

FROM ONTOLOGY OF INTERACTION TO SEMIOTICS OF EDUCATION

INTRODUCTION

There seems to be some movement towards an *ontological turn* in the philosophy of education. The purpose of this chapter is to contribute this current debate by framing what the ontology for the philosophy of education could be and what it could offer. Some current writings in this movement will shortly be reviewed and criticized because of too narrow and shallow understanding of ontology and missing ontological seriousness. Then the task of ontology will be concretized to the solving of some fundamental basic problems of philosophy of education. Solution to these problems will be sketched by introducing an alternative ontological theory developed originally by C. B. Martin. This solution is closely connected to the theme of this book because it is essentially the ontology of interaction. Finally it will be noted that one cannot draw too straight practical conclusions from an ontological theory but in addition at least semiotic analysis of human interaction is needed.

WHAT THE ONTOLOGY FOR PHILOSOPHY OF EDUCATION COULD BE?

Ontology is a core area of theoretical philosophy. A common and useful delineation is to say that theoretical philosophy is divided to epistemology which studies our knowledge and metaphysics which studies the reality as such. And further, ontology is the most general area of metaphysics studying “being as being” or the most basic structure of the reality (Loux, 1998, 15). A concept of *category* is much used here and it refers usually to the most general classes into which the beings can be divided. These categories are typically such like objects or substances, properties, kinds or species, relations, events or processes etc. Ontological theories usually try to determine what categories there are and what the formal relations between categories are; is for example some category dependent of another (e.g. Loux, 1998; Lowe, 2001; Keinänen, 2008).

After empiricist (especially Hume’s) critics, Kant’s Copernican revolution and the rise of the analytic philosophy metaphysics lost its reputation for a while. Kant (1982, Preface to second edition) namely tried to show that although our knowledge about the reality is structured categorically those categories must reside only in the transcendental structure of our cognitive apparatus (transcendental apperception process); and we have neither right nor reason to claim anything about the structure of the reality as such—even though that reality is the source of our knowledge. In the last century metaphysics and ontology started to become a famous area of research again but at least in the beginning only in a Kantian (or neo-Kantian) mode as an analysis of the human ontological commitments. A leading figure was P. F. Strawson (1959) who called his approach *descriptive* metaphysics (description of *the* common and necessary way to think about reality) as differentiation from *revisionary* approaches which can only be either minuscule corrections to the descriptive theory or then perhaps beautiful but unbelievable buildings like the pre-Kantian rational ontologies of Descartes, Leibniz or Berkeley.

To the end of last century and going on in the beginning of this one there has been a noteworthy renaissance of *serious*, revisionary ontology as study of reality as such and independently of the structure of our cognitive apparatus (e.g. Armstrong, 1980). Now it became typical to redefine the descriptive vs. revisionary differentiation so that they both are situated to *serious* metaphysics of mind independent reality, but now descriptive is more devalued and restricted; and revisionary—typically going on from the problems found out by descriptive studies—tries to formulate new and better hypotheses about the basic structure of reality as such (Keinänen, 2008). Of course we have no possibility to evaluate these hypotheses empirically like scientific hypotheses, but instead by formal

criteria (comprehensiveness, methodicalness, conceptual economy and elegance) and perhaps indirectly by their helpfulness to solve theoretical problems unsolvable other ways (Martin & Heil, 1999, 49).

Thus we can figure out four possible approaches of ontology as cross tabulation of two dimensions. First there is the seriousness (reality as such) vs. non-seriousness (thoughts and commitments) dimension and secondly the descriptiveness (interpretative) vs. revisionism (inventive) dimension. The serious descriptive and revisionary alternatives are already described shortly above. The non-serious descriptive area could be perhaps thought as phenomenological analysis of ontological commitments. The last area of non-seriousness and revisionism is interesting and important especially for ontology in philosophy of education and I would call it tentatively as practical ontology, because it has a close connection to the question of practical philosophy and is perhaps even thought to be based on values. (See table 1.) Surely, the borderlines between these areas should not be stressed but rather their interdependence and fruitful interaction.

Aim:	Object:	Thoughts about being	Being as such
Description		Phenomenological commitment analysis	Descriptive metaphysics / ontology
Invention		“Practical ontology”	Revisionary metaphysics / ontology

Table 1. Different approaches of ontology

So what can these areas or approaches offer to philosophy of education? If we accept that philosophy of education is an essential part of the theory of education which should help us to understand what is education i.e. what are we doing in education; to study what is really going on in education; and yet to make decisions about the aims and tools of education then we can set at least next two important duties to ontological research and reflection.

- 1) First if we want that our action and pursuits in education is rational at all then we should check that our ontological commitments are in coherence with our doings and plans. For example that we are not striving for aims which we think are impossible in this world. And we are not trying to affect objects or things that we really do not believe to exist. Contradictory suppositions even as unconscious can be compromising for the efficiency of our trials.
- 2) On the other hand, the secured consistency between our ontological beliefs and our educational procedures may still be not enough. There is still a danger that we are doomed to misfire or to only haphazard success if our ontology does not hold in relation to the reality we are acting upon. If we believe that some goal is possible to gain and we strive for it with most rational tools, we will not yet gain it if it is impossible because of the structure of the reality.

AN ONTOLOGICAL TURN IN THE PHILOSOPHY OF EDUCATION - ONTOLOGICAL WRITINGS IN PHILOSOPHY OF EDUCATION

There can be found more than dozen writings addressing explicitly ontology or metaphysics-not discussion proper-during this century in the philosophy of education (in English). They all consider ontology extremely important to philosophy and also to practice of education, up to suggesting exactly the phrase “ontological turn” in their texts or even titles (Barnett, 2004; 2009; Dall’Alba & Barnacle, 2007; Pio & Varkøy, 2012; Rømer, 2013). Common themes in these papers are: values and aims of education (Ibid, Bonnett, 2000; Brook, 2012; Kristjánsson, 2010), ontological commitments of educational research (Wegerif, 2008), and especially the concept of dialogue and its ontological bearings in education (Dall’Alba & Barnacle, 2007; Game & Metcalfe, 2008; Packer, 2000; Pio &

Varkøy, 2012; Wegerif, 2008). A very strong shared influence is from Heideggerian phenomenological and existential ontology of human existence, being-in-the-world (Dall'Alba & Barnacle, 2007; Pio & Varkøy, 2012). Of course the orientations and arguments differ much in these approaches but the space does not permit doing justice to them by more detailed analysis.

As a conclusion of previous survey could be said that the main concern the writers more or less all share is that of practical ontology. They all suggest some special way of thinking about reality and this thinking is not so much based on any serious ontological theory but rather on practical and value based views about the right or blessing objects and aims of education. At the same time they restrict them to quite special metaphysical questions of human beings and values. None of them tries either explicitly or strongly to build bridges to any general serious and revisionary ontology (except Rømer, 2013). So as a tentative critic to them could be said that firstly they can do the previously mentioned first duty one of educational ontology i.e. coherence and rationality of action partly just because they restrict themselves to quite narrow questions. Secondly many of them do not even try to respond to the second duty to ask is the reality really such that our educational doings can affect it in hoped way.

PRACTICAL PROBLEMS FOR THE ONTOLOGY OF EDUCATION

Next I will list some of most burning problems of philosophy of education which seem to be particularly in the need of ontological analysis. These problems are strongly interconnected like all ontological questions are. They also all have a strong practical weight as they all are connected to the very old problematic of the concept of freedom and determinism as a counter side of it. I will call and differentiate the problems in this way:

- 1) Freedom of action: Is there really that freedom of human action, which is required by our concept of responsibility?
- 2) Openness of individual development: Are students beforehand predestined to some kind of career of learning; what are the limits of teaching?
- 3) Openness of the future of society: Is the future determined and what restricts the possible changes?
- 4) Interaction: How can we affect to other beings and events of the world; and be affected ourselves?

We can start from a plausible assumption that all education is interaction. If we think of teaching as a special case of education then we could say that in the interaction between teacher and student the teacher is trying to affect the student so that the latter would change in certain way which we call learning. How is this possible and what there happens? How this happening is based on the general basic structure of the world? Responsibility of action is one central goal for many devoted teachers especially in so called moral education. The concept of responsibility does not only contain a wish that the action would be good, but rather that the actor herself did freely or autonomously (or at least *compos mentis*) choose to act in a way she acted. But does our science bound ontology allow this kind of freedom if every event in the world is caused and at least in principle is possible to explain by some other previous events (see e.g. Shabo, 2011)? If this freedom does not exist then such traditional ideas of pedagogy—referenced often by a German term *Bildung*, (Siljander, Kivelä, & Sutinen, 2012)—like the open possibilities for a human being to master and transcend any cultural contents and for a society and human kind to cultivate still better and more just unforeseen social and cultural structures are only vain hopes and pious words.

The sound ontology for the philosophy of education should answer all these questions above as accurately as possible. The answer or answers should be such that they are not just ad hoc or custom-build for educational needs but they must be based on the general ontology of the whole reality. As

such these answers cannot of course be any detailed and readymade solutions to the specific problems on educational theory and practice but rather like general reflector planes against which then coherence and credibility of special solutions could be observed and by way of which the educational views could be compared and connected to other areas on action and knowledge.

PROBLEMS OF UNIVERSALS AND DUALISM IN OUR RECEIVED ONTOLOGY

The trap of dualism

It has been very popular to start or restrict the study of ontology or metaphysics to the debates between such doctrines like idealism, materialism and dualism. The bitter controversy between materialistic and idealistic views has a long and well known history in western philosophy. The doctrine of dualism is usually connected to the theory of Descartes about human being (1968, 156). Dualism as a combination of materialism and idealism is though much older. What are these all about? There seems to be in the world something that is describable as material: concrete, extending, spatial, hard or soft, more or less inert stuff. On the other hand there seems or at least feels to be something different: our thoughts and ideas, values, feelings etc. These both are hard to deny but at the same time surprisingly hard to put in a same coherent picture of the world.

Today dualism gains much criticism in the philosophy of education especially from the semiotic theory (Stables, 2010). There are many reasons to that criticism. First one is of course that reciprocal interaction should be possible between the “material” and the “ideal”. Minds should get knowledge and stimuli from material objects and mind’s plans and intentions should act back to them. In addition dualism seems to be a bad habit of thought: if we separate ideal and material, then we may probably also separate hither and transcendent, rational and irrational, human and animal, culture and nature, adult and child etc. etc. And we do not only separate them but also put them in mutually exclusive spheres of reality and thus no interactions and transitions between them seem to be possible.

But can we step away from dualism? I claim that taking a side between materialism and idealism will not do at least any more. You cannot deny the other side and you will always bounce back to some kind of dualism. But fortunately we are not locked in this trap forever in ontology. Namely “material” and “ideal” are just special cases of so called universals, perhaps the most universal of them. Next lets’ see if we could throw all the universals overboard!

Problem of universals

In ontology it is usually assumed that there exist at least individual objects or particular things, shortly *particulars*. You and I; this table; that pencil etc. are particulars. Those particulars which exist more or less independently are traditionally called *substances*. In addition to these particulars there may be something else too. Those particulars seem or feel to be similar and different in some respects. These respects can be called generally *properties*: particulars can have color, shape, size etc. For example this pencil is sharp and yellow. It seems that there exist also properties like yellowness and sharpness. Substances and properties are two candidates to the categories of ontological theories. There can be also others but traditionally ontologists have tried to restrict the amount of categories to the necessary minimum according to the central methodological rule called ontological parsimony, or Ockham’s razor, or qualitative economy.

Now, how is it explained that some particulars are similar? They can be similar in two ways: Yellow pencil and yellow note paper are similar because of their color, so according to one property. Yellow pencil and red pencil are similar because they are both pencils, so according to their species or kinds. Those ontologists who think that the yellow pencil and the yellow paper somehow share a common i.e. *universal* property of yellowness suppose that in addition to particulars there exists a special category of universal properties. Yellowness can be one of the members of this category. This stance to believe

in the existence of universals is traditionally called *realism* though universalism could be a better name (Simons, 1994).

As well known, the most extreme example of realism was Plato. For him, the universals—thought as eternal and stable *ideas*—were the most independent, pure and strongly existing of all beings. All the empirical particulars were derivative, unimportant, bundles of imperfect mirrorings of ideas. The ideas were hierarchically structured so that highest ideas were goodness, beauty, just etc. So this theory was practical, it gave values which empirical beings could try to strive or imitate in their imperfect manners. Aristotle did not accept that ideas could exist independently but instead they were always connected to particular substances. He also transferred the interest from individual properties to species as some kind of bundles of properties. For him again species were stable and eternal—no Darwin yet in sight. And also for him ontology had practical bearing: the species has an *essence* i.e. a whole of the essential properties of that species. The “duty” of particular members of the species is to mimic or realize the essence of the species as well as possible. My pencil is sharp and so it is a good pencil if sharpness belongs to the essence of the species of pencils. (See e.g. Armstrong, 1980 for classification of the main alternatives in relation to universals.)

As we can easily see from this not so impartial description, the realism at least in these core forms is quite questionable starting point for educational ontology. It would easily lead to determinism, pigeonholing of students, nothing new under the sun view, non-interactionist categorizing and dualism. But this is not the main point. It is also a guzzling ontology with its excessive categories of universals. Fortunately there is also an alternative to realism and it is traditionally called *nominalism*. An extreme form of nominalism states that only particulars exist. Not even properties in particulars do exist. Particulars although form resemblance classes and we can give those classes arbitrary names like yellow or pencil. Another, more interesting and fruitful form of nominalism thinks that properties are something real and existing, but they are not universal. Instead every yellow particular has its own yellowness, and not a shared common and universal yellowness. These property particulars are called *tropes* (Bacon, 2008; Keinänen, 2005; Simons, 1994).

C. B. MARTIN’S ONTOLOGY AS AN ALTERNATIVE

Now I have tried to convince on the one hand that the realistic (or universalistic) ontology is defective both as a practical and revisionary ontology and on the other hand that there are real alternatives for it. Next I will describe some central features of the ontological theory which I at the moment think is the best candidate for sound ontology for philosophy of education. Unfortunately this theory does not have a proper name of its own, so I will call it after its original developer as C. B. Martin’s ontology (Martin, 1980; 1997; 2002; 2008; Martin & Heil, 1998; 1999; Heil, 2003; 2010; Snowdon, 2008). This theory can be classified as trope theory, but it does not belong to trope bundle theories which state that ordinary particular objects are only bundles of tropes and nothing else (Martin, 1980; Simons, 1994). In bundle theories the properties are somehow independent beings which just happen to gather together to form an object. Instead Martin sees properties rather as particularized ways of being of objects. Every property, i.e. trope, must be a property of some object, part of that object’s way of being.

One central feature of Martin’s view is what is called *compositionality*. It means quite simply that all objects can be thought as wholes structured (or composed) from smaller objects. Objects are what they are because of the ways of being of those smaller or simpler objects as its parts and the structure or composition that those parts form. Larger wholes can be more complex and have more complex properties than the simpler parts, but they are always strictly in the same ontological level. So there are no separate levels of being and thus no need for complicated and problematic concept of emergence. Simple and complex beings of course have different properties but so do usually have also objects which are as complex or as simple. No ontological categories are needed to account these differences and they can be thought fully gradual. (Martin & Heil, 1999; Martin, 2008, 35-40.)

Another and definitely the most important feature of this theory is Martin's view of properties as at the same time *dispositional* and *qualitative*. Dispositions have been usually thought as some special kind of properties that will manifest only in certain situations like the fragility of the glass. That fragility is manifested only when something breaks the glass. On the contrary such property like transparency of the glass has been thought to be quite different kind of property which is manifest all the time. These latter kinds of properties have been called qualities or categorical or occurrent properties. There are many views about the nature of these two types of properties and the relations between them. According to Martin they are not two types of properties but every property has a dispositional side and qualitative side. For example the transparency is a disposition to let light go through when lighted just like fragility is a disposition to break when hit and non-fragility is a disposition to stay unbroken even when hit. (Martin, 1997; Martin, 2002.) So any object can only manifest such qualities for which it has dispositions, but on the other hand we can know about the dispositions of an object only after they have been manifested as qualities.

Strictly connected to the conception of properties is the Martin's view of causality. An ordinary example of causal event is such that some property of one object affects some other object so that some property of the latter changes. But according to Martin every manifestation of the disposition as a quality is causal event and every causal event is an interaction. For example on the one hand a grain of salt has a disposition of solubility to water and on the other hand water has a disposition to solve salt. Now when we put that grain of salt to glass of water these dispositions manifest in both objects so that salt becomes solute and water becomes salty. So causality takes place between objects not between events. The manifestation requires something to trigger it. In simplified case we can think of two disposition partners like those of salt and water which reciprocally trigger the respective dispositions in each other. In reality the interactions can of course be more complicated so that the whole environment of an object effects to the manifestations of its dispositions. (Martin & Heil, 1998.)

Especially useful feature of Martin's theory is its applicability to the philosophy of mind (Heil, 2013, chapter 6). Plainly put there is clear parallel between simple causal events and human experience. Latter one is of course compositionally more complex but ontologically also these are on the same level. When you see a yellow pencil, it as a disposition partner triggers in you a manifestation of your disposition to see a yellow pencil. That manifested quality of seeing a yellow pencil in you does not of course need be qualitatively similar to a yellow pencil—at least as little as these words of “yellow pencil” are qualitatively similar to a yellow pencil. All causal interactions are in principle similar to mental representation: The causal effect of a disposition partner A takes place in a disposition partner B in a manner which is strongly dependent on the dispositions of B itself.

The point above has some remarkable consequences. In principle any causal interaction cannot be told apart from information change and also every causal effect contains a kind of (instantaneous) “interpretation” from the point of view of the dispositions of the object of the effect. So *force* is not the best general metaphor for causal interaction. Physical events of causation and human experience are ontologically on the same level but of course compositionally perhaps as far from each other as can be. So this view does not mean reductionism: physics cannot explain problems of psychology or education without changing itself to psychology or science of education. Neither does this mean materialism (because nominalist cannot be materialist) nor panpsychism (Martin & Pfeifer, 1986). But now we know that there is no special mystery in the mental existence of humans—in addition to the normal mystery of the existence of the whole reality.

CONCLUSIONS: POSSIBILITY OF EDUCATION AS ONTOLOGICALLY UNDERSTOOD

Education is semiotic interaction but how in earth is it possible to be so? Are the four practical problems solvable in the light of our new ontology? We have seen that every being with its dispositions is capable of being and doing more than it ever is and does. In addition beings can change. They can

grow bigger and gain more and more complex and miraculous properties. Human beings are perhaps the most complex beings with infinite possibilities to change their ways of being. What is possible for the society depends just upon us-and other beings. We can never know is some aim impossible before we try to achieve it and after that there is still endless amount of other chances to try in another way. Yes and we can teach each other and turn in to dialogue. Perhaps it is even easier to do that than cease from it, if we just remember that all learning takes place in action and all action is interaction.

But the hardest philosophical problem is still the freedom of action as precondition of responsibility and as an ultimate goal of education. Is freedom really possible? I cannot of course give here any final answer but perhaps some speculations may be done. First we must remember that no being is fully determined by its environment or by previous events, but it responds to its environment from the base of its own dispositions. Human beings with their mental representations are still less dependent of their environments because they can create i.e. remember and imagine such environment effects which do not exist at the moment or at all. But after all is it possible for a being to cause events itself so that it is not determined by the previous events? This is perhaps not so important question as it has been seen because causality is not in the relations between events. Event is a derivative being based on causal interaction between substances. One interaction changes the situation and after it other interactions are possible. So succession of events do not determine happening but rather makes it possible.

The possibility of freedom is based on the possibility of a being to spontaneously change or remain unchanged. This is a plausible possibility (Martin & Heil, 1999, fn 4). Of course this spontaneity is not the same thing as freedom of human action as an ultimate goal of education, but the previous is a precondition to the possibility of the latter. The latter can be thought as an ability to take part in the creation of new rules of action, based more or less on the old rules, and to try to obey them. These rules are connected to the structures of societies and contents of cultures and they are under continuous reconstruction as new problems and new solutions to them appear and are produced. This semiotic process—*Bildung*, if you pardon—could be, if anything, the ontologically based essence of education.

But I should still stress that from this general ontological background we cannot draw any or at least much practical conclusions. All principles and knowledge about methods, contents and aims of education require special historical, phenomenological, hermeneutical research—and especially semiotical analysis (Pikkarainen, 2010; Semetsky, 2010; Stables, 2005)

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