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On the path towards thinking: learning from Martin Heidegger and Rudolf Steiner

Bo Dahlin
Karlstad University
Sweden

Marek B. Majorek
Goetheanum
Switzerland

Abstract. This paper is a philosophical consideration of how to understand thinking as a mental activity. It starts by noting that some teachers claim to observe the decrease of thinking abilities among young people today. Apart from the questions of how to establish this as a fact and the possible empirical causes behind it, it is also important to consider the more basic question of what thinking really is. Heidegger deals with this question in his later philosophy; another important, if generally less well known, thinker and researcher, who devoted much attention to this issue was Rudolf Steiner. For Heidegger, some pre-Socratic Greek philosophers exemplify genuine thinking, appreciating the meaning of Being and transcending the subject-object dualism. But this kind of philosophy was soon replaced by the onto-theological approach, in which Being is reductively objectified, and the question of the meaning of Being is forgotten. Hence, according to Heidegger, we still have to learn to think. Commentators on Heidegger point to the similarity between his approach to thinking and that of various mystical teachings, such as those of Meister Eckhart or Zen Buddhism. Like Heidegger, Steiner also claimed that we do not know what it means to really think. Steiner was however more outspoken and penetrating in his approach, insisting that only through meditative practice can we directly experience the nature of thinking as mental activity. However, the present day materialistic explanations of thinking as originating in (or being identical with) neurological brain processes of a purely biochemical nature, stand in clear opposition to these or any other spiritual conceptions of thinking. Drawing upon Heidegger (somewhat) and Steiner (mostly) we argue against the materialistic understanding of thinking as misguided and jumping to unwarranted conclusions. We also argue that the materialistic understanding of thinking widespread today may be one of the reasons behind the alleged decrease of thinking abilities among young people. As is well known, Rudolf Steiner was the founder of Steiner Waldorf education, which is based on a spiritual conception of the human being. The paper ends with describing some of the elements of Steiner Waldorf education which are intended to promote the development of living, creative thinking.

I

The question of how to understand thinking is a classical theme of philosophy. Thinking is a mental activity of intrinsic and essential importance to philosophy; one could hardly engage in philosophical activity without thinking. Thinking is also

an important educational activity. Whether as a student or as a teacher, all education requires thinking of some form or other (purely cognitive, technical, moral or aesthetic). According to Jane Healy (1990), many teachers today seem concerned about what is happening to thinking in schools, seeing signs of decrease in children's thinking abilities. In her book *Endangered Minds* (1990) Healy proposes that although children's basic intelligence is not less developed nowadays than in the past (a point worth noting), the following observations made by many teachers indicate that their ability to actively engage in thinking is severely reduced:

- declining listening skills: inability to maintain attention;
- decreased abilities to get facts and ideas into coherent, orderly form in speaking and writing;
- tendency to communicate with gestures along with, or instead of, words;
- declining vocabulary knowledge above fourth-grade level;
- proliferation of "fillers" instead of substantive words ("You know, like, the thing…");
- difficulty hearing differences between sounds in words and getting them in order;
- faltering comprehension of more difficult reading material;
- troubles understanding longer sentences, embedded clauses, more advanced grammatical structures in upper grades;
- difficulty switching from colloquial language to written form. (cf. ibid., p. 99)

Healy suggests that electronic media, hectic life styles, unstable family relations, environmental poisons as well as the instructional forms employed by schools may all influence not only the way children think but even the physical structure of their brains. There is probably some truth in this more or less common sense intuition of what factors influence children's thinking capacities, there may even be empirical evidence for its support. However, our purpose with this paper is to pursue

another, more philosophical intuition. What if a (possible) decline of present day thinking capacities is the result of a lack of understanding of thinking as such? What, in other words, *is* thinking? That is the basic question of this paper.

II

In his essay *The end of philosophy and the task of thinking* Heidegger (1977a) claims that "[w]e still need an education in thinking". Although it was written half a century ago we believe this need is most certainly still there. There still seems to be a lack of understanding even of the sense in which Heidegger asked this question about thinking. Perhaps the recent progress of brain research has made it even *less* possible to understand his question today. Brain research seems to increase the tendency to turn thinking into a phenomenon conceived within objectivist (or instrumentalist) frames of understanding, forgetting the fact that it is "I" or "we" that think (and not the brain). "We ourselves are, in the strict sense of the word, put in question by the question [of thinking]", as Heidegger says in another work (1977b, p. 362), related to the same theme. In this work[1] Heidegger repeatedly returns to the statement that the most thought-provoking thing in our thought-provoking times is that *we still do not think*. Hence, we must (still) learn to think. A strange claim, considering all the mental activity and "information processing" going on in modern societies, not least in education, academy and research. But even though there may be a lot of thinking going on in the sciences, science itself seems unable to find thinking, as long as it objectifies the human being and does not heed the existential challenge of the question: the *call* of/for thinking. Unless science transforms itself by accommodating radical phenomenology and turns to the *immediate experience* of thinking, science will inevitably misunderstand and misrepresent this call.[2] An interesting example of this kind of misrepresentation can

[1] The German title of the work is *Was heisst Denken*, translated as either "What calls for thinking?" (Heidegger, 1977b) or "What is called thinking?" (Heidegger, 1968).

[2] By radical phenomenology we mean going to the roots of all experience, including the experience of thinking. It is a phenomenology that is more empirical than empiricism or positivism ever was, because whatever question it takes up (epistemological, ontological, ethical,

be found in the transhumanist visions of Ralph Kurzweils books (e.g. Kurzweil, 2005).[3] One of Kurzweil's basic ideas is that human intelligence is just smart enough to "understand our own thinking – *to access our own source code*, if you will – and then revise and expand it" (ibid., p. 4; our italics). Kurzweil describes himself as a "patternist", that is, "someone who views patterns of information as the fundamental reality" (p. 5). Thus, the source code of human thinking is presumably a particular pattern of information, which can be objectified, grasped and manipulated – at least in principle but, so Kurzweil believes, in a not too distant future also in actual life. From Heidegger's (and our) point of view, what is misrepresented in this vision is the fact that any objectification and manipulation presupposes thinking, that the "source code" must itself be constituted by a thinking which essentially *transcends* its constituted object.

Heidegger has different names for this transcendence: *Lichtung* or (in the later works) *Aletheia*; translated as openness or "unconcealment":

> Unconcealment is, so to speak, the element in which Being and thinking and their belonging together exist. (Heidegger, 1977a, p. 388)

In *Aletheia*, Being and thinking "belong together". This is Heidegger's interpretation of the famous sentence of Parmenides, that "Being and thinking are the Same". In another text, also a meditation on the same sentence, Heidegger (1969) illuminates the notion of "belonging together" by distinguishing between *belonging* together and

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social or natural) it refuses to leave the field of experience for abstract theory. It could even be said to be more scientific than science itself, since one of the hallmarks of the self-understanding of science is that it never accepts an idea without empirical, i.e. *experiential*, evidence. It was this characteristic of science that made Steiner give his main philosophical work, *Der Philosophie der Freiheit* (according to Steiner himself best translated as *The philosophy of spiritual activity*), the subtitle "Soul observations according to natural scientific method" (not translated in the English edition (1979)). Steiner's approach in this work is basically phenomenological and largely focused on the experience of thinking.

[3] The whole field of transhumanist visions of the human being and its future deserve to be the subject of another philosophical critique; see Radovan (2007) for a more elaborate critique of Kurzweil's version.

belonging *together* (in German Zusammen-*gehören* versus *Zusammen*-gehören). Saying that two things, A and B, belong *together* is for Heidegger an expression of reductionism: A and B are then identical, reduced to *one* and the same thing. This notion is a common trait of the philosophical paradigm of "metaphysics" and representational thinking, in which Being is seen as the universal *cause* of things. In contrast, if A and B *belong* together, they preserve their identities and yet exist only through each other. It is in this sense that Being and thinking belong together. The belonging of thinking to Being is a longing for Being by thinking – and the longing of Being for thinking to uncover it, to "appropriate" it. In German, this "poetising" would of course be expressed differently. The "gehören" in "Zusammengehören" is related to the verb "hören", which means "to hear", that is to listen, and hence to attend to. Being and thinking attend to each other and *tend* towards each other. Therefore, following the idea that the essence of "man", that is, of the human being (or of being human), is thinking, Heidegger notes:

> A belonging to Being prevails within man, a belonging which listens to Being because it is appropriated to Being. […] Man and Being are appropriated to each other. (1969, p. 31)

By saying that thinking and Being *belong* together, Heidegger "ontologizes" thinking. Thinking is not a merely volatile and shadowy by-product of neurophysiologic processes. Heidegger's "ontologizing" of thinking turns thinking into an "allowing to be"; that is, a necessary precondition of any "being" or (thought) "thing". As a precondition of every "being" and every "thing" it necessarily precedes both the "subject" and the "object" (as these are also "things" in a general sense). Hence, thinking precedes all epistemological and ontological distinctions. For the same reason it can hardly be an object of technological revision. However, it can be, and it *has* been, *forgotten* by human thinking, and more so precisely through the modern technological world conception.

We need perhaps to (re-)discover Heidegger's mode of "thinking Being". Thinking Being does not mean to think "about" Being. Nor does it mean that the human being is "a being that thinks". Thinking Being means that thinking and Being *belong* together.

This is the education of thinking that we (still) lack. In contrast to the calculative thinking of modern instrumental reason, it is a meditative thinking which, according to Heidegger, was there in the beginning of philosophy but was very soon forgotten. Referring to another fragment of Parmenides, talking about "the untrembling heart of unconcealment", Heidegger comments:

> The meditative man is to experience the untrembling heart of unconcealment. What does the phrase of the untrembling heart of unconcealment mean? It means unconcealment itself in what is most its own, it means the *place of stillness* which gathers in itself what grants unconcealment to begin with. (Heidegger, 1977a, p. 387; our italics)

What is it that is gathered in this stillness? What is it that grants unconcealment? The Being of all beings…? And why is there an "untrembling heart" connected to this? Presumably only the direct experience of meditative thinking can give satisfying answers to such questions. Heidegger's reported enthusiasm over the Zen Buddhist approach to such questions suggests that he believed in a path or a meditative practice leading to such experiences (cf. Caputo, 1986, p. 204ff; Kim, 2004, p. XVII). Such a path or practice is, however, not to be understood as a kind of mental technology – this would assimilate it to the hegemony of modern instrumental reason and miss the point completely. As Sallis remarks:

> The path of thinking is not first constructed as a path by thinking but is rather a way which already lies before thinking as that which calls upon us to think. (1970, p. 2)

As Caputo (1986) explains Heidegger's view, we have to find our way with the question(s) of Being and thinking, and their belonging together, by ceasing to seek for metaphysical "grounds". We have to make "a leap of thought" by which we arrive at groundedness in Being itself. According to Caputo, Heidegger's suggestions for how to achieve this leap is comparable to what Meister Eckhart called *Gelassenheit*, or "detachment". The leap itself seems also similar to what is called *satori*, or "enlightenment", in Zen Buddhism. In Buddhism, enlightenment means gaining a new perspective on the ego. Similarly, in an essay on Heraclitus Heidegger suggests that in genuine thinking the voice of the ego becomes "merely another appearance within the clearing [*Lichtung*]", as Zimmerman (1983, p. 91) expresses it.

Heidegger (1969) also describes a "leap" of thinking that moves from traditional, representational metaphysics to thinking that entails "the mutual appropriation of man and Being":

> What a curious leap, presumably yielding us the insight that we do not reside sufficiently as yet where in reality we already are. Where are we? In what constellation of Being and man? (1969, p. 33)

The "constellation of Being and man" in which we are, is according to Heidegger that of the *Gestell*. The *Gestell* is perhaps translatable as "the framework of technological rationality" (in the English translation it is called simply "the framework"). This is a particular mode of appropriating Being by the human being, the culmination as it were of the paradigm of "metaphysics", causality and representational thinking. At the same time, the *Gestell* is a challenge to humankind to appropriate Being in a new way, beyond "metaphysics", because within the framework of technological rationality the human being is alienated from Being and therefore from herself. Yet this alienation has now gone so far as to pass almost for

the normal state of things, as "natural", as the way things are.[4] And so visionaries like Kurzweil can publish best-selling books on the future "transcendence" of human biology through technology. The *Gestell* is establishing itself as *totalité*.

III

Against Heidegger's search for the reality of thinking and the reality of our being it can be claimed that his musings (or, for an unfriendly mind, "metaphysical speculations") have been rendered obsolete by the latest advances of neurobiology. For – so the argument – there can be no doubt that these advances have dealt a decisive blow to the long cherished hope or illusion that the spirit (and also of course thought and thinking) can exist independently of matter and in particular of the brain (see for inst. Horgan, 1999; Warner & Szuba, 1994; Schouten & Looren de Jong, 2007). It is claimed that it has now been empirically demonstrated that all mental processes are nothing but products of brain activity. This supposed "empirical demonstration" is usually advanced in three steps: firstly, it has been repeatedly demonstrated that injuries to or lesions of the brain lead to impairment or total loss of certain mental functions; secondly, it has been repeatedly demonstrated that artificial stimulation of various kinds (chemical, electrical, or magnetic) gives rise to certain mental phenomena, typical of the area of the brain which has been thus stimulated, or even to consciousness itself; thirdly, it has been repeatedly demonstrated that neurophysiological activity of the brain *precedes* the emergence of consciousness and/or thought.

These observations of the dependence of the mental on the physical are doubtlessly impressive, but they actually fail to firmly establish the thesis that the brain with its

[4] There seems to be a certain pessimism in Heidegger's view on the possibilities for humankind (in the West, at least) to grow out of the *Gestell* as the "constellation of Being and man" in our time. This shows for instance in his statement that "only a god can save us now" (Heidegger, 1976). Perhaps this reflects his tendency to see thinking as more dependent on Being, than the other way around. In contrast, for Rudolf Steiner (see below), thinking is the very condition of human freedom.

processes is the *producer* of consciousness and its mental functions. To take the brain for the *causa instrumentalis* of the mental on the basis of the first of the three kinds of empirical data mentioned above is to confuse the necessary with the sufficient condition of an event. Let us illustrate this point by means of a familiar example. A pianist certainly needs his piano to play a piano sonata. If the piano is intact, his performance will be as good as he can make it. However, if some elements of the piano (strings, keys, mechanism translating the movement of the keys into the movement of the hammers and so on) are damaged, the performance will be impeded. And if the piano is totally destroyed there will be no concert at all. But the piano is certainly not the cause of the concert. It is merely one of its necessary conditions. Thus it is clear that loss of a mental function as a result of brain damage is perfectly reconcilable with the claim that thinking is not a product of matter, or more specifically of brain processes. These may be necessary to the emergence of the mental, but are not by that virtue alone its sufficient cause. Moreover, one should bear in mind two further complications. First of all, it is well known that very often after some brain damage and the consequent loss of some mental function this function is later restored because either new neurons are generated, or some intact part of the brain begins to serve as the basis for the function in question.

Thus it seems that whereas there is some general dependence of the mental on the physical, no specific part of the brain is necessary in the absolute sense to the execution of any specific mental function. Secondly, as a kind of confirmation and extension of this general principle, research shows at least two cases of children who underwent hemispherectomy (the removal of the cortex of one of the hemispheres of the brain) at the age of three and in time were able to recover practically all mental functions lost immediately after the operation (Battro, 2000; Borgenstein & Grootendorst, 2002). The brain proves to be not as necessary for mental life as it may initially seem. Thirdly, ever since the pioneering works of

Raymond Moody in the 1970's (Moody, 1975; 1977) we have been increasingly aware of the so-called near-death experiences of seemingly brain-dead people. One can try to explain them in terms of some sort of physiological activity, but it cannot be denied that such experiences do seem to indicate that the brain is not as necessary for mental life as it may seem.

It is a bit more difficult to dispel the illusionary persuasive force of the second type of empirical "evidence" advanced for the claim in question, namely the unquestionable fact that one can produce mental phenomena by means of an appropriate form of artificially applied stimulation. In this case one is easily led to conclude that the efficacy of such stimulation is a proof of it being the *sufficient* condition of the mental phenomena evoked by it. Yet even this claim is premature. First of all one has to bear in mind that we are certainly not in a position to produce *any* desired mental phenomenon *ad lib*. Among the things that have been achieved to date are the following:

1. evocation of some form of inner visions or generalised moods by means application of chemical substances (drugs), yet what exactly these visions or these moods in specific people will be, is not predictable in advance;
2. evocation of various reminiscences and states of consciousness including some forms of out of body experiences by means of extra cranial magnetic stimulation, but again what exactly a specific person will experience as a result of a specific form of stimulation remains unpredictable; and
3. evocation of some para-sensory sensations by means of electrical stimulation of parts of sensory cortex, as well as some movements of the limbs by means of electrical stimulation of parts of motor cortex; but the subjects of these experiments usually report that the sensations they experience are not identical to "normal" sensations, but rather have a general, parasthesic character (tingling, electric shock, flashes of light rather than specific objects;

cf. Libet, 1973, p. 101-106), and that the movements executed are not "their" movements. Typically one gets reports of the kind: "It was not me who raised my hand. You did it to me" (cf. Penfield, 1975, p. 76f).

What has *not* been achieved, however, is e.g. an evocation of a specific visual sensation by means of stimulation of the visual cortex, or more to the point, an evocation of a specific sequence of rational thoughts by means of stimulation of, say, the prefrontal cortex.

Even if we were in the position to claim that we *can* reliably produce a specific mental phenomenon by means of a specified artificial stimulation, we would not be entitled to the claim that such stimulation is a sufficient cause to the evocation of the phenomenon in questions. Why not? Another simple example can demonstrate that even such as yet only hypothetical technical mastery over the mind would not exclude the possibility that we are not aware of all the conditions necessary for its success. Consider this simple question: what is necessary to light a match? You have to strike it against a side of a matchbox, of course. You have done it thousands of times and you are pretty sure that this is all there is to it. But a simple reflection will show that this conclusion is faulty. Pump out the air, or even only the oxygen, from the room in which you are trying to light a match and you will see that nothing will come of your efforts. Oxygen is a necessary condition for the match igniting at all, and therefore must correctly be regarded as part of the causes leading to the igniting of the match. This fact is easily disregarded for under normal circumstances we never even try to light a match in an oxygen-free environment and on top of this we do not perceive oxygen by means of any of our senses, so we do not have any direct experience of this factor, still less of the role it plays in the process. But the observation that certain factors which usually escape our attention may be vital to the occurrence of certain observable phenomena, or more broadly

to our understanding of the world,[5] can and must be taken into account in the context of the problem of the relationship between the brain on the one hand, and consciousness and mental phenomena on the other. It cannot be excluded as a possibility that under normal circumstances there is something present in and around the brain which is a necessary condition for the emergence of mental processes and in particular of conscious thought even though this something has not been taken into account in the discussion of the problem so far, for a) it is always there when the consciousness is there; b) it is not normally perceptible.

These methodological considerations enable us to view certain aspects of brain research in a different light. It is only too obvious that experiments aimed at ascertaining the effects of artificial stimulation of the brain are conducted on subjects that are awake. After all one wants to hear the reports of what they experience when stimulated, and you cannot expect a sleeping person to be able to provide such a report. So wakefulness is an obvious necessary condition of experiencing any effects of any stimulation at all. It means that a person has to be consciously present – but that was what we wanted to explain from the start. We do not yet fully understand what is/are necessary and sufficient condition/s for maintaining a person's consciousness. So concluding on the basis of successful eliciting of some mental experiences by means of artificial stimulation of the brain that it is the brain that under normal conditions *produces* such experiences is in fact unwarranted.

Yet there is still the third line of defence of the supporters of reductive materialism. They can refer to the seminal experiments of Benjamin Libet conducted in the 1980's[6] and a number of newer follow-up experiments of the same kind which

[5] Recent striking example of this selective awareness of what is important is the recent discovery of the existence of the so-called "dark energy" which is supposed to constitute up to 74% of the universe, and which was unheard of only 15 years ago (see e.g. Brumfiel, 2007).
[6] The paradigmatic of these experiments was described in Libet, Wright Jr, & Gleason (1982). A good collection of Libets papers can be found in Libet (1993).

seem to demonstrate beyond all doubt that it is the neurophysiological processes in the brain that are the causes of mental phenomena (and not the other way round) for the simple and obvious reason that such processes *come first*, and are *followed* by conscious experiences.[7]

It seems obvious that the temporarily later event cannot be the cause of an event which preceded it. But is what comes before something else *always* the cause of this something? Actually not. Take the familiar case of the dawn and the sunrise. The sky invariably gets lighter *before* the sun rises, not the other way round. And yet it would be absurd to claim that the dawn causes the sunrise. Can it not be that we are dealing with a similar phenomenon in the case of the temporal relationship between the onset of mental phenomena and the onset of the neurophysiological processes associated with it? Can it not be that just as the sun prepares, as it were, its appearance above the horizon by producing the wonderful play of colours at dawn, so human thinking "prepares" its conscious appearance by producing certain neurophysiological processes in the brain? Seen in this light the neurophysiological processes observed in the brain prior to the emergence of thoughts or other mental phenomena are not the causes of these phenomena, but simply a kind of colour play evoked by the sun of the rising thought on the clouds of the brain in preparation for the proper sunrise of its conscious manifestation.

There is a yet another difficulty – this time of philosophical nature – surrounding the claim that brain processes are necessary and sufficient conditions of mental phenomena and thus their causes. Generally when talking about causes it is crucial to demonstrate that a specific event constitutes a necessary *and* sufficient condition of a certain effect in order to be able to describe it as its cause. Thus a specific bolt

[7] This is sometimes taken as "proof" that human beings have no free will, that our actions are predetermined by our brain processes. However, this was not the conclusion that Libet himself made, and there are some unreflected presumptions behind such a conclusion, for instance about the nature of will. In psychology, will is sometimes understood as "conscious decision", but it is far from self-evident that this is a proper definition.

of lightning can be regarded as the cause of a certain fire in a certain house which we are trying to explain because there would not have been this particular fire without the lightning, and the energy of lightning in general and of that specific lightning in particular was such that it was sufficient to cause the fire. The problem with the brain processes as potential causes of the mental is, at this point, that one is describing *on the one hand* certain brain events which seem to be necessary (but very often turn out not to be) for certain mental phenomena, and *on the other hand* certain manipulations which seem to be sufficient (yet looked at more carefully turn out not to be) to produce certain mental states; however, no one has ever been able to demonstrate that a certain brain event is *both* necessary *and* sufficient for a specific mental state, and in particular for a specific thought. In fact there are good reasons to claim that it will never be possible to demonstrate this. The reason for such pessimism has to do with the essential qualities of the mental phenomena on the one hand, and of the brain processes on the other. Mental processes, in particular thought processes, are replicable. Your thought "triangle" is *essentially* the same today as yesterday, and will be essentially the same tomorrow again. Yet the specific neurophysiological processes underlying this conceptual constancy are different in each specific case, even if the same area of the brain is involved.[8] In fact it can be safely claimed that no state of the brain can ever be identically repeated again. In the brain no one state is replicable; something changes from moment to moment, *panta rei*. It is precisely this feature of brain processes that led some influential contemporary philosophers to claim that it is not possible in principle to map thought processes onto brain processes, or, in the philosophical jargon, that the propositional contents of mental states can never be individuated in spatiotemporal neural structures. This point has recently been made on both sides of the Atlantic by such prominent thinkers as Richard Rorty (2004), and Jürgen Habermas (2004).[9]

[8] Cf. Shidara et al. (2005), Fiser et al. (2004), Azouz and Gray (1999), Vogels et al. (1989).

[9] There is of course no contradiction in principle between brain research and a spiritualistic understanding of the human being, or of mental processes. See for instance Austin's (1998)

The upshot of these considerations is clear: despite the appearance to the contrary there is in fact no sufficient empirical or theoretical justification for the often made claim that the brain is the father of thought. Any belief in such external explanations can be called Positivism; in the sense that it seeks the cause of thinking, and therefore also the ground of knowledge, in something "positively given" *before* thinking. It can also be seen as a sign of what Bernstein (1983) calls "Cartesian anxiety": the fear of loosing a "firm ground" for our knowledge. In a similar way, the search for the ground of Being outside Being – which, according to Heidegger, started already among the ancient Greeks – led to Western metaphysics, onto-theology and the forgetfulness of the Being of beings.

IV

But if thoughts are not products of the brain, what are they? The best answer to this question known to us has been offered by a thinker who is surprisingly little known and little appreciated in contemporary academic circles: Rudolf Steiner (1861 – 1925). Steiner has been called the best kept secret of the twentieth century (Schickler, 2005). Generally perceived and disregarded as an "occultist" or metaphysical mystic, few academic researchers bother to study his works. It is therefore little known that not only did he hold a doctorate in philosophy and wrote and published many texts highly relevant and significant for the philosophical discussions at the end of the 19th and beginning of the 20th century, but as a merely 21-year-old student of natural sciences he was appointed editor of Goethe's scientific writings for the then standard German edition of Goethe's works. Later on he was widely respected and regarded as an intellectual force in the German-speaking world before he "disgraced himself" academically by becoming a part of the Theosophical movement. That the way he dealt with scientific and

impressive study of the neurophysiologic aspects of Zen meditation. However, there seems to be a need to uncover and develop other paradigms of brain research than that of scientific materialism.

philosophical questions is still relevant today has recently been pointed out by Welburn (2004).

In the first of four lectures given in Berlin in 1914, Steiner (1991a) characterizes human thinking in a way which has some points in common with Heidegger. One of the first things he states is that in general human beings seldom really think. Instead, we are often content with *words*. Furthermore, the situation is such that in order to realize that we do not really think, we must – think. It is evident that thinking for Steiner is different from the "mental talk" of our everyday life, the major part of which, if we are honest, consists of associations of words and memories.

The capacity for "real thinking" has not always been there in human beings. According to Steiner it arose around 600 BCE. We know that at this time the Presocratic philosophers in ancient Greece took the first steps "from *mythos* to *logos*". Steiner characterizes the older thinking as a *pictorial* thinking, which corresponds to mythical and imaginative conceptions of the world, whereas the new thinking was *conceptual* or ideational in nature. However, the evolutionary emergence of a new human ability does not necessarily mean that it is taken up, used and developed by everyone. What prevents us from genuine thinking today, according to Steiner, is that we are stuck in a *nominalistic* view of thoughts – a natural consequence of confusing thinking with an inner stream of words; words being "names" of things.

Most of philosophy, today as well as at Steiner's time, is nominalistic in character (if not in name), believing firmly in strict analyses and static definitions of words/concepts. Post-structural and deconstructive approaches are relatively recent exceptions in that they aim instead at a destabilization of meaning and of rigid definitions. There is actually an interesting possibility of interaction and

dialogue between Steiner's approach to thinking and the deconstructivists, in that both may be seen as trying to bring *life* into thinking. Referring to Heidegger and the deconstructivist radicalisation of his later thought, Pattison (2005) points out that philosophy always relies on something beyond itself, something "more" beyond (ordinary) thought and cognition. For instance, for Levinas the "unknowability of the Other" forms the basis of all ethics (and hence all philosophy, since ethics for Levinas is the "first philosophy"). This is in agreement with Steiner's view so far as it recognises something basic but nevertheless beyond *ordinary* cognition. The difference is that for Steiner this transcendent dimension is not *absolutely* beyond the capacities of human cognition: human beings have innate potentials to develop their cognitive power beyond what is common today. Thus, as Pattison remarks,

> [t]here is at least a conversation to be had between those who see the transcendence of philosophy as leading to acts of unknowing beyond the limits of all possible cognition and discourse, and those, like Steiner, who, at the point where others find the beginning of unknowing, claim the stirrings of new cognitive capacities. (2005, p. xv)

In our view, the problem with most deconstructivist philosophy is that it goes too far in the direction of unknowability and destabilisation of meaning, tending to leave everything in chaotic ambiguity. For Steiner, real thinking is *alive*; it is an intense mental activity. It uses concepts and ideas not in static forms, but as living movements. Nevertheless, it is also *clear and precise*. Each concept is defined not by a fixed structure but as a particular potentiality of thought movements. As a simple example Steiner takes the concept of the triangle. This concept encompasses all triangles in whatever shape. In thinking the *concept* triangle, and not of a *particular* triangle, we have to think of the sides of the triangle as in constant movement in relation to each other. This is what every mathematician or geometrician must do intuitively (consciously or unconsciously) if she wants her reasoning to be general and not just about one particular triangle. Yet this original intuitive experience

seems not be accommodated within "external philosophy", as Steiner calls most academic philosophical systems. Professional philosophers have been too intent on fixing the definition of words into static linguistic structures (Nominalism). Concepts are rarely understood as *living essences* (Realism).

Now, compare this argument to Heidegger's claim that we confuse beings with *Being* and forget the latter. We realise that the concept of Being has to be a living whole, since it must encompass "everything that is", that is *every thing*, but not as a kind of "common denominator" – for instance as "the property to exist" – but as that which livingly and graciously "gives" existence: as *Aletheia*. Heidegger's *Aletheia* as the "allowing-to-be" of every being or thing has a further parallel in Steiner's view on thinking as an activity preceding the subject–object distinction (Steiner, 1998). *The subject–object distinction can be discovered and constituted only in and by thinking.*[10]

However, Steiner takes a vital step beyond Heidegger: he emphasizes the fact that in our everyday state of consciousness we are never aware of our thinking *activity*; we are only aware of its results, that is, the *thoughts* that it produces.[11] We know *what* we think (more or less), but not *how*. In everyday life, we are not conscious of the mental activity as such, which gives rise to the thoughts we have. If you observe your thought processes carefully, you can easily realize this. Consider the exercise of thinking different forms of the triangle which we briefly described above. It does not seem difficult at all to think these different forms in a succession, it might be a bit more difficult to think them in a quick succession, and it is more difficult still to hold all of them in your consciousness at the same time. But now try to capture the

[10] See Grauer (2007) for an interesting comparison between this insight of Steiner and the constructivist epistemology of Niklas Luhmann.

[11] It may be argued that the parallels pointed out between Heidegger and mystical or contemplative traditions, as noted above, implies that he also realized that we have to go beyond our everyday state of mind to come to real thinking. However, Heidegger did not explicitly emphasize this in his philosophical texts; it is *others* who have pointed to the similarities. Whereas for Steiner the idea of higher or deeper states of consciousness is central to all his philosophical work, for Heidegger it seems to have a more peripheral and contingent significance.

thought process that leads from one concrete form of the triangle to the next. We hope you will agree that this task is a pretty much impossible one: the transition from one finished form to the other remains in the darkness. Yet it is precisely this transition that is accomplished by means of thinking as an *activity*. A concrete form of the triangle is nothing more than a frozen finished product of this activity, no longer an active *thinking*, but only a fixed *thought*.[12]

Thus it seems impossible to reach the active thinking process within our ordinary frame of mind. However, Steiner claims it *is* possible to attain levels of intensified awareness, in which the thinking activity itself becomes the object of attention.[13] Steiner calls this state of consciousness an *Ausnahmezustand*, an "exceptional state". This state can be described as an experience of *thinking* observing itself coming into *being*. How can this state be achieved? The answer to this question is relatively straightforward: the precondition to achieving the consciousness of the process of thinking is a form of meditation exercise. Let us quote here the *locus classicus* of Steiner's view on the subject:

> In the ordinary consciousness it is not the thinking itself which is experienced, but through the thinking, that which is thought. Now there is an inner work of the soul (German: *Seelenarbeit*) which gradually leads one to

[12] In his phenomenological reflections on the element of "final truth" in the *cogito* of Descartes, i.e., on the experience of being as related to thinking, Merleau-Ponty (1992, p. 369ff) claims that thought must be understood "in terms of that strange power which it possesses of *being ahead of itself*, of launching itself and being at home everywhere, in a word, in terms of its *autonomy*" (ibid.; p. 371; our italics). We can reformulate this insight by saying that the hidden-from-view *thinking activity* is that aspect of human mentation which is always "ahead" of *thought*, i.e., the consciously held idea, notion or representation. Hence Merleau-Ponty can somewhat paradoxically maintain that "thought itself […] put[s] into things what it subsequently finds in them" (ibid., p. 371).

Furthermore, Merleau-Ponty brings out the relation between thinking and being when he says: "What I discover and recognize through the *cogito* […] is the deep-seated momentum of transcendence which is my very being, the simultaneous contact with my own being and with the world's being" (ibid., p 377).

[13] One might ask: if this was not possible, how did Merleau-Ponty arrive at his insights (cf. footnote 12 above)? For a kind of answer to this question, see footnote 15 below. An indication in the same direction is given by Brown, Ryan & Creswell (2007), who concerning the Buddhist practice of mindfulness meditation note that the "disentanglement of consciousness from cognitive content may allow thought to be used with greater effectiveness and precision" (p. 213).

> live not in the objects of thought, but in the activity of thinking itself. (Steiner, 1916/1984, p. 161; our translation).

When one says this today, one is of course immediately relegated to the "esoteric" bandwagon. It is therefore important to stress that for Steiner meditation had nothing to do with attempting to achieve some kind of inner bliss, or the melting of the self in Nirvana. They were meant to cultivate certain forces of the soul with a degree of precision and discipline akin to the precision and discipline of mathematical reasoning, in such a way as to be able to strengthen them to the point where the conscious experience becomes independent of its physical instrument, i.e., the brain.

We discussed earlier certain facts indicating a high degree of dependence of our mental processes on brain activity. Steiner never denied the existence of such dependence. However, he interpreted it radically differently from modern reductive materialism. He often resorted to the metaphor of the mirror to illustrate the nature of this dependence. As it is necessary for each one of us to have a mirror in front of us in order to be able to perceive our face, so it is necessary for the human spirit to have the "mirroring apparatus" of the brain in order to become aware of itself (cf. Steiner, 1984, p. 156f). Where such a "mirror" is lacking, or when it is damaged, consciousness cannot arise or arises only in a deficient way. This interpretation is easy to harmonize with the known empirical facts pointing to the loss of mental function as a result of brain injury. While reductive materialists imagine seeing in such empirical facts a confirmation of the thesis that the brain produces consciousness, Steiner sees in them evidence of the fact that the brain acts as a kind of a mirror for the spirit of man. However, this mirror is not a fixed one, but is living and changing, and Steiner emphasizes that each act of consciousness requires a specific preparation of a specific area of the brain to become the mirroring apparatus of this act, hence the known dependence of conscious activity on neurophysiological processes in specific centres of the brain, and hence the

temporal delay between the onset of these processes and the onset of conscious experience. Neuronal processes *are* a kind of colour play evoked by the sun of the rising thought on the clouds of the brain in preparation for the proper sunrise of its conscious manifestation: their appearance signals that the mirror of thought is being forged in the brain by the spirit.[14]

> Human thinking appears to the ordinary experience only in and through the [human body and soul] organisation. [However, this organisation] does not influence the essence of thinking, but *it steps back* when the activity of thinking enfolds itself; it suspends its own activity, it makes the space free; and in this free space there enters the activity of thinking. It is incumbent upon the essential element which works in thinking to achieve two objectives: firstly, *to push back the activity of the human organisation*, and secondly to set itself in its place. (Steiner, 1998, p. 147; our translation and italics)

The point of meditation exercises described by Steiner (1992a; 1989) in great detail is, as mentioned above, to strengthen the soul forces in such a way that one becomes able to maintain consciousness independently of the "mirroring apparatus" of the brain. As soon as one is able to do that, one gains not only direct insight into the reality of thinking as a living activity, but also into the reality of the spiritual world in which we are immersed at every moment of our lives, and which remains imperceptible to our ordinary sensory organs, just as the air is imperceptible to our eyes.[15]

*

[14] This is also in complete agreement with Merleau-Ponty's description of thought as "being ahead of itself" (above, footnote 12).

[15] In one lecture Steiner describes the experience reached as a result of successful meditations thus: "One's experience gets wide; one feels quite concretely: inside of me there is a point which goes into the whole world, which is of the same substance as the whole world. One feels oneself in unity with the whole world […]. In the moment when one has this experience of thinking one feels no longer bound on the earth, but one feels oneself connected to the widths of the heavenly sphere" (Steiner, 1987, p. 17f, our translation; many similar descriptions could be quoted here). Merleau-Ponty's experience of the unity of one's own being with the being of the world quoted above (footnote 12), seems to be a vague intuition of the kind of experience described by Steiner in detail in a lecture given some twenty years earlier (the first French edition of *Phenomenology of perception* was published 1945).

In order to come to a more immediate experience of what we are trying to convey, the reader is encouraged to meditate silently on the following sentence for a few minutes: *Thinking cannot be explained by anything external to itself because it is always thinking that does the explaining.*

This sentence is designed so that its thought content points towards the thinking which produces it. (The statement is also in agreement with Steiner's philosophy of knowledge.) Through meditation on such a sentence one may come to experience the difference between *thought* as the meaning content of any thinking process, and *thinking* as the mental activity which "produces", "constitutes" or "constructs" this meaning content.

Now *thought* may be explained by external factors, since the meaning content almost always is about something external to thinking itself, and this "aboutness", that thinking always has an object external to itself, must somehow reflect itself in the thought. However, the sentence is about how *thinking* cannot be explained by external factors. The thinking activity can only be explained by itself, that is, by thinking. Meditation, an inner work of the soul, is needed in order to *experience* thinking (not thought). If on the basis of experience from such inner work we ask what it means to explain thinking, we will *see* that thinking cannot be explained by something external to itself. A non-thinking object or process – for instance of a biochemical or neurophysiologic nature – cannot be the *cause* of thinking, something from which or out of which thinking activity would arise or emerge as an *effect* (or with which it would be identical, as in reductive materialism). On the contrary, such an explanation is the *result* of thinking activity, not the cause of it.

V

So far our considerations have been focused on the individual human being as the locus where genuine thinking takes place. This may seem contrary to the social

constructivist/-ionist perspectives on education and learning so prevalent today, but it does not mean that our point of view lacks social significance. Our stance can be illuminated by that of Soeffner (2003), who clearly points to the significance of the individual for social life. The individual, according to Soeffner, is simultaneously the *limit* as well as the *foundation* of society. In contrast to abstract entities like ”group”, ”society”, ”state” etc the individual is the only concrete and empirically delimited element of the social. The individual is both a *part* and an *opposite* of society. By being in opposition to the social *and* at the same time participating in it, the individual has the possibility to put her own experiences and convictions against collective norms and conceptions. The individual is a *Störstelle*, a “place of disturbance”, through which society gets a structural corrective for testing out common, abstract constructions. In the end, and somewhat paradoxically, it is this potential a-sociality of the individual that is the basis for a humane society. All democratic societies live of this tension between the potential a-sociality of the individual and the sociality of society. With reference to Hannah Arendt, Soeffner notes that the few who in Nazi-Germany acted against the regime had nothing to trust but their own judgment – that is, their own thinking. According to Soeffner, the individual as the *Störstelle* of all more or less rational societies is probably the only utopia that has as much potential reality that it is worth working for. Such work is in line with the strong tendency towards individualisation in modern societies. Therefore, Soeffner maintains, “subjective-idealistic” discourses seem particularly realistic in modern, democratic societies. Our argument in this paper is probably taken as a variety of such “subjective idealism”, focusing on individual consciousness as the arena on which genuine thinking takes place. However, the subjectivity in question is neither egotistic nor narcissistic, and the idealism is not a monism denying the reality of the body and material things (we need the body/brain to become conscious of our thoughts).

VI

At the outset of this paper we referred to concerns of some educationists about decreasing thinking abilities among today's children and youth. If the observations of Healy (1990) and her teacher colleagues are true, that is, if children today are showing decreasing abilities to think, we may need to consider how this can be remedied by pedagogical means. But even if Healy's observations are not true, if things are not worse in this respect today than in earlier times, it is still important to consider possibilities of improving the development of thinking capacities in our schools.

It may be argued that many of the deficiencies in thinking that Healy points to are to do with instrumental thinking (lack of words, faltering comprehension, lack of coherence, lack of ability to express oneself in written form etc) and *not* the kind of thinking we have discussed in this paper – that is, meditative thinking, "listening to the word of Being". However, Healy also points to the difficulties students have with listening and paying attention. The faltering comprehension of longer and more complex texts may also have to do with not being able to "read between the lines" or get an intuitive understanding of the whole; abilities which are closely related to "listening" and meditative thinking.

In this context it is interesting to note that both Heidegger and Steiner understood thinking to be an activity expressing itself in many forms, not only in the kind of sublime meditations described in the previous sections. Here it is worth quoting Heidegger at length:

> We are trying to learn thinking. Perhaps thinking, too, is just something like building a cabinet. At any rate, it is a craft, a 'handicraft', and therefore has a special relation to the hand. […]
>
> But the craft of the hand is richer than we commonly imagine. The hand does not only grasp and catch, or push and pull. The hand reaches and extends, receives and welcomes – and not just things: the hand extends itself and receives its own welcome in the hands of others. The hand holds. The hand carries. The hand designs and signs, presumably because man is a

> sign. Two hands fold into one, a gesture meant to carry man into the great oneness. The hand is all this, and this is the true handicraft. […] *Every motion of the hand in every one of its works carries itself through the element of thinking*, every bearing of the hand bears itself in that element. *All the work of the hand is rooted in thinking*. (1977b, p. 356-357; our italics)

The actions of the hand described in this quote extend from the practical work of pushing and pulling, to the social gesture of greeting and welcoming, to the spiritual gesture of prayer. And thinking is the common element in all these actions.[16] In a similar vein, Steiner pointed out that although the human soul life can be roughly differentiated into thinking, feeling and willing, these three functions always work together, they are not separate mental compartments but intertwined processes. There is willing in thinking, thinking in willing, and feeling in-between both. (Will for Steiner is that which actually makes the hand move, whereas thinking is guiding the movement, making it more or less intentional). From this it can be concluded that when we talk of thinking in the sense of Heidegger and Steiner, we do not only refer to esoteric activities like meditation or "listening to the word of Being". These activities are more like especially intensified cultivations of that "element of thinking" which is present in almost all human actions.

Turning now to more practical consequences of the views presented in this paper, it is interesting to note that some present educational thinkers have already put forward ideas and measures in line with what we are after. One example is that of Caranfa (2006), who suggests that the problem of education is that it fails to teach the significance of silence and of listening. According to Caranfa, the present one-sided focus on "discourse" and "critical thinking" is contra-productive, because silent listening is the very source of discourse and genuine (critical) thinking:

[16] Heidegger's philosophical poetics about the hand has recently been (at least partly) illustrated empirically; see Broaders, Wagner Cook, Mitchell, & Goldin-Meadow (2007) who report a study showing that encouraging children to make hand gestures while solving mathematical problems brings out their implicit knowledge and facilitates new learning. See also Goldin-Meadow (2005).

> Our failure to teach that there is "more" to knowledge than what "we can tell" is perhaps our greatest shortcoming as educators. The problem of education is a direct result of our failure to listen, to teach silence. To be alone and to listen should have priority over discourse and critical thinking. (Caranfa, 2006, p. 98)

For Heidegger genuine thinking arises as an "echo" to the silent speech of Being, heard and harkened to in the *Gelassenheit* of meditation. Silence and listening is necessary in order for us to hear this speech. They are essential aspects of any meditative practice, and they are not incompatible with everyday school work. A practical illustration is given by Fisher (2006), who tells the story of how he used to start his lessons with a few minutes exercise in silent listening. This simple action seemed to have a positive effect on an otherwise unruly class of youngsters. The ability to "listen with the spirit" is also of use to adults, for instance in team work, as discussed by Moss and Barnes (2008) and Levine (1994). Levine, furthermore, refers to both Heidegger and Steiner.

It may also be necessary to cultivate a certain ability to be alone with oneself. Being alone is a first step towards being "all one". It opens up a space in which thinking can deepen and the echo of Being's word can be heard. Nietzsche at one point complained:

> I have gradually seen the light as to the most universal deficiency in our kind of cultivation and education: no one learns, no one strives after, no one teaches – *the endurance of solitude.* (1997, p. 188)

Being a highly creative thinker, Nietzsche had probably some personal experience of the importance of being alone with oneself.

However, if Steiner's interpretation of the nature of thinking as a *spiritual* activity in the most concrete and radical sense of this word is true, the weakening of the thinking powers seemingly observed among contemporary children and young

people may have deeper roots than the ones listed by Healy (electronic media, hectic life styles, unstable family relations, environmental poisons as well as the instructional forms employed by schools). It may very well be that the dissipation of these powers has something to do with the profoundly materialistic spirit of contemporary cultural life and consequently of much of contemporary educational institutions. If we educate in a frame of mind which reduces the thinking activity of human beings to a product of their brains, we may in fact be undermining the possibility of fulfilling our wish to improve the thinking abilities of our children. Thus the question of appropriate cultivation of such abilities ceases to be merely a question of the appropriate methods, it becomes a question of the epistemological and ontological frameworks for education. This question – if one wants to make a serious account of it – goes very deep. We live in a culture in which many religious people are confronted with the necessity of squaring their personal convictions with the current "scientific opinion", which often contradicts and sometimes is even hostile to any conceptions of a real spiritual world; see for instance Dawkins (2006). It seems obvious that science wields an unprecedented power in contemporary (Western) culture, comparable to that of the church in medieval times (cf. Wilson, 1994).[17] Thus, researchers and scholars who preserve conceptions of a spiritual reality are often put into to a kind of inner schizophrenia: on the one hand they want to cultivate their spiritual point of view; on the other hand they feel compelled to accept an essentially materialistic world ontology, on pain of being decreed "creationists" or worse. Yet the heated conflicts between Darwin and the Bible have perhaps been merely a prelude: as Goldston (2008)

[17] Dawkins (2006) certainly seems to hold the opposite view, citing many contemporary examples where religious beliefs are, according to him, given undue respect. And in some cases we agree, as when US police officers threaten a man if he demonstrates against the visit of a Christian "healer" in his home town (provided the story is true – Dawkins' source, a book called *Atheist Universe*, seems not exactly a source of neutral facts). However, Dawkins' criticism is directed towards all conceptions of "the supernatural"; he does not consider the new developments of spirituality and more open forms of religiosity that have taken place in latter decades (see for instance Lynch, 2007). The new spirituality is much less dogmatic and sometimes even "secular" in character. As an example, the Dalai Lama talks about a secular spirituality, i.e. "a spirituality that is simultaneously committed to experience (including meditative experience) and reason, while being embedded in what he terms 'secular ethics'" (Zajonc, 2006a, p. 241).

notes, the two fields of genetics and neuroscience are presently ”verging on drawing the ultimate materialist picture of human nature – humans as nothing more than proteins and electrical impulses” (p. 17).

To our best knowledge, of all the “alternative” conceptions to materialistic scientism it is only in the spiritual science or anthroposophy of Rudolf Steiner that one finds an interpretation of the world which in its research methods fulfils the requirements of the stringency of science (cf. Majorek, 2002), and yet persistently rejects the materialistic interpretation of the results of modern scientific research and instead unashamedly – so to say – paints a basically spiritual picture of the universe.

It is well known that Rudolf Steiner founded an “educational system” known today under the label “Steiner Waldorf” or “Steiner” schools.[18] In his educational ideas he paid much attention to the question of the right development of the thinking powers of children. Steiner’s non-materialistic, spiritual framework is of course one of the cornerstones of his pedagogical ideas. Thus in Rudolf Steiner schools pupils are not in their chemistry, physics, and particularly biology lessons exposed to question-begging (because ultimately grounded in metaphysical preconceptions, not scientific facts) claims, images and metaphors, such as that the universe is at bottom composed of atoms (or other “smallest” subatomic particles/elements), and of purely physical forces; or that thoughts and generally all so-called mental phenomena are (nothing but) products of brain activity; that the brain is (nothing but) a complicated computer; that man is (nothing but) a higher animal and a product of blind evolutionary forces, one of the most potent of which is the struggle for survival. As pointed out above, such claims may yet turn out to be not only biased, but even poisons for a growing mind in its struggle to develop deeper thinking powers. It also undermines the development of trust and confidence in

[18] Steiner himself did not like to use the term ”system” about his educational ideas, probably because it has a dead and static character. His ideas are rather like a living, organic whole.

one's own thinking power, that it can actually understand the reality of the world (cf. Schieren, 2008).

But apart from a general atmosphere conducive to the cultivation of spiritual life Rudolf Steiner also introduced a number of specific educational procedures which can facilitate the development of thinking skills. Even though the conscious cultivation of the inner meditative activity described above, leading to the insight into the reality of the living thinking process, properly belongs to adult life it was Steiner's conviction that it can and even needs to be prepared for in childhood through proper education (cf. Oberski, 2006). Let us illustrate this point by means of some concrete examples.

In lower classes of the Rudolf Steiner School pupils are taught the so-called Form Drawing which consists in drawing sometimes very complex colourful patterns which are first drawn on the blackboard by the teacher. In the painting lessons of the lower classes the medium used are water-colours with the emphasis on the free play of colour rather than fixed form. Both of these forms of aesthetic activities seem to be conducive to freeing the growing child from excessive dependence on fixed patterns and forms, preparing it instead for dealing with the flowing and extremely complex reality characteristic of all living beings. They stand in sharp contrast to the colouring in of prearranged patterns or line drawings, which are not uncommon occupations in lower classes of some state schools – at least in Switzerland.

The general emphasis given to the arts, and especially to music, in Steiner Waldorf schools seems also to enhance the ability to "listen to the world", rather than impose oneself onto it, which is – as pointed out above – a necessary prerequisite of developing the thinking ability in the deeper sense discussed in this paper. A specifically Steiner school art form is the art of movement called Eurythmy,

inaugurated by Steiner in 1913 as a performing art, and later adapted for school use (Steiner & Usher, 2007). Eurythmy combines a very precise "vocabulary" or "alphabet" of gestures for specific sounds as well as tones and intervals, with a practically unlimited scope for individual creativity and expression in interpreting specific poems or music pieces, thus laying foundations for a kind of instinctive, sensori-motoric understanding of regularity and lawfulness in the flow of life.[19]

Another aspect of Steiner education which seems to be conducive to strengthening the thought forces is Steiner's repeated insistence on the need for *characterisation* rather than definition when introducing new concepts and on maintaining concepts pliable in the course of educating the child, so that they can "grow with it". If a definition is given at the start of the learning process, thinking is in a way already fixed and limited by the definition. Steiner compares it to putting "ice-gloves" on the hands of the child (as if freezing the forces of thinking) (Steiner, 1991b). Steiner described this need for characterisation and "living concepts" in his first course for the future teachers of the first Steiner Waldorf school in Stuttgart in August 1919 (cf. Steiner 1992b, p. 133-145, especially p. 139f). He stressed that one comes to an adequate understanding of phenomena not through fixing one's ideas about it early in the cognitive process by means of a definition, but by considering various aspects of a phenomenon from as many as possible points of view, and coming to a riper grasp of it only at the end of such process. In doing this Steiner applied in practice the theoretical advice given some 150 years earlier by Kant, who in his *Critique of Pure Reason* stated that:

> In philosophy a definition […] should close rather than begin the work. [Because] the concept of a thing, in the way it is initially given, can contain many dark ideas which we omit in the explication of that concept even though we take account of them in the everyday usage of it. Therefore the thoroughness of my analysis of a concept is always dubious, and can be made probably certain, but never absolutely certain, only through

[19] Cf. footnote 16 above.

> appropriate examples. In place of the expression "definition" I would rather use that of exposition, which is more cautious […]. (Kant, 1995, B757-759, our translation)

Finally, one further element of Steiner Waldorf education which should be mentioned in the present context is the methodical principle used in teaching natural sciences at Steiner Waldorf schools. This consists in starting the teaching of any natural phenomenon with pure *observations*, e.g. of a plant, or of an experiment, e.g. the refraction of light in passing a prism, consciously holding back any theorizing about it. This is followed by as careful as possible *reconstructing or recollecting* the observed phenomena without them being physically present, followed by – on the following day – the *conceptualization* of that which was observed (cf. Steiner, 1986, p. 46-48). Attentive dwelling on the observations of the senses enhances the potential of immediate experience to break through the armour of preformed conceptions, i.e. of ready-made thoughts. The recollection of the observations made earlier stimulates penetration of what was experienced by active thinking (Schieren, 2008). This approach is a very good exercise in the discipline of allowing phenomena to speak for themselves, rather than imposing a network of pre-established concepts on them (cf. Dahlin, 2001). It allows the children's judgement to mature without "jumping to conclusions". It teaches open-mindedness, flexibility, truthfulness, and exactitude in dealing with phenomena of nature. It also takes advantage of the beneficial influence of sleep on the learning process, an influence which was repeatedly stressed by Steiner as early as 1919 (1980, p. 95-152, passim) and which has recently been confirmed by neurobiologists in a number of studies (Hairston & Knight, 2004; Huber, Ghilardi, Massimini & Tononi, 2004; Yoo, Hu, Gujar, Jolesz, & Walker, 2007).

Visitors to Steiner Waldorf schools and observers of Steiner Waldorf teaching are often struck by the seemingly authoritarian way the teachers guide the children's activities and decide the content of lessons. They wonder how such pedagogical

methods can develop freedom and autonomy of thinking, which are the espoused goals of Steiner Waldorf education. Here one must first distinguish between being authoritarian and being an authority, which is not the same thing. In Steiner Waldorf schools teachers are considered authorities in the lower grades, but they are not expected to be authoritarian. Secondly, it must be noted that even though there is a strong guidance as to what to *do*, there is actually freedom for the children to use their *imagination* and to *reflect* on what they experience; for instance while hearing the teacher tell a story, copying something from the blackboard, or observing a plant. In mathematics, children's imaginative thinking is stimulated by problems such as "10 = ?", which gives the possibility of an infinite variety of correct answers, as opposed to more conventional problems like "6 + 4 = ?", which has only one answer and gives no space for imagination. In writing, a task like "How is a person that is like an oak?" can be given, again prompting the child's creative imagination. Tasks like these give children freedom to use their own thinking in relation to a given topic, instead of limiting their mental efforts to finding the one and only correct answer (cf. Garrido Mendoza, 2008). Of course, the kind of thinking intended here for the children is not on the same level as that of the meditative thinking described by Heidegger, or by Steiner himself in other parts of his work, referred to above. But it is a preparation for this kind of thinking in that it tries to develop the ability to be both alive and clear in one's thinking activity.

Thus, even though the learning activities are to a large extent guided by the teachers, Steiner Waldorf pupils are often given freedom in their thought-life and many possibilities to use their imagination. The teaching in the lower grades directs itself primarily to the will (bodily activity) and the feeling/imagination, and only indirectly to abstract cognition; the latter is, so to say, left at peace. This kind of pedagogy has a certain affinity with the findings of recent brain research: in order

for learning experiences to manifest as new structures in the brain, *physical activity* and *emotion* are essential, mere abstract cognition is not enough (Hüther, 2006).

VII

Whether it is true or not that the thinking abilities of young people today are decreasing, the question of "what is thinking" is of basic significance to education as well as to philosophy. In this paper we have argued for a spiritualistic understanding of thinking, drawing upon Steiner and Heidegger. We have also pointed to some consequences that such an understanding of thinking could have for pedagogy and education. The first step, however, must be for *us*, teachers and researchers, to realise the necessity of learning to think *ourselves*. In this connection it is worthwhile noting a growing interest, at least in the USA, to apply contemplative practices in education, for teachers as well as for students.[20] In 2006, *Teachers College Record* even devoted a whole issue to the theme of contemplation in education. In one of the papers Zajonc (2006b, p. 1756) points out that the academy "has nothing to fear from contemplative inquiry" because such inquiry is "in some measure already part of a covert curriculum that educates for discovery, creativity, and social conscience". (However, the measure of this "covert curriculum" probably varies a lot between subjects and disciplines.)

Contemplative practice is a way to learn to think, i.e., to learn *to live consciously* in the *activity* of thinking, not only in thoughts. This leads to openness to Being, overcoming the forgetfulness of Being that Heidegger lamented. On a more profane level, it probably also leads to more clear and exact thoughts (but not necessarily more clever ones). We are happy if this paper has contributed something in this direction.

[20] Cf. http://www.mindfuleducation.org/

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