical thinking. One point to Wittgenstein. Without letting oneself be discouraged, however, Wittgenstein's critical thinking could be described as explanatory descriptive. This explanatory feature should, however, only be associated with the internal relationship between concepts. Therefore, the explanation is not valid beyond the propositional context. One point to me.

Against this background it seems as if Wittgenstein's main contribution to the development of critical thinking in scholarship is his emphasis on language. From being merely a tool for expressing critical thoughts, language itself has become a subject of critical scrutiny. Based upon the idea of language-games, the meanings of linguistic propositions are no longer self-explanatory, but they have to be critically explored. Wittgenstein also points to a need for a balance between certainty and uncertainty, which is fundamental for the existence of critical thinking.

Critical Thinking in Critical Rationalism

Explanation as a tool for self-criticism between deduction and induction

With Popper at the head of critical rationalism, epistemology, and scholarship as well, took a new turn. Whereas epistemological concerns have, hitherto, been mainly a matter of confirming the truth, Popper's (2004) philosophy works in the other direction. Instead of trying to confirm theories, he maintains that one should expose them to challenging hypotheses in order to falsify them. Only those theories which still stand up after severe tests, can be considered to be contemporarily reliable, in Popper's point of view. Thereby Popper contributes to the foundation of the hypothetical-deductive method. This radically different approach to knowledge is developed and expressed in Popper's magnum opus, *The Logic of Scientific Discovery*.

The reason for choosing to discuss *The Logic of Scientific Discovery*, in preference to other equally relevant works of Popper, is that it gives a clear picture of his renowned theory of falsifiability. In *The Logic of Scientific Discovery*, Popper brings forth a quite complex reasoning, which cannot be rendered in detail here. Rather, some principal points will be highlighted, in an attempt to capture the overall meaning of his theory.

The Logic of Scientific Discovery takes its origin in two crucial questions: What constitutes that which is called 'empirical science', and what are the 'methods of empirical sciences'? According to Popper, 'empirical science' is commonly characterized by its use of 'inductive methods'. Considering the consequences of using 'inductive methods', however, Popper systematically subverts the common way of demarcating 'empirical science' as well as the legitimization of 'inductive methods' for knowledge development. Underpinned by Hume's philosophy, Popper points out the problem with induction: "...no matter how many instances of white swans we may have observed, this does not justify the conclusion that *all* swans are white." (Popper, 2004, 1: 4, p. 4). Accordingly, there is no logic in drawing general conclusions from singular statements, such as observations or experiments, inasmuch as singular statements cannot tell anything beyond themselves. It becomes clear that approaching certain knowledge by means of cumulative data collection, only leads to an infinite process, in which one is no more certain than one was from the very beginning. Thus the problem with 'empirical science' and its use of 'inductive methods' is the lack of demarcation.

Against this background, Popper makes several demarcating standpoints, in order to develop his theory of falsifiability. First of all, he makes a marked distinction between metaphysics, on the one hand, and empirical science on the other, making it clear that his theory is demarcated to empirical science only. Even though Popper points out that metaphysical concerns lie beyond his field, he does not depreciate the value of metaphysics. Rather, he views it as an essential part of scholarly development. The difference between metaphysics and empirical science is, according to Popper, that metaphysics deals with questions of a non-testable kind, such as probability statements and whether natural laws exist or not. Even Popper's own theory of falsifiability could be considered metaphysical, inasmuch as it cannot be falsified. Empirical sciences, on the other hand, are distinguished by the fact that their hypotheses can be tested by experience. This demarcation is interesting, since Popper thereby places positivism[25], with its foundational belief in laws, into the realm of metaphysics too, despite the positivists own repudiation of metaphysics. By defining empirical sciences by their possibility of testing theories, Popper is able to initiate his theory of falsifiability. When approaching Popper's theory of falsifiability, it is important to know his standpoint that theories can never be verified, but only

25 Popper refers to logical positivism, when criticizing 'positivism'. Logical positivism should not be confounded with Comte's classical positivism, although the approaches have common basic principles.

corroborated. A theory becomes corroborated when it still stands up after severe tests. Corroboration implies that the theory is considered to be temporarily reliable, until a test falsifies it and thereby shows that it is not true. In order to test a theory, hypotheses, which can be tested by experience, are set up and put into practice. If the theory is corroborated by the hypotheses, it is considered to be valid until it is either falsified, or superseded by another, more universal, theory, in which the former theory can be incorporated. Among the range of theories, the chosen theory is not only the one which has survived severe tests, "but the one which is also testable in the most rigorous way." (Popper, 2004, 5:30, p. 91). Thus the most important quality of a theory is, in Popper's point of view, its testability, inasmuch as only then does it meet the criteria of falsifiability. Popper does not, however, claim that exactly every hypothesis must be tested before a theory can be regarded as being corroborated, but every hypothesis must necessarily need to be testable, otherwise the theory itself does not meet the criteria of testable demarcation.

Popper develops his theory further by setting down criteria for what constitutes an empirical theoretical system:

> First, it must be *synthetic*, so that it may represent a non-contradictory, a *possible* world. Secondly, it must satisfy the criterion of demarcation..., *i.e.* it must not be metaphysical, but must represent a world of possible experience. Thirdly, it must be a system distinguished in some way from other such systems as the one which represents our world of experience. (Popper, 2004, 1:5, pp. 16-17)

In order to understand this quotation properly, some explanation is needed. Stating that the empirical theoretical system must be synthetic refers to synthetic statements, which are assertions about reality. Accordingly, 'a possible world', means the real world, of which there is only one, in Popper's point of view. The real world, in turn, is that world which stems from experience. Inasmuch as the real world is the experienced world, experience itself must be the criterion for knowledge development. Thereby Popper elects experience as the method of empirical sciences. Consequently, in order to test an empirical theoretical system, it must be possible to refute it by experience. The latter statement corresponds to the 'criterion of demarcation', and constitutes the foundation of Popper's theory of falsifiability as a whole. Even though Popper states that there is only one possible world, he does not say that it is desirable that science should approach this world from the same angle, which Comte would say, for instance. Quite the reverse, Popper emphasizes the importance of different perspectives, as well as different theoretical concerns in science. Reflecting upon the meaning of Popper's position, however, it appears that the different perspectives which he advocates to keep alive in science are not related to subjectivity, but rather to science itself. It is a matter of "perceptual perspectivism", where the different perspectives correspond to special paradigms, theories and methods, rather than subjective interpretations. Theories are the tools for understanding the world

in rational, explaining terms. It is by means of theories that science has a possibility to master the world:

> Theories are nets cast to catch what we call 'the world': to rationalize, to explain, and to master it. We endeavour to make the mesh ever finer and finer. (Popper, 2004, 3:11, pp. 37-38)

Since all science is biased by different theoretical points of view, Popper holds that the result of science is utmost dependent on the scientists' theoretical ideas and activity:

> Even the careful and sober testing of our ideas by experience is in its turn inspired by ideas: experiment is planned action in which every step is guided by theory. [...] It is we who always formulate the questions to be put to nature; it is we who try again and again to put these question so as to elicit a clear-cut 'yes' or 'no' (for nature does not give an answer unless pressed for it). And in the end, it is again we who give the answer; it is we ourselves who, after severe scrutiny, decide upon the answer to the question which we put to nature – after protracted and earnest attempts to elicit from her an unequivocal 'no'. (Popper, 2004, 10:85, p. 280)

The latter sentence in the quotation above is crucial for Popper's philosophy, because the scientist cannot be certain of anything but a 'no'. A corroborated theory, which stands up after severe tests, can still be falsified, and is therefore not completely reliable. A repudiated theory, however, cannot become true, but is always false, and hence certain. Against this background, falsified theories could be considered to have more value than non-falsified ones. Popper emphasizes the importance, however, of being satisfied with a corroborated theory, which has passed through severe tests. Without stopping to test a theory, and become temporarily satisfied with the result, the process becomes meaningless:

> Every test of a theory, whether resulting in its corroboration or falsification, must stop at some basic statement or other which we *decide to accept*. If we do not come to any decision, and do not accept some basic statement or other, then the test will have led nowhere. [...] Thus if the text is to lead us anywhere, nothing remains but to stop at some point or other and say that we are satisfied, for the time being. (Popper, 2004, 5:29, p. 86)

Against this background, it appears that Popper makes an important contribution to the development of critical thinking and scholarship as a whole. Even though Popper holds that it is not possible to attain the truth, he still believes that it is worth trying to get as close to the truth as possible, which occurs when one is 'satisfied, for the time being'. The way to do that goes through falsifiability, which implies that the critical thinker is expected to critically set up challenging hypotheses, which jeopardize the given theory. Given the fact that Popper makes no attempts to save theories, but rather to falsify them, he appears to dissociate himself from illusionary

truth. Accordingly, Popper claims to a considerable degree of self-criticism, where one is aware that everything one believes today can turn out to be false tomorrow. A hasty conclusion might be that Popper rather chooses to be uncertain, than being delusory certain. Pondering further upon the meaning of his theory, however, it appears that Popper actually searches for certainty by means of uncertainty. His belief in the existence of an absolute truth drives him to search for further knowledge, even though he knows that the truth will never be reached. Apparently, the balance between certainty and uncertainty is well adjusted in Popper's theory. Stating that the empirical scientist shall, in a balancing way, expose theories to the process of falsification, and furthermore judge when it is time to stop, points to a great amount of responsibility, an important character of critical thinking in scholarship. One cannot resign oneself to uncertainty, because the truth might be around the corner. Neither can one be satisfied with what one already knows, since empirical theories can always be falsified. Accordingly, the scientist has to be responsible for the advancement of science. Hence, if one wants to belong to science, in the way that Popper demarcates empirical science, one is left with a continuous sense of uncertainty and aspiration for certainty:

> The wrong view of science betrays itself in the craving to be right; for it is not his *possession* of knowledge, of irrefutable truth, that makes the man of science, but his persistent and recklessly critical quest for truth. (Popper, 2004, 10:85, p. 281)

Reflecting upon the characterization of critical thinking as it appears in *The Logic of Scientific Discovery*, we can conclude that it is plainly explanatory, both as regards its textual presentation, and its characterization of how empirical science should be carried out. The emphasis is on logic and deductive reasoning, which shall be tested by experience. Due to his ontological and epistemological starting point, Popper distances his theory from the possibility of being critically interpretative as well as critically understanding. Inasmuch as only the "real experienced world" shall be a subject of scrutiny in a non subjective way, there is scope for neither interpretation nor understanding. It is clear that Popper demarcates his theory to be valid in natural sciences only. As regards Popper's own thinking, however, it turns out to display some features of critical understanding as well. Many are those scientists and philosophers, who cross Popper's mind, when working out *The Logic of Scientific Discovery*. Some of them are rejected, whereas others are incorporated into Popper's own horizon. One cannot say, however, that Popper's incorporation of other horizons into his own increases his self-understanding in an expressive way. Rather, he keeps the fusion of horizons on a scientific level. It is a matter of a theoretical fusion, rather than a subjective synthesis, in a way that makes his critical understanding become explanatory. In that sense, Popper conforms to his view of science. Empirical science shall be objective, so that those with the same theoretical viewpoint will see the same thing, and will therefore falsify a theory on the same premises. Against this background it appears that Popper made an important contribution to the development

of critical thinking within the frame of natural sciences. The scientist shall not search for hypotheses which support an existing theory, but search for hypotheses which can refute it. Hence, Popper initiated scientific self-criticism into natural sciences, as regards the relationship between deduction and induction.

Critical Thinking in Postmodernism

Abstraction as a tool for explaining discourse in a critical understanding way

Coming to the end of this historical journey, Foucault will be the last stop. Foucault was chosen to constitute the end, because he is one of those philosophers who clearly compose a breach between the past and present times by guiding philosophy into the postmodern era. Of course, there are other great philosophers who did so as well, such as Lyotard, by introducing an accepted definition of postmodernism as a concept, and Derrida, by founding deconstructionism as a critique against metaphysics, and still others as well. Even though the importance of these philosophers cannot be over-estimated, as regards the birth and development of postmodern philosophy, none of them are so profoundly concerned with the history of science and its ideas, the scientific disciplines, and epistemic knowledge, as is Foucault. Therefore, Foucault, and his *The Archaeology of Knowledge*, was preferably selected to give a picture of how critical thinking might be characterized in a postmodern view. The forthcoming portrait of Foucault will differ from how Foucault is commonly interpreted, due to the fact that Foucault's concept of 'power' is excluded from my account. Someone once incredulously asked me: "Is it possible at all to talk about Foucault without treating his concept of 'power'?" As a matter of fact it is, if one limits the analysis of Foucault to his work of *The Archaeology of Knowledge*, since the concept of 'power' does not play an explicit or important role in this work. Rather, focus is put on methodological issues. "But still, should you not even mention 'power', inasmuch as 'power relationships' were the main subject of Foucault's life work?" No, I will not, because then I would not have grasped the address of *The Archaeology of Knowledge*. Discourses should be treated in their own appearances without any interpretative categorizations made in advance. Therefore, one should not search for 'power' in *The Archaeology of Knowledge* just because Foucault was the author of that work.

In *The Archaeology of Knowledge* Foucault (2006) brings up an interesting reasoning in which he integrates and clarifies two important aspects of his thinking by means of analyzing the history of science and knowledge, as regards their discursive formation. Thus one might say that the aim of *The Archaeology of Knowledge* is threefold: To elucidate his theoretical standpoint, to clarify and develop his specific analysis method, and to analyze the discursive domain of knowledge within the frame of the history of science, by means of his specific method, called 'archaeological' analy-

sis. With references to Nietzsche, Foucault emphasizes his theoretical and methodological starting-point, by pointing out that the analysis of history should no longer be a search for continuities or totalizations, but for discontinuities and dispersions. Hence, system thinking is abandoned by Foucault, which is why he levels criticism against phenomenology[26], structuralism, and Marx's philosophy as well. Foucault's criticism against system thinking is, however, demarcated to settled systems in which all elements constitute a consistent and rational whole, such in above mentioned perspectives. The systems that Foucault asks for are of a totally different kind. Rather than looking for coherences, Foucault searches for "systems of dispersion":

> ..instead of reconstituting *chains of inference* (as one often does in the history of the sciences or of philosophy), instead of drawing up *tables of differences* (as the linguists do), it [archeological analysis] would describe *systems of dispersion*. (Foucault, 2006, p. 41)

Due to the fact that systems of dispersion are the subject of Foucault's philosophy, the analysis of contradictions gets a central position. It is in light of the contradictions that discourses may be described in their diversity and dispersion, as well as in their appearance. The contradictions are anterior to the discourses, thereby constituting their nourishment. Therefore, Foucault points out, historical analysts should not keep on trying to reduce contradictions, which unavoidably arise when analyzing history. It is not really the contradictions themselves that are described by means of the 'archaeological' analysis, however, but the gaps between the contradictions. Why Foucault is interested in the gaps between the contradictions, rather than the contradictions themselves, will become clearer further on. For the moment, this specific direction of Foucault's analysis could be explained by the fact that Foucault puts his emphasis on the *relationships* between contradictions, and thereby his interest for the 'spaces of dissension', as he expresses it himself:

> By taking contradictions as objects to be described, archaeological analysis does not try to discover in their place a common form or theme, it tries to determinate the extent and form of the gap that separates them. In relation to a history of ideas that attempts to melt contradictions in the semi-nocturnal unity of an overall figure, or which attempts to transmute them into a general, abstract, uniform principle of interpretation or explanation, archaeology describes the different *spaces of dissension*. (Foucault, 2006, p. 170)

In order to get a picture of Foucault's archaeological method, a range of key concepts, embedded in his theory, must be understood. Firstly, one has to acquaint oneself with Foucault's conceptualization of the *statement*. The *statement*, in the sense

26 It should be mentioned, however, that there is a range of interpreters, who argue for the existence of phenomenological traits in Foucault's works, especially as regards his earlier works (e.g. see Dreyfus & Rubinow, 1983; Flores Morador, 2004; Han-Pile, 2005).

Foucault uses it, does not correspond to the logicians' proposition or the grammarians' sentence. Nor is it equivalent to the English analysts' conceptualization of the "speech act"[27]. Even though the *statement* cannot be identified with any of the mentioned units of discourse, all these units are imbued with *statements*, as parts of a discourse, because the *statements* constitute the condition for their existence as propositions, sentences or "speech acts", with certain meanings. One might say that the propositions, the sentences, and the "speech acts" embody the statements in a way that makes the otherwise invisible *statements* become visible. Foucault himself defines *statements* to be "the modality of existence" of the signs of the discourse (e.g. see Foucault, 2006, p. 120). Furthermore, describing a *statement* is a matter of "defining the conditions in which the function that gave a series of signs...an existence, and a specific existence, can operate." (ibid. p. 122). Thus the *statement* has an existential function of the discourse, and therefore constitutes the condition for the existence of the discourse and its enunciation as such. With references to Aquinas, the *statement* could be considered to be the esse of discourse (its act of being), rather than being the essence, since Foucault makes a point of the fact that statements are not comparable to be the structure of the discourse:

> ...the statement is not the same kind of unit as the sentence, the proposition, or the speech act; it cannot be referred therefore to the same criteria; but neither is it the same kind of unit as a material object, with its limits and independence.[...]The statement is not therefore a structure...; it is a function of existence that properly belongs to signs and on the basis of which one may then decide, through analysis or intuition, whether or not they 'make sense', according to what rule they follow one another or are juxtaposed, of what they are the sign, and what sort of act is carried out by their formulation (oral or written). (Foucault, 2006, p. 97)

The statement emerges and operates in different groups of signs of the discourse. These groups of signs are: a *referential*, a *subject*, an *associated field*, and a *materiality*, which all of them have special meanings. As regards *referential*, it refers to the 'principle of differentiation'. This principle is founded on the 'laws of possibility', what objects (in a very wide meaning of the word) could possibly be included in the discourse. Accordingly, the *referential* constitutes the very limits of the discourse, as regards its possibility of existence:

> The referential of the statement forms the place, the condition, the field of emergence, the authority to differentiate between individuals or objects, states of things and relations that are brought into play by the statement itself; it defines the possibilities of appearance and delimitation of that which gives meaning to the sentence...It is this group that characterizes the *enunciative* level of the formulation...(Foucault, 2006, p. 103)

27 The basic idea of the English analysts is that semantic studies must be based on the study of "speech acts". Generally speaking, the concept of "speech act" refers to such occurrences when a person expresses something that is attended to, in one way or another, by a second person (Filosofilexikonet, 1988).

Foucault's conceptualization of the *subject* has likewise an important meaning to grasp. The traditional view of the subject, in which the subject is bound to the corpus of the individual, is abandoned by Foucault. Rather, the subject is constituted by a position within the discourse, a position that different individuals may occupy. Accordingly, the discourse has many subject positions which may or may not be actualized at a given time. These positions could be occupied by one and the same individual as well. For instance, the doctor is the "questioning subject..., the listening subject..., the seeing subject..., [and] the observing subject..." (Foucault, 2006, p. 58), due to the discourse that the doctor moves in. Hence, the subject is not a coherent unit, but dispersed throughout the discourse. It is important to keep in mind that the different positions that the individual may occupy do not emerge because of the individual's own will to occupy such subject positions, but it is the discourse itself that allows their existence. Accordingly, Foucault makes a landmark here by pointing out that the subject is governed by the discourse, and not the reverse, which has been the conventional way to look at it. In respect to the *associated field*, it corresponds to "a domain of coexistence for other statements" (ibid., p. 129). Thus the *associated field* renders it possible for the enunciative level of discourses to change, because what Foucault seems to say here is that the *associated field* is a space in which different modalities of existence of signs occur. This implies that the esse of the discourse is transformable and that it can therefore take many shapes, and hence change in its enunciation. Finally, the sign of *materiality* refers to the theories or themes that emerge when analyzing different discourses through the history of ideas. For instance, an example of such a theme is the idea in eighteenth-century grammar that all languages derive from one and the same original language (see, ibid. p. 71). Although the theories or themes constitute the substance of the discourse, by edifying the foundation for certain concept formations, the theories and themes convey more than that. *Materiality* is "not only the substance or support of the articulation, but a status, rules of transcription, possibilities of use and re-use." (ibid., p. 129). Thereby it becomes comprehensible why Foucault conceptualizes theories and themes as the strategic choices of the discourse. Given the fact that *materiality* conveys a status with rules of transcription and possibilities for whether an articulation could be of use or not, one might say that *materiality* constitutes the limits for how the discourse is manifested in practice. Due to the existence of an *associated field*, however, the same discourse can enunciate itself differently, depending on how it is *materialized* within the *referential* field.

Accordingly, the different signs of the discourse, the *referential*, the *subject*, the *associated field*, and the *materiality* are connected to one another by relations of dependency. This cluster of relationships functions as 'prediscursive' rules, called *positivities*[28], as to how the discourse is enunciated and realized in the form of *statements*.

28 Even though Foucault introduces the concept of *prediscursive rules*, he soon abandons his use of this concept in favor of *positivity*, which seems to mean the same thing. The reason for mentioning *prediscursive rules* here, is that it facilitates understanding of what Foucault might be referring to when conceptualizing *positivity*.

Thus, it is these specific rules that individualize discourses from one another, since every discourse has its own set of rules. Putting focus on the *positivities* and their realization through the *statement*, Foucault works out his 'archaeological' analysis. Hence, in concise terms, the 'archaeological' analysis is a matter of defining "discourses as practices obeying certain rules" (ibid., p. 155) and to "define discourses in their specificity; to show in what way the set of rules that they put into operation is irreducible to any other" (ibid.). Foucault carefully points out that the 'archaeological' definition of discourses is nothing but descriptive. This description is not interpretative. It does not search for something beyond the discourse itself, such as a concealed meaning or the origin; instead the 'archaeology' is limited to analyzing discourses at the level of *statements* in their own appearances.

So far, a very brief depiction of the main principles in Foucault's thinking and 'archaeological' method has been made, which renders it possible to understand Foucault's analysis of science and knowledge. Against this description, *positivity* turned out to be the cluster of 'prediscursive' rules, which relates the different elements of a discourse (a referential, a subject, an associated field, and a materiality) to one another. Dwelling upon Foucault's conceptualization of knowledge (savoir)[29], we may discern that it belongs to the domain of *positivity*, when realized in the discursive practice:

> Knowledge is that of which one can speak in a discursive practice, and which is specified by that fact: the domain constituted by the different objects that will or will not acquire a scientific status [the referential]...; knowledge is also the space in which the subject may take up a position and speak of the objects with which he deals in his discourse [the subject]...; knowledge is also the field of coordination and subordination of statements in which concepts appear, and are defined applied and transformed [the associated field]...; lastly, knowledge is defined by the possibilities of use and appropriation offered by discourse [the materiality]. (Foucault, 2006, p. 201)

This definition of knowledge does not, however, necessarily imply that it is scientific. Rather, the kind of knowledge that Foucault identifies in the quotation above is that which constitutes the condition for scientific knowledge to exist. In order to become scientific, knowledge has to cross the *threshold of scientificity*[30], in which the discourse

29 In this sentence, 'knowledge' refers to the French *savoir*, which refers to knowledge in general. Foucault himself defines his use of *savoir* as: "the conditions that are necessary in a particular period for this or that type of object to be given to *connaissance* [scientific disciplinary knowledge] and for this or that enunciation to be formulated." (For quotation and further explanation, see Introduction: footnote 3, by the English translator: A. M. Sheridan Smith. In: Foucault, 2006, p. 16).

30 Foucault identifies four thresholds, which could be regarded as different emergences of discourse formation. These are *the threshold of positivity*, *the threshold of epistemologization*, *the threshold of scientificity*, and the *threshold of formalization*, which are best described by Foucault himself: "It is possible to describe several distinct emergences of a discursive formation. The moment at which a discursive practice achieves individuality and autonomy, the moment therefore at which a single system for the formation of statements is put into operation, or the moment at which this system

not only obeys the laws of positivity, but also the laws of construction. Stating that the scientific discourse obeys the laws of construction implies that the propositions of the discourse follow the same systematicity.

Once one has come so far in *The Archaeology of Knowledge*, the whole width of Foucault's archaeological analysis appears. Foucault is not satisfied with describing scientific discourses and their formations as such. Nor is he satisfied with describing knowledge as an entity with specific relationships to each science. What Foucault aims at in *The Archaeology of Knowledge* is to map out the different places, and hence conditions, in which each science emerges in the 'archaeological territory' of knowledge. While doing this, the relationships between the sciences and knowledge are revealed, which reveal that scientists from the same period, however conflicting their theses might be, actually talk about "...'the same thing', by placing themselves at 'the same level' or at 'the same distance, by deploying 'the same conceptual field', by opposing one another on 'the same field of battle'..." (Foucault, 2006, p. 142). By making such an analysis, it is also possible to discover the historical shifts in which a discourse is transformed into a new one, with a new set of rules. This specific analysis is the analysis of *episteme*. *Episteme* is defined by Foucault as being "the totality of relations that can be discovered, for a given period, between the sciences when one analyses them at the level of discursive regularities" (Foucault, 2006, p. 211). What is remarkable in Foucault's analysis of *episteme*, seen from a historical and philosophical point of view, is perhaps not so much that he introduces a new method as to how to analyze discourses in history, but that he manages to do so beyond the horizon of human consciousness. To free historical analyses from anthropologism is, in fact, one of Foucault's missions (e.g. see Foucault, 2006, p. 17). In order to understand Foucault's reason for rejecting every anthropological thought in his analysis, as well as in his conceptualization of discourse and knowledge, one has to view his reasoning against the background of Kant's philosophy, and the phenomenological movement that followed it. In his critical dialogue, which Foucault has with himself, it appears that the underlying aim of *The Arcaeology of Knowledge* is "...to free history from the grip of phenomenology" (ibid., p. 224), which has ensnared the history of ideas into the toils of transcendentalism and subjectivism. Due to the fact that history has hitherto traced humanity to the horizon of transcendentalism, with its ceaseless quest for the origin, and subjectivism, with its effect of making consciousness a sovereign

is transformed, might be called the *threshold of positivity*. When in the operation of a discursive formation, a group of statements is articulated, claims to validate (even unsuccessfully) norms of verification and coherence, and when it exercises a dominant function (as a model, a critique, or a verification) over knowledge, we will say that the discursive formation crosses a *threshold of epistemologization*. When the epistemological figure thus outlined obeys a number of formal criteria, when its statements comply not only with archaeological rules of formation, but also with certain laws for the construction of propositions, we will say that it has crossed a *threshold of scientificity*. And when this scientific discourse is able, in turn, to define the axioms necessary to it, the element that it uses, the propositional structures that are legitimate to it, and the transformations that it accepts, when it is thus able, taking itself as a starting-point, to deploy the formal edifice that it constitutes, we will say that it has crossed the *threshold of formalization*." (Foucault, 2006, p. 206).

source of knowledge, a range of historical discourses have been lost. Foucault points out that discourse should be treated "...as and when it occurs" (ibid., p. 28), which implies that the quest for the origin, as well as how the discourse is constituted by the subject are questions that lead the analysis away from what discourses actually are – discourses are practices: "to speak is to do something – something other than to express what one thinks; to translate what one knows, and something other than to play with the structures of a language[31]..." (ibid., p. 230). Pondering upon the meaning of Foucault's archaeology, we may conclude that in itself it excludes the importance of the subject as a conscious being who constitutes meaning. This is because Foucault is concerned with the field of positivity, the 'prediscursive rules', which are *unconscious* to the subject. No matter how the subject constitutes his or her world, the subject's constitution of meaning will nevertheless be unconsciously governed by the rules of the discourse. Given the fact that Foucault identifies positivity as playing the role of a 'historical a priori', one might criticize Foucault's attempt to get rid of transcendentalism and its stranglehold on the history of ideas. Are not the 'prediscursive rules', preceding discourse, just another transcendentalism like that which Kant and his fellows founded? If one limits transcendentalism to be a matter of structures that appear before experience, Foucault's reasoning is indeed transcendental. In contrast to Kant's transcendentalism, which aimed at categorizing the different a priori cognitions (among other things), however, Foucault's characterization of positivities is not universal, neither in space or time. This fact is something that Foucault points out more than once in *The Archaeology of Knowledge*; that any set of 'prediscursive' rules of a discourse is not transferable to the next one, because each discourse is unique. Foucault's 'transcendental' rules are not bound to the subject either, in the same way as the transcendentalism of Kant's philosophy and the following phenomenological movement are, but bound to the discourse itself instead.

Against this background, it appears that the most prominent aspect of critical thinking in *The Archaeology of Knowledge* is the feature of abstraction. The whole work calls for abstract thinking, as well as Foucault's own critical thinking progress, with its emphasis on relationships. It is notable that Foucault's philosophy, which works in an including way, keeping all contradictions together, argues for a manner of proceeding that fits well with the dialectical work of Ricoeur, even though the hermeneutic-phenomenological subject and its interpretative ability, has a central position in Ricoeur's philosophy. As regards critical explanation, interpretation, and understanding, however, it is more difficult to find features that relate to these aspects in Foucault's philosophy. These difficulties are due to the fact that critical thinking has lost its localization in the individual. Rather, critical thinking appears in the discourse itself. However, with *The Archaeology of Knowledge* in mind, one starts to ask the questions which have become so familiar by now: Is it a matter of

31 In this quotation, 'language' refers to the French *langue*, meaning natural languages, such as Swedish and English, in contrast to languages in a discursive meaning. (See also translator's footnote for further explanation in Chapter 1: footnote 1, p. 26)

explanatory critical thinking? Not really, because there is no attempt to make any deductive reasoning. Rather, Foucault offers a range of fragments illustrating how to view and analyze discourses in a totally new way, which in itself avoids conclusive thinking. On the other hand, Foucault emphasizes the importance of describing discourses just the way they are, at the level of statements, with no interpretations added. Foucault also creates a structural continuity in his analysis of discourses by identifying their elements, the referential, subject, associated field, and materiality, which could be viewed as an explanation of the discourse. These discursive explanations do not, however, appear as a result of the individual's critical thinking, but because the positivities allow them to. Hence, by revealing the positivities, the existence of the discourse becomes explained. One can play with the thought of which kind of positivities are governing the explanation of the analyzed discourse – the positivities of the analyzed discourse or the positivities of the 'archaeological discourse' (of which one is a part when analyzing another discourse by means of the 'archaeological' method)? The latter alternative highlights the fact that the 'archaeological' method is "a discourse about discourses" (Foucault, 2006, p. 226), which implies that it must necessarily posit its own set of 'prediscursive' rules. One is left in a quite ambiguous position, however, when trying to answer the previous question appropriately. Assuming that the 'archaeological discourse' has its own set of positivities, these positivities will constitute the condition allowing an explanation of the positivities of the analyzed discourse. Furthermore, if the positivities of 'archaeology' constitute the condition for explaining discourses, these explanations will not be posited in the analyzed discourses, but in the discourse of 'archaeology'. Hence, there is a methodological problem with Foucault's assertion that he analyzes discourses at their own level. It seems to me that his analysis of *episteme* is rather an analysis of the positivities of 'archaeology'. What Foucault is actually doing is to put the limits for what can or cannot be analyzed within the frame of science. These limits constitute the positivities of 'archaeology', in the shape of *episteme*.

Leaving this methodological ambiguity behind, one is left in another difficult position when considering the aspect of critical interpretation. Foucault states that 'archaeology' is not a matter of searching for the origin or the concealed meaning of discourses, but its only task is to be descriptive in order to discover the positivities and the gaps between discourses, revealing the relationships between discourses of a given time. Expressing it in Foucault's own words, the 'archaeological' method conveys a rather positivistic approach to discourses when his approach is limited to his method only[32]. Somehow, it seems as if Foucault is not really aware that his analyses, however convincing they might be, would almost certainly not show the

32 It should be mentioned that Foucault regrets his choice of words later on in *The Archaeology of Knowledge*. Foucault realizes that relating himself to 'positivism' might give the wrong picture of his philosophy, inasmuch as he dissociates himself from positivism in a fundamental way, as regards their aspiration for generality. I have, however, chosen to make use of his associations to positivism, inasmuch as it facilitates understanding his approach to his method.

same results if someone else performed the same analysis of the histories of madness and science, for instance. Thus it is questionable whether Foucault manages to avoid critical interpretation completely, although his reasoning in *The Archaeology of Knowledge* tells us to be merely descriptive at the statements' own level. Besides the fact that Foucault's own horizon and underlying interests are undoubtedly present in his 'archaeological' analysis, it could be characterized as being a kind of critical interpretation in respect to another aspect as well. Even though Foucault draws attention to the fact that he describes discourses at their own level, with no interpretations added, there is no doubt that he searches beyond what is already given, which is an important feature of critical interpretation. The positivities that he searches for are not immediately given, although they can be found when analyzing discourses on the level of statements. This is something that Foucault points out himself, saying that positivities are neither visible nor hidden. The latter refers to the concealed meaning, however, which is why Foucault claims that discovering positivities is not an interpretative task.

Coming to critical understanding, another difficulty arises, although it is traceable to the same source as before, the absence of the individual. Foucault makes it clear that he analyzes discourses on the level of statements and their positivities, in order to free his analysis from anthropologism. Even though the subject matter of his study is beyond human consciousness, Foucault cannot escape the fact that his analysis is a result of his own critical thinking. Furthermore, this specific critical thinking is imbued with a certain perspective, which encounters an alien horizon (the analyzed discourse). Of course, Foucault would probably say, every discourse, even the discourse of 'archeology', has a subject, although it is not the subject itself who governs the discourse, and hence the result. The subject's possibility of making an 'archaeological' analysis is totally dependent on the positivities preceding it. Thus, if human beings cannot govern discourses, their statements, or even their own thinking within a discourse – one might question what happens to critical thinking. Even critical thinking will be wrapped into the limits of the discourse. This has certain consequences for critical thinking as regards the individuals' responsibility for their critical action. A hasty conclusion might be that Foucault's philosophy deprives the individuals of their responsibility and critical thinking, inasmuch as they are subordinated to the rules of the discourse. Pondering further about the possibilities that are opened up by Foucault's archaeological analysis, however, it appears that the opposite occurs, although the meaning of critical thinking and responsibility changes. As soon as one has realized the human fate of being chained within the invisible powers of the discourse, one has achieved self-understanding. Only then, is a person ready to take responsibility and get rid of all the 'ready-made syntheses' he or she has carried so far, in order to approach alien discourses with other eyes than accustomed. This, I must say, is equivalent to critical understanding and this is therefore also, perhaps, the most critical essence of Foucault's thinking.

CHAPTER 3

Different Contemporary Perspectives on Critical Thinking

Another Approach to the Phenomenon

So far, focus has been put on how critical thinking is revealed in different historical philosophical texts, with an emphasis on epistemology. Against this background, it appears that critical thinking did not become a phenomenon of concern until Dewey. Thus, with the exception of Dewey, the phenomenon of critical thinking had been concealed, but still revealed, in ontological and epistemological issues of different historical times. Rather than pondering upon critical thinking itself, the philosophers of history were preoccupied with understanding the relationship between human and God, revealing the existence of societal constraints, and developing scientific methods, just to mention a few examples. Concurrently with the development of cognitive psychology, as well as the growing educational ideal of educating individuals to become autonomous democratic beings, however, critical thinking itself became a phenomenon of great interest. Certain critical thinking tests were developed during the 20th century in order to measure people's cognitive abilities, and critically thinking individuals were seen as a condition for developing and maintaining a democratic society (Walters, 1994). This, in turn, had a considerable impact on education. Accordingly, the preconditions for writing this chapter on contemporary perspectives of critical thinking are different than in the preceding chapter, where it was the texts themselves, and to some extent the authors behind them, that were focused in order to capture the phenomenon of critical thinking. From this point on, the relationship will be the reversed. The specific authors and their texts, which lay the foundation to the content of this chapter, will rather constitute the background to the phenomenon itself and different approaches to it. Thus, focus will no longer be put on different approaches to knowledge, which generate different characteristics of critical thinking, but rather on different approaches to critical thinking, generating different views of knowledge. As will be evident when the relativistic approaches to critical thinking are considered, however, the knowing process cannot be separated from either the knower or knowledge itself. Therefore, knowledge and critical thinking should be viewed as conditioning and generating

one another. Hence, even though the characters of the preceding chapter and this one are quite different, they constitute two sides of the same coin.

Literature Retrieval

In order to present a survey of different perspectives on critical thinking today, several decisions must be made, such as which perspectives to include, and on what grounds they are chosen. Furthermore, one has to decide how to search for these perspectives, inasmuch as the preferred literature retrieval will become visible in the result. With another principle of selection, the depiction of the perspectives would almost certainly not be the same. Therefore, it was important to make this process explicit, in an attempt to legitimize the content and form of the chapter. In order to get a general view of the field, I started to read articles, which were chosen on the criteria that they should include the concept 'critical thinking' in their article title (in order to keep to the subject as far as possible), and, furthermore, that it should be possible to categorize them within the frame of scholarship and critical thinking in adults (inasmuch as this is a delimitation of the current thesis). Searching specifically for 'critical thinking' in 'higher education' did not, however, provide many useful results. Out of approximately fifty matches, about a third of the articles were directed to specific disciplines, such as 'critical thinking in Environmental higher education' or 'critical thinking in macroeconomics'. Articles of this specifically directed kind were excluded, inasmuch as my aim was to discuss critical thinking in scholarship in general. This is not to say, however, that I regard critical thinking itself as a general phenomenon, independent of the context. Quite the reverse, I hold that the meaning as well as the realization of critical thinking is highly dependent on a range of contextual factors, as well as *who* is thinking critically. This fact has been evident throughout my historical analysis. Even though I have this relativistic approach to critical thinking, I still believe it is possible to talk about critical thinking at a meta-level, inasmuch as my analysis of critical thinking is related to the development of scholarship in *general*, rather than to the development of specific disciplines. The rest of the articles, could be divided into two groups. One group consisted of articles mainly discussing how to teach critical thinking, based upon quite weak scholarly grounds. The other group offered articles of a more scientific and scholarly character, which were almost exclusively based upon empirical quantitative studies, although a few philosophical studies were found too. Emphasis has been put on this latter group, which barely constitutes one fifth of the original article retrieval.

However, the remaining articles were of a quite homogeneous kind, almost all of them based upon a set of established critical thinking tests, such as the 'Watson-Glaser Critical Thinking Appraisal' and the 'Cornell Test of Critical Thinking'. These tests conceptualize critical thinking in an absolute way, measuring certain cognitive

skills with an emphasis on analytical and reasoning ability[33]. It will become apparent further on, that such tests usually reflect a particular perspective on critical thinking, found in the informal logic movement. The relationship to this perspective underlying these articles is also evident in their references. Against this background, it appeared that I could not illuminate the phenomenon of critical thinking from different perspectives, as I intended to, by limiting my article retrieval to 'critical thinking' in 'higher education'. Therefore, an expanded article retrieval was carried out, searching only for 'critical thinking' included in the article title. Thereby a range of relevant articles was retrieved, mainly from philosophical, educational, and psychological journals. Considering them closer, however, different perspectives on critical thinking were primarily found within the category of philosophy, more specifically, in the philosophy of education. In purely educational and psychological journals, the articles generally showed the same tendency as journals in higher education, framing critical thinking within the informal logical movement. This is why the articles within the field of philosophy of education were used as a starting-point, due to the variety of perspectives, and it was fairly soon feasible to identify different approaches and thinkers who frequently recurred in the discussions in this material.

Based upon this list of frequently discussed thinkers and approaches to critical thinking, a first intensified reading of the field was made. This reading did not, however, explore the phenomenon in a many-facetted way, but rather followed a dualistic line of attack. One was thrown into a battle between different 'absolutistic' and 'relativistic' views on critical thinking, where the crucial question seemed to be whether critical thinking could be viewed as a general skill transferable to all contexts or not. Inasmuch as my intention was to illuminate the phenomenon of critical thinking in a more varying way, a new strategy was needed. Thus, another literature retrieval was carried out, although this time comprising entire books. The reason for avoiding articles at this point was that articles are often focused upon temporary debates, which, in turn, merely highlight limited aspects of the whole field, such as the battle between absolutism and relativism. As was the case with the article retrieval mentioned above, a search for 'critical thinking' in 'higher education' and 'adults' proved to be a too limited scope, and did not give much result. Therefore, a delimitation to 'critical thinking' included in the title was carried out. Again, those works with specific disciplinary directions of research were sifted out. Finally, by reading comprising books about critical thinking, a range of different perspectives showed up, which could in some way or another be associated with the recently-published articles about critical thinking today. Authors who clearly represented an established perspective on critical thinking, or introduced a new perspective on the phenomenon, were preferred to practical 'handbooks' on how to realize or enhance critical thinking in practice.

33 The main difference between the two tests seems to be that the Cornell Critical Thinking Test is focused upon 'well-structured' problems (such as syllogisms), whereas the Watson-Glaser Critical Thinking Appraisal is additionally concerned with 'ill-structured' problems (with open-ended answers) (King & Kitchener, 1994).

Such 'handbooks' seldom intensify the meaning of critical thinking, seen from a certain perspective, but provide a rather mixed-up and cover-all conceptualization of the phenomenon. In some cases, however, these practical 'handbooks' provide a consistent manual of reasoning skills, which could be considered to be a pragmatic reflection of the informal logic movement (e.g. see Fisher, 2006; Hughes & Lavery, 2004), which will be discussed further on. Even though the thinkers who are presented here also have suggestions as to how to enhance critical thinking in practice, these suggestions are clearly derivable from their specific perspectives.

A Brief Summary

In my readings of contempory texts, I found four main perspectives on critical thinking, even though variations occur between the scholars within each perspective. Three of these directions are perspectives falling under commonly used designations. The 'developmental-reflective perspective', however, lacks an established designation, which is why I labeled it myself in an attempt to capture its most prominent feature. With references to Walters (1994), who identifies a 'first wave' and a 'second wave' in critical thinking research and pedagogy, the first two of the perspectives presented below, belong to the 'first wave', whereas the latter two rather fall under the 'second wave'. Walters points out that the 'first wave' has its historical roots in ancient Greece, with Aristotle's Analytics in the foreground. Hence, it is constituted by traditional perspectives on critical thinking, in which critical thinking is framed within the logical thinking approach, emphasizing 'analytical, abstract, universal, and objective' qualities in thinking. In order to understand the great impact that the 'first wave' had – and still has – on critical thinking research and pedagogy, one has to view it against the background of the educational crisis that appeared in the USA in the 1970s (ibid.). It appeared that students did not acquire all those skills that education called for, and the need for reasoning skills was urgent:

> Declines in national academic performance and SAT scores[34], plummeting levels of student literacy in mathematics and the sciences, and the difficulty an alarming percentage of students experienced in comprehending or formulating simple arguments, all highlighted the need to reinvigorate the curriculum by complementing "reading, 'riting, and 'rithmetic" with a fourth "R": reasoning. (Walters, 1994, p. 3)

Thus, in order to overcome this problem, the 'first wave' made a great effort to enhance people's reasoning ability, with the consequence that educational textbooks and courses in critical thinking were almost exclusively focused upon different kinds

34 SAT stands for Scholastic Aptitude Test and Scholastic Assessment Test. SAT is a standardized test, which aims at measuring a person's reasoning ability in math, critical reading and writing. The SAT scores are one important factor in the process of selection to colleges and universities. The closest equivalent to the SAT in Sweden is probably 'högskoleprovet'.

of logical argumentation. According to Walters (1994) this 'logicistic orientation' could also be explained by the fact that it was usually philosophers, with sound foundations in logic, who stood behind the educational content of both courses and textbooks. As a result, critical thinking became equivalent with logical thinking, or as Walters accurately points out: "This model of thinking has become so entrenched in conventional academic wisdom that many educators accept it as a canon." (Walters, 1994, p. 1). Even though Walters primarily incorporates the informal logic movement into the 'first wave', this thesis devotes attention to the cognitive perspective too, when talking about the 'first wave' in critical thinking research and pedagogy. This is due to the fact that empirical research in critical thinking is chiefly carried out by scholars with psychological approaches, which affects the character of the meaning invested in critical thinking. However, the conceptualization of critical thinking in both of these perspectives could be derived from the work of Glaser, a psychologist who made his first draft of a critical thinking test in the 1940s (Walters, 1994). In brief terms, Glaser's definition of critical thinking is described by three functional characteristics:

> (1) an attitude of being disposed to consider in a thoughtful way the problems and subjects that come within the range of one's experience, (2) knowledge of the methods of logical inquiry and reasoning, and (3) some skill in applying those methods. (Glaser, 1941. See Walters, 1994, p. 8)

Even though both the cognitive perspective and the perspective of the informal logic movement could be understood against the background of Glaser's definition of critical thinking, there is a difference between the two perspectives as regards their focus. The cognitive perspective has its roots in psychology. Therefore, focus is put on the individual's mental processes when thinking critically. A range of such processes has been identified within the cognitive perspective, such as problem solving, decision making and hypothesis testing, which all are regarded as qualities of critical thinking. Thus critical thinking is conceptualized as a pure skill, very similar to the kind of thinking and methods found in the natural sciences. The informal logic movement, however, belongs instead to the realm of philosophy, with all that it conveys. Focus is put on argumentation techniques, and how to shape sound reasons for one's conclusions. Critical thinking is not only regarded as a skill, as in the cognitive perspective, but also as an *approach*, in the perspective of the informal logic movement. Thus it is not enough to posit the ability to think critically, but one also has to be *disposed* to utilize this faculty when approaching certain problems, which refers to Glaser's first functional character of his definition of critical thinking. In that sense, one might say that the informal logic movement, being founded in philosophy, points out an important condition for the utilization of critical thinking. This fact seems to be unconsciously presupposed, or perhaps ignored, in the cognitive perspective. Another difference between the two perspectives is that the scholars of the informal logic movement often have an explicit educational aim with their emphasis

on critical thinking, namely the maintenance of democracy. According to their view, a democratic society is dependent upon the existence of critically thinking individuals. Such societal and educational efforts are not evident in the cognitive perspective, where interest is limited to the enhancement of critical thinking in the individual, for his or her own good. Even though the two perspectives differ from one another in these respects, they also present similarities. Both of them characterize the meaning of critical thinking in terms of rationality, and both of them identify the process of critical thinking as strategic and principle based thinking. Furthermore, both of them represent critical thinking as a rather absolutistic and impersonal way of approaching phenomena and finally, roughly speaking, critical thinking is considered to be a general skill, transferable to all contexts. (Further on, it will become apparent, however, that the scholars of the informal logic movement acknowledge that at least some subject-specific knowledge is important when thinking critically).

In recent years, however, a range of scholars have raised their voices against the 'first wave' in critical thinking research and pedagogy. These scholars constitute what Walters calls the 'second wave'. This 'second wave' will be presented further on in the developmental-reflective and the feminist perspective, respectively. According to the scholars of the 'second wave', critical thinking cannot be reduced to logical and rational thinking, but also qualities such as empathy, emotions, intuition, imagination, creativity, and reflective thinking are of great importance. Furthermore, the character of critical thinking is considered to be dependent on the context, and the individual's cultural background. Hence, due to the fact that critical thinkers are 'embedded and embodied beings', as Thayer-Bacon (2000) expresses it, mind and body cannot be separated as is assumed in the 'first wave' in critical thinking research and pedagogy. Against this background, the thinkers of the 'second wave' do not believe it is possible to speak of critical thinking in general terms. For instance, the feminist perspective underscores this fact, and stresses that critical thinking in its traditionally rational meaning is a typical male way of thinking. Thus, women have historically been labeled as irrational and non-critical thinkers, due to their different approach to knowledge. In light of the recently highlighted 'irrational' qualities of critical thinking, however, it appears that women, to a larger extent than men, make use of these qualities when approaching a problem. For instance, it will appear further on, that women's general tendency to empathically understand others' position from their specific perspectives, rather than approaching other perspectives with an opposing attitude, is a vital feature of critical thinking. By having an empathic approach to different knowledge positions, it is possible to direct criticism to others' viewpoints on their own premises.

Whereas the keywords in the 'first wave' in critical thinking research and pedagogy seem to be logical thinking and rationality, the keywords in the 'second wave' are rather reflective thinking and social action, according to my interpretation. Hence, critical thinking in the 'second wave' is more a matter of being reflectively aware of one's owns prejudices, as well as others', based upon the awareness of the existence

of different epistemological and cultural assumptions. This epistemological and cultural awareness conveys a great responsibility as regards the consequences of one's critical thinking. Inasmuch as "knowledge claims, as Giroux says, are inseparable from 'human interests, norms, and values' and must be evaluated with reference to them" (Walters, 1994, p. 18), critical thinking must be so too, due to the intertwining relationship between knowledge and critical thinking. Since this issue is ignored by the 'first wave', due to their absolutistic epistemological underpinnings, one could say that the 'second wave' incorporates social responsibility into the concept of critical thinking, or as Walters appropriately expresses it:

> After all, if the primary function of a good thinker [a critical thinker] is to focus on the logical value of discrete arguments, there's no need to worry about the arguments' social and normative implications. This short-sightedness not only bespeaks a breakdown in effective thinking. It also generates an ethical indifference and social complacency that suggest frightening possibilities. (Walters, 1994, p. 18)

Even though both the developmental-reflective and the feminist perspective more or less touch upon most of the characters of the 'second wave', they differ qualitatively from one another as regards their identification of the condition, meaning, and process of critical thinking. According to the developmental-reflective perspective, critical thinking turns out to be a reflective developmental approach in the individual. This implies that the critical thinker is a person who is willing to reflectively re-construe his or her beliefs in order to change his or her habitual ways of thinking and acting. Thus the process of critical thinking is characterized by challenging one's prejudices in order to find alternative ways of being. In the feminist perspective, however, critical thinking is conceptualized as constructive thinking, which embraces a relational, social and pluralistic approach. Knowledge, and hence critical thinking, is not an individual matter as it is in the developmental-reflective perspective, but knowledge and critical thinking are constructed between individuals against their cultural backgrounds. Thus the process of critical thinking, in feminist terms, is constituted by communicative relational action between unique human beings, conveying their specific perspectives of the world. Although the developmental-reflective and the feminist perspective differ from each other as regards the meaning and process of critical thinking, they have points in common too. Both perspectives call for the existence of being heard and listened to as a condition for critical thinking, albeit in different ways. In the developmental-reflective perspective (with the exception of King's and Kitchener's more individualistic approach), the need for others is manifest in the development of critically thinking individuals. More specifically, critical thinking is developed by the existence of already critically thinking individuals, who empathetically listen to the voices of others, being still on their way to becoming critical thinkers themselves. In contrast to the developmental-reflective perspective, which clearly distinguishes between the condition and the process of critical think-

ing, the feminist perspective intertwines the condition with the process in an indistinguishable way. At the same time as the existence of different voices being heard in social co-operation constitutes the condition for critical thinking, it also constitutes its process. Furthermore, both perspectives hold that maintaining a democratic society is the ultimate goal of developing critical thinking in individuals. Thereby, these two perspectives point to the same aim with the development of critical thinking as in their counterpart, the informal logic movement.

Besides the existence of scholars who devote themselves to either the 'first wave' or the 'second wave' of critical thinking, there are also scholars who analyze the discourse on critical thinking at a meta-level. According to these scholars, the discourse on critical thinking consists of different discourses, which all have different expressions, content, purposes, and justifications for their claims. For instance, by making a discourse analysis of three distinct texts within the frame of critical thinking, Moore (2004) shows that the discourses between them differ as regards their *object* of evaluation (what is being evaluated in the text), *content* of evaluation (what is said about the ideas being evaluated) and the *register* of evaluation (in what manner the evaluation is expressed). The first text was constituted by a syllogism, representing a kind of critical thinking that is commonly associated with a 'generalist' view, maintaining that critical thinking is a general reasoning skill transferable to all contexts, and, therefore, possible to teach in some kind of critical thinking courses. The second text was an extract from McPeck's work, constituting his argument that critical thinking cannot be regarded as a general skill, but it is always subject-specific. The third text was an extract from an anthropology review article, in which the reviewer critically discussed the quality of a specific ethnographic study. The point is that due to the discursive differences between the texts, Moore could reasonably argue that the 'generalist' view of critical thinking is not a general discourse on critical thinking, as the advocates of the 'first wave' in critical thinking research and pedagogy assert. Rather, the view of critical thinking as relying on general principles is a highly specific discourse. In that sense, the 'generalist' view of critical thinking is just as specific as the more relativistic views.

The fact that the discourse of the 'first wave' is not a general discourse on critical thinking is also evident in the work of Biesta and Stams (2001), in which they discuss 'the *right* to be critical' from three different epistemological perspectives: critical dogmatism, transcendental critique, and deconstruction. According to their interpretation, the critical dogmatist finds his or her right to be critical in the *truth* of his or her criteria of evaluation. Using Biesta's and Stams' own example, this is evident when one critically decides what kind of practices and theories can be included into the field of education "by means of a definition of what counts as education" (ibid., p. 60). Hence, in critical dogmatism, all criticism stems from a foundation, which is not questioned itself. As regards transcendental critique, however, the right to be critical is justified by the principle of *rationality*. In transcendental critique, critical thinking is "primarily aimed at spotting performative contradictions. It can there-

fore be understood as a specific form of internal critique, where the main critical work consists of the confrontation of a position or argument with its often implicit conditions of possibility in order to reveal whether such a position of argument is rational or not" (ibid., pp. 64-65). Hence, so far, Biesta and Stams have illuminated perspectives belonging to the 'first wave', and it will be manifest later on that the informal logic movement fits very well with the epistemological perspective of the transcendental critique. Finally, deconstruction finds its right to be critical in *justice*. Whereas critical dogmatism justifies its right to be critical in deductive reasoning from a certain foundation, and transcendental critique legitimizes its right to be critical in being rationally aware of the reasons themselves, deconstruction takes another turn. The deconstructionist says that one cannot escape the biases of the foundation, but neither is it possible to be 'objectively' critical to the conditions of possibilities (whether a position or argument is rational or not). Referring to Derrida's explanation of deconstruction, Biesta and Stams point out that this epistemological impossibility is due to the fact that the system of conceptuality and the condition of possibility of all conceptuality constitute each other's possibilities of existence. The system of conceptuality would not exist without the condition of possibility of all conceptuality. The condition of possibility of all conceptuality, on the other hand, can only be expressed within the realm of conceptuality, and is, therefore, conditioned by the conceptuality itself. Hence, one is captured in between these two conditions when trying to take a critical stance. All one can critically do, as a deconstructionist, is to make an attempt to reveal the system by thinking of all that which does not belong to the system, inasmuch as the impossibilities of the system constitute its possibility. This, in turn, leads to the fact that deconstruction is a matter of visualizing the other (that which the system is not), a proceeding that is conceptualized as *justice* by Derrida, and hence constitutes the deconstructionist's right to think critically. Against this background, Biesta and Stams have illuminated the same fact as Moore (2004): There is not a single critical thinking discourse, but rather a range of different discourses on critical thinking with different meanings, aims, and rights are evident. It is also clear that the different characters of these perspectives can be related to their different epistemological underpinnings. With this understanding in mind, it is time to acquaint oneself with the different contemporary discourses on critical thinking. The different perspectives will be presented from the most absolute approach in the cognitive perspective, with an increasing degree of relativism, to the most relativistic approach in the feminist perspective.

The Cognitive Perspective

Halpern: Critical thinking as rational thinking aiming at attaining certain goals

In order to understand the cognitive perspective on critical thinking, with its emphasis on mental processes, one has to know its background. In the 1960s, cognitive psychology started as a critical reaction against behaviorism, which had been the dominating paradigm in psychology for about fifty years. Whereas behaviorists explained human learning in terms of behavioral changes, exclusively derived from external causes, the cognitive psychologists considered learning to be a matter of mental processes in the human mind. Inasmuch as more and more scholars realized that the human mind could not be ignored when talking about learning, and human activities in general, cognitive psychology became a recognized and established direction of research in the 1970s. A range of experiments was undertaken in order to map out the mental processes of the mind when people think. These experiments were often based upon problem solving, which became a measure of intelligence together with critical thinking in an intertwining way. Thus critical thinking was seen as a skill constituted by certain qualities, which some people mastered better than others. 'Poor' thinkers could, however, develop their critical thinking ability by learning 'how to think' in accordance with certain rational rules. Even though a range of alternative scholarly approaches to critical thinking have appeared since the breakthrough of cognitive psychology, the influences from cognitive psychology are still alive today. This is evident, for instance, when considering educational policy instruments, such as Bloom's taxonomy for educational objectives, and the framework of qualifications for the EHEA (see Introduction). Hence, due to its impact on contemporary education, the cognitive perspective on critical thinking will receive some attention here.

Based upon Halpern's (1984) comprehensive work on how to develop critical thinking, seen from a cognitive perspective, there are certain concepts and meanings associated with critical thinking. When these concepts and meanings are considered, it appears that the phenomenon is regarded as a pure skill. Furthermore, many times critical thinking turns out to be equated with scientific methods, which implies that there exist certain rules as to how to proceed in thinking. These rules could be trained, so Halpern suggests a range of strategies as to how to enhance different aspects of critical thinking by using a set of cognitive tools. However, Halpern points to many factors, which she considers to be vital for the phenomenon in concern. Most of them could be derived from reasoning in scholarly as well as everyday contexts. One obstacle to this view of critical thinking is, however, that people do not reason according to the laws of logic, but that they make up their own 'personal logic', Halpern points out. This implies that they incorporate their previous knowledge and beliefs as well in their conclusions. Even though this is considered to be problematic in the context of developing people's logical reasoning, Halpern

calls attention to the question that making use of one's knowledge and beliefs when considering the truth of premises is valuable, for instance when revealing "'holes' or 'gaps' in advertising and political rhetoric." (ibid., p. 54). Besides reasoning, Halpern suggests hypothesis testing as another way of developing critical thinking skills. According to Halpern, hypothesis testing is not vouchsafed scholarship alone, but appears in everyday life too. The difference between scientific hypothesis testing and hypothesis testing in everyday life is that in the former case certain strategies are used to strenghten the hypothesis, and hence the conclusion. Without these strategies, such as making operational definitions, differentiating independent and dependent variables from one another, and using special designs for generalization, for instance, the testing of hypotheses runs a greater risk of ending in a wrong conclusion, and thus of becoming uncritical. Halpern highlights that the same argument holds for probability statements. When rational rules are followed for making a probability statement, as is the case in science, it corresponds to qualified critical thinking. Otherwise it does not.

Problem solving is another concept that is very much associated with critical thinking, especially in cognitive contexts. Halpern suggests that:

> All problems can be conceptualized as being composed of "anatomical" parts that include a start state, a goal state and paths leading from the start to the goal. This entire structure is called the problem space. (Halpern, 1984, p. 202)

The problems that Halpern refers to are, however, of a rather limited kind. It is not a matter of complex social problems, but, rather, her problems are tricky tasks that do not allow for interpretations, but lead to 'correct' answers only, like this one:

> Three men – Fred, Ed and Ted – are married to Joan, Sally and Vickie, but not necessarily in that order. Joan, who is Ed's sister, lives in Detroit. Fred dislikes animals. Ed weighs more than the man who is married to Vickie. The man married to Sally breeds Siamese cats as a hobby. Fred commutes over 200 hours a year from his home in Ann Arbor to his job in Detroit. Match up the men with the women they married. (Whimbey and Lochhead, 1982. In: Halpern, 1984, p. 176)

Dependent on the character of the tricky problem that is to be solved, Halpern proposes fourteen strategies that could be of help. For instance, in the example above, a matrix is considered to facilitate problem solving. In other cases, it could help to draw graphs, working backwards from the end to the different solutions, such as in mazes, or to sift out misleading and irrelevant information, etcetera. Halpern's point is that by increasing one's ability to solve problems of this tricky kind, this skill will have a constructive influence on one's critical thinking ability in general. There are, however, some common pitfalls that the critical thinker should consciously try to avoid when solving a problem:

> Functional fixedness refers to the failure to utilize items in unusual ways. Mental set refers to the predisposition to respond to any situation in a fixed way. Misleading and irrelevant information can "derail one's trail of thought" and can lead you down blind paths. The constraints imposed upon us by our society cause us to view problems from our own narrow experiences. Mechanization refers to the rote unthinking applications of previous solutions without stopping to think about improving our strategies. (Halpern, 1984, p. 203)

Accordingly, critical thinking in relation to problem solving is a matter of being flexible, and hence to be able to change one's problem solving strategies depending on the task. It is also important to distinguish what facts are of relevance when solving the problem, and, furthermore, one should have an objective approach and leave social biases aside. Halpern does, however, discuss problems of a more complex nature too, referring to problems that appear in real life, and which do not have any 'correct' answers. When critical thinking is related to problems of this kind, she calls it 'decision making', rather than 'problem solving'. When being faced with a problem of decisive importance, which involves great responsibility, the critical thinker has to realize that there is more than one possible solution to the problem, which each of them lead to different consequences. Among the range of solutions, one has to be chosen. How then, can he or she be sure that the chosen solution is the most appropriate? Well, according to Halpern, the first step is to define the problem and to find out possible solutions to the problem. The next one is to list the considerations and weigh them against one another. This implies that the aspects of relevance must be identified in relation to the problem, and that they must be identified and ordered hierarchically. For instance, a youth's choice of what to do after college could depend on 1) interest in work, 2) assessed income, 3) parents' opinion, 4) friends' opinion, and so forth. When one has come so far, it is time to weigh the alternative solutions against the consideration list and to reach a decision, which involves assuming responsibility for the consequences.

Halpern also emphasizes the fact that language is important when discussing critical thinking. The importance of language is, however, not so much about its impact on thought as such, but that "[l]anguage is the vehicle or mode for the transfer of ideas" (Halpern, 1984, p. 30). Hence in relation to critical thinking, focus is put on verbal comprehension. This involves the listener's ability to grasp the intention of the speaker, and the reverse, the speaker's ability to make his or her intention clear to the listener. It is assumed in Halpern's work as a whole, that there are rules for clear communication too, which could be trained by being conscious of what to say and how to say it, dependent upon the listener. For instance, important questions are: "What is the purpose of the communication? What are your listener's characteristics? That is, what is you listener's age and social status? How much does the listener know or want to know about the topic?" (ibid., p. 31). Thus, the critical thinker is consciously aware of what to say and how to say it, in relation to who is listening. Apparently, in a cognitive perspective, critical thinking is above all a matter of being

critical to one's own thoughts and, subsequently, to be critical as regards how these thoughts are enunciated.

Another factor that Halpern devotes attention to in relation to critical thinking is memory, when it is a matter of remembering relevant information or to learn from previous experiences when making decisions. Creative thinking and intelligence are also considered as important qualities of critical thinking, although Halpern carefully points out that the meanings of these qualities are not clear. Even though creative thinking is hard to define, any definition should "include a sense of originality, uniqueness, or unusualness. [...] Thus, creativity is a blend of unusual and good or useful ideas" (Halpern, 1984, p. 317). Construed as implying that critical thinking involves creativity, this supposes that the critical thinker is someone who is open to new ways of dealing with problems. As regards intelligence, the meaning might not be clear, although it seems to coincide with critical thinking, in the sense that Halpern conceptualizes it. This is due to the fact that the factors previously mentioned, such as problem solving, probability statements, verbal comprehension, and memory skills, are usually involved in intelligence tests. Furthermore, certain evidence suggests that students who are trained in critical thinking and problem solving achieve higher scores on intelligence tests than they did before the training program (Halpern, 1984). Against this background, one might ask if critical thinking is the same thing as intelligent thinking, when considered from a cognitive perspective.

Kurfiss: Critical thinking as rational exploration of ill-structured problems

Whereas Halpern could be viewed as a representing a purely cognitive perspective on critical thinking, Kurfiss (1988) rather constitutes a middle position between the cognitive perspective and the informal logic movement, which will be presented next. I have chosen to introduce Kurfiss' perspective within the cognitive frame, however, inasmuch as she has a psychological approach to critical thinking, rather than a philosophical one. This can be seen, for instance, from the fact that her work devotes more attention to cognitive processes (emphasizing individual construction of meaning) and intellectual development (such as the developed awareness of perspective biases) than it does to informal logic (with its focus on argumentation skills). Based upon these perspectives, which were predominant in higher education research during the 1980s, Kurfiss defines critical thinking to be:

> ...a rational response to questions that cannot be answered definitely and for which all the relevant information may not be available. It [critical thinking] is defined...as *an investigation whose purpose is to explore a situation, phenomenon, question, or problem to arrive at a hypothesis or conclusion about it that integrates all available information and that can therefore be convincingly justified*. In critical thinking, all assumptions are open to question, divergent views are aggressively sought, and the inquiry is not biased in favor of a particular outcome. (Kurfiss, 1988, p. 2)

It is noteworthy that Kurfiss makes a marked distinction between critical thinking and problem solving, in the cognitive sense of the word. Although Kurfiss admits that critical thinking is a kind of problem solving, she carefully points out that "critical thinking involves reasoning about open-ended or 'ill-structured' problems, while problem solving is usually considered narrower in scope" (Kurfiss, 1988, p. 28). Thus, the goal of critical thinking "is not to find and execute a solution but to construct a *plausible representation of the situation or issue that could be presented in a convincing argument*." (ibid., p. 28). It is interesting that Halpern (1984), who devotes herself to the cognitive perspective as well, rather considers problem solving (in the narrow sense that Kurfiss points to) as a quality in critical thinking. The kind of critical thinking that Kurfiss refers to is construed to be the quality of 'decision-making' in Halpern's conceptualization of critical thinking. This difference between Halpern and Kurfiss might be partly explained against the background of Kurfiss' relation to the informal logic movement, which mainly deals with problems of an 'ill-structured' kind. Inasmuch as Kurfiss relates herself to informal logic with its emphasis on 'ill-structured' problems, her perspective of critical thinking offers a more social approach than Halpern's. Before discussing the character of Kurfiss' social approach, however, some attention will be given to her cognitive base.

Even though Kurfiss' perspective on critical thinking is partly supported by the perspective of informal logic, Kurfiss points to the insufficiency of their approach, namely that it cannot provide answers to *why* people fail to think critically, despite educational efforts:

> ...while logicians generate ever-expanding lists of fallacies in reasoning, their lists provide little help in understanding *why* people persist in reasoning erroneously, even when they have been alerted to the dangers of fallacious reasoning. (Kurfiss, 1988, p. 25)

Therefore, the examination of the phenomenon of critical thinking has to be considered from a cognitive perspective as well. Against the background of her cognitive perspective, Kurfiss states that people make representations of knowledge in accordance with their existing beliefs, which has certain consequences for critical thinking in classroom learning. Especially three cognitive factors are highlighted in relation to this fact. Firstly, Kurfiss underscores that "*[k]nowledge is meaningful information stored in memory*" (ibid, p. 26). This statement conveys a concern as to how knowledge is acquired. The cognitive answer to this is that knowledge is constructed by the learner's active information processes, in which new information is incorporated into the individual's preexisting schemas (his or her earlier beliefs). Since new input is understood against the background of previous knowledge, the new information becomes meaningful, and is thereby transferred into the individual's knowledge base. Consequently, students' earlier experiences and knowledge are of great importance in learning. Information which does not match the student's previous schemas will not be acquired in the way the teacher intends it to be. Hence, Kurfiss says, "stu-

dents remember *what they understand*, not necessarily what is said" (ibid., p. 26). Secondly, Kurfiss also points to the fact that "*[k]nowledge in memory is organized*". This implies that each schema constitutes a context in which the individual has collected context-related experiences. The point is that these schemas are organized differently, dependent on the amount of experience and knowledge one has within a certain domain. For instance, this is evident when comparing experts and novices within the same area with one another. In contrast to novices, who are unable to distinguish important aspects from unimportant ones when facing a difficulty, experts are already familiar with their context and can, therefore, decide what aspects are irrelevant at the moment. Furthermore, experts deal with their knowledge in form of 'chunks' to a much higher degree than novices do. 'Chunks' consist of clustered patterns of information, which occur frequently within a domain. For example, a philosopher probably uses the chunk 'phenomenologists' when hearing the names of Husserl, Heidegger, and Mearleau-Ponty. Inasmuch as students lack these expert skills of sifting out relevant information and categorizing information appropriately, they need help to organize their knowledge. Therefore, Kurfiss emphasizes the teacher's instructive role in the organization process. For instance, Kurfiss suggests that matrixes or hierarchical ordered tables are of great use in organizing knowledge.

Finally, Kurfiss illuminates the fact that "*[k]nowledge takes many forms*" (ibid., p. 27). More specifically, Kurfiss presents three such knowledge forms: declarative knowledge, procedural knowledge, and metacognition. Declarative knowledge refers to "concepts, principles, stories, and other proposition knowledge that is used to make inferences" (ibid., p. 27). In simple terms, declarative knowledge could be described as 'knowing that'. Procedural knowledge, on the other hand, refers to 'knowing how' to make use of one's declarative knowledge. Metacognition is related to control strategies, which implies that 'competent problem solvers' "make plans, set goals and subgoals, ask questions, take notes, observe the effectiveness of their efforts, and take corrective action when necessary" (ibid., p. 27). The point is that mastering all three knowledge forms is vital for critical thinking. Thus the teacher's task is to encourage students in their development of each of these knowledge forms. Even though Kurfiss holds that these cognitive factors are of general importance when related to critical thinking, she carefully points out that the ways how scholars approach critical problems differ between the disciplines. Hence, Kurfiss construes that critical thinking is a general skill, although it is applied differently depending on the context-specific task. For instance, solving a problem is not the same thing in mathematics as it is in political sciences, although both the mathematician and the political scientist need to organize their knowledge in a meaningful way, as well as mastering all the three knowledge forms when thinking critically.

Kurfiss' interest in exploring the cognitive conditions for critical thinking is also found in her concern with the developmental foundations of critical thinking. By considering different developmental models, such as Perry's stages of intellectual development and King's and Kitchener's stages of reflective development (of which the

latter will be discussed further on), it is possible to understand the different difficulties that arise along the student's path of development towards being a critical thinker, Kurfiss points out. Both models are concerned with progress towards the higher levels of epistemological development. Perry's developmental model is, however, almost exclusively based upon responses from men, whereas King's and Kitchener's model has a better balance between men and women. Kurfiss has found empirical evidence from other scholars (using the aforementioned models) that students learn to think in more complex and reflective ways by the years of their university studies. Referring to Brabeck's study, Kurfiss argues that there seems to be a positive correlation between high critical thinking ability (based upon Watson-Glaser's critical thinking appraisal) and higher achieved stages of reflective development. Kurfiss points to the fact, however, that it is not enough to master analyzing and constructing arguments to attain the highest stage in intellectual developmental models, inasmuch as "*[l]earning these skills does not necessarily alter students' beliefs about the nature of truth or about their role in the construction of knowledge*" (ibid., pp. 60-61). Thus, provided that Kurfiss is right in her claim, one can conclude that courses in informal logic are not sufficient for developing critical thinkers. Something more is needed, so Kurfiss turns her attention to the benefits of social interaction.

Since Kurfiss conceptualizes critical thinking within the frame of ill-structured problems, she emphasizes the need for social interaction when developing it, because different perspectives and alternative solutions are easier revealed in critical discussions between individuals. This in turn facilitates changes in the student's epistemological understanding, as regards the nature of truth and the awareness of his or her role in the construction of knowledge. It should be clarified, however, that even though Kurfiss stresses the importance of different perspectives and alternative solutions, her standpoint is not based on relativistic grounds, in the sense of admitting that knowledge is always biased and cannot be objective. Rather, the different perspectives that may arise in social interaction are supposed to be objective and unconditioned by cultural and normative biases. It seems as if the teacher's challenge is to release students from the biases that influence them when thinking critically, since Kurfiss asserts that their thinking is otherwise uncritical:

> Teaching for critical thinking does not take place in a vacuum. Students frequently bring with them both a home culture and a peer culture with norms that may be antithetical to critical questioning. Uncritical thinking...is a pervasive and resilient counterforce that does not evaporate when students enter the classroom. (Kurfiss, 1988, p. 103)

Furthermore, even though Kurfiss mentions that emotions seem to motivate people to start to think critically, apparently she does not consider emotions as a fundamental part of the critical thinking process. Hence, although Kurfiss points to the fact that there are frame factors in the classroom situation, such as class size and teaching strategies, her awareness of the contextual impact on critical thinking is limited to

the concrete situation. Thus, if students leave their cultural baggage at home, and if the teacher manages to create learning situations in which students socially interact with one another in an argumentative way, they will develop their reflective skill and think in more objective and complex ways. This in turn, Kurfiss asserts, enhances critical thinking.

The Informal Logic Movement

Siegel: Critical thinking as rational thinking justified by appropriate reasons

Leaving the cognitive perspective behind, with its focus upon the condition and process of critical thinking, attention is now directed to the perspective of informal logic, which rather problematizes the *meaning* of critical thinking. This shift in focus could be explained by the fact that the informal logic movement[35] is constituted by philosophers, on the one hand, and, on the other hand, that understanding the meaning of critical thinking could be considered as a condition for its development:

> Despite widespread recent interest in critical thinking education, there is no clear agreement concerning the referent of the term. But if that notion is to carry significant weight in our educational thinking and practice, it is essential that it be delineated with some precision, so that we will know what we are talking about when we talk of the desirability of critical thinking, or of educational efforts aimed at improving students' critical thinking ability. (Siegel, 1988, p. 5)

Inasmuch as the informal logic movement is a well-established approach in the critical thinking discourse, it comprises many philosophers of relevance. I have chosen, however, to present the perspective mainly through the voice of Siegel, who is of great immediate interest in this movement today. Besides the fact that Siegel puts his focus on the meaning of critical thinking, rather than its process, he also distinguishes himself clearly from the cognitive perspective in that he highlights that

35 The Informal Logic Movement is a recent discipline, which has made a great impact on contemporary education in Canada, the United States, the United Kingdom, and an increasing number of other countries as well. It is not constituted by a group of homogeneous philosophers, but the variation of approaches within the movement is quite large. Those who commit themselves to the movement do, however, have that in common that they "attempt to develop a logic which can be used to assess, analyse and improve the informal reasoning that occurs in the course of personal exchange, advertising, political debate, legal argument, and in the types of social commentary found in newspapers, television, the World Wide Web and other forms of media. In many instances, the evolution of informal logic has been motivated by a desire to develop ways of analysing and evaluating ordinary reasoning which can be made a part of general education, and which can inform and improve public reasoning, discussion and debate." (Stanford Encyclopedia of Philosophy, Informal Logic, p. 1).

critical thinking cannot be discussed without relating it to the critical thinker. It will appear further on that Siegel identifies critical thinkers as having certain character traits, which he considers to be fundamental for the realization of critical thinking. In order to understand Siegel's conceptualization of critical thinking, one should consider the philosophers that he relates his thinking to. Based upon Siegel's (1988) own accounts of these philosophers, a brief summary of the thoughts of Ennis, Paul, and McPeck will be rendered here.

Ennis, who could be considered as "the leading theorist of critical thinking testing" [36] (ibid., p. 7), started his conceptualization of critical thinking as being "a person's ability [to] correctly...assess or evaluate certain sorts of statements" (ibid., p. 6). The problem with that conceptualization was, however, that it viewed critical thinking in a quite passive manner. Even though a person had this critical ability, he or she would not necessarily feel an urgent need of making use of it. Therefore, the conceptualization was later on enlarged by Ennis to include the person's *tendency* to make use of his or her 'ability to correctly assess or evaluate certain sorts of statements'. Thus a critical thinker, in Ennis view, is someone who has both the skill and tendency to realize his or her skill in different activities. Even though Siegel thinks that Ennis takes a step in the right direction, Siegel points to two factors, which he considers to be undeveloped in Ennis' theory. The first is that Ennis gives no reason why critical thinkers should have a tendency to make use of their ability of thinking critically. Siegel underlines that:

> ...critical thinkers should be disposed to think critically, and tend to do so, because (i.e. for the reason that) they recognize the value of critical thinking. This recognition involves the recognition of related values, such as truth, intellectual honesty, and justice to evidence. (Siegel, 1988, p. 9)

Thus, critical thinking has in itself a value, in Siegel's point of view. As a matter of fact, critical thinking is considered to be of so much value that Siegel argues for it to be an educational ideal, from which all education (even compulsory school[37]) should be arranged, at least to a great extent. As regards the value of critical thinking, Siegel identifies four reasons for promoting critical thinking in education. From his point of view, critical thinking paves the way to "morality and respect for persons, self-sufficiency and preparation for adulthood, initiation into the rational traditions, and the requirements of democratic living" (ibid., p. 61). Siegel assumes that the condition for these desirable aims of education is the existence of autonomous critically thinking individuals who live in a democratic society, where the one conditions the other. By raising critical thinking to an educational ideal, education itself will aquire a special social status:

36 Ennis was one of the creators of the 'Cornell Critical Thinking Test', which has been widely used to measure critical thinking.

37 Even though Siegel does not expressly say so, his writings hint at it, especially as regards his concern for educating young children to become critical thinkers.

> ...critical thinking is no rubber-stamp friend of the status quo; indeed, it is an enemy of the unjustifiable status quo. This is not only an important fact about critical thinking; it also makes clear how threatening a full embrace of the ideal can be to the maintenance of the established social order, and so explains a certain sort of resistance to that embrace. Making critical thinking a basic aim of our collective educational endeavors in effect grants those endeavors a special status: it establishes education, and its concern for critical thinking, as an independent critical and guide of democratic society. (Siegel, 1988, p. 55)

However, besides the fact that Ennis lacks this moral aspect in his conceptualization of critical thinking, Siegel also points to the fact that Ennis confuses critical thinking with the characters of the critical thinker:

> The tendency to utilize proficiencies, for example, may be a characteristic of a critical thinker, but it is surely not a criterion for determining the rationality of a given piece of thinking, since a piece of thinking, while it may be the result of that tendency, surely does not itself possess that tendency. Tendencies to think or act in certain ways are properties of persons, not pieces of thinking. (Siegel, 1988, p. 9)

Considering the quotation above, it is clear that Siegel finds it important to differentiate between critical thinking and the critical thinker. This is due to the fact that Siegel identifies the critical thinker as a "certain sort of *person*" (ibid., p. 10). Apparently, only those who have the specific characteristics of a critical thinker can participate in the activity of critical thinking. One might wonder what attributes Siegel refers to when characterizing critical thinkers. In brief terms the critical thinker is:

> ...one who is *appropriately moved by reasons*: she has propensity or disposition to believe and act in accordance with reasons; and she has the ability properly to assess the force of reasons in the many contexts in which reasons play a role. (Siegel, 1988, p. 23)

I will come back to Siegel's definition of the critical thinker later on. As regards Siegel's conceptualization of critical thinking, however, it cannot be fully understood in its foundations without discussing Siegel's relations to Paul's and McPeck's thinking as well. Whereas Ennis is concerned with the critical thinker's ability and tendency to think critically, Paul takes the argument one step further, emphasizing the importance of utilizing one's skill.

Paul distinguishes between critical thinking in a 'weak sense' and critical thinking in a 'strong sense'. The former is a matter of mastering a set of skills in order to reject statements that do not fit with one's own founded beliefs. The rejection of statements is not based upon contemplating grounds, such as trying to grasp the particular perspective that precedes the statement, but it is rather a superficial and 'atomic' way of thinking critically. Hence, critical thinking in a 'weak sense' appears to be nothing more than a manipulation of arguments which do not affect the individual at a profound level. On the other hand, critical thinking in a 'strong

sense' refers to a more complex way of approaching and thinking about subjects. The superficial arguments are replaced by dialectical thinking, in which different opposing worldviews are held together. There is also an emphasis on understanding oneself by revealing the horizon from which one speaks. Getting to know oneself includes a sensitivity and conscious avoidance of self-deception, where one discloses the underlying interests of one's thinking and tries to "depersonalize one's world view" (ibid., p. 13). In short, critical thinking in a 'strong sense' means to question one's own deepest beliefs in the same way as a one would do with a view that one was strongly opposed to.

Although Siegel agrees with Paul that it is of utmost importance to conceptualize critical thinking in terms of a realized action, Siegel has some objections to Paul's thinking as well. Assuming that critical thinking in a 'strong sense' is a matter of relating one's criticism to the profound level of world views, one is soon caught in the snare of relativism, Siegel asserts. This is because "whether or not a given bit of reasoning is fallacious...depends on the world-view from which one addresses the issue at hand..." (ibid., p. 14). It seems to Siegel that the 'weak sense' of critical thinking is the only form, of the two suggested, that reconciles such difficulties, since an 'atomic' approach "does not require commitment to any particular world view" (ibid, p. 15). Furthermore, as Siegel reflectively concludes, the whole idea of creating a general theory of critical thinking is rescued by not adopting Paul's conceptualization of the 'strong sense' of critical thinking, inasmuch as critical thinking itself could be considered as a world view in Paul's theory. Another difficulty which Siegel finds in the 'strong sense' of critical thinking is "its focus on the avoidance of ego- and sociocentrism and self-deception" (ibid., p. 15). According to Paul it is most difficult to think critically about the subjects and areas, in which one is involved oneself. Challenging one's own self-interests is really hard, for instance, when questioning one's own moral, personal or political beliefs. Nevertheless, the distinction between cases of egocentrism, sociocentrism, and self-deception, on the one hand, and cases that do not display these traits, on the other, is not self-evident from Siegel's point of view. Inasmuch as the line between these groups is not clear-cut, but rather hazy, it is troublesome to attempt distinguish between a 'weak sense' and a 'strong sense' of critical thinking, Siegel concludes.

Even though Siegel directs criticism to Ennis and Paul in their conceptualization of critical thinking, Siegel belongs to the same philosophical approach as they do. All three are supporters of the Informal Logic Movement, which, in very brief terms, strives at developing ways of reasoning that could be generalized to be useful in all contexts. As regards McPeck, however, his perspective is rather contradictory to the whole movement. Whereas Siegel and the Informal Logic Movement conceptualize critical thinking as being a general skill, which is possible to utilize in all contexts, McPeck argues that such generalization is not possible, due to the fact that thinking cannot be dissociated from its content. There is no such thing as pure thinking, because thinking always appears in form of thinking *about* something. Accordingly,

talking about critical thinking in itself does not make sense, from McPeck's point of view. The consequence of all this is that critical thinking will always be context-dependent (since it is a matter of thinking *about* something), and that it will, therefore, function differently in different settings. Siegel opposes McPeck's argument by pointing out that there are many rational skills such as:

> ...identifying assumptions, tracing relationships between premises and conclusions, identifying standard fallacies, and so on [which] do not require the identification of specific subject matters; [since] such skills are germane to thinking in subject areas as diverse as physics, religion, and photography. (Siegel, 1988, p. 20)

Siegel reports McPeck's answer to this, where McPeck argues that such a skill as 'identifying assumptions or fallacies' is still context-dependent, inasmuch as it cannot be carried out appropriately without any subject-specific knowledge. Even though Siegel admits that McPeck is right in his remark, he does not give up the idea that general logical knowledge is an important part of critical thinking. In fact, both subject-specific knowledge and general knowledge about how to identify assumptions are needed. However, McPeck himself conceptualizes critical thinking in terms of being an activity of reflective skepticism (see Siegel, 1988, p. 22), which Siegel finds troublesome:

> A skeptic might be reflective, and yet her skepticism unjustified. [...] We would need to use critical thinking to determine whether any particular instance of reflective skepticism is or was in fact justified. Hence justified reflective skepticism assumes critical thinking; consequently it cannot in turn explicate or define critical thinking. (Siegel, 1988, pp. 22-23)

Even though Siegel is clearly opposed to McPeck's conceptualization of critical thinking, because of its ontological grounds, he acknowledges that McPeck highlights two important components of the phenomenon: *The reason assessment* component, and the *critical spirit* component. The former refers to the fact that the critical thinker has an "ability to assess reasons properly" (ibid., p. 23), and the latter refers to "the willingness, desire, and disposition to base one's actions and beliefs on reasons; that is, to *do* reason assessment and be guided by the results of such assessment" (ibid., p. 23). Accordingly, it is these two components that Siegel has in mind when stating that the critical thinker is a person, who is 'moved by appropriate reasons'.

Once we have come so far in understanding how Siegel relates to these philosophers, it is possible to capture the meaning of Siegel's conceptualization of critical thinking in its whole width. The relationship between critical thinking and rationality is very close. One cannot say that the one constitutes a dimension of the other, but they are coextensive with one another, in Siegel's opinion:

> Critical thinking is best conceived, consequently, as the educational cognate of rationality: critical thinking involves bringing to bear all matters relevant to the rationality of belief and action; and education aimed at the promulgation of critical thinking is nothing less than education aimed at the fostering of rationality and the development of rational persons. (Siegel, 1988, p. 32)

The deep connection between rationality and critical thinking derives from the fact that they are both based upon the relevance of reasons, Siegel says. Hence, the key concept is reason, which is considered to be the ultimate condition for thinking to be both rational and critical. With references to Scheffler, Siegel points out that there is a close relationship between reason, principles, and consistency. Devoting oneself to the realm of reason implies that one commits oneself to think and act in accordance with certain principles. Inasmuch as principles have the character of being general rules, reason based thinking conveys a consistency in thought and action. Thus critical thinking is the same as consistent principled thinking, in Siegel's terms. If we accept Siegel's premises that critical thinking is principled thinking, there are two kinds of central principles, which jointly govern the assessment of reasons: subject-specific principles, that are context dependent, and subject-neutral principles, which work across contexts. Neither of these types of principles could be regarded as being subordinated to the other in an 'a priori' way. Rather, both of them are essential for critical thinking, Siegel says. Besides the fact that the critical thinker relies on principles, the critical thinker is also moved by emotions in form of 'rational passions', to adopt Siegel's own words. This means that the critical thinker has a passionate aspiration for truth in that he or she carefully considers the facts as well as the arguments of others before making any judgments. In short, the critical thinker is deeply concerned about finding out how things really are, and thereby critical thinking involves an important emotional dimension, according to Siegel's point of view.

The Developmental-Reflective Perspective

King and Kitchener: Critical Thinking + Reflective Thinking = Good Thinking

The cognitive perspective and the informal logic movement chiefly conceptualize critical thinking in terms of argumentative and rational problem solving thinking, which aim at finding the most appropriate (and sometimes the only) solution to a problem. When coming to King's and Kitchener's (1994) contribution to the discourse on critical thinking, the importance of reflective thinking is highlighted. According to King and Kitchener, it is possible to outline two traditional perspectives on critical thinking. One perspective conceptualizes critical thinking "as synonymous with logic or the hypothetico-deductive method... [with a] focus on inductive and deductive logic skills" (ibid., p. 8). This perspective corresponds quite well to the cognitive approach as represented in Halpern's view. As regards the other traditional

perspective, King and Kitchener refer to the informal logical movement, in which critical thinking is conceptualized in terms of "a process of inquiry or problem solving" (ibid., p. 8). This latter perspective is, according to King and Kitchener, closer to their understanding of reflective judgment, although they find it insufficient for conceptualizing critical thinking. King and Kitchener point to two limitations to the traditional perspectives they refer to. Firstly, "both approaches are limited by the assumption that critical thinking consists primarily of a set of skills or general principles that one can apply in order to solve problems" (ibid., p. 9). Secondly, "[t]hose who see critical thinking as only problem solving fail to acknowledge that epistemic assumptions...play a central role in recognizing a problematic situation" (ibid., p. 9). The latter limitation is mainly directed at the tendency of viewing and approaching problems in an exclusively 'scientific' way. For instance, when a hypothesis is formulated and then tested without taking into account that this method "cannot be applied if the individual fails to recognize that a problem exists and that this recognition itself is predicated on other assumptions about knowledge (for example, that it is gained through inquiry)" (ibid., p. 9). Thus, against the background of their criticism, one could say that King and Kitchener position themselves against the 'first wave' of critical thinking. It will appear below, however, that they do not really release themselves from this first movement of critical thinking, but rather that they constitute a bridge between the two 'waves'.

King and Kitchener point out that 'ill-structured' problems, rather than 'well-structured' problems constitute important challenges in the development of reflective thinking. Based upon Dewey's philosophy, they present a theoretical model of reflective judgment, which "describes a developmental progression in people's assumptions about how and what they can know" (ibid., p. 20). Even though King and Kitchener do not label themselves phenomenographers, their study is reminiscent of a phenomenographic study[38]. More specifically, their developmental model consists of seven qualitatively different reasoning approaches, derived from interviews with people resolving ill-structured problems. According to King and Kitchener, the respondents' different approaches could be structurally ordered and related to one another in a hierarchical way, where each approach constitutes the condition for the next one in a way that makes them different developmental stages. The basis for the structural hierarchy is the fact that people in their study founded their reasoning upon seven sets of epistemic assumptions, which could be ordered into three comprehensive groups. The first three stages constitute expressions of 'pre-reflective thinking'. Individuals within these stages do not acknowledge or are not even aware that knowledge is uncertain. For instance, at stage one, the individual's epistemo-

38 In the 1970s Marton founded a new scholarly approach, phenomenography, which has its roots in educational research. Having a phenomenographic approach implies that one searches for individuals' qualitatively different ways of experiencing certain phenomena. Based upon this data, the individuals can be arranged in qualitatively different groups as to how they approach and understand something, for instance the meaning of a text. These groups can, in turn, often be hierarchically ordered to one another, as regards their complexity in understanding (Marton & Booth, 1997).

logical assumptions are based upon a quite empirical approach to knowledge, where one's own experiences cannot be questioned. Thus, "[b]eliefs are not consciously constructed; they are simply held and are not open to criticism or doubt" (ibid., p. 48). When the individual has reached the fourth and fifth stages, however, his or her epistemological understanding is characterized by 'quasi-reflective thinking'. This implies that the individuals:

> ...recognize that some problems are ill structured and that knowledge claims about them contain an element of uncertainty. As a result, they understand that some issues are truly problematic. Although they use evidence, they do not understand how evidence entails a conclusion; thus, they have difficulty when they are asked to draw a reasoned conclusion or to justify their beliefs. (King & Kitchener, 1994, p. 58)

Accordingly, individuals within the stages of 'quasi-reflective thinking' are aware that knowledge is constrained within subjective and contextual frames. For instance, at stage five, the individual accepts that there is no absolute knowledge, but "[o]nly interpretations of evidence, events, or issues may be known" (ibid., p. 64). These individuals have developed an ability to deal with knowledge in a complex and differentiating way, as regards different interpretative perspectives. They know how to "use evidence to reason logically within a particular context" (ibid., pp. 66-67), but they have not yet developed the ability to "compare and contrast evidence across contexts". (ibid., p. 66). This reflective skill is not manifest until the individual has reached the last two stages, which represent 'reflective thinking'. Individuals of the sixth and seventh stages "argue that while judgments must be grounded in relevant data, conclusions should remain open to reevaluation" (ibid., p. 66). In the seventh and last stage, the individual has developed 'true reflective thinking'. Knowledge is constructed through an inquiring approach, which synthesizes "evidence and opinion into cohesive and coherent explanations for beliefs about problems" (ibid., p. 70). It is a matter of dealing with knowledge in a complex and relativistic way, and the individual still manages to draw a conclusion on evidence-based reasons:

> Beliefs are justified probabilistically on the basis of a variety of interpretative considerations, such as the weight of the evidence, the explanatory value of the interpretations, the risk of erroneous conclusions, the consequences of alternative judgments, and the interrelationships of these factors. Conclusions are defended as representing the most complete, plausible, or compelling understanding of an issue on the basis of the available evidence. (King & Kitchener, 1994, p. 72)

Even though King and Kitchener admit that Dewey himself used critical thinking and reflective thinking in a synonymous way, they point out that there is a difference between the two concepts:

> Reflective thinking is related to but not synonymous with critical thinking because critical thinking involves many types of reasoning, including deductive and inductive logic about well-structured problems. In addition, critical thinking is typically characterized as a set of skills that can be acquired through the learning of increasingly complex behavior or rules. [...] [T]he Reflective Judgment Model departs most dramatically from most models of critical thinking...in its insistence that the ability to engage in reflective thinking cannot be understood without considering the cognitive characteristics (specifically, the epistemic assumptions) of the developing person. (King & Kitchener, p. 18)

The distinction between critical thinking and reflective thinking put forward in the above quotation is crucial. It is an indication that King and Kitchener remain in the 'first wave', although they are on the edge of the 'second wave'. In spite of their criticism of the perspectives of the 'first wave', they preserve the 'traditional' meaning of critical thinking, by pointing out that reflective judgment is another kind of thinking. Ironically, they simply accept the conventional way of conceptualizing critical thinking, without reflectively doubting the conceptualization itself. Instead, they point to the fact that critical thinking, as it is traditionally conceptualized, is not enough for enhancing learning and understanding in adolescents and adults. Hence, King and Kitchener do not try to re-construe the concept of critical thinking by incorporating reflective thinking, as the scholars of the 'second wave' would. Furthermore, even though King and Kitchener are opposed to the idea that good thinking relies on general principles only, their own reflective judgment model constitutes a general principle itself. King and Kitchener assume that the individual has to pass through certain epistemological stages before 'true reflective thinking' is applied. In addition, their meaning of reflective judgment is restrained to epistemological awareness, in an objective sense. This implies that the individual should be aware of the existence of different epistemological assumptions, and manage to take an objective critical stance across different perspectives. Although King and Kitchener point to the fact that "*[d]evelopment in reflective thinking occurs within the context of the individual's background* [as regards gender, race, and ethnicity]*, previous educational experiences, and current life situation*" (ibid., p. 229), these facts are never connected to the individual's self-awareness. Nowhere in their model is reflective thinking or judgment a matter of critical self-understanding – how the reflective thought is captured within one's own horizon. Furthermore, as regards emotions, which are considered to be an important factor in critical thinking in the 'second wave', King and Kitchener only treat this issue in passing without really incorporating emotions into their model.

However, given the fact that King and Kitchener emphasize the importance of reflective judgment in qualified thinking, it appears that they do take a step towards the 'second wave' in critical thinking research and pedagogy. This is due to their assertion that reflective thinking does not rely on general principles. Moreover, King and Kitchener touch upon the question of gender differences in developmental

models, which is an issue of immediate concern in the 'second wave', especially in the feminist perspective. Based upon results from seventeen studies that included both men and women, King and Kitchener are unable to give a clear-cut answer on this issue, inasmuch as some of their studies support the idea of gender differences, while others do not. Furthermore, the studies that suggest gender differences generally point to the conclusion that men are better at reflective judgment than women. With references to Wood, King and Kitchener underscore that such results may depend upon "a variety of factors in addition to gender, such as academic aptitude, leadership opportunities, and different rates of maturation, or differences in the timing of growth spurts" (ibid., p. 186). Even though King and Kitchener express themselves in guarded terms as regards the gender issue, they do take it seriously and do not ignore it, which is why their perspective could be considered as an opening to the 'second wave' in critical thinking research and pedagogy. With this in mind, it is time to examine another scholar within the developmental-reflective perspective, namely Brookfield, who certainly characterizes critical thinking in terms of developmental reflection. Furthermore, Brookfield expands the meaning of critical thinking in a way that makes it embrace a kind of critical self-understanding. Thereby, Brookfield's approach could doubtless be characterized as a perspective within the 'second wave' of the critical thinking discourse.

Brookfield: Critical thinking as explorative thinking aiming at individual and societal change

In order to conceptualize critical thinking in a non-academic way that could be comprehended and applied by 'ordinary' people, Brookfield (1987) works out a rather different perspective of critical thinking than those presented above. Since Brookfield clearly expresses that his aim is to discuss critical thinking beyond the frame of scholarship, one might ask what relevance his perspective has in this thesis. As a matter of fact, his perspective is highly relevant, inasmuch as his conceptualization of the phenomenon very much concretizes the qualities of critical thinking that are in great demand in scholarship. His perspective also renders it possible to view critical thinking as an inherent potential in all human beings, which entails an educational benefit in itself.

According to Brookfield, critical thinking appears frequently without us even knowing it, even though all human beings do not use their critical thinking well. Assuming that critical thinking comprises two interrelated processes: "identifying and challenging assumptions, and imagining and exploring alternatives", the problem is that what "frequently happens is that one process occurs without the other." (ibid., p. 229). Brookfield argues that it is not enough to master logical and rational thinking in order to be a critical thinker, but critical thinking is more than that. It is also a matter of:

> ...calling into question the assumptions underlying our customary, habitual ways of thinking and acting and then being ready to think and act differently on the basis of this critical questioning [...] Being a critical thinker is part of what it means to be a developing person, and fostering critical thinking is crucial to creating and maintaining a healthy democracy (Brookfield, 1987, p. 1)

Reminiscent of Siegel's conceptualization of critical thinking, it appears that there are similarities as well as differences between Siegel and Brookfield. Both authors extend the aim of critical thinking beyond the individual's horizon: critical thinking is seen as essential for maintaining a democratic society. Thus, critical thinking is not only a matter of being responsible in relation to oneself, but also in relation to society – and this responsibility should conform to democratic principles. Furthermore, both authors characterize critical thinking as an approach rather than a skill, albeit in different ways. Whereas Siegel points out that the critical thinker has an *autonomous and rational* approach, Brookfield conceptualizes critical thinking approach in terms of *development and change in the individual*.

In agreement with Siegel, Brookfield identifies the critical thinker in terms of certain characters. However, in contrast to Siegel, who defines the critical thinker to be a person who is 'appropriately moved by reasons', Brookfield identifies several characteristics of a critical thinker, which more or less point to a developmental and open-minded approach. Firstly, critical thinkers display a positive and innovative attitude to life. They view life as offering a range of possibilities, which they believe they have the potential to realize, allowing them to improve it further. Making life better is an endless process, which the critical thinker never gives up, inasmuch as that would be the same as reaching "a state of complete critical development" (ibid., p. 6). Attaining such a state contradicts the meaning of critical thinking, inasmuch as the assumptions have to be re-questioned over and over again. This does not mean that the critical thinker is an over-skeptic person, who can never agree with anything, due to the uncertainty of the truth of the assumptions, but rather that the critical person is "skeptical of claims to universal truth or to ultimate explanations" (ibid., p. 9). Things can always be constituted differently, when considered from another point of view, but it is still important for the critical thinker to choose an attitude, from which he or she can act critically and change his or her attitude over time. Inasmuch as the critical thinker is aware that there are no general truths, which are valid irrespectively of the setting and the subjects involved, the critical thinker is also 'contextually aware'. This contextual awareness, in turn, facilitates pluralistic thinking, given that there is always more than one possible way of being. None of these ways of being could be considered to be right or wrong, although the critical thinker may take a critical standpoint, as regards better or worse ways of being, from his or her particular point of view.

Brookfield also points to the fact that even though critical thinking is guided by rationality, which is commonly regarded as dissociated from emotions, emotions

do have a great impact on critical thinking. Critical thinking is triggered by events, which awaken emotions both in a positive and a negative sense, depending on the event. In this respect, Brookfield differs from the common view on which kind of emotions arouse critical thinking. Brookfield does not only associate the origin of critical thinking with negative emotions, such as perplexity and doubt, which has been evident "ever since Dewey" (ibid., p. 31), but he emphasizes the importance of positive events too. A positive event could be an important accomplishment, which makes oneself consider the past from a new angle. Perhaps the old assumptions need to be re-construed, in order to explain the newly acquired success, which arouses a feeling of release and increased self-esteem, or something else in a positive direction. A negative event, on the other hand, requests for alternatives of how to deal with the problem in order to change the situation to the better. Realizing that one has potential for making a change in itself entails a sense of power, excitement or something else that makes the critical thinker become active. Hence, the emotions follow the critical thinker from the very start of the critical thinking process to the end, as regards its consequences.

With the characteristics of the critical thinker in mind, Brookfield recognizes four important components of critical thinking. The first is that identifying and challenging assumptions are essential for critical thinking. All the prejudices that one is surrounded with as well as all those that one has incorporated into one's own beliefs, can always be questioned. The crucial point is, however, to identify these prejudices. The second component is to be aware of the fact that prejudices are contextually dependent. Accordingly, there are several alternatives ways things could be if one leaves the context aside for a moment. Imagining and exploring these alternatives is the third component of critical thinking. By doing this, critical thinking leads to reflective skepticism, the fourth component, in which universal truths and ultimate explanations are encountered with incredulity. For instance: "Just because an idea is accepted by everyone else does not mean that we have to believe in its innate truth without first checking its correspondence with reality as we experience it." (ibid., p. 9).

Inasmuch as Brookfield does not frame critical thinking as an individual matter, but widens critical thinking to a collective responsibility in the name of democracy, there is a need for developing critical thinking in as many individuals as possible. This is due to the fact that a sustainable and healthy democracy depends on critical thinkers, according to Brookfield's point of view. Provided that the ultimate goal is to prepare the way for critically thinking citizens, educational efforts are needed to attain that goal. These educational efforts do not necessarily have to appear within the frame of education, Brookfield claims, but could appear anywhere and anytime in everyday life. Thus critical thinkers have a responsibility to help others to think critically. They do so by being sympathetic, empathetic and open-minded beings, with the ability to listen and reflectively respond to their fellows. By using this approach, their fellows are offered an opportunity to view things differently, to figure

out alternative ways of being, and to bring up a satisfying and critically reflected solution concerning what to do next.

The Feminist Perspective

Thayer-Bacon: Critical thinking as relational constructive thinking aiming at pluralism

Whereas Siegel describes the critical thinker in terms of being an autonomous individual, Thayer-Bacon does the opposite. In fact, Siegel is one of those who Thayer-Bacon directs her sharp criticism to. Thayer-Bacon agrees with Siegel, however, as regards one crucial point: Critical thinking is important for maintaining democracy. Founding her perspective in pragmatism, postmodernism, feminism, and the work of Freire (with his emphasis on conscientization[39]), Thayer-Bacon's perspective has its emphasis in human relationships. Critical thinking, in Thayer-Bacon's (2000) terms, is a matter of social interaction in a community, which she metaphorically describes as a quilting bee. People come from different cultures with their unique individual perspectives, contributing to the quilting bee by their participation. Thus the quilting bee stands for the construction of knowledge, which grows larger and larger by the increasing number of quilters (knowers) and their voices. The concept of voice is a feminist key concept in Thayer-Bacon's thinking. When referring to 'voice', it conveys a meaning of conversation and physical closeness. The specific perspective constituted by a unique mind and self is also revealed when listening to the voice or making it heard. Imagining a patchwork quilt, Thayer-Bacon's reasoning implies that each individual contributes to the quilt work with their unique voices, their certain patches of knowledge, which each has a specific color and pattern due to the quilter's cultural background. All patches, thus all voices, are needed if the quilt, the construction of knowledge, shall take its form, although they have to be arranged in accordance with the activity of the community. This implies that the individual has to join and participate in accordance with the agreed language of the community; otherwise one will be left with a patch, which cannot contribute to the quilting bee. One's voice will not be heard. Thayer-Bacon points out several benefits from using the metaphor of a quilting bee when conceptualizing critical thinking. The pheno-menon of critical thinking is then viewed as a practice, which involves physical human beings, constituted by both mind and body in an indistinguishable way:

39 Conscientization is the English word for Freire's concept of *conscientização*. "The term *conscientização* refers to learning to perceive social, political, and economic contradictions, and to take action against the oppressive elements of reality."(Translator's footnote 1, p. 17, in Freire (1993)).

> First, there is the actual physical activity of sewing which goes on at quilting bees. But that is not all. There is probably talking going on by the quilters. Maybe the quilters are singing or telling stories. At some quilting bees, everyone sews, but even there everyone does not necessarily sew at the same time. People may take turns sewing while others are taking a break, or helping build up the material supplies needed for the quilting, such as cutting more material to use. At some quilting bees some participants may not actually sew at all: instead their talents will be used in other supportive ways: as cooks and servers of food and drinks for everyone, as child care providers playing with young ones so others can work...It is possible to find a quilting bee that is somber and quiet, where little interaction is taking place. But most quilting bees are lively, noisy places, where lots of conversation goes on. Quilting bees are certainly activities where people can contribute to the task of quilting in a variety of ways. They are also places where there is no doubt that we are talking about knowers as people with physical bodies that contribute significantly to the quilting experience. (Thayer-Bacon, 2000, p. 9)

This fact, that the mind and body may not be separated, is highlighted by Thayer-Bacon. Thayer-Bacon points out that historically, mind and body have been regarded as two different entities, of which only the former has been considered to be of importance for the critical thinker. This dualistic view is still evident today, Thayer-Bacon says, directing her criticism to Ennis, Paul, McPeck and Siegel. Considering which 'tools' are essential for critical thinking, Thayer-Bacon's classification explicates why body and mind must be kept together in an indistinguishable whole. Thus, turning back to her metaphor of a quilting bee, her argument is perhaps better understood when pondering upon the range of tools that are needed for such a practice. For instance, one needs rulers, scissors, and straight pins. These tools embrace *reason* when related to critical thinking in Thayer-Bacon's metaphor. By using rulers, scissors, and straight pins, the material can be put in order, and it is possible to keep the material together by means of the straight pins before sewing. This kind of ordering arrangement of the different pieces of knowledge corresponds to reason:

> Our reasoning helps us define and clarify our ideas, shaping them purposefully into place, so that we are sure the quilting pattern will fit together and look as we picture it in our minds. We need reason to help us decide what to leave in and what to leave out, how large the pieces need to be, and how to make sure they are orderly in their arrangements and accurate in size. We also use our reason to help us be able to step back from the immediacy of constructing knowledge, and gain a more distant perspective. Reasoning, like straight pins, holds our work in place while we let go, thus allowing us to take a break from our quilting. (Thayer-Bacon, 2000, p. 148)

Thayer-Bacon highlights that the use of rulers, scissors, and straight pins is a creative process. At the same time as the use of reason sets limits for the quilting thought, it also offers a range of possibilities concerning what materials should be contributed to the quilt, and it is in this infinite range of alternatives that creativity can thrive.

Besides the reasoning tools, there is also a need for needles and thread, which metaphorically constitute the important tool of intuition. Whereas rulers, scissors, and straight pins were used to order and straighten the chosen material, needles and thread are needed to put the pieces of material together. Thus intuition is necessary for constructing the different pieces of knowledge into a meaningful whole. One could also understand intuition as the designing function in the construction of knowledge. Besides reason and intuition, Thayer-Bacon also emphasizes emotions and imagination as important tools for critical thinking, inasmuch as these tools are considered to be the origin of critical thinking. In relation to her metaphor of a quilting bee, imagination and emotions constitute the material itself of which the quilt is made. Imagination is construed to be the material's pattern and designs, whereas the emotions are found in the material's colors and textures. With references to Greene, Thayer-Bacon holds that "imagination helps us create new orders as it helps us bring parts that seem to be severed together, as it helps us see patterns where there appeared to be none" (Thayer-Bacon, 2000, p. 155). Thus imagination is not only the beginning of critical thinking, but it has a transformative and creative function too, because it is by means of imagination that one can see things in new ways. As regards emotions, they have usually been regarded as being contrary to rationality, and hence, critical thinking. This explains why emotions are the less developed tool for critical thinking among all those mentioned here (ibid.). In contrast to Siegel, who views the relationship between critical thinking and emotions in the 'passion for reason', Thayer-Bacon contextualizes emotions as "collaborative constructions, greatly influenced by our contexts as embedded and embodied social beings" (ibid., p. 157). Accordingly, emotions are a fundamental part of critical thinking, inasmuch as critical thinking appears in social interaction with all the emotions such contexts convey.

Given the fact that Thayer-Bacon emphasizes not only reasoning, but also intuition, imagination, and emotions when identifying important tools for critical thinking, her feminist perspective of critical thinking is evident. Against the background of Euro-Western history, Thayer-Bacon underlines that reasoning is associated with 'White men of prosperity', whereas intuition, imagination, and emotions are rather associated with women and people from non-European cultures[40]. Inasmuch as reasoning has historically been regarded as the prime tool of critical thinking, critical

40 In her historical survey, Thayer-Bacon discusses critical thinking in relation to Aristotle and Plato in ancient Greece, on the one hand, and Dewey, Mead, James and Peirce in Classic Pragmatism, on the other. The rest of history is left out. Hence, an emotional man as Nietzsche, for instance, has received no attention in her historical construction of the male perspectives on critical thinking. Thayer-Bacon does, however, refer to other feminist scholars as well, supporting her assertion. Unfortunately, I have not had the time to study the historical analyses of these scholars. Against the background of my own historical survey, however, it seems as if the feminists are generally right in their claim that reasoning, and hence critical thinking, is primarily connected to men. This is due to the fact that the domain of scholarship has historically been constituted by 'white men of prosperity'. Even Nietzsche, who distinguishes himself radically from the general male way of thinking, was one of them.

thinking itself has been linked to male thinking. Thayer-Bacon's feminist perspective is also manifest when she defines the self in a relational way. Thayer-Bacon finds several scholars who show that men act in accordance with principles and rules, while women base their action upon responsibility and care, which could be considered to be a more relational approach. With references to Grimshaw, however, Thayer-Bacon points out that this gendered distinction is not really appropriate, inasmuch as "women *do* act on principles, just like men, but their principles are considered less valuable by men. Principled judgments that involve distancing ourselves from too much contextuality are considered valid and important, whereas principled judgments based on the value of maintaining relationships..." (Thayer-Bacon, 2000, p. 85) are regarded as more weak and based upon the wrong reasons. Hence, conceptualizing critical thinking in terms of a quilting bee points to that critical thinking is developed in relationships between human beings, thereby its feminist feature.

Against this background Thayer-Bacon argues that the concept of critical thinking must be transformed when adapting a feminist perspective. This is due to the fact that critical thinking is historically and culturally framed within the realm of rationality and reasoning, which are qualities associated with absolutism and male ways of thinking. Thus, based upon her pragmatic approach, which emphasizes the need for social interaction and dialogue, and her postmodern approach which highlights that human beings are embedded and embodied within cultural frames, as well as her feminist approach underscoring the importance of 'female' qualities for critical thinking, such as intuition, imagination, emotions, and relational thinking, Thayer-Bacon transforms critical thinking into constructive thinking. Making such a move implies that critical thinking receives other epistemological grounds than previous perspectives have assumed. Knowledge is no longer found 'out there', in the world, or 'in here', in the mind, but is rather something that is constructed in social interaction between individuals. Thus the line between private and public is not so clear anymore, inasmuch as positing such line in the first place is considered by Thayer-Bacon to be absolutistic. Since knowledge is constructed between individuals, knowledge cannot be regarded to be absolute and valid across cultures, but is something that is highly dependent on the context and on whose voice is speaking. Perhaps most important, knowledge is not only connected to the mind, but also to the body. Inasmuch as different bodies do not move in the same environment, knowledge is inevitably dependent on the experiences of the body. Hence, against this background, critical thinking must be transformed into constructive thinking.

CHAPTER 4

Arriving at a Synthetic Understanding of Critical Thinking

Introduction to the Synthesis

A retrospect and a look forward

Heidegger called attention to the fact that one cannot understand human existence without considering how the things in the world are used. Thereby he broke away from the conventional view of objects, as something that could be understood by observations alone, to consider their utilization. Based upon Heidegger's idea, I concluded that one cannot really understand critical thinking without considering how it is used. Therefore, I decided to scrutinize the use of critical thinking as it appeared to be expressed in the texts of different philosophers through history. It appeared that critical thinking had been used in a variety of ways. Even though the conditions, processes, and consequences of their critical thinking were different, all these philosophers used their critical thinking in order to enhance knowledge. Hence, irrespective of time, place, and person, the common scholarly interest has always been to attain increased understanding of the nature, humanity, and society. Implicitly, there was a belief in that such increased understanding was needed for the good of human living.

In view of the different perspectives on critical thinking today, the same phenomenon is evident, although the need for an increased understanding has changed and we now believe it is needed to be for the good of life on earth as a whole. It is no longer enough to be concerned about one's own society and the immediate environment, but things are put in a global perspective:

> For the first time in the history of the human race, we have the ability to destroy all life on earth. The decisions that we make as individuals and as a society regarding defense, the economy, conservation of natural resources, and the development of nuclear weapons will affect future generations of all people around the world. (Halpern, 1984, pp. 1-2)

Thus critical thinking in scholarship conveys a large amount of responsibility. Connected with the concern for the world, and the beings in it, scholars have a social responsibility as regards the consequences of their research. They also have a scholarly responsibility concerning their processes of research, which implies that no choices may be arbitrary or gratuitous. Every step has to be consciously deliberated and the awareness of alternative ways of acting must always be evident. Recalling that the authentic being consciously considers his or her possibilities in life and make careful decisions of every move, one might say that the scholar is obliged to authentic living, in Heidegger's terms. Such authentic awareness also conveys an understanding that living in the world is not only Da-sein, but also Mit-dasein. Accordingly, being in the world not only implies that one is thrown into a certain culture and constraints of being, but also that one has to live there with other people as well. Therefore, a person's movements in the world have consequences for others, as well as others put their marks on that person. Living is very much a matter of social action. Referring back to Heidegger's assertion that the use of things in the world must be considered if one wants to understand human beings' existence, it could be construed that human beings are connected and interact with one another through their existence and use of things. Assuming that critical thinking is not really a "thing", but something that is used by people as a possible way of moving and relating to the world and each other, one could say that it has a social dimension. Thus, according to my interpretation, critical thinking in scholarship could be considered to be a kind of social action.

In my readings of different contemporary perspectives on critical thinking, I found that critical thinking as a concept was always associated with rationality in some sense. Some scholars equate critical thinking with rational thinking, while other scholars hold that rationality is just one of many qualities in critical thinking. Irrespective of perspective, however, rationality always appears somewhere in their discourses on critical thinking. Thus one could say that rationality and critical thinking are two intertwined concepts that constitute an important quality in scholarship. One of the scholars who has focused upon rationality as being a fundamental part of social action is Weber. Inasmuch as I construe critical thinking to be a kind of social action, and due to the fact that critical thinking obviously has a tight relationship to rationality, it becomes feasible to analyze the different perspectives on critical thinking through the light of Weber's different types of social action. Thereby it is possible to describe the character of the critical thinking activity within each perspective. In order to scrutinize the activity of critical thinking as framed within the different perspectives, there is a need for concrete practices where the meaning of critical thinking can be realized. Hence, each analysis of the different perspectives is preceded by staging critical thinking in their specific meaning in an imagined classroom scene. Against the background of my experience from the staged classroom, the different aspects of critical thinking are outlined. This makes it possible to understand the phenomenon in a new way, beyond the perspective's own explication. Finally, based

upon these results, it is possible to relate the analysis to Weber's different types of social action, which will be presented further on. Before, going into Weber's definition of social action and its different types, however, some attention will be directed to the use of different imaginary classroom scenes as a tool for understanding the phenomenon of critical thinking.

Staging critical thinking

Gadamer maintains that a horizon cannot be revealed without encountering another horizon. In this thesis, the fusion of horizons appears in my encounters with the different perspectives on critical thinking, in which different constitutions of meanings are generated. Hence, my personal horizon is the familiar one, and the different perspectives constitute the alien horizons. In order to explore the meaning of critical thinking within these alien horizons, I chose to concretize the perspectives into practice. Thereby I was not restricted to *explore* the different meanings of the phenomenon against the background of different horizons, but I could also imaginatively *experience* the phenomenon in practice, and ponder upon how critical thinking can be *used* in relation to the different frames of the perspectives. Inasmuch as this thesis is based upon texts, I had to stage these experiences by means of imagination based on my own life-world, hence experience beyond this thesis. Thus, equipped with my power of imagination and earlier experience, I imagined a university, consisting of different departments, which implement the different perspectives on critical thinking into practice. This imaginary university offers a range of possibilities as to how critical thinking could make itself manifest from the horizons of each perspective. One could find critical thinking in the leadership of the organization, in the research carried out by the scholars, in the teacher's planning, or in the classroom activities, just to mention some instances. I chose, however, to limit my experiences to the classroom activity in the departments. Thereby I had the same stage, although expressed in different scenes due to the limitations of the perspectives. Each classroom, in turn, conveys many possible scenes, where different experiences and meanings of critical thinking emerge. Only one possible scene is presented from each classroom, however, inasmuch as there was neither time nor space for presenting them all. The chosen presentation was imaginatively staged on the criteria that it would palpably capture the meanings of critical thinking from each perspective, as well as seizing how these meanings could be concretely expressed in practice. Therefore, the scenes might be perceived as a bit excessive and idealized, but this is necessary for understanding the practical consequences of the different meanings of critical thinking in relation to their perspectives. By proceeding in this manner, a total of six different constitutions of meaning in relation to critical thinking have been generated against the background of six different horizons. When these meaning constitutions are considered together, they provide a deeper understanding of the phenomenon as a whole, more than a single perspective can ever offer. Before the analysis of the different perspectives is introduced, however, Weber's concept of social action and its different types will be outlined.

Social action and its different types

According to Weber (1968), social action can be understood in relation to four different types. Inasmuch as Weber states that not all human actions are social, it is important to know what he means by social action, before discussing the different types. In short, he explains social action in the following terms:

> We shall speak of "action" insofar as the acting individual attaches a subjective meaning to his behavior – be it overt or covert, omission or acquiescence. Action is "social" insofar as its subjective meaning takes account of the behavior of others and is thereby oriented in its course. (Weber, 1968, p. 4)

Social action does not necessarily mean that a person is active, inasmuch as social action also involves "failure to act and passive acquiescence" (Weber, 1968, p. 22). Hence, what makes action social is its *orientation* to others, which can be extended in time, inasmuch as social action "may be oriented to the past, present, or expected future behavior of others" (ibid., p. 22). The condition for the orientation to be social is, in turn, dependent on the individual's subjective meaning with his or her action. As regards the 'others', Weber states that there is no need for an immediate presence in social action. It may well be that a person acts in accordance with just a conception of the 'others', a conception that either constitutes certain individuals or a whole contemplated community:

> The 'others' may be individual persons, and may be known to the actor as such, or may constitute an indefinite plurality and may be entirely unknown as individuals. (Thus, money is a means of exchange which the actor accepts in payment because he orients his action to the expectation that a large but unknown number of individuals he is personally unacquainted with will be ready to accept it in exchange on some future occasion.) (Weber, 1968, p. 22)

Merely reactions or various random effects of being involved in action with other people do not, however, correspond to social action in Weber's sense. There is a need for a meaningful orientation towards others as well. Putting the concept of social action into a concrete context, it implies that one and the same action is sometimes regarded to be social and other times not. For instance, reading a book is not a social action if it is read just for one's own pleasure. Reading a book in order to teach its meaning or write a thesis about it is, however, a social action, due to its orientation towards others. Furthermore, even if many people perform the same action at the same time, this does not necessarily point to a social action:

> ...if at the beginning of a shower a number of people on the street put up their umbrellas at the same time, this would not ordinarily be a case of action mutually oriented to that of each other, but rather of reacting in the same way to the like need of protection from the rain. (Weber, 1968, p. 23)

Playing with the thought that people would put up their umbrellas in order to protect the person next to them would, however, correspond to social action. In relation

to critical thinking, it implies that critical thinking could be considered to be an expression of social action when it is oriented towards others. It will be manifest that all the different perspectives on critical thinking today could to a certain extent be depicted in terms of social action, even though this social orientation is sometimes rather implicit. According to Weber, social action may be oriented in four ways: *instrumentally rational*, *value-rational*, *affectual*, and *traditional*. Even though Weber's analysis of the different types of social action is related to economy, it is also possible to relate them to scholarship and critical thinking, as I intend to do.

Instrumentally rational action seems to be type that is most compatible with the historically traditional view of science, especially when it is put within the frame of hypothetico-deductive thinking, inasmuch as *instrumentally rational action* is depicted to be:

> ...determined by expectations as to the behavior of objects in the environment and of other human beings; these expectations are used as "conditions" or "means" for the attainment of the actor's own rationally pursued and calculated ends; (Weber, 1968, p. 24)

It appears that *instrumentally rational action* is a movement towards an aspired goal, in which the individual rationally considers the different possibilities as to how to attain the goal. The individual also weighs the direct and indirect consequences of realizing the goal, as well as the possible means themselves against one another:

> Action is instrumentally rational... when the end, the means, and the secondary results are all rationally taken into account and weighed. This involves rational consideration of alternative means to the end, of the relations of the end to the secondary consequences, and finally of the relative importance of different possible ends. (Weber, 1968, p. 26)

Weber points out that it is a matter of a purely rational process, which is not guided by values. It happens, however, that conflicting possible ends appear, such as when the attainment of a goal would occur at the expense of another equally aspired goal. In such dilemmas, Weber holds that "[c]hoice between alternative and conflicting ends and results may well be determined in a value-rational manner. In that case, action is instrumentally rational only in respect to the choice of means" (ibid., p. 26). Thus the borderline between *instrumentally rational action* and *value-rational action* is rather slippery. *Value-rational action* is particularly interesting when related to scholarship as a whole. According to Weber, *value-rational action* is:

> ...determined by a conscious belief in the value for its own sake of some ethical, aesthetic, religious, or other form of behavior, independently of its prospects of success (Weber, 1968, pp. 24-25)

One is inclined to say that there is a general tendency to give credence to scholarship in a way that gives the scholars' activity 'a value for its own sake'. The same thing could almost be said about critical thinking in scholarship, conventionally construed

to be one of the most important tools for creating new knowledge. What distinguishes scholarly activity from Weber's ideal type of *value-rational action* is, however, that scholarship as well as scholarly critical thinking aim at something beyond their own processes, namely increased knowledge. Therefore, the *value-rational action* of scholarship, if one ventures to say so, is certainly not 'independent of its prospects of success', but rather the reverse. Its whole aim is to develop itself, and thereby change the conditions of human living. In that sense, the development of scholarship could be considered to be closer to *instrumentally rational action*, inasmuch as its meaning is placed in its achieved results. This is the crucial point, distinguishing scholarship from Weber's conceptualization of the *value-rational action*, inasmuch as Weber says that "the meaning of the [value-rational] action does not lie in the achievement of a result ulterior to it, but in carrying out the specific type or action for its own sake" (ibid., p. 25). Considering how Weber depicts the value-rational person, however, it appears that the history of scholarship is constituted by a range of scholars who have more or less gone against the stream of society in their conviction that they have found better ways of thinking, just as Weber exemplifies value-rational action to be:

> ...the actions of persons who, regardless of possible cost to themselves, act to put into practice their convictions of what seems to them to be required by duty, honor, the pursuit of beauty, a religious call, personal loyalty, or the importance of some "cause" no matter in what it consists. In our terminology, value-rational action always involves "commands" or "demands" which, in the actor's opinion, are binding on him. It is only in cases where human action is motivated by the fulfillment of such unconditional demands that it will be called value-rational. This is the case in widely varying degrees, but for the most part only to a relatively slight extent. (Weber, 1968, p. 25)

Both *instrumentally rational action* and *value-rational action* are carried out by the individual with a conscious meaning of the activity. In *instrumentally rational action* the meaning of the action is placed *beyond* its process. In *value-rational action*, however, the meaning of the action is placed *in* its process. Apparently, it is the element of 'conscious meaning' that makes an action rational, if we use Weber's concepts, since he states that the other two types of social action lack this quality and are, therefore, not rational. The two "irrational" types referred to are *affectual action* and *traditional action*, respectively. *Affectual action* is "determined by the actor's specific affects and feeling states" (ibid., p. 25). This kind of social action has been purposefully combated in scholarship through the times (with the exception of Nietzsche). It has traditionally not been regarded as critical and scientific to rely on emotions when carrying out research, inasmuch as such states are not considered to be objective. Especially in the postmodern era, however, this traditional view has been questioned. On the one hand, the existence of objective knowledge is considered to be a myth, which is why there is no need to restrain one's emotions when creating new knowledge. On the other hand, postmodernists point to the fact that body and mind cannot be separated. Hence, one could say that the development of scholarship is on its way to

accept *affectual action* as an unavoidable part of its activity. It should be mentioned, however, that Weber illuminates the blurred line between *value-rational action* and *affectual action*. As soon as *affectual action* "occurs in the form of conscious release of emotional tension...it is usually well on the road to rationalization..." (ibid., p. 25), which implies that it transforms itself into either *instrumentally rational action* or *value-rational action*, or both. Finally, *traditional action* is, according to Weber, "determined by ingrained habituation" (ibid., p. 25). Hence, *traditional action* has become so habitual that people have ceased to be consciously aware of its meaning. At this point, critical thinking plays a crucial role in scholarship. The scholar may never cease to question the meaning of his or her use of a theory, method, or concept. Still, it seems as if this *traditional action* also appears in scholarship, inasmuch as the concept of dogmatism would otherwise not exist.

It is important to bear in mind that Weber does not consider the different types as static and fixed entities. Nor does he claim that they exist in reality in their pure forms. Rather, Weber offers a theoretical tool for analyzing how social action could be interpretatively understood. This implies that the different orientations should only be understood in terms of ideal types, which could be used as a background for understanding the character of a social action. Thereby it is possible to see a social action as being more or less oriented to either one type or the other:

> It would be very unusual to find concrete cases of action, especially of social action, which were oriented *only* in one or another of these ways. Furthermore, this classification of the modes of orientation of action is in no sense meant to exhaust the possibilities of the field, but only to formulate in conceptually pure form certain sociologically important types to which actual action is more or less closely approximated or, in much the more common case, which constitute its elements. (Weber, 1968, p. 26)

In the same way, the forthcoming synthesis of the different perspectives on critical thinking should not be understood in absolute terms, but only as a possible way of understanding the phenomenon. Hence, with the picture of these ideal types of social action in mind, the analysis of the different contemporary perspectives critical thinking, can begin.

Pedagogical Implications of the Contemporary Perspectives on Critical Thinking

Creating the "University of Critical Thinking"

Having a phenomenological approach means to carefully consider how the individual constitutes meaning in relation to his or her experience of a certain phenomenon. My own meaning constitutions in relation to contemporary perspectives on critical thinking have, however, not really been expressed explicitly yet. Rather I have kept myself in the background, letting the different perspectives speak for themselves. Thus the aim of this chapter is to analyze the different meanings of critical thinking in order to reveal my own understanding of the phenomenon. This was carried out in a certain manner. Firstly, I made four reduced summaries. Each summary consisted of the essential concepts and meanings which were associated with critical thinking within each perspective. Based upon these summaries, I tried to imagine how the realization of the different perspectives on critical thinking would look in practice. My imagination resulted in a visit to the imaginary "University of Critical Thinking", where the educational ideal is to enhance critical thinking in students. The "University of Critical Thinking" has four departments: the cognitive department, the informal logic department, the developmental-reflective department, and the feminist department, which all work in different ways. At each department I was invited to observe the classroom activity. (In some departments I was even asked to participate in their activity). Totally I attended six different classrooms, during one lesson each. Each classroom was constituted by a teacher who put a certain perspective on critical thinking into practice, and students who tried to develop their critical thinking ability. Thereby I could encounter the possible realizations of Halpern's, Kurfiss', Siegel's, King's and Kitchener's, Brookfield's, and Thayer-Bacon's approaches to critical thinking. By reflectively analyzing my classroom experiences, different practical aspects of critical thinking appear in each perspective. These aspects were then put into Weber's model of different types of social action, in order to understand the meaning of the classroom activity in relation to the consequences it might have for scholarship as a whole.

Visiting the cognitive department

Experiences from Halpern's classroom

It was early in the morning. A group of students were waiting outside the door of the classroom, talking about what they did in the weekend. Some of them took a rapid glance at me, probably wondering what I was doing there, but no one seemed to be curious enough to ask me. Just in time, the teacher arrived and opened the door. Since we had an appointment, she looked happy to see me and wished me welcome. Shaking hands, she said that I could take a place in the corner and observe the class-

room activity. The teacher introduced me to her students and asked them not to be distracted by my presence. Soon, the lesson had begun. The teacher delivered a lecture in hypothesis testing, starting with the explanation that "[a] hypothesis is a set of beliefs about the nature of the world; it is usually a belief about a relationship between two or more variables" (Halpern, 1984, p. 94). The critical thinker may not be satisfied with arbitrary hypotheses about how nature is constituted, but must have reasonable arguments for his or her beliefs, she said. Accordingly, it is not enough to believe that something is true just because one's earlier experiences support this belief, or because someone else, who we really trust, says so. The teacher suggested that reasonable arguments may be achieved by hypothesis testing. There are many critical factors to keep in mind if the hypothesis testing shall be valid, she pointed out, and started to go through the many steps of the process. All the students made notes of what she said. Then there was a break. After the break, the teacher wrote something on the whiteboard:

> A mad scientist taught his pet fly to "fetch" a small stick whenever a whistle was blown. The scientist then found that after he cut off the fly's wings, the fly didn't "fetch" the stick. He concluded that flies hear with their wings and that the fly had become deaf as a result of losing its wings. How would you convince the scientist that his experiment doesn't prove that flies hear with their wings? (Halpern, 1984, p. 116)

The teacher asked her students to make use of hypothesis testing for solving the problem. In front of each student there was a blank paper which was successively filled in with a suggestion of a solution. After a while the teacher asked somebody to read aloud his answer. He did so, but he did not seem to be convinced of the solution he had provided. It did not really match his expectation as to how the problem should be solved. Apparently, his solution did not really match the teacher's expectation either, inasmuch as she did not look really satisfied. She asked him to tell her how he had reasoned when he tried to solve the problem. The student enumerated a range of strategies for his thinking. The teacher pointed out that he forgot to incorporate the use of a control group into his argument, and that his argument was therefore not as valid as it could be. The student showed a mixed facial expression of disappointment and relief (probably because he now knew what went wrong). Thereafter the teacher made her own thinking explicit to her students, as to how she would solve the problem herself. She offered a complex solution with all the steps in hypothesis testing involved and the students made notes of her reasoning. Then she offered them a couple of other problems, which were supposed to be approached and solved by hypothesis testing. The lesson ran to its end, and the teacher concluded by saying that all problems have a solution. It is not difficult to find a solution, but the hard task is to provide a *valid* solution. In order to make a solution valid, it must be preceded by critical examination. There exists a range of strategies for making such critical examinations and today the students had been taught one of them: hypothesis testing, which could be helpful when trying to critically understand the world

around us... Time is out. The students streamed out of the classroom. Still, nobody made any attempts to contact me, with the exception of the teacher, who expressed her thanks for my interest in her critical thinking course. I, in turn, thanked her for letting me visit her class.

Some reflections upon my experiences from Halpern's classroom

In front of the classroom, there was an authority who possessed the key to critical thinking. Critical thinking could be learned by listening to the authority, who delivers certain strategies for thinking critically, and by trying to make use of these strategies. While making use of the strategies, the students worked individually, and isolated from one another. Some of the students succeeded in their imitation of the suggested thinking strategies, whereas others failed because they had missed some important parts on their way to solving the problem. In such cases, the authority guided them into the right way to go. It seemed as if critical thinking was a matter of utilizing strategies in accordance with a prescribed model. It appeared that even though content varied, the strategies were the same. Hence, the content was subordinated to the means. By using the right strategies, the solution was considered to be valid and based upon critical examination. Thus, the goal was also subordinated to the means. This is interesting, inasmuch as the whole process of critical thinking (in Halpern's conceptualization of it) aims at finding a solution. Furthermore, I now understand why the students did not ask me who I was. Inasmuch as the means are already fixed, it is not important *who* is speaking, inasmuch as anyone (who is a critical thinker) can make the same reasoning, and found it on the same basis. Thus, the uniqueness that comes with different persons is not considered to be valuable. Critical thinking seems to be an impersonal skill.

Practical implications of Halpern's perspective on critical thinking

If one leaves the experiences of Halpern's classroom aside, and considers her cognitive perspective as a whole, it appears that irrespective of which qualities one refers to in her conceptualization of critical thinking, the same phenomenon is evident. Problem solving, decision-making, and probability statements etc., are all carried out by using certain strategies connected to the specific type of problem. Against this background, three aspects seem to be essential for critical thinking in Halpern's conceptualization. One is the identification of which problem type one is faced with: *Identification of problem type*. The second is the choice of strategies for how to solve the problem: *Choice of strategies*. Finally, the third is the appropriate use of the strategies: *Use of strategies*. Pondering upon the over-all meaning of a strategy, in the scientific and critical manner Halpern refers to, a strategy appears to be constituted of rules. Thus critical thinking, in Halpern's conceptualization, is mainly a matter of *mastering and manipulating rules*. Against this background, it appears that critical thinking is captured within the frames of reproduction of knowledge. Since the same

rules are used over and over again, irrespective of content, the ultimate meaning and qualitative understanding of the content is reproduced. Imagining that scholarship would exclusively rely on the type of critical thinking that Halpern suggests, and bearing in mind that the development of scholarship is highly dependent on the use of critical thinking, one would find that it develops in a cumulative way only. Knowledge will thus be expanded, but not really deepened and understood in a qualitatively new way. This is due to the fact that qualitative changes require new ways of approaching phenomena.

Considering Halpern's perspective on critical thinking in the light of Weber's model, it appears that her perspective mainly falls into instrumentally rational action and traditional action. Its traits of instrumentally rational action are manifest in the fact that the conscious meaning of the action is placed beyond its own process, inasmuch as critical thinking is a matter of attaining a certain goal (a solution). Furthermore, there is an emphasis on rational decisions as to which strategies will lead to this goal. It appears, however, that Halpern puts focus upon the means rather than the consequences of critical thinking. Against the background of Halpern's classroom, there was no consideration of the consequences of attaining the solution (for instance what might happen if one convinced the mad scientist that he was wrong). Therefore, Halpern's conceptualization of critical thinking does not completely satisfy the criteria for instrumentally rational action, inasmuch as such action is also a matter of weighing the consequences of the use of certain strategies. By keeping her perspective to the rules, rather than the consequences, Halpern frames the meaning of critical thinking into its own instrumentality. There is also a quality of traditional action, inasmuch as the recurrent use of certain strategies seems not to be questioned in their repeatable utilization. Simply, it has become "tradition" to use the suggested methods when thinking critically. This in turn results in that the quality of knowledge continues in the old rut, without the critical thinker being aware of its epistemological implications.

Experiences from Kurfiss' classroom

After my visit to Halpern's classroom I went for lunch with another teacher, whose class I was supposed to visit next. Her educational approach was based upon Kurfiss' perspective on critical thinking. During the lunch, she told me how she had planned her lesson. Her plans sounded interesting, and it seemed to be a quite different lesson compared to the one I had attended earlier. Inasmuch as her teaching was based upon group-work, she suggested that I could move around the groups and listen to their discussions. When lunch-time was over, we went to the classroom, where the students waited outside the door. The teacher presented me to the class and told her students that I would listen to their discussions today. Then she asked me to sit down next to her, in front of the class, so I could see them all. The teacher started her lesson by calling attention to what they had learned last time. She reminded them that organizing information is important for critical thinking, and that they had been in-

troduced to different organizing tools, such as making use of matrixes or hierarchical ordered tables. She pointed out that such proceedings make it easier to take stock of information. Some students gave a nod of assent. Today, she said, I want you to make use of these tools in order to consider what facts are of relevance when understanding and attacking this social problem:

> In a certain city, there is a housing area, which has heavy problems with high criminality. Considering the people who live there, they mainly fall into socially exposed categories, such as unemployed, immigrants, addicts, and single parents. Often they match more than one of these categories. The environment consists of several ten-storied houses with grassy spaces between the houses. Vandalism and graffiti are found all over the place. The housing area is surrounded by highways and streets crowded with traffic. Therefore, the whole area has tunnels and footbridges intended for pedestrians and cyclists. Even though the police are not stationed in the area, they often circulate there due to the high criminality. The fire department and ambulance also turn out several times a week. Inasmuch as this housing area incurs heavy expenses for the municipality, as regards all the turnouts and subsequent measures, there is an on-going project as to how to deal with the high criminality. Hence, in order to combat this undesirable development there is a need to understand its possible causes.

All students made careful notes of the problem, while the teacher was talking. When the teacher had completed her depiction of the problem, she made sure that everyone was finished with their notes, before asking them to divide themselves into four discussion groups. The students seemed to be keen on their task and quickly constituted discussion groups, consisting of about five students per group. The teacher told them that she expected an account from each group in an hour. I started to go to a group, consisting of five men. They discussed the problem of not integrating immigrants into the society. "*Placing immigrants in one and the same place cut them off from the rest of the city. I think it is a political failure, because then the immigrants do not experience that they are a part of the society.*" Another student agreed and concluded that: "*If the immigrants felt that they were an important part of the society, they would feel responsible for it and would probably not vandalize it or hurt its social members.*" A third student said: "*Yes, they would care for the society instead of attacking it. But one must be aware that not all immigrants in this area can possibly be criminal. One should not judge everyone alike. I have made a matrix of the social categories living there. We also have to consider the unemployed, the addicts, and the single parents. What do we think about them? Are they causing the criminality too?* The group became silent. All of them seemed to be reflecting upon this issue carefully. I decided to listen to the second group, which consisted of four women. Approaching them, I heard that they were discussing the environment and how it might cause high criminality. In the same way the third group, consisting of three women and two men, discussed the need for a police station in the area, as well as social programs at school where,

the children could "*from the very start be educated in the consequences of using drugs*". The last group I listened to was the most heterogeneous. It consisted of two women and four men, of which three had a foreign extraction. This group worked hard at making a hierarchical ordered table of the possible causes. They could not really agree as regards the hierarchical order of the causes, which factors they considered to be of most relevance for understanding the phenomenon. When time was out, they decided to emphasize poverty as a crucial cause of the high criminality in the housing area. The teacher broke the discussions and asked the groups to inform the class of their results. All groups had reached one main cause, although the suggestions differed between the groups. The teacher thanked them for their work and told them that it was time for a break. The students streamed out of the classroom, still discussing the problem. The teacher asked me to help her with preparing the playback of a videotape. We had some trouble finding the video channel, but we fixed it at the last moment when the students came back. They were supposed to watch a prerecorded documentary about the kind of housing areas that they had just discussed. The documentary showed a housing area, where the politicians decided to literally blow up the high-rise buildings, due to the fact that high criminality usually appears in such housing areas. The people who lived there had to move across the street. Most of them were unemployed immigrants. Two years later, it appeared that the high criminality remained. In another area, where the houses were built in three floors, and those living in the area were mainly unemployed non-immigrants, the same problem was evident. The documentary pointed to many other factors of the problem, and the students seemed to be really interested. After 45 minutes, the documentary was ended and the teacher asked her students to continue their discussions, and to incorporate the new information they had got from the documentary into their conclusions. I passed around the groups and recognized that they had changed their viewpoints. They also reasoned in a more complex way, weighing in more possible causes into their conclusions. Twenty minutes before the lesson was scheduled to end, the teacher told the groups that it was time to make a second account of their discussions. It turned out that all groups had changed their opinions. Irrespective of group, the possible causes seemed to be interrelated to one another. They did no longer think that there was a main factor. Furthermore, they had started to reflect upon the factors themselves – what it means to be unemployed for instance. The teacher ended the lesson with an encouraging smile, saying: You see, we all have biases, which make themselves manifest when approaching a problem. We do not know that, however, until we encounter other perspectives and get more information. I think you did a great job today. See you next week.

Some reflections upon my experiences from Kurfiss' classroom

In contrast to Halpern's classroom, where the teacher played an important role, Kurfiss' classroom emphasized the students and their activity. Focus was not so much on the use of different thinking strategies, even though matrixes and hierarchically

ordered tables were used. Rather, it was a matter of illuminating a problem from different perspectives, which became manifest through social interaction in group-work. Furthermore, there was an attempt to reveal the students' biases and make them reason in a more objective and complex way, by giving them more information (from the documentary). It is questionable, however, if the students actually became aware of their biases. Perhaps their changed reasoning was only a result of getting more information. In none of the discussions the students reflected upon their own understanding, but, rather, they treated the different perspectives, including their own, as constituting objective aspects of the problem. This was evident, for instance, in the first group where the men implicitly perceived a relationship between immigrants and criminality, and rationally decided to blame the politicians. Even though they admitted that everyone must not be judged alike, there was a concealed belief that immigrants rather than other socially exposed groups would be criminal. They would almost certainly not reason like they did if they were immigrants themselves. To make a summary of my experiences from this classroom I interpret it as being a matter of dealing with information in a many-facetted way. Focus was put on understanding the problem, seen from different points of views, rather than on understanding the different perspectives themselves, including understanding one's own perspective.

Practical implications of Kurfiss' perspective on critical thinking

Considering both Halpern's and Kurfiss' perspectives, it appears that they place emphasis on critical thinking as a cognitive process, although in different ways. At first glance, it might be construed that Halpern limits the process to being just an individual matter, whereas Kurfiss expands the process of critical thinking to being a collective activity. As regards Halpern, this seems correct, but pondering further upon Kurfiss' meaning of critical thinking, it appears that her perspective puts focus on the individual as well. Kurfiss' suggestion that critical thinking is enhanced by social interaction between individuals is still rooted in her concern for the individual's development. Her emphasis on social interaction is not directed towards increasing collective knowledge, but rather upon the individuals' own cognitive understanding of a phenomenon. Thus, besides matrixes and tables, the group seems to be just another tool for the individual to think critically, even though it is seen as an important one. Furthermore, compared to Halpern, Kurfiss offers a narrower view of critical thinking. Whereas Halpern relates critical thinking to solving all kinds of problems, Kurfiss restricts critical thinking to an explorative investigation of ill-structured problems only. Kurfiss' limitation to ill-structured problems is, however, explained by her definition of critical thinking, which aims at exploring and integrating all available information so that a hypothesis or conclusion could be convincingly justified. Thus the meaning of critical thinking itself entails a feature of uncertainty, inasmuch as Kurfiss associates it to the act of exploration and convinction. Pondering upon the meaning of these concepts, it appears that exploration, in Kurfiss' sense of the word,

conveys a range of alternative explanations. In this phase, there is a feature of uncertainty, inasmuch as it is still unclear which of the explanations one should rely upon. When relating conviction to exploration, in Kurfiss' use of these concepts, conviction means that one rationally explores the different possible explanations in order to find the most valid and unbiased, and thereby the most convincing one. The latter phase involves a feature of certainty, based upon the rational integration of all available information. Against this background it appears that the process of critical thinking is a movement from certainty (the original belief) to uncertainty (the exploration of alternatives), and back to certainty again (the rational alteration of one's original belief). Hence, it is possible to identify three aspects in Kurfiss' understanding of critical thinking. The first is exposing one's belief to close examination: *Exposition of belief*. The second is exploring alternative beliefs: *Exploration of alternative beliefs*, and the third is the rational and objective choice of one belief in preference to the others: *Choice of belief*. Based upon the meaning of these dimensions, one could conclude that critical thinking is chiefly a matter of *objectifying and rationalizing one's beliefs*.

In relation to Weber's analysis model, it appears that Kurfiss' perspective on critical thinking is framed within the same types as Halpern's perspective is. The meaning of the critical thinking process is found in the goal: to attain 'a rational response' to a certain problem. The means for attaining this rational response is by making use of explorative and rational thinking. Thus, in these respects, Kurfiss' perspective displays features of instrumentally rational action. In accordance with Halpern, Kurfiss puts focus upon the means rather than on the consequences of critical thinking. This can be discerned from the fact that the result of the thinking process can be 'convincingly justified', as long as the preceding investigation has been carried out appropriately, integrating all available information in a rational manner. Kurfiss' conceptualization of critical thinking could therefore also be characterized as traditional action, due to the fact that, without further consideration, she associates it with rationality and objectivity, two of the leading concepts in the history of scholarship. Even though the quality of affectual action is not very pronounced in Kurfiss' perspective, it should be mentioned that Kurfiss points out the sense of wonder as a powerful motivation for students to think critically. Considering the process of critical thinking from its beginning to its end, however, it appears that the quality of affectual action is lost as the process proceeds.

Visiting the informal logic department

Experiences from Siegel's classroom

The day after visiting Kurfiss' classroom, I went to the informal logic department, in order to visit Siegel's classroom. This time I met a male teacher, who seemed to be full of expectations for the forthcoming lesson. He presented me to his class and explained that they were going to stage a mixed variant of an American trial and a

panel discussion today. Therefore, everyone (including me) had to give a helping hand, moving the furniture. After five minutes of moving around desks and chairs, the classroom had become something that partly reminded of an American court room. In front of the room, the teacher's desk constituted the judge's place. At one side of the desk, there was a row of five chairs, slightly turned towards the middle of the room. At the opposite side of the desk, there was another row with five chairs placed in the same way. In the middle of the room, the rest of the chairs were placed in a half-circle, constituting the jury's place. When we had finished the task of moving around furniture, the teacher asked his students to sit down anywhere they wanted. He explained to them that the roles would change next week, so those who debated today would constitute the jury next time, and the reverse. There seemed to be some competition as regards the judge's chair, but taken as a whole, the students agreed about their roles. Then the teacher asked if everyone had remembered to get information about nuclear power stations during the week, as he had instructed them last time. Judging from their facial expressions, it seemed as if all were well prepared. The teacher explained that they would have a panel discussion about nuclear power stations, whether they should be dismantled or preserved. The right side would argue for their dismantlement, and the left side would argue for their preservation. The jury was supposed to take notes of the different arguments and weigh their soundness. Afterwards the jury would present their results to the judge, who would decide which side won the argumentation competition. Once the teacher was sure that everyone had understood the task, he asked the debaters to leave the classroom and go to the rooms for group activities, where they could prepare their arguments. He pointed out the importance of keeping oneself to the truth, inasmuch as one of the most important features of a true critical thinker is his or her willingness to search for the truth – and the truth could only be found on true premises. One student asked the teacher if it was really possible to consider the question of nuclear power stations as a question of truth. The teacher admitted that it was not really that kind of question, but that one could still examine its justification, based upon true facts. Thus, making up facts in order to win the competition would be considered to be cheating and equal to non-critical thinking. They had one hour to arrange their facts and to make up argumentation plans, before they came back. The rest of the class, constituting the jury and the judge, stayed.

The teacher held a lecture to the remaining students about different types of arguments, referring to logos, ethos, and pathos. Writing on the whiteboard, he explained that logos is related to logical arguments, and that ethos refers to the trustworthiness of a speaker, or in this case to the source supporting the debaters' arguments. He pointed out that pathos is a very deceptive kind of argument, inasmuch as it plays on people's feelings in a way that might contradict rational thinking. The teacher gave them some examples from each of the argument types too, and winded up with saying that logos was the most valuable of them all for critical thinking. He also asked them to try to identify assumptions and fallacies in the debaters' reason-

ing. An hour was gone and the students, who had been appointed to be the debaters, came back. The teacher decided to have a break. After the break, all students took their places and the debate began. The teacher and I took place among the jury. I was impressed by their ingenious discussion. It reminded me of watching a tennis match, where the ball bounced back and forward, and was served anew when one side could not find any more counter-arguments. They illuminated the issue from an economical perspective, an environmental perspective, and also from the perspective of human rights. The debaters exerted themselves to present explicit reasons for their arguments and listened carefully to their counterparts. They seemed not, however, to listen to their counterparts in order to acknowledge the soundness of their arguments and to build further on them, but, rather, they listened in order to show their fallacies. Hence, the discussion was more a question of demolishing arguments than of constructing knowledge (this phenomenon could, however, be partly explained by the fact that the students were involved in a competing debate). After about forty-five minutes, the teacher ended the discussion by thanking the students for their contributions. He then asked the jury to discuss aloud their analysis of the debate. The jury had found all three of the argument types in the discussion presented by both sides: logos, ethos, and pathos. They could also identify assumptions and fallacies at a more comprehensive level than the debaters themselves could while discussing the theme. When a further forty-five minutes had passed, it was time for the judge to make his decision. Considering the character of the arguments on both sides, it appeared that it was hard to decide which side had the soundest reasons for their arguments. The 'advocators' of the preservation of nuclear power stations used logos more frequently in their arguments, however, and were therefore announced to be the winners. All the students seemed to accept the judge's decision, and started to pack their things, since time was out. Before they left the classroom, the teacher exhorted them to get information about genetic engineering for the following week. Before I left, I told the teacher that I had had a really nice time and thanked him for inviting me.

Some reflections upon my experiences from Siegel's classroom

Just as in Kurfiss' classroom, the teacher did not play a leading role in Siegel's classroom. This was probably due to the fact that the teacher in Siegel's classroom strived to realize Siegel's assumption that it is not enough to have the skill to think critically, nor is it enough to be disposed to think critically, but one has to *utilize* one's skill. Of course, the students utilized their skill in Halpern's classroom too, although much of the lesson was occupied by the teacher's lecture on how to think critically. Half of the class in Siegel's classroom was prepared to analyze the arguments, with respect to their type of reasoning, and attempted to identify the assumptions and fallacies of them. They succeeded well in doing that, even though they kept their analysis on a quite superficial level. There was no concern for understanding the underlying meaning in the debaters' assumptions, but, rather, the jury analyzed the arguments

at their expressive level. In the same way, the debaters frequently used their ability of identifying fallacies in their counterparts' arguments in order to prove the merits of their own reasoning. Sometimes, when one side could not find any more arguments speaking for their assumption, they switched their target to another shortcoming of their counterparts' standpoint. Almost all the time, their arguments relied on so-called true and objective facts, but it happened that gleams of personal and emotional values were interspersed into their reasoning. Such gleams were, however, more or less reduced to silence by their partners, who were anxious not to lose the competition. They would then be considered to be less skilled in critical thinking.

Practical implications of Siegel's perspective on critical thinking

In contrast to the cognitive perspective, where the epistemological assumptions of the perspective on critical thinking seem to be taken for granted, Siegel treats this question seriously. Even though he devotes himself to the same epistemological realm as Halpern and Kurfiss (the realm of absolutism and objectivism), he is particular about delivering reasons for his epistemological view of critical thinking. He certainly puts his theory into his own practice. Siegel asserts that critical thinking cannot be exercised at the deep level of understanding and questioning different worldviews, partly because it would then be impossible to objectively decide whether a reasoning is fallacious. This is because judging the fallacy of a reasoning would be totally dependent upon which worldview one originates from. Neither can the meaning of critical thinking be dependent on the context, inasmuch as actually there exist general traits in critical thinking. One finds evidence for this in the existence of certain qualities in critical thinking, such as identifying assumptions and fallacies, which are applicable irrespective of the context, Siegel points out.

Reflecting upon Siegel's conceptualization of critical thinking in relation to my experiences from Siegel's classroom, it is clear that critical thinking receives a rather limited meaning when realized in practice. It becomes a matter of rationally arguing in favor of one's reasons for believing or doing something. Of course, the critical thinker has to be able to change his or her beliefs or actions if someone or something convinces the critical thinker that he or she is moving upon the wrong reasons. The point is, however, that a person thinks critically, in Siegel's sense, as long as he or she is moved by appropriate reasons. One cannot avoid asking: appropriate for whom and in relation to what? For the critical thinker him- or herself in relation to his or her specific situation, or...? Siegel does not really answer this in his definition, but instead refers to the context. According to my interpretation of Siegel, he means that a person moves appropriately in relation to the demands of the context. Such reasoning preconditions, however, that the context is perceived in the same way for everyone, and furthermore that the individuals involved are moved by the same interests. Against the background of my experiences from Siegel's classroom, however, both sides of the panel discussion seemed to be moved by the appropriate reasons in relation to their specific standpoint – and their reasons were certainly not the same.

Thus, if one takes Siegel's definition seriously, it seems to be directly connected to the individual, otherwise the appropriateness of the moves does not make sense. One could also understand the appropriateness of the moves from the judge's perspective, however. One side, constituting the 'advocators' of the preservation of nuclear power stations, turned out to be better at thinking critically, because they used logos more frequently in their arguments. Viewing the phenomenon from this angle, it appears that there is a need for another power to judge the appropriateness of someone's moves. Recalling Siegel's claim that critical thinking is related to moral and democratic beings, the appropriateness of the moves could perhaps best be understood in relation to morality and democracy. Hence, the moral and democratic values of a society will determine the appropriateness of a move, but once again one has to ask: whose morality and in relation to what democratic society?

The question of the appropriateness of a move does not necessarily constitute a problem, however, when viewing it within Siegel's own frame. As long as one is framed within rationality and principle based thinking (which Siegel holds to be coextensive with critical thinking), the appropriateness of a move becomes independent of its emotional and cultural values. Drawing on Siegel's premises, this implies that it is thereby possible to judge the appropriateness of a move objectively. This, in turn, has certain consequences for the scope of possible ways to enact critical thinking. Inasmuch as Siegel says that critical thinking is coextensive with principle based thinking, the scope of critical thinking is framed within actions that may be derived from principles. Thus, the rules, which governed the critical thinker in Halpern's perspective are now exchanged and become principles in Siegel's view. The difference between Halpern's rules, on the one hand, and Siegel's principles, on the other hand, is subtle when contemplating their meanings. According to Siegel, principles follow the laws of consistency, which Halpern's rules for thinking critically also do. They differ, however, in that Halpern does not emphasize the rules as an intrinsic part of the critical thinker's character, in the way that Siegel does with principle based thinking. Neither does Siegel explicate the principles in a fixed manner, the way Halpern does with her rules. The principles that Siegel refers to are those that could be found in logical reasoning, given that every thinker is captured within the frame of arguments. Pondering upon the meaning of an argument, in Siegel's sense of the word, it seems to be an expression based upon reasons aiming at conviction. In relation to my experiences from Siegel's classroom it appeared that the panel discussion was kept on the level of combating with words. The side that had the last word and followed the principle of logic won. Thus, in addition to Siegel's definition of critical thinking, it is also a matter of weighing one's words and managing to formulate their logical continuity. I here use the concept of "formulating" in a wide meaning. It does not necessarily mean that one has to formulate one's reasoning aloud, but that one manages to formulate one's reasoning, at least for oneself. Accordingly, five aspects appear in Siegel's perspective on critical thinking. The first aspect is about feeling a need for action, such as being responsible towards society: *Need for action*. The second aspect

is the formulation of arguments supporting the action: *Formulation of arguments*. The third aspect is the formulation of the principle based reasons for presenting the arguments: *Formulation of rational reasons*. The fourth aspect is the refutation of possible critique by searching for fallacies in potential counter-arguments. If one cannot find any fallacies in the counter-arguments, the counter-arguments are considered to be the most appropriate. I call this aspect: *Searching for fallacies*. The fifth aspect is action in accordance with the appropriate reasons: *Reason-based action.*

Due to Siegel's emphasis on utilizing critical thinking skills in relation to the aforementioned aspects, as well as his association to the ethical aspects of critical thinking, it is possible to trace a prominent feature of obligation and responsibility in his perspective. The critical thinker feels obliged to be responsible to the society. The critical thinker is also responsible for finding reasons for certain arguments and ways of acting. Furthermore, the critical thinker is obliged to base action on reason. Pondering once more upon Siegel's definition of critical thinking, which is "...to *do* reason assessment and be guided by the results of such assessment" (Siegel, 1988, p. 23), it almost seems to be a trial-and-error way of acting. Relating his definition of critical thinking to his over-all reasoning and his focus upon moral and democratic living, however, the meaning of his conceptualization of critical thinking could be expanded to be a matter of *rationally implementing one's social obligations and responsibility by reason-based action*. Even though this might sound as a wider interpretation of the meaning of Siegel's definition of critical thinking, it must be remembered that it is still framed within the limits of absolutistic and logical thinking.

As defined in Siegel's perspective, critical thinking could be understood as instrumentally rational action, on the one hand, or as value-rational action, on the other, depending on which aspects are focused. The immediate goal of critical thinking is to attain rationally justified conclusions, by means of principle based thinking. In Siegel's classroom, this could be observed from the fact that the students used critical thinking as a tool for revealing assumptions and fallacies in reasoning, in order to justify their conclusions. Hence, the characteristic of instrumentally rational action is manifest in that the meaning of critical thinking is placed beyond its own process. Thus, in contrast to Halpern and Kurfiss, who put their emphasis on the process, Siegel highlights the result as well, saying that the critical thinker is guided by the results of his or her critical assessments. Approaching Siegel's perspective in a wider context, however, it could rather be understood as being an expression of value-rational action, since Siegel emphasizes the ethical aspect of critical thinking, in a way that gives it a societal value in itself: People should think critically, because critical thinking is the same as good thinking, leading to the maintenance of a democratic society. With respect to traditional action, Siegel differs from Halpern and Kurfiss, although he devotes himself to the same epistemological realm as they do (absolutistic and objective). Considering the critical thinker in Halpern's and Kurfiss' perspectives, it appears that the critical thinker thinks in certain ways because he or she has unquestionably learned that critical thinking is equivalent to proper rational thinking. This

in turn, might lead to a rather habituated way of relying upon rationality, without being consciously aware of its meaning. Hence, the meaning of thinking critically in a traditional way is not problematized, but instead justified against the background of how critical thinking is conventionally defined. By contrast, Siegel is careful with explicating his reasons for stressing the importance of rationality, and hence logical thinking, something that is reflected in his characterization of the critical thinker. Being a critical thinker, in Siegel's sense, implies having a conscious attitude and the will to think critically, because of its societal value. Hence, one cannot accuse Siegel of conceptualizing critical thinking in accordance with traditional action, inasmuch as the prominent characteristic of traditional action is that the activity in question (critical thinking) has become so habituated that the thinkers are no longer consciously aware of its meaning. If we examine Siegel's statement that emotions are fundamental for critical thinking, it appears that his restriction to rationality makes it hard to identify a quality of affectual action in his conceptualization. Even though Siegel states that the critical thinker, for instance, has a *passionate* will to find the truth, this passion is directly connected to rationality. Accordingly, although Siegel stresses the importance of emotional states in the critical thinker, his reasoning nevertheless places rationality above emotions, a relationship that is incompatible with the meaning of affectual action.

Visiting the developmental-reflective department

Experiences from King's and Kitchener's classroom

In the afternoon, after visiting Siegel's classroom, I made my way to the developmental-reflective department. I had an appointment with a female teacher who had recently studied King's and Kitchener's reflective judgment model, and was making educational efforts to implement their model into her teaching. I arrived just in time, before the teacher closed the door. The students were already seated, and the teacher introduced me to her class. I was invited to sit down in the first row. The teacher took out a sheaf of papers from her briefcase, and started to distribute the papers to the students, while telling them that she had graded their examination. The students started to chat with one another and seemed to be curious of each others' results. A couple of students appeared to be disappointed, whereas others looked happy. The teacher called for their attention, saying that they were going to analyze different degrees of epistemological awareness today. Therefore, she had made a selection and copies of fourteen of the students' answers to the first problem at the test. Some of the students looked worried, so she said that there were no names mentioned. She explained to them that the fourteen answers constituted seven stages of epistemological awareness, with two answers belonging to each stage. They would also get a model of criteria and examples showing how to assess the degrees of epistemological awareness in the answers. While asking them to divide themselves into pairs, she distributed the tasks and the model to her students. All the students chose

to work with the person next to them. Within ten minutes, everyone was busy assessing the different degrees of epistemological awareness by comparing the answers with the criteria and examples of the model. All the pairs seemed to be having a reflective dialogue, where they carefully listened to each others' suggestions. They wrote down their conclusions, and sometimes had to erase their suggestions and move an answer to another stage. In the meantime, the teacher explained to me that these students had various experiences of higher educational studies. Some of them had studied for about three years now, while others were studying their first term. Therefore, there was a high variation in their ability to make reflective judgments and in their epistemological approaches, she said. The teacher also explained to me that the test they had answered consisted of five ill-structured problems, which they were supposed to reflect upon and come up with a personal conclusion. I was shown the example they were working with now:

> Most historians claim that the pyramids were built as tombs for kings by the ancient Egyptians, using human labor, and aided by ropes, pulleys, and rollers. Others have suggested that the Egyptians could not have built such huge structures by themselves, for they had neither the mathematical knowledge, the necessary tools, nor an adequate source of power. (King & Kitchener, 1994, p. 259)

Discussions had lasted an hour and it was time for a break. After the break, the teacher told the students that they had another half hour to go before she would interrupt them and go through the different stages of the answers. During the final moments of working with the tasks I moved around the pairs and listened to their dialogues. Some pairs seemed to be uneven in their epistemological approaches, where one of the students reasoned in a more complex way than the other. The other listened carefully, and asked questions in order to better understand the different aspects of the problem, although he or she did not really manage to reason at the same level. I noticed that their dialogues were not so much directed at convincing, by logical reasoning in the form of 'if – then'. Rather, attention was directed at deeper understanding, by pondering upon different possible ways to understand the problem in the form of 'could be'. Irrespective of pairs or individuals, however, they were totally focused upon the tasks, and no one seemed to relate the different stages to their own test results. When time was out, I went back to my place in the first row and the teacher called for the students' attention. She lined up the answers on the whiteboard and started to go through each of them, discussing which reflective judgment stage they belonged to, and on what criteria. Observing the facial expressions of the students, it seemed as if the first and most primitive stage had been the easiest to grasp. However, there seemed to be some confusion as regards the differences between the following stages. Five minutes before the lesson was supposed to end; the teacher told the students that she would give them a difficult task. For next time, they were supposed to use today's analysis on their own test results. In other words,

she expected them to consider each answer of their test and decide which reflective stage it belonged to. The students were also exhorted to motivate their classification in a reflective manner, and to hand in their final reports to her. The teacher wished them good luck. When the students had left the classroom, the teacher explained to me that she found the lack of self-awareness a limitation in King's and Kitchener's model. Therefore, she wanted her students to start reflecting upon their own epistemological approach. I told her that I thought it was a good idea. Shaking hands with me, she wished me welcome back some other time.

Some reflections upon my experiences from King's and Kitchener's classroom

The teacher in this classroom worked actively with improving the students' ability to think reflectively. She did so by letting her students approach ill-structured problems on their own. The students had to contemplate and reach a conclusion in relation to ill-structured problems, as well as reflectively analyzing the answers to one of these problems. Thus, there was an attempt to increase the students' reflective awareness of the qualitative differences between different epistemological assumptions. Since the students were searching for ways of characterizing epistemological assumptions, their activity differed from the former classrooms I had attended. In comparison to the other classes, where the students were supposed to think critically about the problem itself, the students in King's and Kitchener's classroom were invited to think critically about the *conditions* (the epistemological assumptions) for attacking a problem in a certain way. Hence, one could say that their task enabled them to think critically beyond the rules and principles for critical thinking. When classifying the answers into the different stages, the students had to apply principle based thinking, following certain criteria. The students also had to correct themselves, when they found another answer fitting better into a certain stage. Thus, their activity reminded somewhat of the trial-and-error action found in Siegel's definition of critical thinking. The students' activity demanded, however, more than just using principle based thinking. They also had to understand the problem in a reflective way, in order to identify the epistemological assumptions behind the answers. This was obvious when I passed around the students and listened to their dialogues. In those pairs where the students had attained different levels of reflective ability, the student who was able to reflect in a more complex way opened up new possibilities of understanding for the other student. In contrast to the activity of the former classroom, where critical thinking was very much about excluding competing alternatives, by means of rules and principles, the activity of critical thinking in this classroom was characterized by an inclusive way of working. The different epistemological approaches to the problem were not considered in terms of right or wrong, but rather in terms of more or less complex and reflective ways of understanding. It seems as if their including ways of thinking and working made it possible to include a reflective dimension to critical thinking.

Practical implications of King's and Kitchener's perspective on critical thinking

King's and Kitchener's perspective on critical thinking has a rather unique position in this thesis. On the one hand, they state that the use of general rules and principles is not sufficient for thinking critically, and that reflective thinking is also essential. On the other hand, they assert that critical thinking and reflective thinking are two different things, although both are needed for developing good thinkers. King and Kitchener do not explicate their understanding of the relationship between critical thinking and reflective thinking. Thus, it is somewhat difficult to know how to approach this ambiguity in their reasoning. According to my interpretation of their theory, however, reflective thinking could be considered to be a certain quality of critical thinking, and without that quality, critical thinking is not estimated to be as qualified as it could be. Pondering upon the overall meaning of critical thinking when it involves the feature of reflective thinking, it appears that critical thinking becomes a phenomenon of inquiry to a much higher degree than in the aforementioned perspectives. It is not only a matter of attaining a goal, such as finding the correct solution, rationalizing one's beliefs, or using the appropriate reasons for a certain way of acting. Critical thinking also means to *get a deep and reflective understanding* of a problem, beyond the frames of logical thinking. Against the background of my experiences from King's and Kitchener's classroom, it is possible to identify four central aspects of King's and Kitchener's conceptualization of 'good thinking' (that is to say critical thinking, including reflective thinking). During the stage of answering the test, the students approached a problem with reasoning based on their personal epistemological assumptions in order to understand it. Thus the first aspect is: *Understanding a problem*. During the lesson they were offered different answers to one of the test problems, in an attempt to raise their awareness of the existence of different ways of understanding the problem. We are thus able to observe another central aspect in King's and Kitchener's perspective, namely to identify and reflect upon different ways of understanding a problem: *Identification of alternative ways of understanding*. Based upon this set of understandings, the students were supposed to characterize their complexity and different stages of reflective development. They were initiated into the aspiration for a higher complexity and reflective thinking in understanding epistemological assumptions: *Search for complex and reflective ways of understanding*. Against the background of the model of the different stages, the students were also aware that the seventh and last stage included the most complex way of understanding the problem. They realized that this stage involved choosing and arguing for a personal epistemological standpoint in relation to current facts and beliefs, despite uncertainty and the existence of contradicting evidence: *Choice of a personal critical standpoint based upon reflective judgment*.

In accordance with the perspectives on critical thinking discussed above, King's and Kitchener's perspective places emphasis in instrumentally rational action. It appears that the prominent goal of 'reflective-critical' thinking in King's and Kitchener's perspective is a question of making reflective judgments, which means that

one takes a critical standpoint in relation to a problem. The condition for making such judgments is the existence of ill-structured problems, containing a great deal of uncertainty (inasmuch as there are no certain answers to these problems). In relation to such problems, the individual makes use of an inquiring approach, by tentatively figuring out different possible ways of understanding, in order to find the most complex and reflective one. Thus there is both an explicated goal and specific means (reflective inquiries) to attain that goal in King's and Kitchener's perspective, which points to a characteristic of instrumentally rational action. There is some ambiguity when relating the quality of traditional action to King's and Kitchener's perspective, because they insist on distinguishing between critical thinking (in its traditional meaning) and reflective thinking. Given the fact that King and Kitchener do not question the meaning of critical thinking in a way that makes them re-construe the concept, certain qualities of traditional action are involved. If we consider the meaning of reflective judgment, on the other hand, it conveys in itself the meaning of being contradictory to traditional action, inasmuch as it is a matter of constantly dealing with the never-ceasing presence of uncertainty. An action that relies on the consciousness of the existence of uncertain knowledge is not as vulnerable to 'ingrained habituation', since understanding has to be questioned over and over again. This is not to say, however, that adding a reflective dimension to critical thinking secures it from being captured within the realm of traditional action. Once the critical thinker is no longer conscious of the meaning of his or her critical action, and makes use of reflective thinking by force of habit, traditional action is not far away. Comparing this to Heidegger, and the characteristics of the authentic being, the development of habituated action is prevented by highlighting the individual's responsibility of the consequences of his or her critical thinking and action. The individual's responsibility is, however, not prominent in King's and Kitchener's perspective. This is due to their tendency to impersonalize individuals, by characterizing them in terms of different epistemological stages. On the other hand, the quality of responsibility appears to be strongly marked in Brookfield's developmental-reflective perspective below.

Experiences from Brookfield's classroom

The very next day I went back to the developmental-reflective department, in order to visit Brookfield's classroom. An elderly male teacher, with a welcoming smile, met me at the door to the classroom. His students dropped into the classroom and took their places around a big table. The teacher explained to me that I would only see half of the class today, since the other half would have their literature seminar on Thursday. I said that it was fine with me and sat down between two students. A total of nine students and one teacher were assembled. All of them had a copy of *The Human Condition* by Hannah Arendt in front of them. The teacher told his students that they had a visitor today, and asked me to introduce myself to them. When I was finished with my presentation, the teacher opened the literature semi-

nar by saying that they were going to discuss Arendt's three dimensions of human action: labor, work, and political action, in relation to learning in higher education. Then the teacher asked me if I had read the book. I told him that I had. The teacher was delighted at hearing that, so he asked me to please participate in their discussion. I thought it would be a nice idea too. He started to ask his students if they could explain how they had understood the characters of the three dimensions of human action. One student said that it was not an easy book to read, so he was not sure that he had understood the meanings of the dimensions properly. The teacher agreed with the student that it could be a difficult task to understand Arendt when reading her for the very first time. He asked his student to tell them what he thought that he understood, and also what he felt was hard to grasp. The student gave his picture of the three dimensions, and pointed out his difficulties with understanding their different meanings and values. The teacher reflectively responded to the student by giving a summary of those characters of the dimensions that the student had understood properly. Then the teacher asked the other students to contribute to the understanding of the dimensions, in relation to the questions their classmate had. Another student suggested that one could understand all the dimensions as necessary for human living, although political action was considered to be the most valuable action. Soon, the discussion was in full swing. I made some contributions as well. I recognized that the teacher did not really add any new content by his comments, but he rather highlighted relevant aspects in our discussion. Furthermore, the teacher had an encouraging attitude, especially towards those students who seemed hesitant in their understanding and who had difficulties expressing their meaning. When an hour was gone it was time for a break. After the break the teacher made a summary of the students' collective understanding of Arendt's dimensions of human action. Thereafter he asked them to ponder upon their own learning, how it could be understood in relation to labor, work, and political action. He asked them to think of learning situations which could be related to any of these dimensions. It seemed to be a problematic task, and all students were silent. The teacher suggested that they could think of the lesson today. Soon somebody started thinking aloud. The teacher encouragingly nodded and asked a reflective question back, which aimed at making the students find other ways of understanding today's lesson in relation to Arendt's dimensions. Another student answered the question, and then someone else gave her view on it. Then the teacher asked them to ponder upon why they thought they perceived it differently. After some reflections, they concluded that they had different previous experiences of learning which might influence their different understandings. It appeared to them that their own views were not universal, and that they could understand their experiences in other ways. At the end of the lesson we all had identified different learning situations which could be understood in relation to either labor, work, or political action. The teacher said that he was impressed by our performance today, and that he looked forward to discuss this issue further next time, although in relation to another book (I did not catch the title). Everyone

looked satisfied and started to pack their books. I thanked the teacher for inviting me and he thanked me for my contributions to their discussion.

Some reflections upon my experiences from Brookfield's classroom

The whole atmosphere in this classroom radiated sympathy, due to the teacher's empathetic approach. By listening and responding reflectively to the students, rather than instructing them, the teacher promoted their critical thinking. Many different views appeared and the students got the opportunity to revaluate their experiences of learning in higher education. The teacher did a great job with inviting everyone into the discussion, implicitly making it clear that everyone had something important to say, which contributed to further understanding. This was evident in that he highlighted those aspects that he thought were especially relevant from each utterance. By proceeding in this manner, the teacher realized all the aspects of Brookfield's conceptualization of critical thinking. The students were offered an opportunity to ponder upon their own learning experiences in relation to Arendt's theory. This made it possible for them to identify and challenge assumptions, both from their own perspectives and from the teacher's perspective. Inasmuch as a range of voices were heard, framing learning into different contexts with different meanings, there was an increased awareness of that assumptions are contextually dependent. Furthermore, the different voices made it possible to explore alternative ways of understanding the phenomenon of learning in higher education. This in turn made it possible to question ultimate beliefs as to how their learning experiences could be understood. Thereby the students entered a state of reflective skepticism.

Practical implications of Brookfield's perspective on critical thinking

Brookfield holds that critical thinking consists of four important qualities: questioning prejudices, being aware that prejudices are contextually dependent, exploring alternatives, and reflective skepticism, in which universal truths and ultimate explanations are questioned. As mentioned above, all of these qualities were realized in Brookfield's classroom. The crucial question is, however, if it is possible to understand his conceptualization of critical thinking in another way when pondering upon what happened in the literature seminar. For instance, what does it mean to question prejudices? Furthermore, what does it mean to understand that prejudices are contextually dependent? According to Gadamer, there is a need for an alien horizon if the questioning of prejudices shall appear at all, since the encountering of an alien horizon is a precondition for seeing one's own familiar horizon. In the literature seminar, the students were exposed to other horizons than their own, which made it possible for them to recognize that they did have prejudices. In addition, the students became aware that their different learning experiences were contextually dependent, which implies that each horizon as well as each context constitutes certain frames of possibilities of thinking and action. By his reflective and open-minded

attitude, the teacher revealed the concealed frames and possibilities of his students' learning experiences. This, in turn, made it possible for his students to understand the phenomenon of learning in higher education in a new way. This outlines the first aspect of Brookfield's perspective. One could say that questioning prejudices as well as understanding that prejudices are contextually dependent is a matter of *Revealing the frames and possibilities of understanding.* Once the students had been exposed to this pluralistic picture of different ways of understanding, they could start to see their own familiar horizon, questioning their own prejudices. In that second aspect the students started to understand themselves in relation to their specific contexts. They also became aware that they constituted a certain meaning of their experiences of learning in higher education and that they did so in a particular way: *Constitution of meaning*. Thereafter, the students were invited to explore the different alternatives of understanding the phenomenon. They were offered the opportunity to empathetically and collectively figure out how the meaning of their experiences could be constituted differently with another frame. By relating their experiences to Arendt's theory as well as to one another's experiences, a range of possible meanings were explored, and new constitutions of meanings appeared. This made the students re-constitute their own meanings of learning in higher education. I will call this third aspect: *Reconstitution of meaning*. The teacher asked them to ponder upon why they thought that they had different understandings of their learning experiences. The students suggested that it could be explained by the fact that they had different backgrounds, containing different learning experience. Thus, the teacher made it possible for them to realize that it was the students themselves who constituted the different meanings against the background of their previous experiences. Thereby the teacher rendered it possible for his students to be reflectively skeptical towards ultimate explanations and universal truths. Such explanations and truths express constitutions of meaning, which are constituted differently dependent on *who* is relating himself or herself to a certain phenomenon in a specific context. Accordingly, the teacher implicitly told his students that one should not grant too much credibility to authoritative voices that guide people to believe and act in certain ways. Rather, the students should trust in their own ability to constitute credible meanings, just as they did during the whole literature seminar. Against this background, it is possible to construe a fourth aspect, where individuals release themselves from the power of authorities and conventional ways of thinking and acting: *Liberation of oneself from traditional boundaries*. In an attempt to catch the over-all meaning of these aspects, critical thinking appears to be a matter of *liberated constitution of meaning*.

If one leaves the frame of Brookfield's classroom behind and considers Brookfield's perspective as a whole, it appears that there is no marked quality of instrumentally rational action in his conceptualization of critical thinking. There is no emphasis upon attaining certain goals, such as reaching a conclusion or judgment. Nor is critical thinking framed within the use of rules or principles that guide the critical thinking process. Rather, critical thinking, in Brookfield's sense, involves an

increased awareness that there are always different possibilities to understand things, and, furthermore, that these possibilities are contextually dependent. Thus, ultimate explanations and universal truth claims are considered with reflective skepticism. Accordingly, even one's own assumptions have to be questioned over and over again, which results in the fact that critical thinking causes change and development in the individual. When re-questioning one's assumptions, it is not enough to master logical and rational thinking, but reflective thinking is also needed, which concurs with King's and Kitchener's perspective very well. The difference between King's and Kitchener's perspective and Brookfield is, however, that the former conceptualizes reflective thinking in a rather impersonal way, due to their emphasis on epistemological assumptions. The individual's values and emotions are not highlighted as fundamental for reflective and critical thinking in the same way as in Brookfield's perspective. However, in accordance with Siegel, Brookfield defines critical thinking in a way that gives it a characteristic of value-rational action. One important meaning of being a critical thinker, in Brookfield's sense, is to be responsible and caring towards one's fellows, by being a developing and fostering person. Thus to think critically involves the responsibility of developing and fostering other individuals to become critical thinkers themselves, which implies that they learn to see the possibilities of life. This is important, Brookfield points out, since a democracy is created and maintained by the existence of critically thinking individuals. Thereby critical thinking has a value and meaning in itself. As regards affectual action, Brookfield stands out from the aforementioned scholars, by pointing out that all kinds of emotions are essential for awakening critical thinking – even good ones. Furthermore, he states that emotions are always present in the critical thinking process. In contrast to Siegel, who limits the importance of emotions to rationality, Brookfield makes no such limitations. All emotions are there, even 'irrational' ones, following the critical thinking process from its beginning to its end. Hence, Brookfield is the first author we have inspected so far, who carefully incorporates affectual action into the critical thinking process.

Visiting the feminist department

Experiences from Thayer-Bacon's classroom

In the afternoon, I went over to the feminist department, where I had some trouble with finding Thayer-Bacon's classroom. Obviously, I looked lost, since a group of female students asked me if I needed help. When they heard that I was trying to find Thayer-Bacon's classroom, they told me that I could accompany them, since they were on their way to the same classroom. While walking through tortuous corridors, up and down stairs, the students heaped me with questions. They wondered who I was, what I was doing there, if I could tell them about my thesis, and so on. In turn, they told me that they were going to write their first composition at the university. Maybe I could help them with some suggestions for what they should bear in mind?

Before I got a chance to answer them, we had arrived at the classroom, where the teacher was busy arranging a table with cups, spoons, sugar, milk, and thermoses with coffee and tea. The students told their teacher that they had found me wandering about on the first floor. The teacher looked up from the table and thanked them for taking care of me and apologized to me for not giving me directions how to find the classroom. She bade me welcome to her class and asked everyone to please take a cup of coffee or tea. When everyone was sitting down with their cups, the teacher asked me to tell something about myself to the class. Then she asked her students to do the same. They started to introduce themselves, one by one. I noticed that almost all of them were females. In total, there were ten females and two men. While listening to their presentations of themselves, I recognized that they constituted a rather motley crew of students. They had different cultural backgrounds, as well as different interests. In spite of this diversity, the students seemed to have a strong spirit of community. They supported one another in their presentations by reminding each other of what might be interesting to tell about themselves. It took about half an hour to go through our presentations. The teacher told us something about herself too. Then the teacher asked her students if they had found a subject for their compositions – a subject they were especially interested in and that they wanted to know more about. Apparently, the students had found such subjects, since they nodded and picked up some papers from their bags. In the meantime the teacher explained to me that they were divided into four groups, consisting of three students in each group. When it seemed as if everybody was ready, the teacher explained to them that each group would present their subject. Afterwards, they would all jointly (including me) help the group by providing feed-back on their ideas how to work further, as regards formulating a problem and finding an adequate method to investigate their subject of research. The group on the teacher's left side started. Their presentation was accompanied by a range of ideas from their classmates. It appeared to be a little messy, so the teacher suggested that we should firstly think about what aspects could be of relevance in relation to their problem. Everyone contributed with their specific perspectives of what might be of relevance. The group wrote down all suggestions. Someone suggested an aspect, which the other students could not agree with. After some discussions we concluded that the aspect was too far-fetched in relation to their subject. When it seemed as if the students had attained a condition of saturation, with respect to finding relevant aspects, the teacher asked them to ponder upon how to formulate a problem. It was now a matter of formulating an interesting problem by means of relating the aspects to one another. Again the students sparkled with their ideas. We were all engaged in formulating a problem that the group would find interesting and which the teacher could accept from a scholarly and methodological point of view. When we had reached a sound problem formulation, the teacher said that we now had to consider how they were going to investigate the problem. The students were exhorted to figure out relevant methods for finding answers to the problem. We all together discussed different possible strategies for how to carry

out the research. Some suggestions were accepted as possible, whereas others were rejected. Then it was time for a break. After the break, the next groups made their presentations and we discussed their subject in the same way as before. When the last group presented their subject, we were all quite tired, after two hours of intensive conversation. The discussion started to run short, so the teacher decided to have another break. We took some more coffee and tea and opened the windows to get some fresh air. For the next ten minutes we talked about easy everyday problems, such as missing the bus and house-training puppies. It obviously helped, since the discussion was flowing again after that. All groups seemed to be satisfied with the result of the discussions. Together they had constructed problem formulations and strategies for how to investigate the problems. The teacher told them that time was out and wished them good luck with their work. In two weeks she expected them to present their material, in order to collectively consider possible ways of how to interpret their data. She underscored that this was the crucial point of all their research, inasmuch as new patterns of knowledge would then appear. The students dropped out of the classroom while I thanked the teacher for letting me participate in their discussions today. She thanked me back, and said that every voice was welcome in the construction of knowledge.

Some reflections upon my experiences from Thayer-Bacon's classroom

Thayer-Bacon's classroom sparkled with a collaborative spirit, where every conclusion was a result of a collaborative construction of knowledge. At the same time there was an emphasis upon each individual, contributing with his or her unique perspective. The uniqueness of the individuals was partly highlighted by the self-presentations from each participant. Even though the individuals were important, the collective knowledge was implicitly regarded to be more powerful than the single contributions, considered one by one. This was plain from the fact that the teacher made the composition work become a collaborative task from its very beginning to its end. Thus the composition was not dependent upon the individual's use of certain rules, principles, or reflective thinking, but rather on keeping the conversation going. It was a matter of letting imagination, creativity, intuition, and rationality all together be the driving forces of the discussion. The conditions for this kind of critical thinking to emerge were the existence of individuals who related to one another, who spoke and listened to each other, and who had the will to collaboratively construct new knowledge by catching on to their different ideas into a whole. The teacher's task was not so much to engage in the discussions, but rather to create the preconditions for such constructive discussions to appear. She did so by assuring that the needs of both body and mind were supplied. First of all, she allowed them to choose their own subject of critical thinking, by letting them write about any topic they wanted. Thereby, the teacher made it possible for her students to involve their emotions into their work, since they could work with a subject that they were really interested in. Furthermore, the teacher was also concerned about their physical

needs. For instance, when the conversation ran short the teacher decided to have an extra break, in which the students got something to drink and their minds could rest for a while. As regards her teaching approach, she did not 'correct' her students in any manner. All suggestions were considered valuable, although some of them were collectively regarded to be less useable in relation to the specific subject. Thus, one could say that there was a high level of tolerance in this classroom.

Practical implications of Thayer-Bacon's perspective on critical thinking

Thayer-Bacon points out that critical thinking, when it is re-construed as constructive thinking, is dependent upon many qualities beyond rationality. Rationality and the use of reasons are, however, important for constructive thinking too. The use of reasons is needed for defining and clarifying ideas, making them appear in the foreground against a background. This process sets the limits as well as the possibilities of the thought in relation to a certain subject. In relation to Thayer-Bacon's classroom, this could be observed when the students tried to figure out relevant aspects of a given subject. Reflecting upon what happened during this process, it seemed as if the limits and possibilities of their thoughts were conditioned by which concepts they associated to the subject under discussion. Thus, the students delimited the subject by associating it to certain concepts. This, in turn, implies that they established constructive relationships between the subject and the concepts. Accordingly, the first central aspect in Thayer-Bacon's perspective is: *Establishment of the relationships between a subject and its associated concepts*. In addition to rationality, Thayer-Bacon holds that intuition is important for critical thinking. Intuition is the quality that renders it possible to put the pieces of relevance together into a meaningful whole, which occurred, for instance, when the students tried to formulate a problem. During this process, the students were concerned with arranging the relevant concepts in a way that gave the subject of research a special meaning. The particular arrangement of the concepts provided the problem with certain direction of research. Considering what this particular direction means, it appears to be the revelation of the students' collected intention. Thus, one could construe that the process of making use of one's intuition is not only a question of making a meaningful whole, but also of revealing one's intention. Of course, a problem formulation aims partly at explicating the individual's intention. In fact, scholarship as a whole is in some sense a matter of revealing intentions. The point is that irrespective of the kind of statement one makes, the intention is always there, yet it might be concealed. This is because a statement conveys the individual's background, beliefs, will, and direction of action, which all together conceptualize the individual's intention. Against this background, it is possible to outline a second aspect in Thayer-Bacon's perspective on critical thinking: *Revelation of intention*. Furthermore, Thayer-Bacon identifies emotions as another important quality of critical thinking. Emotions seem to have two functions in the process of critical thinking. On the one hand, emotions start the process. On the other hand, they constitute its material, being 'collaborative constructions', which

are dependent upon the context. This implies that emotions direct the individual's attention and interest. What the individual attends to is in turn dependent upon his or her specific culture and the specific context. Something that awakens a range of certain emotions in one culture may awaken opposite emotions in another culture, if any emotions are awakened at all. Thereby emotions are something highly dependent upon which culture, and also which context the individual moves in. This is why Thayer-Bacon conceptualizes emotions as being 'collaborative constructions'. Hence, in relation to Thayer-Bacon's classroom, the force of emotions was evident in the students' choice of subject of their compositions. Since emotions constitute the material and 'collaborative constructions' of critical thinking, emotions were also manifest in the students' choices of which concepts they associated to the subject. It appears that what the students did, by making use of their emotions, was to construct substances of meaning, which constitutes the third aspect: *Construction of substances of meaning*. Finally, Thayer-Bacon emphasizes imagination as essential for critical thinking. By means of imagination, it is possible to discern new patterns when considering a phenomenon, making it appear in a new way. Besides emotions, imagination is also another catalyst of critical thinking, Thayer-Bacon points out. It is feasible to construe that the quality of imagination was present in the students' rational process, when they started to figure out what concepts might be associated with a given subject. Thereby, the subject could be understood in a many-facetted way, due to the individuals' different meaning contributions to the subject. Even though the students had not come to the part of analysis yet, it is also possible to understand the analyzing process as being highly dependent upon imagination. In order to understand the meaning of imagination in the current context, it seems as if it is a matter of expanding the construction of meaning, inasmuch as the students searched for yet other ways of understanding the given subjects. Hence, the fourth aspect in Thayer-Bacon's conceptualization of critical thinking seems to be: *Expansion of the construction of meaning.* Pondering upon the over-all meaning of critical thinking against the background of these aspects and Thayer-Bacon's perspective as a whole, critical thinking for her seems to be a matter of *social construction of new meanings*.

In relation to Weber's model, it appears that Thayer-Bacon's perspective offers a combination of value-rational, affectual, and even traditional action. Starting with the characteristic of value-rational action, it can be inferred from the circumstance that Thayer-Bacon expresses the meaning of critical thinking in a way that makes the process and result of critical thinking merge into one another. Critical thinking is to participate in a democratic community, where one listens and responds to each others' voices. By proceeding in this manner, a mutual affection between the individual and his or her community appears as a consequence of the interaction, which in turn leads to further conversation and participation. Accordingly, critical thinking in this sense is not so much a question of attaining a goal, but rather to keep on thinking critically, and hence to remain in the construction of knowledge. Or as Thayer-

Bacon says herself, referring to Greene: "Our quilting bee is a pluralistic democratic community always in the making...or a coalition across differences" (Thayer-Bacon, 2000, p. 163). Due to the fact that the 'making' process is constituted by different voices, which convey the individuals' backgrounds, critical thinking is embedded and embodied. This implies that critical thinking can never be objective, but it is always framed within certain cultural values and emotions, from which the individuals speak. Therefore, traditional action and affectual action could be considered to be the condition for critical thinking, in Thayer-Bacon's perspective. Without these characteristics, the different voices will not be heard as unique and singular voices, and hence no critical-constructive thinking will appear.

Dialogue with My Alter Ego

The aspects of critical thinking

ALTER EGO: You have made a long journey, seeing a lot of places, hearing a lot of voices, experiencing the phenomenon of critical thinking in a range of different settings. Now, tell me: What did you see and hear?

EGO: I saw and heard many things, shaping different aspects of critical thinking, intertwining the present with the past. Of course, there are certainly yet other aspects to be found, which I could not see, due to my horizon. However, the aspects of critical thinking that I found appeared more or less palpable, dependent on their background. What I am trying to say is that each appearance of critical thinking could convey more than one aspect, yet most of them are concealed in their appearances. Thus, considering each perspective on critical thinking, mainly one of these aspects becomes apparent, whereas the rest of the aspects constitute the surplus of meaning. By varying the appearances, however, each of these aspects had an opportunity to reveal themselves, constituting different meanings of the phenomenon.

ALTER EGO: Tell me about these aspects. Which are they?

EGO: For instance, critical thinking in ancient Greece is a matter of deductive reasoning, revealing the *aspect of logical necessity*, which aims at capturing the nature of the world in itself. This aspect of logical necessity also appears in the works of Descartes, Comte, Popper, and Dewey. Due to their various horizons, however, the directions of their critical thought are not the same. Hence the appearances of the aspect of logical necessity vary. In the contemporary perspectives, one

finds this aspect in the conceptualization of critical thinking in the cognitive perspective and the informal logic movement.

Considering Kant's philosophy, it entails not only the aspect of logical necessity, but also the *aspect of intellectual awareness*. The experiencing mind should be conscious about that all experiences are posited in *the I*, which constitutes certain meanings of the objects. Apparently, it is not possible to reflect upon the world in itself, but only on the experiences of the mind. It seems appropriate to say that the cognitive perspective on critical thinking touches this aspect too, inasmuch as critical thinking is characterized in terms of individual mental processes.

Close to the aspect of intellectual awareness, is the aspect that one finds in the meaning of critical thinking conveyed in the philosophies of Augustine, Aquinas, and Hegel. Critical thinking, in their sense, appears not only to be a matter of logical necessity or intellectual awareness. Their kind of critical thinking also reveals the *aspect of self-realization*, inasmuch as critical thinking appears in the developing spirituality in the subject. This self-realizing aspect either aims at exclusion or inclusion of the possibilities of self-realization in a spiritual sense. For instance, in Augustine's case, where the critical thinker has to follow the "right" paths only, the aspect of self-realization works in an excluding way. In Hegel's case, on the other hand, all paths must be entered upon if complete spiritual self-realization is to be accomplished, producing an including manner of self-realization. Even though there is no aspiration for spirituality in the developmental-reflective perspective on critical thinking, it nevertheless includes a marked feature of self-realization, as well as a raised intellectual awareness. Accordingly, it is possible to construe that the developmental-reflective perspective conceptualizes critical thinking in a way that makes critical thinking actualize the aspects of *intellectual awareness and self-realization*.

ALTER EGO: I like the aspect of self-realization, since it clearly conveys a genuinely pedagogical quality to the phenomenon of critical thinking. Accordingly, critical thinking is something that develops both the individual and the collective, right?

EGO: Well, yes, one could see it that way. However, in relation to a raised self-awareness, the *aspect of doubt* is not far away. This is due to the fact that a raised self-awareness facilitates the awareness of the exist-

ence of prejudices. For instance, this awareness is highly actualized in Socrates, who points out that one cannot know anything for sure, due to the fact that knowledge is always prejudiced. The concern about prejudices is also found in the philosophies of Bacon, Descartes, Comte, Popper, and Dewey. The difference between them is that Bacon, Descartes, and Comte have doubts only as regards the process of critical thinking. As long as the prejudices are consciously constrained, there is no need to doubt the result. Popper and Dewey distinguish themselves from Bacon, Descartes, and Comte, however, in that their doubt is extended to the conditions and result also. Inasmuch as it is always possible to question the premises of the critical thought, the feature of doubt permeates the whole critical thinking process. In the cognitive perspective, one finds the aspect of doubt in accordance with Bacon's, Descartes', and Comte's concern for the process of critical thinking. The informal logic movement and the developmental-reflective perspective are, however, closer to Popper's and Dewey's approaches in this respect.

Wittgenstein also inaugurates the aspect of doubt in his philosophy, although in another way. He is not really concerned about prejudice, but rather poses the question if language as such formulates and expresses that which is true. It is always possible to doubt the existence of a hand, even if one says "here is a hand". Thus, by considering the parts of the propositions and their different applications, Wittgenstein is concerned with the *aspect of accurate enunciation* in critical thinking. In the terms that Siegel proposes in the informal logical movement critical thinking is a matter of battling at the superficial level of arguments. This implies that the critical thinker has to be highly aware of the enunciation of his or her thoughts. Accordingly, along with Wittgenstein, the informal logic movement touches upon the aspect of accurate enunciation.

If we consider the conceptualization of critical thinking in Nietzsche's, Wittgenstein's and Foucault's philosophies, we can observe that they invoke the *aspect of conscious confinement*. This implies that they create an awareness of the confinements that human beings are unconscious of. The aspect of conscious confinement involves two dimensions. On the one hand, there is an emphasis on the specific rather than the general, due to the fact that they all repudiate the possibility of a general objective whole. Since there is no general objective whole, only the limits are left, revealing a range of disparate perspectives and propositions. In this sense, the aspect of conscious

confinement in critical thinking makes it possible to become conscious of the confinements of the perspectives and propositions. On the other hand, the aspect of conscious confinement could also mean the revelation of the limits, which history has irrevocably ensnared human beings into. Wittgenstein does not touch upon this dimension, since he is not concerned with the subject, but both Nietzsche and Foucault do. In Nietzsche's case, these limits are constituted by the human being's destiny. In Foucault, the limits are constituted by the discourses. The aspect of conscious confinement in both its dimensions is also found in the feminist perspective on critical thinking, where the critical thinker realizes that he is an embedded and embodied being, and, therefore, has a certain confined perspective on the world. The developmental-reflective perspective also shows some traits of this aspect, pointing out that the individual thinks and acts in accordance with his or her prejudiced assumptions.

The directions of critical thinking

ALTER EGO: So, according to your experience, the phenomenon of critical thinking consists of the aspects of logical necessity, intellectual awareness, self-realization, doubt, accurate enunciation, and conscious confinement. Considering your depiction of the historical development of critical thinking, these aspects could be characterized in terms of explanation, interpretation, understanding, and abstraction. I am skeptic to your assurance, however, that these aspects are all related to critical thinking. How can you be sure that all these aspects are qualities of critical thinking? Maybe you are, in fact, talking about completely different things, which cannot be combined into one and the same phenomenon. So, tell me, what do all these aspects embrace. Is there anything that keeps them together?

EGO: Well, actually there seems to be one thing that occurs in all the presented aspects of critical thinking. Critical thinking appears to be a phenomenon that is concerned with *wholes* in different ways. One might say that the creation of a whole constitutes the direction of the critical thought. These wholes are sometimes systematic and consistent, at other times unsystematic and inconsistent. What characterizes them as wholes is the fact that the critical thinker is in one way or another concerned with *relationships*, which ultimately refer to an implicit or explicit, a harmonious or contradictory, whole. The point is that the whole constitutes the direction of the critical thought. What this whole looks like depends on the specific aspects that are involved in it. Hence, it is possible to reveal the wholes that direct critical thought, by considering the underlying meaning of the aspects.

ALTER EGO: I am not really sure if I understand what you mean. Could you depict these wholes and tell me how they are related to the different aspects?

EGO: I can give it a try. Considering the aspect of logical necessity, one finds the aspiration to create a whole in terms of continuity. Thus, critical thinking is directed to the *whole of continuity*. Sometimes this continuity is based upon causal relationships, as in the thinking of ancient Greece, Descartes, and Dewey, for instance. At other times, this continuity is displayed by increasing degrees of complexity, as in Comte's hierarchical division of the sciences, each successive degree being more complex than the other. As regards Popper, he is closer to Comte's approach to the whole of continuity. However, these kinds of continuities were also evident in the classrooms of the cognitive and informal logic departments, where the students were supposed to arrive at a conclusion by means of causal and complex thinking.

With respect to intellectual awareness, this aspect is related to another kind of whole. Rather than continuation, it creates its whole within the human mind. Hence critical thinking aims at the *whole of the human mind*. For instance, Kant worked out impressive schemes, depicting a whole of categories of human understanding. In similar way, the classroom activities in the cognitive department were directed at the actualization of different mental processes in the students. It was presupposed that they would thereby approach the problems in an all-comprehensive way. Thus, in this school of thought critical thinking means to activate all intellectual faculties that are posited in the whole of the human mind.

The aspect of self-realization in the critical thinking of Augustine, Aquinas, and Hegel aims at the union of humanity and spirit into the *whole of being*. This implies that human life is not complete without its relationship to spirit, which reveals the possibilities of accomplished living. In the sense used by Augustine and Aquinas, this means that the critical thinker incorporates religious faith into his or her being, in order to discern the good possibilities of life from the bad ones. Accordingly, the whole of being in the Middle Ages could be related to the individual's self-realization in relation to God. As regards Hegel, however, the whole of being is connected to the self-realization of humanity. This implies that the whole of being is constituted by a critically thinking humanity which realizes all possibilities that life can offer, in order to attain the state of absolute be-

ing. What connects these different approaches to the whole of being is their emphasis on human responsibility.

ALTER EGO: That was a really big whole, the whole of being. I can see that it is possible to capture the whole of continuity, and even the whole of the human mind by learning certain rules and methods for critical thinking in the classroom. I mean that these wholes seem to be easier to grasp, but the whole of being is...wow. That is almost the same as thinking of the infinite universe. One can hardly imagine such huge whole. How can one embrace that by means of critical thinking in the classroom?

EGO: I think you have missed a point. I am not saying that it is possible either to capture or embrace any whole completely. In fact, all wholes are related to infinity, inasmuch as the relationships within the wholes could be re-constituted over and over again. Furthermore, new content is added to the whole over time, generating yet other relationships. Nevertheless, it is feasible to *approach* wholes, creating them imaginatively by the developing critical thought.

ALTER EGO: I see. I admit that you have a point there, but tell me about how this whole of being can be observed through critical thinking in the classroom.

EGO: All right. The developmental-reflective perspective, for instance, points to the whole of being, especially in the light of Brookfield's conceptualization of critical thinking. There are mainly two aspects supporting this assertion. On the one hand, Brookfield emphasizes that the critical thinker is an individual who views life in terms of possibilities, offering different ways of being. Even though all these different ways of being are considered to be valid parts of the whole of being, the critical thinker can still choose those ways that seem to lead to a better life. On the other hand, Brookfield holds that critical thinking involves a responsibility in relation to the community. This means that the critical thinker should help others to become critical thinkers themselves and to participate in the creation of the manifestation of all possible ways of living, creating the whole of being. Accordingly, Brookfield touches upon the whole of being in both of the aforementioned senses, incorporating individual as well as collective accomplishment. In relation to Brookfield's classroom, the direction aiming towards the whole of being could be seen from the fact that the students revealed different possible learning experi-

ences, in order to understand them synthetically. Thus all experiences were considered as different but valid ways of learning, among which some could be considered to be better ways than others in relation to Arendt's theory of human action. These are my conclusions, so far. Are you satisfied with my answer?

ALTER EGO: For the moment, I think so, but how about the aspect of doubt? What kind of whole do you relate it to?

EGO: Upon closer scrutiny, the aspect of doubt seems to be related to two wholes. On the one hand, it is related to the *whole of reality*. This appears, for instance, in the philosophies of Bacon, Descartes, Comte, Popper, and Dewey, who all play on the aspect of doubt in order to show the relationships between the objects in the empirical true world. They all agree that there exists a reality in itself, although it is possible to doubt the human being's potential access and assessment to this world, depending on the fact that human beings err in their perceptions and beliefs. Whereas Bacon, Descartes, Comte, and Dewey rather create the whole of reality by thinking critically of what reality *is*, Popper does the reverse, affirming what reality *is not*. Investigating the position of Socrates in this stream of philosophers, it does not seem entirely appropriate to relate the aspect of doubt to the whole of reality, since Socrates is not so much concerned with the empirical world, but, rather reflects upon the meaning of different human phenomena, such as excellence. Therefore, Socrates' doubt in his critical thinking is rather related to *the whole of meaning*. Irrespective of which whole one refers to, however, doubt aims at finding the truth. Against this background, it appears that the aspect of doubt, which is directed to the whole of reality in one sense or the other, or else to meaning, involves a dialectical relationship between right and wrong. Right and wrong in the current context refer to whether a pretension corresponds to the real state of things. Thus, it should not be confused with right and wrong in terms of valuations. Instead, these relationships between right and wrong create the whole of reality and meaning related to the vision of truth.

ALTER EGO: You know what? Some scholars would not agree with you that the whole of reality and the whole of meaning are two different things. Consider Hegel, for instance, who states that the 'world itself' is just a construction of thought. Or why not your own hermeneutic-phenomenological approach, in which the access to the world goes through meaning constitutions?

EGO: You are certainly right in your claim, although I was not asserting that there in fact exist two distinct wholes. I was just clarifying the point that due to the different approaches of critical thinking, the whole gets different meanings, and hence different imaginary wholes are created. One could say that I play on the aspect of conscious confinement here. Thus, the limits between the so called wholes should not be regarded as real, but only as constituted by thought.

ALTER EGO: I think I understand what you mean. Now, tell me how the wholes of reality, and meaning, make themselves manifest in contemporary perspectives on critical thinking.

EGO: Well, as regards contemporary perspectives on critical thinking, one finds the aspiration for the whole of reality mainly in the cognitive perspective. In Halpern's classroom this was clear in that the students were exhorted to make a hypothesis to convince the mad scientist that he was wrong, hence that his belief did not correspond to reality. In Kurfiss' classroom, the ambition for attaining the whole of reality was plain in that the students were requested to find out the relevant (that is to say the real) relationships between certain facts and high criminality in a specific housing area. In Siegel's classroom, critical thought was directed both towards the whole of reality and the whole of meaning. Concerning the whole of meaning, it is evidenced by the fact that the students had to consider the meaning of the arguments. Otherwise they could not respond with counterarguments. As regards the other whole under consideration, the students in Siegel's classroom made a great effort at revealing the relationships between their reasons and a certain kind of action, arguing for either the dismantlement or the preservation of nuclear power stations. In that sense, they dealt with the issue in terms of right and wrong, implicitly directed to a whole of reality.

ALTER EGO: Aha. In the cognitive perspective the notion of whole of reality is predominant for the direction of the critical thought, whereas the informal logic movement conceptualizes critical thinking in a sense that makes the critical thinker concerned with the whole of meaning as well. But, I have a feeling that the whole of reality loses its key position in the developmental-reflective perspective. Am I not right?

EGO: Yes, it seems as if you are right, since critical thought in the developmental-reflective perspective is rather directed to the whole of meaning, although more in Protagoras' sense than in Socrates'. This is

due to the fact that Protagoras' whole of meaning is more including than Socrates', inasmuch as Socrates has a tendency to exclude and simplify the content of meaning. Socrates inaugurates doubt into his thinking, to a greater extent than Protagoras, however. Since the developmental-reflective perspective on critical thinking relies both upon doubt and an including way of considering the whole of meaning, it is perhaps best to consider this perspective as displaying similarities with both Socrates and Protagoras in these respects.

ALTER EGO: I see, but tell me how the whole of meaning appears in the developmental-reflective practice.

EGO: In King's and Kitchener's classroom, the students were busy scrutinizing the relationships between epistemological assumptions and different beliefs, revealing a whole of meanings. This in turn entailed a doubt concerning epistemological beliefs, inasmuch as such beliefs are related to their preceding assumptions. In Brookfield's classroom, the students tried to understand their experiences of learning against the background of Arendt's theory, constituting a whole of meaning. During this process doubt was plain in that the students were exposed to other meanings of learning experiences than their own, given that any person's interpretation is not the only valid one.

ALTER EGO: But how about the aspect of accurate enunciation? Which whole would you relate that to?

EGO: Well, actually, if I consider the meaning of critical thinking as it appears in Wittgenstein, the aspect of accurate enunciation seems to be related to three wholes. Two of these have been discussed previously: The whole of reality, and the whole of meaning. Since Wittgenstein studies linguistic propositions, however, the aforementioned wholes do not capture the direction of the aspect of accurate enunciation completely. In his writings, Wittgenstein also directs critical thought to the *whole of language*, revealing the relationships between propositions and their applications. Based on the account of Siegel's classroom, it appears that the conceptualization of critical thinking in the informal logic movement is also a matter of creating a whole of language. This appears in that the students' arguments were constituted by certain linguistic relationships for the legitimization of their validity.

ALTER EGO: I think that is interesting. Wittgenstein delimits his interest to lan-

guage as such. Still, his critical thinking is directed to more wholes than any of the other aspects do. But now maybe you could tell me about the aspect of conscious confinement.

EGO: The aspect of conscious confinement seems to be related to the *whole of plurality*. With respect to Nietzsche's philosophy, for instance, his critical thinking aims at bringing out the individuals' particular perspectives. These perspectives constitute different power relationships, which all together create a pluralistic and contradictory whole. Whereas in Wittgenstein, the pluralistic whole is constituted by the infinite range of language games which reveals the relationships between the proposition and its different applications. Foucault's critical thinking is, in turn, directed to the specific relationships between discourses, conditioning their existence. This too generates a whole of plurality.

ALTER EGO: Now, tell me how the aspect of conscious confinement, aiming at the whole of plurality, could be understood in relation to contemporary perspectives on critical thinking.

EGO: Pondering upon the feminist perspective on critical thinking, in Thayer-Bacon's terms, it approaches the whole of plurality in two senses. On the one hand, Thayer-Bacon puts focus upon the fact that critical thinking has to be re-construed into constructive thinking. This implies that critical thinking appears in the connecting relationships between different voices. Due to the fact that the voices entail different cultural backgrounds, a pluralistic whole is created by the process of critical-constructive thinking. On the other hand, constructive thinking also means to consciously treat the aspect of conscious confinement. This conveys a raised awareness that knowledge is relative to the context, as well as being dependent on the individuals' embeddedness and embodiedness. This generates an awareness that there exist more ways to understand the world than are given in a certain context and perspective. Hence, the whole of plurality that appears in the feminist perspective on critical thinking is not only implicit, but explicit also. In Thayer-Bacon's classroom, the students collectively strived for an agreement on how to work further with their compositions. In this process, the different viewpoints were regarded as important contributions to the construction of knowledge, based upon a pluralistic whole. In Brookfield's classroom, critical thinking was also directed to a whole of plurality. This was clear in that all the students' learning experiences conveyed a range of dif-

ferent perspectives on how learning in higher education could be understood. There was no attempt to attain a general conclusion of what learning in higher education is all about, but rather to explore the phenomenon in its manifoldness and possible ways of being.

ALTER EGO: I have listened carefully to your summary of the different aspects of critical thinking, as well as the directing wholes related to these aspects. I wonder, are you saying that critical thinking is always a matter of being directed to wholes? What if I am just interested in a specific part of a whole? Is it not possible to think critically about parts, without relating these parts to a whole?

EGO: I have to remind you of my understanding of what constitutes a whole. As I mentioned before, the critical thinker seems to be concerned with relationships. These relationships could be considered as constituting a whole. Accordingly, even just a small part constitutes a whole in itself when considering its inner relationships. My point is that critical thinking in scholarship is a matter of thinking in terms of relationships in some sense. Often it is possible to characterize these relationships in a way that make them understandable as constituting a whole, directing the critical thought. This is what I have previously done.

The intentional directions of critical thinking

ALTER EGO: I see your point, but I am still not satisfied. You have mentioned many wholes: The whole of continuity, human mind, being, reality, meaning, language, and plurality. I ask you now: *Why* do you think the critical thinker is concerned with wholes? I mean, what are the *intentional origins* of critical thought?

EGO: This is a difficult question, but it is possible to discern three dimensions; *mastering the world*, *understanding the world*, and *changing the world*, which each seem to direct the intention of critical thinking in scholarship.

ALTER EGO: Interesting. Could you tell me about these intentionalities?

EGO: As regards *mastering the world*, it appears in the scholar's use of critical thinking for control and prediction.

ALTER EGO: Could you give me some concrete examples of how critical thinking is directed to mastering the world?

EGO: Well, for instance, one finds plain features of this intentional direction in as diverse philosophers as Dewey, Popper, and Nietzsche. In respect to Dewey, the ultimate goal seems to be the creation and maintenance of democracy, which could be considered as a certain way of mastering society. Popper, on the other hand, states that critical thinking, in terms of hypothesis testing, is needed to falsify theories. Corroborated theories, which still hold after severe tests are means to 'explain and master' the world, as Popper expresses it himself. Whereas Dewey is concerned with mastering society in democratic terms, and Popper is concerned with mastering the world in scientific terms, Nietzsche takes another turn. His will to master is neither related to democracy, nor to scientific knowledge. Rather, he speaks in terms of strong critically thinking individuals, who can lead the weak people towards a masterful society.

ALTER EGO: Against the background of these philosophers, I am inclined to agree with you that critical thinking could be considered as a means for mastering the world. But, you have only mentioned historical instances of this phenomenon. Could you find support for this intentional direction of the critical thought in contemporary perspectives too?

EGO: Yes, actually I can. Remember, with the exception of the cognitive perspective, all contemporary perspectives on critical thinking call upon the need for critical thinkers in order to create and maintain democracy. Accordingly, they follow in Dewey's footsteps. The cognitive perspective, however, is closer to Popper's way of mastering the world through science. This is because the cognitive perspective puts focus upon scientific rules for thinking critically.

ALTER EGO: It seems as if you are right, but what about the other intentional directions? You mentioned that you had identified two other directions as well. Could you tell me about them?

EGO: As regards the intentional direction of *understanding the world*, it seems as if all scholars include this direction in their critical thought, to some extent. Most of the time, this direction is combined with either mastering the world, or changing the world, which I will describe later on. With the exception of King's and Kitchener's perspective, such combinations appear in all contemporary perspectives on critical thinking. It happens, however, that the critical thinking process is almost solely intentionally directed to understanding the world,

as in King's and Kitchener's perspective, where critical thinking is a matter of understanding epistemological assumptions. The intentionality of understanding the world is also clear in the philosophies of Augustine, Aquinas, and Hegel, due to their emphasis on being. Being, in their sense, has its own development and cannot change and become complete until the humans have understood being itself. Thus, changing the world goes through understanding it.

ALTER EGO: Could you tell me more about the last intentional direction: changing the world.

EGO: I would be pleased to do so. The intentional direction of changing the world sometimes coincides with mastering the world, but it does not have to. You see, when mastering the world means to follow in the traditions of the past, there is no aspiration to change the world. Thus, changing the world aims at liberating human beings from social, and even natural constraints.

ALTER EGO: I think you are right, but what do you mean by natural constraints?

EGO: Well, for instance, consider medical research, which is concerned with finding cure for fatal illnesses. Even though nature has already decided the fatality, these researchers use their critical thinking in order to free human beings from an untimely death.

ALTER EGO: I understand what you mean now, but tell me how this intentional direction appears in the different perspectives.

EGO: Historically, one finds its most predominant traits in Nietzsche and Foucault, who both use their critical thinking in order to rouse human beings from their traditional slumber. Thereby human beings realize that they are captured within a net of traditional ways of understanding their lives. Once human beings have attained this insight, they receive the power to change the world into something different. The same purpose is evident in Husserl and the range of phenomenologists who followed him, although in another way. Whereas Nietzsche and Foucault are concerned with combating the limits of thought, Husserl and the phenomenologists rather search for the possibilities.

ALTER EGO: Assuming that you are right in your claim, it is possible to say that postmodernists think critically about the limits in the world, whereas phenomenologists think critically about the possibilities in the world.

Now, I have to remind you that you once said that critical thinking appears in between two states. Thus, even though the postmodernist directs his or her thoughts to the limits, he or she must also consider the possibilities. In the same way the phenomenologist has to be aware of the limits, although his or her interest is directed towards the possibilities. It seems to me that the limits and the possibilities are preconditioning one another. Or, what do you say?

EGO: I agree with you. There is a dialectical relationship between the limits and the possibilities in the act of critical thinking. Only seeing the limits is to paralyze action. Only seeing the possibilities is to be naive. Thus, if one wants to bring about a change in a critical manner, both the limits and the possibilities have to be considered.

ALTER EGO: However, continue with your thoughts about changing the world. You have not said anything about the intentional direction of critical thinking in relation to contemporary perspectives yet.

EGO: Against the background of contemporary perspectives on critical thinking, one mainly finds the intentional direction of changing the world in the informal logic movement, the developmental-reflective perspective and, to some extent, in the feminist perspective. I say to some extent, because even though it seems as if Thayer-Bacon conceptualizes critical thinking in emancipatory terms, the meaning of her constructive thinking does not really meet the criteria for change. This is due to the fact that her perspective is based upon agreement. When taken by themselves, the individual voices are important, however conflicting they might be. Considering the process of constructive thinking, however, it does in fact aim at reducing the individuality of the voices into a collective voice. Conflicts are supposed to be turned into consensus. Consequently, those who do not participate in the collective direction of thought cannot join in the construction of knowledge. Thus, as long as there is agreement in the group, knowledge will be constructed in the same rut. In fact, even though the conceptualization of critical thinking in the informal logic movement could be considered as more traditional than in the feminist perspective, the intentional direction of the critical thought in the informal logic movement is closer to the aim of changing the world. Critical thinking in their sense is certainly not to attain a consensus, but rather to evoke conflicting arguments. As Siegel properly says, critical thinking aims at battling the status quo. This can only be done by opposing oneself to the status quo, given that criti-

cal thinking means to be in a never-ceasing disposition to conflicts. As regards the developmental-reflective perspective, its emphasis on change is rather connected to the individual's development. Nevertheless, changing the individuals' beliefs and ways of action in itself entails an intentional direction of changing the world. Therefore it seems justified to insert the developmental-reflective perspective into this direction as well.

Being a critical thinker

ALTER EGO: So, according to your exploration of critical thinking, the intentionality of the phenomenon is threefold. It is a matter of mastering the world, understanding the world, and changing the world. At the beginning of your journey, however, you had a belief that critical thinking originated from a sense of dissatisfaction and responsibility in the individual. How do you understand your prejudiced view of critical thinking in relation to its intentionalities?

EGO: When considering the intentionalities, it is possible to understand them as different expressions of the scholar's dissatisfaction, care, and will. For instance, critical thinking in scholarship seems to be related to dissatisfaction with that which is already known. This is because that the critical thinker is aware of the fact that there are always still other ways of understanding the world, either by cumulative or qualitatively increasing knowledge development. Assuming that the intentional aim of critical thinking in scholarship is to master, understand, and change the world through enhanced knowledge, the dissatisfaction is not only directed to that which is already known. Also that which is still unknown becomes a subject of dissatisfaction, since the unknown entails the limits as well as the possibilities of nature and human life. Hence, by his or her dissatisfaction with both the known and the unknown, the critical thinker in scholarship is forced to prepare the way for yet other ways of understanding nature and human life, opening the possibility of mastering and/or changing the world. This concern for understanding the world, in order to master or change it, could be derived from an underlying sense of care. Being involved in the sense of care is the characteristic of responsibility, which implies that responsibility is related to critical thinking. Furthermore, even though I did not notice it from the beginning, there is also a *will* to care and a *will* to know, contradicting the sense of dissatisfaction. This will is fundamental for mastering the world as well as for changing it.

ALTER EGO: Is it possible to trace the individual's sense of dissatisfaction, care, and will to the classrooms at the University of Critical Thinking? I mean, how was the feeling of dissatisfaction invoked in the students, forcing them to search for new knowledge? How were they taught the will to master and change the world? How were they taught to care about the world?

EGO: Well, much teaching and learning appear implicitly. Thus, the students were not explicitly taught to master, understand, or change the world. They were, however, given a tool for such purposes, namely critical thinking. Considering the pedagogical implications of critical thinking in each classroom, they are all compatible with the ultimate intentionalities and origins of critical thinking. For instance, in Halpern's classroom, critical thinking turned out to be a *mastering and manipulation of rules*. Accordingly, the students implicitly learned to be dissatisfied with knowledge, which was not yet rationally explained. Thereby, the students were taught how to understand the world, on the one hand, and how to master it, on the other. You see, they were actually taught how to control knowledge, which in the long run aims at a will to master the world. In Kurfiss' classroom, critical thinking aimed at *rationalizing one's beliefs*. Hence, the students were taught the will and care of how to understand the world. As regards Siegel's classroom, critical thinking meant *rationally implementing one's social obligations and responsibility by reason-based action*. This was done through the debate of a social problem. Thus, the students were taught how to care about the world through critical action. They were also taught how to master the world by delivering the best reasons for a certain kind of action. Furthermore, due to the conflicting perspective in the informal logic movement, the students also learned to be dissatisfied with an answer, and furthermore to have a will to change the world. In King's and Kitchener's classroom, the students were supposed to *get a deep and reflective understanding* of a problem. Thereby, they got the will and care to understand the world, stemming from a sense of dissatisfaction with one's insufficient knowledge. Critical thinking in Brookfield's classroom, on the other hand, implied to *liberate the constitution of meaning*. Accordingly, the students were implicitly directed towards attaining a sense of will and care to reveal themselves from their traditional boundaries, in order to understand and change their perceptions of the world. In Thayer-Bacon's classroom the same purpose was evident, inasmuch as critical thinking in her classroom was a matter of *social construction of new meanings*. I have argued earlier, however, that it

is uncertain whether Thayer-Bacon's perspective on critical thinking actually creates the possibility for change, due to its foundation in consensus. Thus, it could be argued that the students in Thayer-Bacon's classroom are taught the will and care to understand the world, rather than to change it.

ALTER EGO: It seems as if all the pieces fit together. Now, I will ask you a last question. After all you have seen and heard, after all your contemplations upon the phenomenon: what is your own developed meaning of critical thinking?

EGO: I will not deliver a definition of critical thinking, inasmuch as such definitions are never complete. Neither are they desirable, since further meaning constitutions are then hampered. Instead I will share my view of what it means to be a critical thinker with you. According to my understanding the critical thinker is a person, who holds out his or her hands to the world, saying:

"I care for the world and all life in it. There is too much that could be better, although it does not have to be this way. Thus, by opening my mind, better ways of being will be revealed. All I need to do is to use my will to search beyond what is already given. I am willing to challenge the limits of thought, forcing myself to action".

ALTER EGO: You know what? I think you just did the epoché.

CHAPTER 5

The Conditions and Development of Critical Thinking

By means of my hermeneutic-phenomenological approach, a range of different meanings of critical thinking has been revealed. Furthermore, it appears that these meanings were constituted differently depending on the intentionalities preceding them. This was especially palpable when considering the possible realizations of the contemporary perspectives on critical thinking in the classroom. Against this background, and in relation to the purpose of this thesis, two main questions arise. Since critical thinking has different meanings, the conditions for realizing critical thinking differ as well, depending on which meaning it is associated with. Thus, it is valuable to ponder upon these conditions: What are they, and how are they related to the different meanings of critical thinking? Furthermore, it appears in relation to today's perspectives on critical thinking that the development of the meaning of critical thinking is on its way to new dimensions. Seen from the perspectives in the second wave, critical thinking is no longer understood in rational terms only, but other qualities are included as well. Irrespective if one considers perspectives from the first or second wave, however, emphasis is mainly put on the meaning and process of critical thinking, rather than on its possible consequences. Assuredly, most perspectives today state that the existence of critical thinking among individuals is a precondition for a democratic society, which could be understood as encompassing the ultimate consequence of critical thinking. Also, some perspectives highlight the importance of responsibility in thought and action, which involves a certain concern for the results. Although there is a concern for the consequences of critical thinking, considering, for instance, that it is valuable for maintaining democracy, and that a sense of responsibility is important, no perspective questions the ethical aspect of critical thinking itself in other terms than that it is a valuable tool for attaining socially and scientifically desirable outcomes. Thus, it seems as if the phenomenon has been framed within its own process. Viewing critical thinking as an assurance of attaining normatively good ends is, however, not wholly unproblematic, which will be discussed further on. Hence, in light of these circumstances, where focus is almost exclusively put on the process itself, the second question emerges: What are the consequences and possible development of scholarly critical thinking in relation to scholarship as a whole? Accordingly, the forthcoming discussion of the result of

this thesis will be carried by these central questions. This is not to say, however, that the last word has been said about critical thinking as regards its meanings, conditions and development. That would be totally contradictory to my hermeneutic-phenomenological approach and the meaning of scholarship as a whole, which is to be a constantly varying movement. Rather, the results of this thesis should be comprehended as constituting a springboard for further meaning constitutions of critical thinking, which in turn reveal yet other conditions and possible directions of development than those referred to here.

Potentials for Critical Thinking

Four ways of understanding potential

When dealing with the issue of realizing the conditions for critical thinking, one has to consider the potential for its actualization. This is due to the fact that if there is no potential for critical thinking to be realized, there is no actualization either. Before discussing the different potentials for critical thinking, however, there is a need to consider the concept of potential, and its various meanings. Therefore, some attention will first be directed to four different ways of understanding potential and actualization. Looking for the meaning of "potential" in a dictionary, one finds that it conventionally means:

> Possible as opposed to actual; existing *in posse* or in a latent or undeveloped state, capable of coming into being or action; latent. (Oxford English Dictionary Online)

According to above definition, it appears that "potential" is related to an attainable development, where potentials become actualized in an ongoing process. This way of understanding potential is similar to how potential is comprehended in the Bildung

dition[41]. For instance, this is evident when considering Humboldt's[42] view of how human beings attain Bildung. According to Humboldt (1969), all men[43] possess, in different proportions, three groups of inner powers[44]: physical powers, intellectual powers, and moral powers, which all constitute different aspects of one and the same power, the power to attain Bildung. In Humboldt's sense, Bildung is attained when all individuals have optimally developed their powers, since a harmonious whole of humanity is then created, in which person and citizen are united in a single being. The condition for such development is, however, dependent on the nation, and on whether it allows individuals to be free and autonomous in thought and action, Humboldt points out. The same idea occurs in Key's thought on Bildung. In her lecture from 1897, Key (1992) holds that human beings have natural predispositions to Bildung, and that these natural predispositions allow the integration of the matter of Bildung into a person's entire being. When a person's entire being is involved, all her faculties, such as heart, mind, and sense of beauty interact. According to Key, this integration of all faculties paves the way for Bildung. In contrast to Humboldt, however, Key claims that a natural predisposition to Bildung exists in some people, but not in others, depending on their ability to integrate all their knowledge in their entire being. This difference between individuals is due to social constraints, which do not allow all people to have potential to attain Bildung. Stating that potential for Bildung is inherent in certain individuals only is not regarded as a problem from Key's point of view, however. The Bildung of all humanity is still possible, because Key considers Bildung as being a long process extending over several generations. Irrespective of their diverging views in this respect, both Humboldt and Key have the

41 As a concept, Bildung is indefinable (e.g. see von Hentig, 1997; Masschelein & Ricken, 2003; Reichenbach 2003), yet those who are familiar with the concept and use it know its manifold meanings. Johann Gottfried Herder originally introduced the concept of Bildung in the last decades of eighteenth century. Using the noun "Bild" as a stem, Herder created the concept "Bildung" in order to capture human beings' development towards the image of perfectibility (Liedman, 1998). With references to Drowdowski, however, Nordenbo (2002) gives a more exhaustive explanation of the linguistic meaning of Bildung: "The suffix *-ung* on a verbal noun in German indicates that we are dealing *either* with an act, a process or an occurrence [...], *or* with the completion or result of an occurrence [...]. Applied to *Bildung*, this means that we are dealing *either* with an act, a process or an occurrence, by which somebody or something becomes an image, or with the image that emerges at the end of, *or* as the result of, an act, a process or an occurrence. [...] The German word does not, therefore, refer primarily to somebody or something that does something to somebody or something, but to an image – a model – *of which* somebody or something is to become an image or model" (Nordenbo, 2002, p. 341).

42 Humboldt was a key figure in implementing Bildung thinking into the university.

43 Whether Humboldt thought that women possessed potential for Bildung is not clear, since women were totally ignored as regards education in all his works. Hence, in Humboldt's meaning Bildung seems to be a privilege for men only (Liedman, 1997, p. 233).

44 In the forthcoming text, potential will also be referred to as 'power', 'predisposition', 'potency', and 'potentiality', depending on the source. According to my interpretation, all these designations are synonymous with potential in the current context, because they all embrace the concern for the actualization of a certain being.

same understanding of the potential for Bildung: The potential for Bildung has its origin in the individual, who develops his or her inner powers in an ongoing process towards a harmonious whole, both within the individual and in relation to society. Transferred to the context of this thesis, such understanding of potential implies that critical thinking is actualized when the individual has developed his or her inherent potential for thinking critically.

Besides the above-mentioned way of understanding the actualization of potential, as being the individual's development of his or her inherent powers, there are other ways to comprehend the meaning and realization of potential as well. Therefore, some thoughts of Scheffler, Aristotle, and Vivante will be highlighted too. All of these thinkers have discussed the issue of potential in a way that sheds light on the conditions for realizing critical thinking in relation to its different meanings. In the terms of Scheffler's (1985) contribution to the discussion of human potential, it is no longer a matter of possessing an inherent potential. Rather, Scheffler holds that potentials are very variable both in their existence and the possibility of their realization, since they are dependent on person, time and context. Therefore, the realization of certain potentials is only possible under specific circumstances, depending on the individual's capacity, capability, and propensity, Scheffler maintains. By capacity he means the outer conditions for the individual's acquisition of those features that the potential is directed at. Included in these conditions are different aspects, such as current opinions and attitudes within the context. Thus, to be concerned with the individual's capacity implies to focus upon contextual factors that may prevent the acquisition of the desirable features. Capability, on the other hand, refers to the individual's inner requirements, free will, and choice to realize his or her potential, given that capability is related to motivation. In respect to capability, Scheffler emphasizes that the individual's responsibility plays an important role, since exercising of his or her powers has different possible outcomes:

> To develop a student's capability to learn is, in general, to give him skills which may be employed for a variety of ends, both good and bad. With the development of his powers of effective choice goes responsibility for the exercise of such powers. (Scheffler, 1985, p. 62)

Even though capability is connected to the individual's own agency, it should not be understood as equal with seeing potential as an inner essence in the individual, as discussed above. Rather, the individual's capability depends on different circumstances, since Scheffler carefully points out that "potentials construed as capabilites of acquisition are not intrinsic to the person; they may be developed or constricted over time" (Scheffler, 1985, p. 62). Besides capacity and capability, propensity is understood as superior to potential. In Scheffler's sense, propensity meets the critical aspect of both capacity and capability, proposing conditional predictions for potentials to be realized. Accordingly, it is not enough to have both the capacity and capability

to learn something, but something more is needed. It appears that prediction of the individual's capacity and capability is "only *relative to* conditions to be understood in context" (ibid., p. 54). Thus, "for the outcome to be predicted a number of appropriate 'ifs', characterizing the environment at intermediate times, have also to be realized" (ibid., p. 55). This implies that even if a person has the intellectual capability to think critically, and moves in circles where critical discussions are frequently held, this person will not necessarily act like a critical thinker. For instance, maybe he or she does not want to participate in the critical discussion him- or herself, since it makes certain demands upon his or her performance and knowledge, which could lead to performance anxiety.

When coming to Aristotle, however, the condition for a potential to be actualized is no longer mainly an individual matter. Aristotle approaches the issue by pondering upon the relationship between *dunamis* and *energia* in his Metaphysics Book IX. By *dunameis*[45] is meant different potencies that exist in nature, animals and human beings. Aristotle holds that some potencies are innate from birth, such as spirit, wish and appetite, while other potencies appear through practice and learning. As regards reasoning and understanding, for instance, they are abilities that develop naturally with increasing age. Moreover, Aristotle makes a distinction between rational and nonrational potencies, in respect to two differences between them. Whereas a nonrational potency is only capable of one effect from its activity, a rational potency can lead to different possible effects, contrary to one another: "Every rational potency admits equally of contrary results, but irrational potencies admit of one result only." (Aristotle, 1996, Book IX: II, p. 433). For instance, a doctor can both cure and kill. Since there are many outcomes of critical thinking, it should be related to rational potencies. The crucial point is that since only one effect can be actualized at any given time, other factors are also involved, determining the outcome. According to Aristotle, these factors are derived from either desire or choice. *Energia*, on the other hand, refers to the activity or actuality that is actualized through the activation of a certain set of *dunameis*. The interesting point here is that Aristotle argues for the priority of activity, that *energia* precedes *dunamis*. This implies that *dunamis* can neither be defined nor understood without its actuality. Furthermore, Aristotle holds that *energia* is better than *dunamis*, inasmuch as *dunamis* has an inherent potency to end in something bad. In more precise terms, Aristotle holds that good actuality is more valuable than the good potentiality it is related to. This is due to the fact that the good potentiality involves a possibility of ending in something bad. The good actuality, however, cannot be other than it is, since its contrary actuality cannot be present at the same time. For instance, the contrary actualities of health and illness cannot appear at once in one and the same person. Hence, if a good potential is realized into its good actuality, this end is always good[46]. Aristotle also talks about complete versus incomplete substances, a thinking that founds his form tenet. Com-

45 *Dunameis* is the plural form for *dunamis*.

46 As regards bad actualities, Aristotle considers them as worse than their related potentialities.

plete substances already have their form, while incomplete substances lack form. Incomplete substances have, however, potentiality to become complete, and hence get their form. The question of how a substance can get its form, without having it initially, is a complicated philosophical issue not dealt with here. More important for the sake of this discussion is Aristotle's assertion that there is an essential need for other complete substances if an incomplete substance is to develop into a complete being. Therefore, actual form is prior to potential form. In relation to critical thinking, this implies that human beings have a set of *dunameis*, in which the potency for critical thinking is assumed to be apparent. Following Aristotle's thinking in this respect, it implies that students are incomplete critical thinkers, who need complete critical thinkers to get their form, and thereby become complete critical thinkers themselves. In order to exist as a critical thinker in its highest degree, however, the individual has to actively use his or her potential for critical thinking. What happens then is that the individual's *dunamis*, his or her inherent potency for critical thinking is transferred into *energia*, which makes him or her complete as a critical thinker, or to put it in other words: he or she gets his or her form.

Just as Aristotle, Vivante (1955) does not believe that potential goes before actuality, but rather that potential is placed in its related actuality. Whereas Aristotle holds that *energia* precedes *dunamis*, however, Vivante states that potentiality coincides with actuality. Thus, against the Bildung tradition, Vivante (1955) holds that potentiality cannot be understood as something incomplete that precedes actuality. Rather, potentiality is merged with actuality:

> Potency is not the 'non-being' which precedes the act; but coincides with the act. Being is all potentiality – in the measure in which it is not a mere objective existent in itself lifeless, or a mere condition in the processes of extrinsic causality. Potentiality lives in the expressive sign, in the actualization: the objective aspect of actualization has no power to annul it. Potentiality lies in the active beat of being." (Vivante, 1955, p. 9)

Potentiality, in Vivante's sense, is best understood as the different possibilities of action, between past and future: "Power [potentiality] has an intuitive extension or amplitude, as the actual comprehension of a gradation of possibilities." (Vivante, 1955, p. 13). This implies that every occurring act can be derived from a set of different possibilities (its past potentiality) at the same time as it constitutes new possibilities (its future potentiality) for further action. Since there is an internal relationship between actuality and past and future possibilities of actualization, potentiality and actuality are necessarily apparent at the same time. Although potentiality and actuality cannot be separated in time, there is a value in making a theoretical distinction between them, inasmuch as potentiality contributes to the uniqueness of the actuality:

> The absolute uniqueness – and novelty – of the act lies in its living potentiality itself, with which only it can be identified. It refuses all abstract identification. In the intrinsic purposiveness of the creative act, there lives the sense of the possible – of a possible not to be defined (in opposition to the actual) as that which in reality does not exist, but in the sense of the possible which is born of a vital, supreme ontological reality (Vivante, 1955, p. 5)

In relation to critical thinking, Vivante's reasoning implies that potentiality is dependent on the actuality of critical thinking, and inversely that the actuality of critical thinking is dependent on its potentiality. Thus the individual does not possess any potential for critical thinking, unless he or she is not actually thinking critically[47]. Against this background, it is clear that even though Vivante distinguishes himself from Aristotle, they do have one point in common. Both of them assert that potential cannot be understood without relating it to its actuality.

The potential for realizing critical thinking in contemporary perspectives

So far, different meanings of potential have been briefly outlined. When these meanings are related to the different perspectives on critical thinking, the diverging conditions for critical thinking to be actualized become manifest. This, in turn, reveals an interesting relationship to the first and second wave of critical thinking. However, starting with the cognitive perspective, it appears that the potential for critical thinking to be realized mainly depends upon the individual's inherent capabilities. Thus, in order to actualize critical thinking, the individual has to possess and develop certain mental skills, which corresponds quite well to how potential is understood in the Bildung tradition. Furthermore, both Halpern and Kurfiss relate critical thinking to different types of problem solving. In Halpern's perspective, these problems are of various kinds. In Kurfiss' perspective, however, ill-structured problems are preferred, since they invoke reflection. Besides her focus upon ill-structured problems, Kurfiss also stresses the importance of social interaction when solving problems, since different aspects of the problem are easier revealed then. Against this background, two conditions for critical thinking appear: On the one hand, there is a need for individuals who possess and activate certain cognitive skills. On the other hand, the existence of problems is fundamental, since the realization of critical thinking goes through problem solving, either individually or collectively. As regards the latter condition, however, it presupposes that the individual in fact experiences the problem as a problem, which has been highlighted by King and Kitchener.

47 Viewing potentiality in this way is not a new phenomenon, however. Actually, such thinking is apparent already in ancient Greece, where Aristotle criticized the Megaric school "...who say that a thing only has potency when it functions, and that when it is not functioning it has no potency." (Aristotle, 1996, Book IX: III, p. 435).

Another implicit way to understand the potential for critical thinking appears in Siegel's perspective, within the informal logic movement. According to Siegel, the realization of critical thinking relies on the individual's ability and propensity to make use of his or her reasoning skills. Moreover, Siegel highlights that critical thinking is a driving force in social changes. Combating the status quo of society is, in turn, a fundamental feature of a democratic society, from Siegel's point of view. Reflecting upon the conditions for this social approach to appear, it seems as if an open-minded atmosphere is required, in which contradicting opinions may emerge and be articulated. Considering these conditions for critical thinking to be actualized, it appears that they concretize Scheffler's conceptualization of potential[48]. The potential for critical thinking to be realized lies in the capacity of the surrounding (an open-minded atmosphere), and the individual's capability (reasoning skill) and propensity to be a critical thinker. Pondering upon these potentials, it appears that the conditions for critical thinking to be actualized in Siegel's perspective are, firstly, that there is a divergence among the individuals as regards their opinions. Otherwise, the conflicting atmosphere will not arise. In this respect, Siegel's perspective is supported by the aforementioned empirical studies, which show that moving in circles of diversity is fruitful for critical thinking (Nelson Laird, 2005; Serra Hagedorn et al., 1999; Tsui, 2000)[49]. Secondly, the existence of individuals who possess and have the will to activate their inner skill of reasoning is a fundamental condition for the actualization of critical thinking. The cognitive perspective and the informal logic movement have this point in common, that one of the conditions for critical thinking to be realized is that the individual possess the inner capability for logical thinking. They differ from one another, however, as regards the object of the critical thought. Whereas the cognitive perspective relates the individual's mental faculties to problem solving, the informal logic movement relates the individual's skill to fallacies in reasoning. Accordingly, the third condition is that there exists an attempt at logical reasoning, and furthermore, that the individual understands reasoning as being a matter of logical thinking. Pondering upon the over-all meaning of Siegel's perspective, it appears that critical thinking is only valuable when it is actualized, since Siegel insists that the true critical thinker is one who *utilizes* his or her skill. In this sense, Siegel speaks in similar normative terms to Aristotle, who holds that good *energia* is better than good *dunamis*.

Within the developmental-reflective perspective, the potential for critical thinking appears in different ways. In King's and Kitchener's perspective, critical thinking is most qualified when reflective thinking is included. When this occurs, a sceptical and reflective approach can appear, in which the individual becomes aware that knowledge statements stem from different epistemological grounds. According to King and Kitchener, the development of such an attitude appears when the indi-

48 This is not surprising, however, inasmuch as Siegel himself acknowledges that Scheffler has had a great influence upon his works (see Preface in Siegel, 1988).

49 See Introduction.

vidual is faced with ill-structured problems, which cannot provide certain answers. In relation to such problems, knowledge is always uncertain, so each critical judgment is based upon a complex understanding of the problem. Thus, the existence of ill-structured problems is a condition for critical thinking to appear in the reflective sense King and Kitchener refer to. This in turn, requires that the individual, in fact, experience the ill-structured problem as being a problem, which King and Kitchener carefully point out. Hence, this constitutes a second condition in their perspective. It is then possible to scrutinize the condition for experiencing a problem as a problem. With references to Arendt (1978), the condition is found in the sense of wonder, when something appears admirable. That is, when a person perceives something that is experienced as worthy to ponder further upon. However, by means of their reflective judgment model, King and Kitchener also show that reflective critical thinking is developed gradually through different epistemological phases and stages. Thus, complete critical thinking is not apparent until the last stage is attained. Thereby a third condition is revealed, namely the individual's intellectual development to the highest level of reasoning. In this condition, one finds that the potential for critical thinking to be realized is ultimately the individual's development of his or her inner potential for reflective and critical thinking. Accordingly, the potential for critical thinking to be realized in King's and Kitchener's perspective is best understood against the background of how potential is understood in the Bildung tradition. Hence, their perspective is close to the cognitive perspective in this respect.

In relation to Brookfield's perspective, however, potential takes a new turn. Granted, Brookfield conceptualizes critical thinking in a manner that approaches the potential for its actualization as mainly an individual matter, just as in the aforementioned perspectives. This is evident in the fact that Brookfield calls upon the need for questioning one's own assumptions and habitual ways of thinking and acting. In doing this, emotions play an important role. Accordingly, it is assumed that the individual possess the ability to have a self-critical attitude and reflect upon his or her own being. This, in turn, implies that the individual has to distance him- or herself from his or her own horizon, seeing it from another viewpoint. Such proceedings require a great amount of abstract self-awareness. There are other aspects of Brookfield's conceptualization of critical thinking, however, that place the potential for its realization closer to the Aristotelian meaning of potential than any of the other perspectives. Recalling Aristotle's tenet, he says that rational potencies (such as critical thinking) have different possible ends, of which some are bad. Furthermore, Aristotle says that it is only possible to actualize one of these ends at a given point of time. The same reasoning appears in Brookfield's perspective, although in other words. According to Brookfield, an important feature of the critical thinker is his or her never-ceasing awareness of the existence of a range of possible ways of being. Even though all of these ways are valid as regards their possible actualization, the critical thinker has to choose the best one. The similarity in Brookfield's and Aristotle's thinking reaches its peak, however, in light of Aristotle's form tenet and assertion

that *energia* precedes *dunamis*. Brookfield emphasizes the fact that the critical thinker has a responsibility to invoke critical thinking in others. The critical thinker does so by being a reflective listener and conversation partner. Hence, the critical thinker constitutes a model (or a complete form, in Aristotelian terms) as to how to be a critical thinker. Aristotle's (and Siegel's) assertion that the actualization of critical thinking is normatively better than its potential is, however, not so markedly pronounced in Brookfield's perspective. Assuredly, it is possible to find implicit traces of this thinking in Brookfield too, especially since *energia* apparently precedes *dunamis* in Brookfield's perspective. When considering the fact that the critical thinker is not only a fostering person, but also a developing person, the potential for critical thinking seems to be just as important as its actualization. Against this background, two conditions for critical thinking appear in Brookfield's perspective: Firstly, there must be individuals who possess the ability to reflect upon their own as well as others' possible ways of being. Secondly, there must be critical thinkers who have already received their form as critical thinkers.

In Thayer-Bacon's perspective, critical thinking is transformed into constructive thinking. This implies that critical thinking appears in the continuous construction of knowledge between individuals. In this process, the contributions from each individual are important, since each individual carries with him or her a certain cultural way of viewing the world. This is due to the fact that all humans are embedded and embodied beings. Given that the individual is embedded and embodied, critical thinking is necessarily related to the physical body, conditioning the result of the construction of knowledge. In knowledge construction it is important to let the individuals' specific voices be heard, inasmuch as these voices constitute the material of collective critical thought. Thus, one of the conditions for critical knowledge construction to appear is the existence of voices being heard and being mutually respected. Knowledge cannot be constructed in any way, however, since there are frames for the direction of the construction of knowledge. The common language used within the community determines this direction. Accordingly, those individuals who do not follow the implicit rules of the specific language game will not be a part of the construction of knowledge. Hence, a second condition for critical thinking, in Thayer-Bacon's perspective, is that the individuals comply with the given discourse of the community. In relation to these conditions, it appears that the potential for critical thinking to be realized lies in the process of knowledge construction itself. Thus, critical thinking means to be in a continuous dialogue with other people, in a way that intertwines the process with the result, which fits well with how potential is conceptualized in Vivante's theory.

Against this background, it is possible to make a contribution to the understanding of the difference between the first and second wave of critical thinking. Walters (1994) characterizes the difference between the waves in terms of how the meaning of critical thinking is understood. In the first wave, critical thinking is conceptualized as a general skill, consisting of logical and rational thinking. In the second wave,

critical thinking is considered to be highly dependent upon the context, as well as of who is thinking critically. Furthermore, the meaning is expanded, which implies that critical thinking involves other qualities, such as empathy, emotions, intuition, imagination, creativity, and reflective thinking. When viewing the perspectives in light of the potential for critical thinking to be realized, however, another important difference between the two waves appears. In the cognitive perspective and the informal logic movement, the potential for critical thinking is mainly an individual matter. Thus, in the first wave, the potential for critical thinking is placed in the individual, rather than in outer conditions. Considering the developmental-reflective perspective (in relation to Brookfield's approach) and the feminist perspective, however, the potential for critical thinking is not implicitly a latent inherent phenomenon, but it is implicitly understood as an active part of critical thinking. Accordingly, as a result of the second wave, the potential for critical thinking is no longer placed in the individual, but in its actualization. Furthermore, this actualization is conditioned by the existence of other critical thinkers as well. Hence, critical thinking is no more a solitary activity, but it gets its most critical essence when performed together with other people. In this respect, it is questionable whether King and Kitchener are properly categorized as belonging to the developmental-reflective perspective and the second wave. Through the previous analysis of the potential in their perspective, it appears that they rather belong to the first wave. I will discuss this problem further in the section *Self-critical Reflections and Confessions*.

The Development of Critical Thinking in Scholarship

Understanding current developments in relation to Weber

Besides the fact that the two waves differ in respect to the meaning and potential for critical thinking, the results of this thesis have revealed another difference between the two waves, relating to Weber's different types of social action. In the cognitive perspective, critical thinking displays characteristics of instrumentally rational action, with an emphasis on instrumentality, on the one hand, and traditional action, on the other. Both Halpern and Kurfiss conceptualize critical thinking in a way that makes it a method for attaining solutions of problems. As long as the method is appropriately followed, the solution is legitimized in its validity, hence the emphasis on the instrumentality of critical thinking. The methods themselves and the kind of epistemological assumptions that precede them are not questioned, however, so the characteristic of traditional action is plain as well. Siegel's informal logic perspective is still distinguished by instrumentally rational action. This is palpable in that the goal of critical thinking is to attain rational conclusions as to how to think and act next. The prime concern is, however, how the activity of critical thinking is carried out. Focus is put on whether the individual is moved by the appropriate reasons,

rather than on the possible consequences beyond the frames of rationality. Against this background, it appears that a similar phenomenon is apparent as in the cognitive perspective. The instrumentally rational action of critical thinking becomes mainly a matter of being critical in relation to the process, rather than in relation to its consequences. In contrast to the cognitive perspective, however, one cannot find traits of traditional action in Siegel's perspective. Rather, we can observe features of value rational action. In the spirit of Siegel, this means that the process of critical thinking has a societal value in itself, since the existence of critical thinkers is considered to be essential for a democratic society.

Considering the character of social action in critical thinking in the developmental-reflective perspective, the same difference appears between King and Kitchener, on the one hand, and Brookfield, on the other, as we were able to observe when discussing potential. The kind of social action in King's and Kitchener's perspective on critical thinking is closer to the cognitive perspective, than it is to Brookfield's. Firstly, King and Kitchener make no attempts to re-construe the concept of critical thinking, but choose to add the quality of reflective thinking. Since King and Kitchener do not try to re-construe the meaning of critical thinking, the characteristics of traditional action are embedded in their perspective. Furthermore, critical thinking in King's and Kitchener's reflective sense aims at attaining a critical answer to an ill-structured problem. This is achieved by reflecting upon the epistemological assumptions embedded in the problem. Accordingly, there is both an explicated goal and certain means as to how to attain that goal. Hence the characteristics of instrumentally rational action are evident. As in the cognitive perspective and Siegel's informal logic perspective, focus is put on the process of critical thinking, rather than on the consequences. Once a critical standpoint is taken, the main concern is whether the individual has reached the highest intellectual level or not in respect to the amount of complexity and reflectivity. Thus, complex and reflective thinking seems to be sufficient for thinking to be qualified critical. In Brookfield's perspective, however, it appears that the predominant quality of instrumentally rational action is not present anymore. This is due to the fact that there are no clear goals, such as problem solutions or rational judgments. Neither is critical thinking carried out by using certain rules or principles. Rather, critical thinking in Brookfield's perspective involves a certain approach beyond the frames of rational and scientific thinking. It implies to see the possible ways of being and to see that all understanding is dependent on the individual's particular horizon, from which he or she experiences the world. Granted that critical thinking in Brookfield's perspective involves a responsibility towards oneself, other people, and the democratic society as a whole, there is an ethical aspect of critical thinking that gives the process a value in itself. Accordingly, Brookfield's perspective conceptualizes critical thinking in a way that attributes it the characteristic of value rational action. Since Brookfield emphasizes the impact that emotions have on critical thinking, there is also a quality of affectual action. These two kinds of social action appear in the feminist perspective as well. In Thayer-Bacon's terms,

critical thinking is mainly a matter of letting different voices be heard in a continuous dialogue. Inasmuch as the purpose of critical thinking seems to be placed in the process itself, critical thinking may be characterized by value-rational action. The voices in the community convey not only the individual's mere opinions, but also their emotions, which are traceable to their varying cultural backgrounds. Given this fact, critical thinking is a matter of affectual action as well. In contrast to Brookfield, however, critical thinking in Thayer-Bacon's perspective also entails the quality of traditional action. This is due to the fact that the individuals are considered to be irrevocably embedded and embodied beings, who are moved by their traditions. Furthermore, complying with the given discourse within the community constitutes the condition for participating in the construction of knowledge. This could lead to a situation where the individuals keep moving on in the same direction, without letting ideas beyond the discourse be inaugurated in the knowledge construction.

Against this background, it appears that the perspectives of the first wave of critical thinking have one point in common, which is not found in the second wave (with the exception of King and Kitchener): they all characterize the meaning of critical thinking in a way that construes it chiefly a matter of instrumentally rational action. In addition, they do so in a manner that captures critical thinking within its own instrumentality. As long as critical thinking is carried out appropriately with respect to certain rules and principles, the result is rationally justified. In the second wave, the common point (King and Kitchener excepted), is the emergence of affectual action in relation to critical thinking, a type of action which is excluded in the first wave. Another interesting phenomenon also appears, when relating all current perspectives of critical thinking to Weber's different types of social action. If we incorporate responsibility into the conceptualization of critical thinking, as Siegel and Brookfield do, critical thinking is enriched by a quality of value-rational action. This implies that, when critical thinking is related to responsibility, the conscious meaning of the activity becomes placed in its own process. This is due to the fact that the sense of responsibility entails an ethical dimension to critical thinking, which in turn conveys that the individual consciously thinks in terms of values. When these results are related to the different meanings of critical thinking throughout history, an interesting development is revealed. Before discussing this development, however, there is a need to consider how the historical meanings of critical thinking are related to different types of social action.

Understanding the historical development in relation to Weber

In my account of the historical development of critical thinking, I analyzed the appearances of the phenomenon in a two-fold sense. On the one hand, I tried to grasp the character of critical thinking as it appeared in the works. On the other hand, I also attempted to capture the ways in which the philosophers used critical thinking when creating their work. However, in the analysis below, showing the different types of social action that can be observed in the historical meanings of critical

thinking, the analysis of critical thinking is limited to the terms in which it appeared in the philosopher's work. I chose this delimitation, since it is ultimately the work that puts its stamp on the further understanding of epistemological issues, and hence critical thinking in scholarship.

In ancient Greece, critical thinking involved a deep concern for both the means and the end. With respect to the means, critical thinking necessarily had to provide a logical continuity. Otherwise it could not lead to the truth, which was the purpose of the whole activity. Thus, critical thinking in ancient Greece is best understood as a manifestation of instrumentally rational action. This type of action remains a central notion with respect to critical thinking in the Middle Ages, although the truth, which the activity aimed at, was in this period related to God. Since critical thinking in the Middle Ages had a religious and ethical aspect, it showed qualities of value-rational action and affectual action as well. This is especially palpable in relation to Augustine's work, where Augustine and his pupils conclude that man is happy when he is searching for the truth. Thus, the activity of critically searching for the truth in God has a value in itself, raising a sense of pleasure. Coming to Bacon in the Renaissance, critical thinking becomes more instrumentalized. This is due to the fact that it is no longer enough to approach the truth by using logical thinking, but there is also a need to establish certain strategies as to *how* the scientist should think logically in order to develop knowledge. By means of these strategies, value-rational, affectual, and traditional action are consciously avoided. Hence, only instrumentally rational action is left. Even though Bacon's inductive method undoubtedly contributes to the instrumentalization of critical thinking, the goal of the process is still immediately present. Bacon's critical thinking is always directed at finding the pure forms of nature, which in Bacon's view correspond to the truth. The same emphasis upon the instrumentalization of critical thinking is found in Descartes' rules for knowledge development, though with the difference that Descartes' rules are deductive. Just as Bacon, however, Descartes is also driven by his will to find the ultimate truth. All the previously mentioned scholars understood their methods as giving direct access to the world as it appears in itself. This epistemological assumption was never questioned, so a feature of traditional action can be observed in their critical thinking as well. Kant abolished this traditional way of understanding knowledge, however. He pointed out that one cannot achieve knowledge about the thing in itself, since all understanding is preceded by a priori experiences, shaping the knowledge of the things. Even though Kant frees himself from the traditional way of understanding knowledge, his critical thinking is still explanatory in its character. His schemes of human understanding are the result of logical principles, which aim at attaining a complete picture of the human mind. Hence, the quality of instrumentally rational action is still apparent.

Coming to Hegel, however, other types of social action are manifested in the meaning of critical thinking as well. In accordance with his forerunners, Hegel's philosophy aims at attaining the truth, which in Hegel's sense corresponds to the

complete human development, where human beings have passed through all stages of experience. In contrast to his predecessors, however, Hegel does not believe in such thing as a world that exists in itself. This is due to the fact that the world is, in Hegel's understanding, nothing but a construction of thought. Since the human development that Hegel refers to embraces all experience, including affective, traditional, and valuing kinds, critical thinking is no longer framed into instrumentally rational action. Rather, all types of action are characteristic and essential for critical thinking in the light of Hegel. This expanded meaning and manifestation of critical thinking did not last for long, however. With Comte's entrance into history, critical thinking is again reduced to a matter of instrumentally rational action, with an emphasis on the instrumentality, due to Comte's emphasis upon the positivistic Method. Furthermore, with Comte there is a return to the idea that it is possible to investigate the world in itself.

In Nietzsche's philosophy, the manifestation of critical thinking takes a new turn. According to Nietzsche, knowledge can never be objective, but only the individual's particular perspective of the world is left. Those individuals who are the most exceptional in thought and action, are the best critical thinkers. This implies that they are carried by strong values and emotions, and moreover, that they are aware that every person is irrevocably ensnared into their predetermined history. Thus, the characteristics of value-rational action, affectual action, and traditional action are plain when approaching the meaning of critical thinking in Nietzsche's highly original and individual perspective. In respect to the philosophers after Nietzsche, critical thinking is once again a matter of instrumentally rational action. Starting with Dewey, this can be seen by the fact that critical thinking becomes equated with reflective problem solving. The individual has to deal with problems in a certain way to attain a critical solution. Dewey carefully points out that the problem and the end are interrelated. Thus it is not only a question of being critical in relation to the means, but also as to how these means are related to the end, given that the whole process of instrumentally rational action is encompassed. Critical thinking in Dewey's sense is, however, not only related to instrumentally rational action. Since Dewey states that critical thinking has its origin in experiences of perplexing kind, his notion displays a quality of affectual action as well. However, this aspect fades away during the process of critical thinking, since only logical criteria ultimately justify the conclusion. In that sense, Dewey's conceptualization of critical thinking involves certain features of traditional action too, inasmuch as he follows the majority of philosophers, who unquestionably equate critical thinking with logical thinking.

In respect to Wittgenstein's later philosophy, a difficulty arises when considering the kind of critical thinking that appears in his works in relation to the different types of social action. This difficulty derives from the fact that the subject is absent in Wittgenstein's philosophy. Thus, the qualities of affectual and value-rational action are completely incompatible with critical thinking as it appears in Wittgenstein's philosophy. Neither is critical thinking a matter of traditional action, since dealing

with language-games means being constantly aware that each use of a concept is unique. Due to this constant attentiveness to the meaning of concepts, critical thinking cannot be related to traditional action. Accordingly, only instrumentally rational action is left, but is there a clear goal for critical thinking in Wittgenstein's sense? The ultimate aim of Wittgenstein's later philosophy is to describe the infinite ways concepts are used in language-games. If a goal could be construed as being in a ceaseless process of discovering new applications of concepts, then there is a goal. If the idea of having a goal without a definite end is rejected, however, merely the instrumentalization of critical thinking remains. In Popper's critical rationalism, critical thinking is also best described as an expression of instrumentally rational action. Since Popper directs his interest towards pure science, with its emphasis on objectivity, there is no scope for affectual or value-rational action. Even though the objective approach to knowledge is traditional, critical thinking in Popper's sense is certainly not a matter of traditional action. This is due to the fact that Popper exhorts us to constantly question the premises of knowledge. The implicitly utopian, and hence unattainable, goal of Popper's method is to attain true knowledge. Since Popper states that this goal is impossible to attain, one can only achieve knowledge of that which is not true. This puts the scientist into an endless process of approaching the truth by constantly falsifying theories, which in turn leads to an instrumentalization of critical thinking; as long as the method is applied appropriately, the scientist becomes closer to the truth. Popper emphasizes, however, that the scientist needs to stop his or her hypothesis testing at some point. Thereby, Popper also points to a more explicit and concrete goal of critical thinking, which is to attain temporarily satisfying results.

Finally, when coming to Foucault's postmodern perspective, grasping the character of social action in relation to critical thinking turns out to be an intricate task. As with Wittgenstein, this difficulty is traceable to the issue of the subject, although with a difference. While Wittgenstein completely ignores the subject, Foucault places the subject in the discourse, so the subject is dispersed throughout the discourse. Since the subject still has an important position, although in a fundamentally different non individual way, all the types of social action are more or less present in Foucault's philosophy. In relation to Foucault's work, critical thinking aims at describing the positivities of a given discourse. This is carried out by the archaeological method, where the relationships between the different signs of the discourse are considered. Hence, there is a goal as well as certain means as to how to attain the goal, pointing to instrumentally rational action. When trying to understand critical thinking as it appears in Foucault's work in relation to the other types of social action, one is left in an ambiguous position. Considering traditional action, for instance, it is possible to argue for its absence, since the whole meaning of Foucault's critical analysis is to break away from the traditional ways of understanding and approaching knowledge. On the other hand, Foucault's philosophy points to the fact that human beings are irrevocably captured by the given rules of the discourse. This implies that the critical thinker is only able to think critically in accordance with the tradition of his or her

discourse – if he or she does not devote him- or herself to Foucault's archaeological method. In respect to affectual and value-rational action, the same ambiguity arises. Foucault's archaeological method implies analyzing statements at their own level, in a quite positivistic sense. Thus emotions and values are not considered to be involved in Foucault's analysis, since they belong to the individual. Still, it is possible to state that the discourse, which the critical thinker cannot escape, conveys certain emotions and values. Since emotions and values are implicitly embedded in the discourse, aspects of affectual and value-rational action are involved. Accordingly, the same reasoning must be applicable when carrying out the archaeological analysis as well, inasmuch as Foucault conceptualizes it as a 'discourse about discourses'.

Against this background, it appears that the development of the meaning of critical thinking is neither linear nor cumulative. It is totally dependent upon the horizon in which critical thinking occurs, as well as the preceding intentionality, directing the critical thought. Anyone, who expects to find general relationships between intentionality, meaning, and social action involved in the critical thinking, will be disappointed, since there are no such relationships. For instance, two philosophers as different as Dewey and Nietzsche could both be derived to the intentionality of mastering the world. Even though they are similar in this respect, they differ with respect to the meaning of critical thinking and the type of social action it relates to. These differences are dependent on the fact that the philosophers' horizons are not the same. Everything which is co-given in a horizon directs the preceding intentionality, as well as the meaning of critical thinking, and hence how it is manifested in different types of social action. Although one cannot draw any conclusions in this respect, except that critical thinking is manifold in its modes of being, it is nevertheless possible to see some relationships that seem to be consistent throughout all the meanings of critical thinking. These relationships are visible when relating contemporary perspectives on critical thinking to the historical account.

Intertwining the present with the past

The perspectives of the first wave stress those aspects of critical thinking that makes it a matter of instrumentally rational action, with an emphasis on the instrumentality. The same phenomenon is apparent when considering the historical development of critical thinking. In fact, most of the historical texts turned out to be an expression of instrumentally rational action. A hasty conclusion might be that the objective approach to knowledge is related to an instrumentalization of critical thinking. Pondering further, however, it appears that it is not really the epistemological approach, but rather the emphasis on certain methods that seems to be related to the instrumentalization of critical thinking. This is due to the fact that all those perspectives, which instrumentalize critical thinking, rely on certain principles and methods for attaining new knowledge. By contrast, when critical thinking is manifested as a human approach to understanding, rather than a method for attaining new knowledge, other types of social action appear as well. This is evident both in history and in

the second wave. Considering Hegel and Nietzsche, for instance, critical thinking involves the characteristics of traditional, value-rational, and affectual action, while affectual action is the connecting point in the perspectives of the second wave (King's and Kitchener's perspective excepted). Along with the philosophers of the Middle Ages, Hegel's and Nietzsche's perspectives also support the claim that incorporating a sense of responsibility into critical thinking turns it into value-rational action. In Augustine and Aquinas, the human being is responsible for his or her actions in relation to God. Hegel, on the other hand, relates human responsibility to the human development as a whole. In Nietzsche's perspective, the responsibility is primarily an individual matter. Even though responsibility has different implications for these philosophers, it seems to generally convey a value-rational notion of critical thinking. Hence, the process of critical thinking attains a value in itself.

The current instrumentalization of critical thinking

Another insight emerges from the aforementioned differences between the first and second wave. Recalling the EHEA framework and Bloom's taxonomy, it appeared that critical thinking is mainly understood as a purely cognitive skill[50]. Thus, the process is focused, rather than the possible consequences of critical thought. The concern for the consequences appears only once, in the demand for responsibility in the second cycle of the EHEA framework. Taken as a whole, however, the need for responsibility in critical thinking is not explicated in these educational policy instruments. Furthermore, the aspects of critical thinking which are emphasized as important in the second wave, are completely left out. Rather, according to these policy instruments, students should merely adopt certain ways as to how to deal with knowledge in a traditional scientific way. Accordingly, the kind of social action that one implicitly finds in these documents is the same type as in the first wave and the major part of history: Instrumentally rational action, with an emphasis on the instrument rather than the goal. Especially in light of the EHEA framework, which is supposed to bring higher education into the future, this circumstance is interesting. Whereas the development of critical thinking research is on its way to emancipate itself from the pure rational and instrumental approach, which appears in the traditional perspectives, the educational policy instruments are still in the grip of the first wave. Thus, even though the second wave has opened up new dimensions of critical thinking, one should not expect a change in which aspects of critical thinking will be required from higher educational students in the nearest future. Most striking is, however, that the emphasis upon mere instrumentality reflects a state of affairs that was subject to Horkheimer's (2004) criticism already at the end of the Second World War. At that time, when Horkheimer wrote his *Eclipse of Reason*, the leading paradigms were positivism and pragmatism, which (among other things) he condemned for their emphasis on the means to the detriment of the end. In the shadow

50 See Introduction.

of Nazism's ravaging it was more important than ever to consider the meaning and consequences of human action. Given this fact, it seems as if scholarship has been captured within its own instrumentality, since the same circumstance that Horkheimer pointed out sixty years ago, apparently still remains. This development is not so surprising, however, inasmuch as it appears to affect society as a whole, as von Wright (1997) points out when claiming that today's society is generally characterized by a change from valuing the end to valuing the means. However, Horkheimer explains this circumstance by the fact that scholarship has lost the objective values that the Church and philosophy once provided as a guiding light for all human action. Without such objective values, the instrumentally rational action loses its goal. Hence, knowledge development becomes a matter of pure production, in which the end is eclipsed by the means. In relation to contemporary perspectives on critical thinking, it could be objected that almost all the perspectives discussed in this thesis maintain that critical thinking is important for maintaining a democratic society. Thus, democratic values could be considered as providing the objective values that Horkheimer asks for. It appears, however, that this is not enough for critical thinking to be an assurance of ending in something good, as will be discussed below.

Redeeming the consequences of critical thinking

Considering all perspectives on critical thinking, there is a palpable tendency to put focus on the process of critical thinking, rather than on its related ends. Apparently, the activity of critical thinking is implicitly comprehended as resulting in something good, which explains the emphasis on the process. Granted, all, except the cognitive perspective, relate critical thinking to the development and maintenance of a democratic society. Furthermore, critical thinking is a valuable tool in the construction of knowledge, which is especially marked in Thayer-Bacon's feminist perspective. These facts could be interpreted as encompassing a concern for the end of critical thinking. The problem is, however, that there is no direct relationship between critical thinking and a democratic society, or between critical thinking and the construction of knowledge. Rather, critical thinking could be considered as constituting a potential for democracy and constructive knowledge to be actualized. Considering Aristotle's statement that rational potencies have an inherent possibility to end in something bad, it appears that there is a need to reflect upon the undesirable consequences of critical thinking. Critical thinking is not necessarily constructive, but can also destructive. Sometimes this destructive feature could lead to reconstructive results, as can be seen in Nietzsche's and Foucault's philosophies, for instance. Other times, it leads to devastating consequences, as when Einstein's theories made it possible to drop an atomic bomb over Hiroshima in 1945. Of course, critical thinking in scholarship should be related to its constructive aspect, since scholarship aims at constructing or re-constructing new knowledge. Still, the result of constructive critical thinking can be used in destructive ways, which are far beyond the original intention. Accordingly, it seems as if it is not to enough to think critically, since critical

thinking does not in itself involve an assurance of attaining good ends. In order to attain good ends, the *relationship* between the means and ends must be considered. During this process, emotions play an outstanding role. This is due to the fact that the individual attains the fundamental state of responsibility through his or her emotions, as has been revealed by Arendt (1978)[51]. The sense of responsibility is, in turn, important since it entails a raised awareness of the possible ends. Thus, with the perspectives of the second wave (King and Kitchener excepted), which emphasize the importance of emotions, a step in the right direction seems to be taken. Still, something more is needed if critical thinking shall lead to good ends, and thereby be a good activity in itself. Construed that the sense of responsibility opens the way to an involvement of the possible ends in critical thinking, one also has to ask what and whom this responsibility is related to. In scholarship this responsibility should be related to the community and the world, since it would probably have terrifying consequences if scholars completely relied upon their own personal interests in their work. What I am trying to say is that critical thinking gets its most critical features when the intention, process and end constitute a constructive interrelated whole. Thus, separating the process from its preceding intention and possible ends can lead to fatal consequences, and hence turn critical thinking into uncritical thinking. This is due to the fact that critical thinking in itself involves a direction towards the future, which involves the intention and possible consequences as well. Accordingly, by considering both the intention and the possible consequences, there is a need to think critically about the process of critical thinking itself.

51 See Chapter 1.

Self-Critical Reflections and Confessions

Contemplations upon the Method

It is time to make a critical retrospect. Looking back, I see that the greatest challenge for me was to grasp the meaning of phenomenology. This is due to the fact that when approaching phenomenology, in order to understand it, a phenomenological experience in itself is required. Each time one approaches Husserl's phenomenology, new aspects emerge, which cause new understandings of its meaning. I cannot tell how many times I have torn my hair, realizing that I must have misunderstood the meaning of phenomenology *again*. Much of my trouble with understanding what it means to have a phenomenological approach could probably be traced to my former ontological and epistemological background. Since I had well-founded roots in psychology, I was a child of the positivistic paradigm. As a child of the positivistic paradigm, it is easy to fall into the temptation of searching for the essence of critical thinking. Thus, this was actually what I was trying to do at the beginning of my investigation, which can be noticed in the way I outline the historical development of critical thinking. Further on, however, I was struck by the insight that I could never find the essence, since it would always be biased by my own understanding. Without letting myself be disheartened, I developed a new comprehension of phenomenological research as being the discovery of the variation of meanings of critical thinking. This second phase of understanding is intimated in the manner I explore the contemporary perspectives on critical thinking, where focus is still put on the meanings of critical thinking itself. When I came to the climax of this thesis, however, in which I was supposed to attain a synthetic understanding of the phenomenon, I became aware that I had missed a fundamental aspect of phenomenology, namely my ego. Since all experiences of the phenomenon were related to my ego, I could not merely describe the variations of meanings. I had to capture how these meanings were constituted, and furthermore I had to reveal the embedded intentionality as well. Still, this third phase of understanding was not enough for capturing the meaning of phenomenology at a deeper level, since it did not give me a clue to why I constituted the phenomenon of critical thinking the way I did. Accordingly, when I came to the last chapter of this thesis, I finally realized that my task was also to outline the horizon in which the phenomenon was constituted by my ego. It appeared to me that this horizon provided me with the surplus of meaning, that is to say those aspects that are implicitly co-given, conditioning the meaning constitution of critical think-

ing. All this resulted in a fifth version of my first chapter, *Critical Thinking through a Hermeneutic-phenomenological Approach.* Thus, the version included in this thesis is the last one, comprising my most developed understanding of phenomenology.

The perspicacious reader will see between the lines that this thesis constitutes a subtle movement from essence to esse (act of being)[52] in its manifold ways of being and meaning constitutions. One might ask if such a change in the subject of investigation weaken the validity of this thesis. It certainly would, if I was not aware of it, but I am. Due to my raised awareness in this respect, the case is rather the reverse, that it has strengthened the results. Carrying out phenomenological research is namely a matter of revealing the constitution of meaning in a sense that makes it available to both myself and others. Thus, rewriting the thesis in order to conceal this shift in focus would be to make another misinterpretation of the mission of phenomenology. Therefore, I do not deliver any ready-made syntheses being stripped of all the misunderstandings which precede them. Instead, I choose to expose a more reliable description of the path I have walked, even when my intentionality brought me into blind alleys. Recalling Gadamer's idea of how understanding appears, the blind alleys are the most important elements of my own process of developing understanding, since all understanding goes through misunderstanding. Thus, without encountering these blind alleys, I would not have come to the position where I am today. Neither would the reader grasp how I could draw the conclusions that I do.

Reflections upon the Historical Account

Consequences of the delimitation to epistemological issues

The historical development of critical thinking in scholarship could be described in many ways. The way I have chosen has certain consequences for the results of this thesis. At the stage of delimiting my readings to texts treating epistemological issues, certain aspects of critical thinking became more apparent than others. This is due to the fact that when I directed attention to epistemology, I implicitly constituted a relationship between epistemology and critical thinking. Thus, the meaning of the former unavoidably conditioned the meaning of the latter. Accordingly, one should ask oneself what the meaning of epistemology conveys to the meaning of critical thinking. On the one hand, being concerned with epistemology leads to a focus upon what is counted as knowledge. On the other hand, there is a focus upon how to attain this specific knowledge. In scholarship these two questions are usually treated within the realm of methodology. Therefore, discussing scholarly critical thinking in relation to epistemological issues often results in methodological concerns. This explains the fact that there is often a fusion between scientific methods and critical

52 For a further explication of the meaning of esse, see Aquinas in *Critical thinking in the Middle Ages*, Chapter 2.

thinking in my historical account, in a way that makes them indistinguishable from one another. It appears that critical thinking is required in order to carry out certain methods, and, the reverse, that certain methods are sometimes required to carry out critical thinking, dependent upon the meaning of it. In relation to contemporary perspectives on critical thinking, the latter circumstance is especially palpable in light of the first wave. The focus on epistemological issues has certainly also influenced how the activity of critical thinking was frequently understood. The characters of explanation and instrumentally rational action would maybe not be so predominant throughout history if I had focused upon historical texts treating ethical issues, for instance.

Consequences of using the hermeneutic tools

Besides my focus on epistemological texts, my hermeneutic tools (explanation, interpretation, understanding, and abstraction) also constituted a delimitation, with certain consequences for how the meanings of critical thinking were understood. The tools were considered as constituting the four cornerstones of critical thinking, which implies that each meaning of critical thinking was constituted by relating it to these cornerstones. By proceeding in this manner, it appeared that critical thinking was often characterized as explanatory. Other times, the meaning of critical thinking could be constituted in relation to more than one of the cornerstones. Such results may give a distorted picture of the complexity and quality of the different historical meanings of critical thinking. It was never my intention, however, to make one philosopher's work appear as more critical than the other. Rather, I attempted to characterize the different meanings of critical thinking as they appeared in relation to my prejudiced understanding of the phenomenon. Certainly, if I had approached the philosophical texts from another angle, the result would be different. Some of the philosophers' works would probably appear to have more complex meanings of critical thinking than those, which have been revealed in this thesis. And inversely, a philosopher like Hegel, who involved all the cornerstones, would maybe not appear as the most qualified critical thinker if his work were considered from another viewpoint.

Reflections upon the Contemporary Perspectives on Critical Thinking

My own development from the first wave to the second wave

When I started to write about the contemporary perspectives on critical thinking, I became aware that my own prejudiced understanding of critical thinking had changed somewhere along the way. It was no longer the same as the prejudiced view that I had presented at the beginning of my historical chapter. At that time, when I outlined my horizon, my understanding of critical thinking was quite close to the first wave, since I mainly understood critical thinking as a kind of problem solving. Thus, I had a rather cognitive understanding of critical thinking, without being aware of it. Furthermore, Siegel's perspective, which I had devoted myself to at an early stage of my investigation, became less attractive over time. Paired with my change from an absolutistic to a relativistic approach to knowledge, my own perspective on critical thinking was transformed. Thus, from being a scholar of the first wave, I had gradually become a scholar of the second wave myself. Today, I would say that my own approach to critical thinking is closest to Brookfield's.

The re-constituted meaning of King's and Kitchener's perspective

It became apparent at the end of this thesis that King's and Kitchener's perspective was closer to the first wave than to the second wave. Their perspective is perhaps best construed as constituting a relativistic approach within the cognitive field. When I first approached the different perspectives on critical thinking, however, my understanding was different than it is in the writing moment. In order to categorize the contemporary perspectives, I mainly looked for carrying concepts, which could facilitate the labelling of the perspectives as belonging to either the first or second wave. Since both King and Kitchener, on the one hand, and Brookfield, on the other, conceptualized critical thinking in terms of "development" and "reflective thinking", I concluded that they constituted two poles of the same perspective, although I from the outset realized that King and Kitchener had roots in the first wave. I understood their perspective as constituting a bridge between the two waves. Moreover, I understood the over-all meaning of their perspective as belonging to the second wave, rather than the first, partly due to their emphasis on different epistemological assumptions. When approaching the different perspectives in respect to the potential, as well as the kinds of social action that were associated with different meanings of critical thinking, however, King's and Kitchener's perspective came into another light. It appeared that my previous understanding of their perspective was too cursory, since I had delimited my understanding to the carrying concepts. Apparently, King and Kitchener could only be considered as belonging to the second wave when keeping the analysis at the superficial level of vocabulary use. When considering

the underlying meaning of their expressions in relation to the aspects which are co-given in their horizon, however, I realized that King and Kitchener implicitly spoke in the same terms as the perspectives of the first wave. Thus, by approaching the perspectives from another angle, other aspects appeared, revealing the concealed meanings of critical thinking in the different perspectives. Against this background the urging question emerges: Should my misinterpretation of the meaning of King's and Kitchener's perspective be considered as a weak point of my investigation? No, I do not think so, for the same reason as I put forward above. It would be worse if I did not reveal my mistakes after all my work. To rewrite the chapter of the different perspectives in order to conceal my misinterpretations would indeed be a mistake in a phenomenological sense. Then the process of my own meaning constitution of the different meanings of critical thinking would be lost.

Remaining in the Constitution of Meaning

Coming to the last chapter of my thesis, it appears that my final discussion differs quite radically from how final discussions in theses are usually carried out. The reader might ask: What kind of person persists in revealing more new results in the end? My answer is that this is precisely what a person who remains in the ceaseless phenomenological experience of constituting meaning would do. Then, if the thesis constitutes a movement without a settling end; how should one understand its form? Well, from the perspective of a musician, the form and movement of my thesis is perhaps best characterized in terms of Maurice Ravel's *Bolero*, with its soft but constantly intensifying accelerando and crescendo. In contrast to Ravel's composition, however, my theme entails variations. Still, there is no doubt that I deliver no end in a conventional meaning. Rather, the content of this thesis increases until the last breath, since it does not contain the customary discussion with a hold on the preceding results. Instead, in the final act, the results are discussed by inaugurating still new aspects, and hence new results. This way of ending should not be misunderstood as a difficulty to draw a conclusion, since it is there, although in another form than is usual. The conclusion consists in this: Each time one approaches a phenomenon, new aspects arise, and consequently new meanings are constituted. Thus, what occurs in my final chapter is that still new constitutions of meaning are revealed when approaching the phenomenon of critical thinking for the last time in this context. This circumstance points to the fact that the constitution of meaning never ceases, just as Ravel's *Bolero* could continue its accelerando and crescendo ad infinitum if it would not be for Ravel's decision to create a final accord at some point. So, this is what I am going to do right now. Even though I claim that no ends exist in a phenomenological sense; in this thesis, these are my last words.

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Appendix:

Dates of Birth and Death of the Philosophers in Chapter 2

Critical Thinking in Ancient Greece

Parmenides	(birth about 515 BC)
Protagoras	(about 485-415 BC)
Socrates	(about 470-399 BC)
Plato	(about 428/427-348/347 BC)
Aristotle	(384-322 BC)

Critical Thinking in the Middle Ages

Augustine	(354-430)
Aquinas	(1225-1274)

Critical Thinking in the Renaissance

Bacon	(1561-1626)

Critical Thinking in Rationalism

Descartes	(1596-1650)

Critical Thinking in the Enlightenment

Kant	(1724-1804)

Critical Thinking in German Idealism

Hegel	(1770-1831)

Critical Thinking in Positivism

Comte	(1798-1857)

Critical Thinking in "Perspectivism"

Nietzsche	(1844-1900)

Critical Thinking in Pragmatism

Dewey	(1859-1952)

Critical Thinking in the Later Wittgenstein
Wittgenstein (1889-1951)

Critical Thinking in Critical Rationalism
Popper (1902-1994)

Critical Thinking in Postmodernism
Foucault (1926-1984)

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