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# Naturalism and Normativity in Pragmatism

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## 1. Introduction

Norms and values are often considered as a serious problem for naturalism. This is, among other things, due to a misleading dichotomy of nature and culture. This dichotomy suggests that human reason and language is the distinguishing feature of human beings that raises us over and above nature. Especially morality, values and norms arise only in human society. Nature is the realm of pure causality where norms simply do not exist. So norms cannot be naturalized. The same holds for goals and purposes. "There are no purposes in nature; physics has ruled them out, and Darwin has explained them away" (Rosenberg, 2014, 25).

It is true that evolution does not have goals, but it does not follow that individual subjects and groups of them do not have goals. Obviously, they do. The problem is how to explain it in naturalistic terms. In order to see how this can be done we have to look closer on what is the character of philosophical naturalism. Naturalism is most often based on an appeal to natural science. This can be called *hard naturalism* because of this appeal to "hard" natural science. However, there is an alternative to this. According to John Dewey culture is a product of nature, a system developed by natural creatures that does not cease to be natural creatures, biological organisms, after having evolved to cultural beings. This type of naturalism can be called *soft naturalism* (Määttänen 2006).

Instead of the appeal to natural science and its methods one can adopt Dewey's view of science as problem solving. Note that Dewey developed this view on the ground of an analysis of the development of the sci-

ence of physics from Isaac Newton to Albert Einstein and nuclear physics. On Dewey's view any method can be used if it can be expected to produce information that can be used in solving the problems encountered. Instead of appealing to the natural scientific methods one can define naturalism with the simple principle that nature is causally closed.

According to Jaegwon Kim the naturalistic principle of causal closure can be interpreted to entail that "no causal chain involving a physical event will ever cross the boundary of the physical into the non-physical" and "to explain the occurrence of a physical event we never need to go outside the physical domain" (Kim, 1996, 147). The first part of this characterization is obviously correct if it means that no supernatural forces can have an effect on causal processes and that there is no room for Cartesian dualism of two distinct substances. The latter part concerning the explanation of physical events cannot be accepted if it entails reductionism in the sense that all events "are in principle explainable in physical terms" (Melnyk, 2003, 215). Everything that happens in nature is realized through physical causal processes but this leaves room for "complex structures and configurations of physical particles" that can "exhibit properties that are not reducible to 'lower-level' physical properties" (Kim, 1996, 212). The task is to make explicit what these complex structures and configurations are. The claim is, then, that by finding the correct structures and configurations we can introduce normativity to naturalism without violating the principle of causal closure. For this we need to reject hard naturalism with its commitment to natural scientific methods and find the correct unit of analysis, find out what the causal processes involved are.

## 2. The unit of analysis

It is a widespread presumption that the relation between mental and physical is really a relation between the mind and the brain. According to Andrew Melnyk both dualists and physicalists can agree that an accurate characterization of the mind is the following. "The mind of an organism receives information about its environment from its sense organs, stores and modifies this information, and then causes movement in the organism's bodily parts" (Melnyk, 2003, 281). According to Kim "it seems beyond doubt that mental events occur as a result of physical/neural processes" (Kim, 1996, 8). When discussing the problem of extrinsic mental properties he maintains that if an organism's relationship to various external environmental and historical factors is involved, then we face a serious

problem because "we expect the causative properties of behavior to be intrinsic and internal" (Kim, 2000, 37). This kind of internalism is precisely the stand that should be seriously questioned.

The brain as the unit of analysis surely makes it hard to see how normativity could be naturalized. Neural processes as such as well as processes studied by nuclear physics have nothing to do with norms and values. However, it is not a conceptual truth that the brain processes are the only physical processes that can be considered as realizing mentality and cognition. The concrete organism/environment interaction is also realized through physical processes, and the relevance of this interaction has been considered for a long time by approaches like enactivism and dynamical systems theory. The present version of the analysis of organism/environment interaction is based on the pragmatism of Charles Peirce and John Dewey. It is the organism as an acting agent that has values and goals. The normativity involved can be analysed in terms of this interaction if the unit of analysis is chosen differently, and the problem about the relationship between normativity and neural processes as such does not even arise.

As Maxwell Bennett and Peter Hacker point out, the talk about the brain alone as realizing mental activities is crypto-Cartesianism: what René Descartes said about the soul, is said about the brain (Bennett & Hacker, 2003). This mind/brain talk seems to be based on a presumption adopted from classical philosophy. Mind is considered to be something internal (soul or brain) as opposed to the so-called external world. However, it is not a conceptual necessity that the brain processes are the only causal processes realizing cognition. The concrete interaction between living organisms and their (natural and cultural) environment is also realized by physical causal processes. John Dewey already pointed to this direction when he criticized the concept of reflex arc. The problem with the reflex arc concerns its too narrow scope. It is realized entirely within the body. It starts from sensory processes and ends to motor responses. Dewey suggested that the notion of sensorimotor circuit is better (Dewey, 1975, 97). The point is that the elements of the environment are included in the circuit. Or in other words, the objects of environment belong "to the functional organization of mind" (Määttänen, 1993, 105).

The brain, the body and the environment form the system, which as a whole is required in the analysis of mind. This unit of analysis opens the door for external environmental and historical factors in explaining the relationship between mental and physical, which is not a relationship

between mental and neural properties or processes. Neither is it a relationship between mental causation and physical/neural causation. The notion of habit of action (see below) makes it possible that external environmental and historical factors form the basis of anticipation of action and its consequences, and the physical factors involved in mental causation consist of internal needs of an organism, internal anticipatory mechanisms and external things that function together (Määttänen, 2015b, ch. 5).

Organism/environment interaction consists of perception and action, and both are realized through physical causal processes. They cannot be separated by cutting them off from each other in the manner of the classical faculty psychology. Perception and action take place simultaneously and function together as recent research shows (Noë, 2004). Charles Peirce distinguished between them by saying that in action "our modification of other things is more prominent than their reaction on us" while in perception "their effect on us is overwhelmingly greater than our effect on them" (CP 1.324). Generally speaking the flow of causal influence follows a loop: from an organism to the environment in action and back to the agent in perception. Interaction with the world proceeds as an ongoing loop of action and perception. It starts when we are born and stops when we eventually die.

This loop of perception and action can be considered as a mental loop. Causal processes realizing cognition are the ongoing processes of this loop. From this viewpoint mind is not a property of the brain or even the body. Mind is a property of organism/environment interaction (Määttänen, 2015b, ch. 5). If a living organism is isolated from its interaction (or the brain put in a vat) mental predicates become problematic. As Bennett and Hacker (2003) point out, mental predicates are attributed to behaving persons, not to the brain or parts of the brain. If one drops the loop, then one loses mentality out of sight. The mental loop also helps to analyze the central concept that is needed in introducing normativity in naturalism: habit of action.

### 3. Habit of action as a teleological notion

One of Peirce's characterizations of habit is the following where he explains how habits differ from dispositions:

Habits differ from dispositions in having been acquired as consequences of the principle, virtually well-known even to those whose powers of reflexion are insufficient to its formulation, that multiple

reiterated behaviour of the same kind, under similar combinations of percepts and fancies, produces a tendency—the habit—actually to behave in a similar way under similar circumstances in the future

CP 5.487

The formation of a habit depends on the acting agent and on the circumstances to which action is accommodated. The role of the circumstances is neglected if one considers habits merely as bodily states. Peirce operates, in effect, with the unit of analysis given above, although he does not explicitly say so.

The important point to note here is the tendency to behave in a similar way under similar circumstances in the future. Similar circumstances and past experience during habit formation give the possibility to anticipate what the probable outcome of similar activities will be. In practical experience habits get accommodated to objective conditions of action, or to “laws or habitudes of nature”, to use Peirce’s expression (CP 5.587). Habits can be characterized as structured schemes of action (Määttänen, 2015b, ch. 3). The structure of a habit fits the structure of the objective conditions of action, and in this sense habits are beliefs about these conditions.

Habits are also meanings. Peirce says, “what a thing means is simply what habits it involves” (CP 5.400). This can be applied to any perceived object. If an object involves a habit, then to think with that habit is to anticipate what consequences habitual action probably has. The perceived object is a sign-vehicle that refers to these consequences. Habits establish meaning relations that are based on the anticipation of habitual action. It turns out, that the capacity to anticipate is an essential element of normativity in nature.

Meanings and beliefs are supposed to be general entities if they are to fulfill their function as vehicles of cognition. Peirce approached this question by asking *when* do habits exist? There are three obvious possibilities, past, present and future. Peirce writes:

For every habit has, or is, a general law. Whatever is truly general refers to the indefinite future; for the past contains only a certain collection of such cases that have occurred. The past is actual fact. But a general (fact) cannot be fully realized. It is a potentiality; and its mode of being is *esse in futuro*. The future is potential, not actual. What particularly distinguishes a general belief, or opinion, such as is an inferential conclusion, from other habits, is that it is active in the imagination.

CP 2.148

In the past there has been only a certain finite number of instances of any habit. No genuine generality can be involved here. The same holds for the present. The only alternative is the future. This has the interesting consequence that habits can only be objects of thought. But nothing Cartesian follows because habitual action is always performed by biological organisms in this material world. For short, cognition is anticipation of action, and habits as meanings and beliefs are vehicles of cognition (Määttänen, 2010).

Habits are meanings by virtue of the capacity to anticipate, and this ability has the consequence that habit of action is a teleological concept. Future can indeed have an effect on the present (CP 2.86). Peirce talks about final causation in this context, but this is slightly misleading because it may be understood as some peculiar sort of causation. The notion of mental loop described above helps to see how anticipatory mechanisms are formed during practical experience through causal processes. When similar behavior is repeated in similar circumstances the course of action becomes habitual and is imprinted into memory by virtue of the pragmatist law of association (Määttänen, 2010). This law says that sensory inputs, which are relevant for successful action, are associated with each other and with the sequence of motor responses. When similar situation is encountered again, this chain of associations is activated as an internal process, and past experiences of the outcomes of habitual behavior are remembered. This anticipated future has an effect on the present choices of what course of action is performed next. No backwards causation is involved here. The only thing that is required is that the acting agent and the circumstances remain relatively stable. According to Peirce this is the "special uniformity" of nature required for habit formation and inductive reasoning (CP 2.775). Actually this uniformity is not only a prerequisite of habit formation. It is a necessary condition of our existence as embodied beings and thus a precondition of all mental phenomena.

#### 4. Facts and values of an acting agent

David Hume famously claimed that morality is not an object of science. It consists not in any matter of fact that can be discovered by the understanding. This is because if, for example, one considers a willful murder, one cannot find any matter of fact or real existence, which can be called vice. David Hume presents the principle according to which one cannot derive *ought* from *is*. (Hume, 1978, 468–469). This is the so-called Humean

guillotine that cuts values off from the world of facts with a sharp and heavy blade. The character of values and their mode of existence becomes a serious philosophical problem.

Hume's philosophical framework is typical for classical philosophy since Descartes. Internal mind has experience of the so-called external world through sense organs. Experience consists of sense perception, and the object of knowledge consists of the hidden causes of perceptions. And as Hilary Putnam notes, Hume entertains pictorial semantics (Putnam, 2004, 15). If one is to know that something is a fact, one must literally perceive it. This view of the structure of experience and the object of knowledge is based on presumptions that can be rejected. These notions are defined differently in pragmatism.

As is well known, Peirce wanted to broaden the concept of experience (CP 1.336). Action, effort and resistance must be included in that notion. This leads to a different conception of the structure of experience and the object of knowledge. The world is experienced as possibilities of action, not as perceived individual objects, their properties and mutual relations. Indeed we perceive objects, but "any object that is overt is charged with possible consequences that are hidden" (Dewey, 1981, 28). In this view, the object of knowledge is a relation between two situations, the one in which an acting agent is situated and the second situation, which is the outcome of some habitual action or controlled operations. To know is to know what to do. This definition of the object of knowledge entails that the knowing subject and its action belong to the object of knowledge. The knowing subject lives in the midst of the interactions going on in the world, and what can be known is the joint outcome these interactions and the activity of the subject. (Määttänen, 2015b, ch. 2.) The notion of habit is teleological, and goal-oriented activity is always involved in the object of knowledge.

This revision of the object of knowledge has consequences for the notion of a matter of fact. Hume's notion of fact consists of what one can literally perceive here and now. A matter of fact in pragmatism is defined on the ground of how the object of knowledge is defined. Accordingly, a matter of fact in pragmatism consists of a *factual* relation between two situations mediated by habitual action or controlled operations. Facts happen, and a fact is known if a course of events can be anticipated correctly. Of course, processes in nature proceed by themselves but this not relevant for the problem of the relation between facts and values. This problem concerns the world as experienced. The facts that happen due to the activ-

ity of a knowing subject are known if the outcome of activity is anticipated correctly. The difference between Hume and pragmatism becomes clear in the following quotation. "We perceive objects brought before us; but that which we especially experience—the kind of thing to which the word 'experience' is more particularly applied—is an event" (CP 1.336). Experienced facts are events, and this notion of a matter of fact leads to a very different view about the relation between facts and values.

The world is experienced as possibilities of action. There are always a large number of possibilities in every situation one encounters. It is impossible to act according to all the possibilities at the same time. Thus one necessarily has to choose between the various possibilities. And to choose is, in effect, to value. Valuation is based on the anticipated consequences of habitual action. Positive consequences are valued highly, negative consequences are not. The necessity of choice implies that there is no action without valuation based on past practical experience. In other words, the facts and values of an acting agent are necessarily intertwined in experience. Hume's guillotine is in deep rust. It holds only as a logical principle according to which one cannot infer value statements if there are no value statements in the premises. This is true, but why should we preclude value statements from the premises. As we shall see in the next section, acts of valuation are objective facts in nature. Why close the eyes in front of them?

Valuation in action is typically not based on conscious moral deliberation. Many if not most practical choices are made subconsciously. But this does not mean that choices are determined by blind causation. That which proceeds by virtue of subconscious habits now has been acquired with valuation of the outcomes of action during habit formation. The development of skills proceeds in this manner. A beginning piano student thinks very carefully on what key she puts her finger next. The basic value is to pick the right key. A skillful pianist does not think about fingers. They find their way to correct keys subconsciously. The conscious values concern the character of the melody and other features of a piece of music as a whole. In a certain sense the development of skills reaches down to the history of evolution. Sense organs are kind of crystallized habits of perceiving features that are relevant for action. Of course, the evolution of sense organs is not based on conscious decisions, but natural selection functions to the effect that those courses of action that have positive value for survival are favoured. Generally speaking subconscious habitual skills form the major body of the resources for living the life.

Conscious decision is only a top layer on all this. We do things without knowing the reasons. "One of the main jobs of consciousness is to weave our lives together in a story that makes sense to us and is consistent with our self-conception" (Franks, 2010, 70–1).

## 5. Values as natural properties

The critics of naturalism sometimes claim that it is a fallacy, the so-called naturalistic fallacy, to take a natural property as a definition of morally good. This is a fallacy because for any natural property it is always possible to ask: But is it good? So one is asking is good good, and this does not make sense. This accusation of fallacy is, however, based on an aprioristic fallacy, on the assumption that philosophical concepts like that of good have an exact definition, that the meaning of good is precise, independent of experience and applies to all cases when something is experienced as good. This conception is based on the presumptions of classical philosophy, mainly on the idea that reason with its content (concepts, meanings) can be separated from experience.

The pragmatist notion of meaning is different. According to Peirce, what a thing means is simply what habits it involves. This principle can be applied to any object of perception: doors, windows, apples and words of a language (see Määttänen, 2005). Words gain meaning when they are used in the context of other practices. The use (the meaning) of the word "good" is not independent of the practical context where it is used. It gains a slightly different meaning when used in different contexts. It is perfectly possible to ask whether something recognized as good in the context of one set of practices is good from the viewpoint of some other set of practices.

The pragmatist notion of meaning also gives the explanation of how natural properties are related to values. Meanings are attached to observed things like apples, and an apple as a sign-vehicle refers to the anticipated consequences of habitual action that apples involve. A hungry person attaches a positive value to a perceived apple, but strictly speaking the valued thing is not the apple but the consequence of eating the apple, the anticipated satisfaction of hunger. So it is correct, literally speaking, to say that the natural properties of the apple as such are not value properties. The status of the apple as a valued thing is based on its role in the life activity of apple-eating animals. This is not to reject naturalism because the satisfaction of hunger is a natural property of some living creatures. This kind of value is not a reserved for cultural beings.

The goal of a hungry person is the satisfaction of hunger, and the apple is a means for attaining that goal. This is technical normativity. The goal determines the means; it gives a norm what to do, not only to human beings. It is a simple and objective fact in nature, based on bare observation, that living creatures tend to live their lives until they eventually die. Once born, a creature must live the life to the end. There is no choice in this. The life can be long or short, but it has a beginning and an end. Bare observation tells also that most creatures strive to live as long as possible. This is something programmed by natural evolution. Evolution does not have goals, but it would not proceed without this one goal of living organisms. This goal also gives norms what to do. It depends, of course, on the character of an organism what it has to do, but human beings (amongst many other species) have to breathe, drink, eat, get shelter and so on in order to stay alive. This is given by biology, and the normativity in question can be called *biotechnical normativity* (Määttänen, 2009, 131–133). Recall that a matter of fact is here defined as a relation between two situations mediated by action. It is an objective fact in nature that a large number of developed living creatures eat food in order to get rid of hunger, and satisfaction of hunger as value is accordingly an objective fact in nature. It is something that living creatures strive for.

Human beings are organisms that live in nature and experience it as its natural elements. They experience events as facts, and for this one must necessarily choose between various courses of anticipated action. Valuation is thus an objective feature in nature.

## 6. Values and emotions

David Hume could not perceive—in a literal sense—values, and hence ended up with the view that values are quite peculiar things. But something can still be said of them, according to Hume. Valuation is based on some kind of moral sentiment or feeling (Hume, 1978, 470). Just like in the separation of facts and values, here, too, the exact opposite holds. Emotions are based on values.

Antonio Damasio (1996) has put forth a hypothesis that he calls the somatic marker hypothesis. According to it emotions are signs of values. Negative emotions are associated with things that are related to negative experiences and positive emotions with experiences related to positive experiences. Emotions help us make decisions about what to do. Negative emotions advise us to avoid situations that seem to be harmful. Positive

emotions tell us to think closer how to get the possible positive experience. For Damasio emotions are heuristic aids of rational thought. They help us to make decisions about how to act. This help is expressed as emotions and is based on the evaluation of the experiential value of the anticipated courses of action. The anticipated future has an effect on the present (but not on the past) by virtue of reminding what sorts of experiences are about to follow.

Accumulated experience produces an emotional attitude expressing the summary of the values of the possible experiences the environment affords. "The attitude is precisely that which was a complete activity once, but is no longer so. The activity of seizing prey or attacking an enemy, a movement having its meaning in itself, is now reduced or aborted; it is an attitude simply" (Dewey, 1971, 183). Dewey uses the German word *Gefühlston* (tone of feeling) to express emotional attitudes that have become thoroughly habitual and hereditary (ibid., 188).

Dewey applies these ideas in his philosophy of art. Paintings are expressive because, among other things, lines and relations of lines "have become subconsciously charged with all the values that result from what they have done in our experience in our every contact with the world about us" (Dewey, 1987, 107). Paintings as a whole and even single qualities have this emotional property, *Gefühlston*, which explains why a painting is emotionally expressive. This idea applies more generally to any work of art. The subconscious working of tacit meanings explains the emotional power of aesthetic experiences. The explanation of the emotionally expressive power of art is based on the fact that single qualities, their mutual relations and the work of art as a whole do refer, albeit subconsciously, to all the previous experience our species has had during the long biological and cultural evolution (Määtänen, 2015a).

## 7. The multi-layered system of values

Human beings are not only natural creatures, they are also cultural beings. Not all values are based on biology. This is more than obvious. The point is, however, that these values are basic in the sense that there is no culture without human beings as living organisms. This justifies a bottom-up strategy in developing a value theory. Cultural diversity is built on top of biotechnical normativity. The result is a multi-layered system of values, which is not necessarily so coherent. Human history of wars and ideo-

logical fights shows that one of the basic values, respect of life, is often neglected in the name of more abstract ideological values.

The structure of the value system is closely related to the structure of the system of meanings. This is because habits as meanings play a central role in valuation in practice. Basically there are two kind of meanings: tacit (non-linguistic) meanings of objects like tools, doors, windows *et cetera* and linguistic meanings. Similarly basic values are related to bodily behavior and preservation of life. The practical functioning of values does not necessarily involve human consciousness and language use. These values function in practice also in the life form of other developed animals. Cultural values are discussed and formulated in some language and are related to the social and cultural world.

The pragmatist notion of meaning entails that meanings are context dependent, and the same holds for values. The context of different practices ties meanings and values to a viewpoint. Hopeless relativism does not follow because the physical viewpoint determined by embodiment is objective in the sense that the body is an objective element in nature and no one can detach herself from that (except in imagination). Physical viewpoint must be distinguished from conceptual viewpoint, which allows of more flexibility and pluralism. But even linguistic meanings are tied to the practical context. For a naturalist there are no abstract immaterial meanings in some realm of mental entities for reason to catch. Similarly values cannot be derived from moral Mount Sinai or out of the *a priori* blue, to use Dewey's expression (Dewey, 1988, 219).

The role of values is to direct behavior, and this is fulfilled only if they have a relation to practices. If intrinsic values are defined as values that have no relation to other things, then they are not worth considering. Their only possible value is in arousing emotional states. Values that have no relation to practices are practically worthless. John Dewey emphasized the connection of means and ends and introduced the notion of end-in-view in order to make this point. The real value of ethical theory is in its relation to problems of life. The complex nature of social relations and context dependence of values directing different practices entails that a multitude of viewpoints is inevitable. Instead of searching for one precise definition of moral good or set of moral rules we should find ways to discuss what is good or bad for whom, where and when and develop a value system suitable for modern developed society. On this ground it might be possible to decrease the amount of bad and increase the amount of good.

## References

- Bennett, Maxwell & Hacker, Peter (2003). *Philosophical Foundations of Neuroscience*. Oxford: Blackwell.
- Damasio, Antonio (1996). *Descartes' Error. Emotion, Reason and the Human Brain*. London: Papermac.
- Dewey, John (1971). "The Theory of Emotion", in: J. A. Boydston, ed., *John Dewey The Early Works 4* (pp. 152–188). Carbondale and Edwardsville: Southern Illinois University press.
- Dewey, John (1975). "The Reflex Arc Concept in Psychology", in: J. A. Boydston, ed., *The Early Works 5* (pp. 96–109). Carbondale and Edwardsville: Southern Illinois University press.
- Dewey, John (1981). *Experience and Nature, The Later Works 1*, ed. by J. A. Boydston. Carbondale and Edwardsville: Southern Illinois University press.
- Dewey, John (1987). *Art as Experience, The Later Works 10*, ed. by J. A. Boydston. Carbondale and Edwardsville: Southern Illinois University press.
- Dewey, John (1988). *Theory of Valuation, The Later Works 13*, ed. by J. A. Boydston. Carbondale and Edwardsville: Southern Illinois University Press.
- Franks, David (2010). *Neurosociology. The Nexus Between Neuroscience and Social Psychology*. New York: Springer.
- Hume, David (1978). *A Treatise of Human Nature*, ed. by L. A. Selby-Bigge. Oxford: Oxford University Press.
- Kim, Jaegwon (1996). *Philosophy of Mind*. Boulder: Westview Press
- Kim, Jaegwon (2000) *Mind in a Physical World. An Essay on the Mind-Body Problem and Mental Causation*. Cambridge: The MIT Press.
- Melnyk, Andrew (2003) *A Physicalist Manifesto. Thoroughly Modern Materialism*. Cambridge: Cambridge University Press.
- Määttänen, Pentti (1993). *Action and Experience. A Naturalistic Approach to Cognition*. *Annales Academiae Scientiarum Fennicae B 64*, Helsinki.
- Määttänen, Pentti (2005). "Meaning as Use: Peirce and Wittgenstein", in: Friedrich Stadler & Michael Stöltzner, ed., *Time and History, Papers of the 28th International Wittgenstein Symposium* (pp. 171–172). Kirchberg am Wechsel: Austrian Ludwig Wittgenstein Society. <http://wab.uib.no/ojs/agora-alws/article/view/1386>
- Määttänen, Pentti (2006). "Naturalism: Hard and Soft", in: Heikki J. Koskinen, Sami Pihlström & Risto Vilkkö, ed., *Science—A Challenge to Philosophy? Proceedings of the xv Internordic Philosophical Symposium, Helsinki, May 13–15, 2004* (pp. 227–236). Frankfurt am Main: Peter Lang.
- Määttänen, Pentti (2009). *Toiminta ja kokemus. Pragmatistista terveen järjen filosofiaa* (Action and Experience. Pragmatic Philosophy of Common Sense). Helsinki: Gaudeamus.
- Määttänen, Pentti (2010). "Habits as Vehicles of Cognition", in: Ahti-Veikko Pietarinen et al., ed., *Applying Peirce. Proceedings of International Peirce Con-*

- ference, Helsinki, June 2007.* Helsinki: Nordic Pragmatism Network  
<http://www.nordprag.org/nsp/1/>
- Määttänen, Pentti (2015a). "Emotionally Charged Aesthetic Experience", in: Alfonso Scarinzi, ed., *Aesthetics and the Embodied Mind: Beyond Art Theory and the Cartesian Mind-Body Dichotomy* (pp.85–99). Dordrecht: Springer.
- Määttänen, Pentti (2015b). *Mind in Action. Experience and Embodied Cognition in Pragmatism*. Cham: Springer.
- Noë, Alva (2004). *Action in Perception*. Cambridge: The MIT Press.
- Peirce, Charles (CP). *Collected Papers 1–8*, ed. by Charles Hartshorne, Paul Weiss and Arthur W. Burks. Cambridge: Harvard University Press, 1932–1958.
- Putnam, Hilary (2004). *The Collapse of the Fact/Value Dichotomy*. Cambridge: Harvard University Press.
- Rosenberg, Alexander (2014). "Disenchanted Naturalism", in: Bana Bashour & Hans D. Muller, ed., *Contemporary Philosophical Naturalism and Its Implications* (pp. 17–36). New York: Routledge.