

Habit, Action, and Knowledge, from the Pragmatist Perspective

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The word habit may seem twisted somewhat from its customary use when employed as we have been using it.

John Dewey (1922, 40)

The highest quality of mind involves a great readiness to take habits and a great readiness to lose them. ... No room being left for the formation of new habits, intellectual life would come to a speedy end.

C. S. Peirce (CP 6.613; 1892).

Introduction: It's habit all the way down

I find myself placed in a panel whose task is to discuss such themes as, 'Habit', 'Action', and 'Knowledge'. This pleases me, as I have for years studied these themes, and have noticed that their Pragmatist meaning is not at all too clear even to such people who otherwise are well-versed in this philosophy and sympathize with it. It so happens that the organizers of our Conference placed those themes in such an order that follows the themes' explanatory priorities – according to the Pragmatist understanding. I hope that this is no mere coincidence but reflects these people's view about this philosophy. In Pragmatism, namely, 'habit' is prior to 'action', and they both are prior to 'knowledge.' As is apparent at first glance, this order is not only different but diametrically opposite to the order in which

other major philosophical approaches, from analytic philosophy to phenomenology, would place these themes. They would place the question of knowledge first, and would want to settle the question of action on its basis. (Detailed opinions about what is most pertinent to knowledge of course differ between major approaches). Regarding the notion of ‘habit,’ non-pragmatist philosophies either shun its treatment altogether, or treat it as a residual category in the analysis of ‘action.’ Analytic philosophers and phenomenologists might again disagree about details, but not about basic priorities. In contradistinction to both of these approaches, pragmatism is the first philosophy that has realized that “Human beings are creatures of habit”, and even in a so forceful sense that “only a being with habits could have a mind like ours,” as the idea is expressed today by Alva Noë (2009, 97-98), a philosopher of cognitive science (for comments, see Kilpinen 2012).

At first glance all this may seem to prove right many philosophers’ worst suspicions about pragmatism. As the eminent language theorist, Jerry Fodor (2008, 12) has recently and eloquently put it, in his opinion “pragmatism is Cartesianism read from left to right; the genius of pragmatism is to get all explanatory priorities backward”, so that there can be no doubt that “Descartes was right,” and pragmatism was and is wrong. “Why, after all these years, does one still have to say these things?” concludes Fodor (2008, 14) his empathic animadversion. A sympathizer of pragmatism might try to reply that this verdict might be hasty, but if s/he then learns that Pragmatism takes human beings as “creatures of habit”, and that this principle concerns even the most cherished part in us, our mind, after that s/he may easily succumb to Fodor’s accusations and take the case of pragmatism as lost. Namely, the general opinion in philosophy about the value of the ‘habit’ phenomenon does not seem to have changed very much since the time of Immanuel Kant, who once said that “as a rule, all habits are objectionable” (1798/1974, 29).

Philosophy, however, ought to change its collective mind about all this. It should have done so at the time of classical Pragmatism, and it should do so today, at the latest, if it pays any attention to what cognitive science and the philosophy of mind building on it are telling today. Namely, the above conclusion that our unique kind of mind is due to us being creatures of habit is not just a philosophical conclusion but a finding from empirical research. Classical Pragmatism in its time strived to be, and to a considerable extent managed to be, an “empirically responsible philosophy”, as I have recently called it (Kilpinen, forthcoming; the saying is originally Lakoff’s and Johnson’s 1999). Today, the interpretation known as embodied cognition, and the philosophy of mind building on it, represent best, in my opinion, the same intention toward empirical responsibility (Kilpinen, forthcoming; on embodied cognitive science see Chemero 2009). From an empirical-*cum*-pragmatist viewpoint, to call human beings ‘creatures of habit’ *does not at all* suggest that a *slave of mindless repetitive routines* is meant. *It* certainly could not have a mind like ours. The position of Pragmatism is rather the complete opposite. It does not refer by ‘habits’ to repetitive routines, but understands them as “vehicles of cognition”, as goes a happy coinage by my compatriot, colleague and friend, Pentti Määttänen (2010).

This, however, is still quite enigmatic, to say the least. How could habits have anything to do with cognition, let alone serve as its ‘vehicles’? To get any clarity on all this, one must get rid of two traditional presuppositions concerning the concept of ‘habit.’ In the first place, classic representatives of Pragmatism do not relate ‘habit’ to repetitive action, as other philosophers, as a rule, do. Secondly, and in a sense following from the former point, pragmatists do not assume, as other philosophers do, that the acting subject’s consciousness is not involved in the on-going action process, the phenomenon to which pragmatists refer by the term ‘habit’. Thought or consciousness is supposed not only to be present, but even to be

in charge of the whole affair. “Habits deprived of thought and thought which is futile are two sides of the same fact,” was John Dewey’s emphatic position (1922/2002, 67). He went on to specify the mutually constituting role of habit and thought as follows: “To laud habit as conservative while praising thought as the main spring of progress is to take the surest course to making thought abstruse and irrelevant and progress a matter of accident and catastrophe” (*ibid.*). Or, to state the matter in alternative terms, the position of Dewey and other classic Pragmatists is that *intentionality without habituality is empty, habituality without intentionality is blind*. But if so, we are entitled to repeat Fodor’s above question, but with different priorities and sympathies: Why, after all these years, does one still have to say these things?, things that actually jump out of the page if one reads classics of Pragmatism at any length. I think the reason is that the Pragmatist understanding of ‘habit’ is so unusual and ahead of its time (I would add: then and now) that most philosophers have let the term pass as a mere colloquial expression, without imagining that anything more serious might be involved. In contradistinction to all this, my own opinion is that correct understanding of the habit-term and even more of its underlying notion gives the key to understanding classic Pragmatism altogether. As regards those who today are known as neo-pragmatists, their understanding of this crucial question seems to follow analytic philosophy and/or phenomenology, without a premonition that this may not be the whole story.

Accordingly, these ideas appear to be too radical to most philosophers’ stomach, and most social scientists do not fare any better in this respect. The reason why Kant above found the whole idea of habit ‘objectionable’ is apparently that he took the term in the same sense as his predecessor David Hume. According to the latter, a habit or custom “operates before we have time for reflection,” and the reason why it operates so quickly is that it “proceeds from past repetition without any new reasoning or conclusion”

(Hume 1739-40/1985, 153, 152). It is easy to see what is meant. Hume refers by ‘habit’ (or custom) implicitly to what in later times, in psychology, has come to be known as ‘conditioning.’ The idea is that action proper takes place consciously and intentionally, as philosophers (both analytic and phenomenological) like to call it. However, by frequent repetition some action may also assume a self-propelling character, so that its performance escapes intention’s control, operates ‘before we have time for reflection,’ as Hume noted. Now we begin to see what is ‘objectionable’ in all this, as was the worry of Kant. As consciousness and rationality are not in charge of habitual action, this kind of action cannot represent that what is most important and valuable in human action, its rationality and moral responsibility. As Kant added eloquently, in habits “the animal in man projects out of him too far ... here he is led *instinctively* by the rule of habituation, like another (non-human) nature, and so risks falling into the same class as cattle” (1974, 28; original emphasis).

‘Habit’ and ‘action’ undergo a Copernican Revolution in Pragmatism

After the Darwinian revolution in life sciences, some people began to think that our animal character needs not *per se* be our most obnoxious feature. In addition, this revolution suggested to some people, like the classic Pragmatists, two further conclusions, one about action; the other about the world where the action is taking place. In the first place (i), the traditional idea about action, about it emanating from inside us, so to speak, from our ‘will’ or whatever you choose to call it, began to lose its unquestioned plausibility. The idea rather began to be that action is a *relation* between us and the surrounding world, material and social. This relation, however, is not steady but rather unstable, so that the notion of *fallibility* needs to be included into the idea of action. Karl Popper became famous as a philosopher by emphasizing the inherently fallible character of human knowledge. Classic Pragmatists

went one better – but this is not at all well-known: – they highlighted the *inherent fallibility of human action*, and from this principle Popper’s position actually follows as a corollary. However, although action is for Pragmatism inherently fallible, from this in a sense already follows that it is capable of self-correction, to a degree, in other words, it is able to advance. Were this not true, we wouldn’t be here. This principle was included in Pragmatism right from its genesis, in what is known as Charles Peirce’s doubt/belief model of inquiry (1877-78; see EP 1), which is generally agreed to be the birth context of classic Pragmatism (for detailed action-theoretic interpretation of Peirce’s theory, see Kilpinen 2010).

For another thing (ii), some people began to take the world (or whatever you choose to call the arena of our doings), after the Darwinian revolution, as undergoing continuous but irregular change. As Peirce, for example, maintained that “Darwin’s view is near to mine” (EP 1, 222; 1884), he did not have empirical biology in mind. The phrase rather referred to the ontological consequence that he drew, *viz.* that as living creatures are mutable, but yet adapting to their environment surroundings, as Darwin’s theory proved, this suggested the further conclusion that this environment, the conditions of the creatures’ doings, also is mutable. It has undergone change and all possible changes may not have yet appeared. In other words, Peirce’s (and other pragmatists’) conclusion was that the *world (or reality, if you like) is a process*, though not necessarily a linear process, but rather one with hitches and jumps. Those philosophers formed a position of *process ontology* as a conclusion from their acceptance of Darwin’s descriptive theory about biological evolution (see further Kilpinen 2009, 166f.; on process ontology generally see Rescher 1996; 2000). Combine those two principles, action taken as fallible and as a relation (rather than emanation), and the process character of the world (or reality), and you are entitled to conclude that *for pragmatism human action also is a process; it is not a string of individual ‘actions’ that take*

place one at a time, as is the understanding in other major philosophies.

This is a conclusion for which one actually should not need to argue; it ought to be part and parcel in all competent discussions about pragmatism. However, I assume the burden of proof and try to demonstrate the validity of the above thesis by text-evidence. Whilst doing so, I also use the occasion to prove another of my above points. That point was that ‘habit,’ which precisely refers to the *process-character* of action in Pragmatism, is explanatorily prior to ‘action’, as I said. Above I already implicitly suggested that this philosophy does not take ‘habit’ as a derivative of individual ‘actions’, as Hume and Kant, for example, used to take it. Let us take a closer look at all this.

Hume’s position above was that habit or custom “proceeds from past repetition without any new reasoning or conclusion” (1985, 152). Without mentioning Hume by name, but apparently well aware of the emerging contradiction, Peirce (NEM 4, 143, ca. 1898) maintained in opposition to this that “Habits are not for the most part formed by the mere slothful repetition of what has been done, but by the logical development of the potential germinal nature of the man, generally by an effort, the accident of having done this or that merely having an adjuvant effect.”

There is more to come. The reason why Hume defined ‘habit’ in terms of repetition was his conviction “a habit can never be acquir’d by merely one instance” (1985, 154). According to Peirce, one instance may well suffice, or rather, no empirical instance of actualization is needed at all, as he once says that he would “not hesitate to say [that] a common match has a *habit* of taking fire if its head is rubbed, although it never has done so yet and never will but once” (Peirce MS(s) 104, 13, n.d., original emphasis). It turns out that the two philosophers do not disagree about mere terminology, but that a radical transformation in the habit-term’s meaning has occurred while it has travelled from Hume to

Peirce. The word ‘habit’ really is twisted somewhat in pragmatism, as Dewey said (see our motto above). And as is apparent already at first blush, Peirce means by ‘habit’ in the last passage the *disposition* of the doer (or of the thing in question, a match is an instrument rather than doer), and I submit that this is an essential part of his intended meaning as he discusses ‘habit’ even elsewhere.

So the case is, as Peirce states the matter explicitly in one of his central articles, ‘Prolegomena to an Apology for Pragmaticism’ (originally published in *The Monist*, 1906). There he gives one of his most detailed definitions about the three basic types of signs: icon, index and symbol. He writes about the last type that a sign can be interpreted to refer to its object, “by more or less approximate certainty that it will be interpreted as denoting the object, in consequence of a habit (which term I use as including a natural disposition), when I call the sign a *Symbol*” (CP 4.531; 1906; original italics).¹

Regarding ‘disposition,’ however, we mustn’t take it in an exclusively bodily or corporeal sense, as Peirce also (see e.g. our motto above) talks about habits as constituents of our *intellectual* life. Peirce’s and other classic Pragmatists’ aversion to the mind/body dualism is well known in literature, and I believe that the double meaning that they give to ‘habit’ (it is both mental as well as corporeal) is a case of their efforts to overcome it. However, as Peirce, Dewey and other classics of Pragmatism consistently stick to the term ‘habit’, whilst aware that they have “twisted” its meaning, the conclusion also arises that they wish to express something special with this traditional, almost colloquial term, which

¹ It is to be noted that Peirce consistently defines a Symbol by referring to a habit (in a sign’s interpretation), both in the cited article (1906) and in his even more extensive discussion in the 1907 ‘Pragmatism’ (EP 2, 398-433). He never uses philosophers’ pet term ‘rule’ or social scientists’ pet term ‘convention’. Relating Peirce’s ‘symbol’ to these latter notions is accordingly an intrusion by later scholars, not always to a happy effect. As a habit is simultaneously a corporeal and mental mode of action, it can be *articulated* into the form of a rule or convention, but habit is the natural mode of symbol-mediated and symbol-mediating action, according to Peirce’s doctrine.

they now have “twisted.” My conclusion thus is that they are referring to the *sui generis* process character of action with their newly-interpreted term ‘habit’.

This conclusion is, of course, no news to such people who have so much as thumbed through Dewey’s *Human Nature and Conduct* (1922). However, today that book does not seem to be quite well-known, and my point is that the process interpretation of action, to which ‘habit’ refers, is characteristic of the entire classical tradition of Pragmatism, it is not just idiosyncratic to Dewey. I lack the space to go through the writings of all members of the classic quartet, Peirce, Dewey, William James and G. H. Mead (about Mead see Kilpinen, forthcoming, and some other new interpretations that appear in the same collective volume (Burke & Skowronski (eds.)). As I have said, for Pragmatism, ‘habit’ is explanatorily prior to individual ‘action’. I have submitted that Pragmatists mean by ‘habit’ an action-process, and about processes we know that “for processes, to be is to be exemplified,” as says Rescher (2000, 25), the leading process philosopher of today. Accordingly, in the study of action, the order goes *from* larger totalities (‘habits’) onto their smaller constituents, individual ‘actions.’ Peirce proves my point, as he once states (CP 5.510; 1905) that “I need not repeat that I do not say that it is the single deeds that constitute the habit. It is the single “ways,” which are conditional propositions, each general – that constitute the habit.” In classical philosophy, as in Hume and Kant, for instance, it *is* the single deeds that by continuous repetition become to constitute the habit. In overcoming this view (whose roots lie in mind/body dualism), and changing the entire perspective on the subject, Pragmatism has performed its ‘Copernican Revolution,’ as I have sometimes called it (Kilpinen 2009).

Above Peirce said that it is the “ways” of doing, each general, that constitute the habit. There remains a slight ambiguity here, so that a critical reader might still remain unconvinced whether he gives primacy to ‘habit’ over and above individual ‘actions’ or not.

The correct answer is the former; Peirce does understand ‘habit’ as the primary category and (an) ‘action’ as secondary, as an exemplification of the former. In his unfinished long draft of 1907, entitled ‘Pragmatism,’ Peirce (EP 2, 402) goes to pains to argue that intellectual concepts (symbolic signs, if you like) refer beyond mere existential facts, “namely [to] the ‘*would-acts*’ of habitual behavior; and no agglomeration of actual happenings [read: individual ‘actions’] can never completely fill up the meaning of a ‘would be.’” Our interpretation of habit as disposition (corporeal as well as mental – even intellectual) thus receives support from Peirce’s original word. Yet another item to the same effect is forthcoming from the formulation with which Peirce concludes his cited account: “Now after an examination of all variants of mental phenomena, the only ones I have been able to find that possess the requisite generality to interpret concepts and which fulfill the other conditions [of definition] are habits” (EP 2,431; 1907).

So much about Peirce, thus far, but how can I assert that this interpretation of habit as disposition characterizes the entire movement (in its classical period)? As said, I do not have enough writing space to demonstrate this by text evidence, but we can let Peirce pass the verdict. It is true that he did not unreservedly agree with all of the ideas held by his fellow-pragmatists (as some outside commentators like to point out), and occasionally he brought out his dissatisfaction poignantly. However, the conclusion that Peirce, with his doctrine of ‘pragmaticism,’ wanted to dissociate himself from the entire pragmatic movement, is only a positivist pipe-dream. In truth, pragmaticism is a sub-division of pragmatism, according to Peirce’s definition, he did stick also to the latter wider doctrine, throughout his life, and his way to define it is pertinent to our treatment of the subject. At the end of the penultimate article of his publishing career, ‘A Neglected Argument for the Reality of God’ (1908), he enumerates strengths and weaknesses of other pragmatists, brings out his dissatisfaction with

their “angry hatred of strict logic,” but nonetheless finds also important points of agreement, such that in my opinion outweigh the disagreements. As he says (EP 2, 450; 1908; original emphases),

Among such truths, – all of them old, of course, yet acknowledged by a few, – I reckon their [i.e., other pragmatists’] denial of necessitarianism; their rejection of any “consciousness” different from a visceral or other external sensation; their acknowledgment that there are, in a Pragmaticist sense, Real habits (which really *would* produce effects), under circumstances that may not happen to get actualized, and are thus Real generals); and their insistence upon interpreting all hypostatic abstractions in terms of what they *would* or *might* (not actually *will*) come to in the concrete.

This passage is loaded by characteristically Pragmatist expressions, all the way from a denial of mind/body dualism (consciousness is based on sensation, visceral or external), via a notion of realist process ontology (all possible circumstances need not actualize), to the interpretation of habit as the basic mode of action, to be analyzed in conditional terms. To sum up and draw a conclusion, for Pragmatism action is *relation* between the subject and his/her/its world, in which relation both sides have a say. To say that it is a relation is tantamount to saying that it cannot be reduced to either of its constituents, the subject or the world. Both kinds of reduction have been attempted. Let us treat the outside world first. The movement known as behaviorism in psychology did try to reduce action to the outside world, by putting its emphasis exclusively on ‘stimuli.’ However, as a general approach to psychology, let alone philosophy, this project was soon found to leave to a dead end.

Everyone agrees that behaviorist psychology is reductive, even its leading champions, Watson and Skinner never denied this.² How many philosophers have realized that the other option that highlights the role of intention can be just as reductive? It can be reductive in the sense that it seeks the determinants of action exclusively inside the subject, in his or her preferences, values, or – you name your favorite intentional term. If we concentrate exclusively on these, we lose the contact to the outside world, and forget that all action takes place in some particular situation, whose conditions are more or less – but only rarely completely – objective. The classic understanding of action in philosophy ever since Aristotle, relying on ‘mind-first-explanation’ of action, reduces action to the subject of action. The lesson to be taken is that we cannot fight behaviorism by means of ‘naïve intentionalism’ (to indulge in some sarcasm), nor can we do the opposite trick and reduce action to mere stimuli from the outside. Adopting the pragmatist position allows us to have our cake and eat it too, to see some valuable aspects both in intentionalism and in behaviorism, without accepting either of them as the general truth.

How Can We Know with Our Habits?

A theme still remains untreated, namely the Pragmatist conception of knowledge, which I promised to take up. In the article ‘Prolegomena to an Apology of Pragmatism’ (1906), already cited, Peirce makes also an interesting aside about knowledge. As he writes (CP 4.531),

² For a just critique of Watson, see Mead (1934); for a just critique of Skinner, see Dennett (1978/1997). They are ‘just’ in admitting that the behaviorists have got *one* point right, in emphasizing the inalienable role of the outside world, which other approaches too often neglect completely.

... since symbols rest exclusively on habits [Cf. my note1 above! E.K.] already definitely formed but not furnishing any observation even of themselves, and since knowledge is habit, they do not enable us to add to our knowledge even so much as a necessary consequent, unless by means of a definite preformed habit.

Two points are involved in this brief passage. In the first place, Peirce says laconically – but for this very reason also enigmatically – that ‘knowledge is habit.’ In addition he speaks about us adding to our knowledge, rather than, say, possessing some. These points are involved with each other, and they both highlight the Pragmatist position about epistemic questions. (i) Peirce’s laconic expression ‘knowledge is habit’ lets us understand that he means by knowing a form of doing, rather than being in a mental state. (Pragmatism assumes no ontological division between mental and material doing, we remember. In both of them, continuous habit is the basic mode.) (ii) Peirce’s phrase about adding to our knowledge gives a first intimation about the Pragmatist principle that in matters epistemic, the basic question is knowledge-acquisition (in Pragmatist terms: *inquiry*), rather than the possession of knowledge. Let us take a closer look.

I have to be brief about Peirce’s laconic point that ‘knowledge is habit’. Suffice it to note that it receives apt elucidation from Dewey (2002, 182-3), who argues that “The scientific man and the philosopher like the carpenter, the physician and politician know with their habits, not with their ‘consciousness.’ The latter is eventual, not a source.” To some people it easily appears that Dewey here tries to reduce the principle ‘knowing that’ to another, ‘knowing how,’ to use Gilbert Ryle’s (1949/1970) terminology – this criticism has been presented many times against Ryle, Dewey, and other pragmatists. The criticism loses most of its thrust, if we keep consistently in mind that (i) Pragmatism allows no mind/body dualism (which is implicitly assumed, when ‘knowing how’ and ‘knowing that’ are

contrasted.) For another thing (ii), we should remember Pragmatism's other principle that knowledge-acquisition (inquiry) is to be taken on a par with, or even as overriding the notion of knowledge-possession.

Classical Pragmatism understands 'inquiry' as an *epistemic* concept, a point too often neglected. This idea reflects the basic assumption in this philosophy that action is the way in which we exist in the world, in other words, it is not a contingent phenomenon. (The above phrase is originally by Hans Joas). Accordingly, as action is a universal phenomenon, it follows that we are all inquirers, though only a small minority of us are intellectual, scientific or philosophical inquirers. Quite recently this principle has received some new support, and from a novel side, so to say. Namely, although Jaakko Hintikka, a bona fide analytic philosopher by his background, has not professed any explicit sympathy toward classic Pragmatism as such, he has reached conclusions that give some new support to the position of that tradition. As Hintikka says (2007a, 13), "The basic insight [for a new approach to epistemology] is that there is a link between the concept of knowledge and human action." That link is in the realization that we need knowledge to guide us in action, and we obtain knowledge by conducting inquiries. A further reason and the reason why inquiry indeed should be taken as the basic notion in matters epistemic is given by Hintikka (2007a, 17-18) in the following terms:

Surely the first order of business of any genuine theory of knowledge – the most important task both theoretically and practically – is how new [information is] acquired, not merely how previously obtained information can be evaluated. A theory of information (knowledge) acquisition is both philosophically and humanly much more important than a theory of whether or not already achieved information amounts to knowledge. Discovery is more important than the defense of what you already

know.

The upshot of this formulation might be taken as ‘Peirce and Dewey updated,’ in the sense that Hintikka’s conception of inquiry, the Interrogative model, as he calls it (for its details see Hintikka 2007b), is founded on a more advanced logical foundation, but has just the same knowledge-interest as that of the classic Pragmatists. Let Hintikka formulate it one more time: “The criteria of knowledge concern the conditions on which the results of epistemological inquiry can be relied as a basis of action.” This is classical Pragmatism vindicated, to speak solemnly.

However, it is not the same thing as to vindicate what is today known as neo-pragmatism, and the cited author Hintikka has intimated about this elsewhere, by asserting that “there is no trace in actual pragmatists” of those ideas that neo-pragmatists champion today (Hintikka 1997, xx). I shall not go into the issues involved, those concerning the assumed universality of language and its assumed character as a window into the human mind. Nor shall I raise here the question whether, and if yes, in what sense, neo-pragmatism (an expression in fact used by Charles W. Morris already in 1928) goes in the footsteps of the original variant. Instead I wish to remind, by way of conclusion, about the untapped resources still remaining in this tradition. In 1906 Peirce wrote that he had recently received “a shower of communications” thanking and congratulating him for the invention of pragmatism. This, he went on, “causes me to share the expectations that I find so many good judges are entertaining, that pragmatism is going to be the dominant philosophical opinion of the twentieth century” (CP 6.501). As everyone knows, the history of philosophy in the twentieth century did not turn out like that. But what is a century between friends? It may well be that Peirce was only excessively optimistic but not so wrong about what is pertinent to philosophy. My own opinion is that the last word about the classical tradition of

Pragmatism has not yet been spoken. When it is spoken, keeping all the time in mind this philosophy's sense of 'empirical responsibility' (i.e. sensitivity to research advances outside philosophy in the strict sense), it may well turn out that this tradition survives as a major tradition in the twenty-first century.

References

- Chemero, A. 2009. *Radical Embodied Cognitive Science*. Cambridge, MA & London, England: MIT Press.
- Dennett, D. C. 1997 (1978). Skinner Skinned. In Dennett's collection of essays, *Brainstorms: Philosophical Essays on Mind and Psychology*. 53-70. Paperback edition, Harmondsworth: Penguin.
- Dewey, J. 2002 (1922). *Human Nature and Conduct*. Amherst, NY: Prometheus Books.
- Fodor, J. 2008. *LOT2: The Language of Thought Revisited*. Oxford: Clarendon Press.
- Hintikka, J. 1997. Introduction, to Hintikka's collection of essays, *Lingua Universalis vs. Calculus Ratiocinator: An Ultimate Presupposition of Twentieth-Century Philosophy*. ix-xxii. Dordrecht/Boston/London: Kluwer. Vol. 2 of *Jaakko Hintikka Selected Papers*.
- Hintikka, J. 2007a Epistemology Without Knowledge and Without Belief. In Hintikka's collection of essays: *Socratic Epistemology: Explorations of Knowledge-Seeking by Questioning*. 11-37. Cambridge: Cambridge University Press.
- Hintikka, J. 2007b. Abduction – Inference, Conjecture, or an Answer to a Question? Pp. 38-60 in the above volume.
- Hume, D. 1985 (1739-40). *A Treatise of Human Nature*. Harmondsworth: Penguin.

- Kant, I. 1974 (1798). *Anthropology from a Pragmatic Point of View*. Translated with an Introduction and Notes by M. J. Gregor. The Hague: Martinus Nijhoff.
- Kilpinen, E. 2009. Pragmatism as a Philosophy of Action. In S. Pihlström & H. Rydenfelt (eds.), *Pragmatist Perspectives*. Helsinki: Societas Philosophica Fennica, 163-179. Vol. 86 in the series, *Acta Philosophica Fennica*.
- Kilpinen, E. 2010. Problems in Applying Peirce in Social Sciences. In M. Bergman et al. (eds.), *Ideas in Action: Proceedings of the Applying Peirce Conference*. Helsinki: Nordic Pragmatism Network, 86-104. (On-line ISSN 1799-3954).
- Kilpinen, E. 2012. Human Beings as Creatures of Habit. In A. Warde & D. Southerton (eds.), *The Habits Consumption*. Helsinki: Helsinki Collegium for Advanced Study, 45-69. Vol. 12 in the series, *Collegium: Studies across Disciplines in the Humanities and Social Sciences*.
- Kilpinen, E. (forthcoming). George H. Mead as an Empirically Responsible Philosopher: The 'Philosophy of the Act' Reconsidered. In T. Burke & K. Skowronski (eds.), *George Herbert Mead in the Twenty-First Century*. Lanham, MD: Lexington Press.
- Lakoff, G. & Johnson, M. 1999. *Philosophy in the Flesh: The Embodied Mind and Its Challenge to Western Thought*. New York: Basic Books.
- Määttänen, P. 2010. Habits as Vehicles of Cognition. In M. Bergman et al. (eds.), *Ideas in Action: Proceedings of the Applying Peirce Conference*. Helsinki: Nordic Pragmatism Network, 265-274. (On-line ISSN 1799-3954).
- Mead, G. H. 1934. *Mind, Self, and Society, from the Standpoint of a Social Behaviorist*. Charles W. Morris (ed.). Chicago: University of Chicago Press.
- Noë, A. 2009. *Out of Our Heads: Why You Are Not Your Brain, and Other Lessons from the Biology of Consciousness*. New York: Hill & Wang.

- Peirce, C. S. 1931-58. *Collected Papers of Charles Sanders Peirce*. 8 vols. C. Hartshorne, P. Weiss & A.W. Burks (editors). Cambridge, MA: Harvard University Press. Cited as CP, with volume number and *paragraph*, not pages.
- Peirce, C. S. 1976. *New Elements of Mathematics, by Charles S. Peirce*. 4 vols. (in 5 tomes). C. Eisele (editor). The Hague & Paris: Mouton de Gruyter; Atlantic Highlands, NJ: Humanities Press. Cited as NEM.
- Peirce, C. S. 1992-1998. *The Essential Peirce: Selected Philosophical Writings*. 2 vols. N. Houser, C.J.W. Kloesel & the Peirce Edition Project (editors). Bloomington & Indianapolis: Indiana University Press. Cited as EP.
- Peirce, C. S. Microfilmed manuscripts. Department of Philosophy, Harvard University. Cited as MS.
- Rescher, N. 1996. *Process Metaphysics: An Introduction to Process Philosophy*. Albany: State University of New York Press.
- Rescher, N. 2000. *Process Philosophy: A Survey of Basic Issues*. Pittsburgh: University of Pittsburgh Press.
- Ryle, G. 1970 (1949). *The Concept of Mind*. Paperback edition, London: Hutchinson.