

# Pragmatic Evolutions of the Kantian *a priori*: From the Mental to the Bodily

---

Matthew Crippen

*Humboldt University Berlin*  
& *Grand Valley State University,*  
*Michigan*

## 1. Introduction

My aims in this chapter are threefold: first, to offer textual evidence indicating that William James and John Dewey expanded—which simultaneously means criticizing and adjusting—the Kantian project; second, to demonstrate that the pragmatic evolution of the Kantian *a priori* is a transition from the mental to the bodily; and, third, to highlight applied merits of this transition. As with Immanuel Kant’s work, which emerged against the background of Newtonian and Copernican revolutions, pragmatism developed in the context of the next most significant scientific advancement up until that point: Darwinism. Hence in addition to speaking of a transition in thinking brought about by pragmatists, I examine its relation to evolutionary theory.

Evolution by natural selection was one in a small flood of theories of transmutation that began cropping up in the 19<sup>th</sup> century and earlier. It is in fact difficult to overstate the impact of such outlooks and especially Darwinism on the trajectory of biology, social theory, economics, psychology, and quite a bit more. In regards to understandings of mind from the late Modern period onward, a speculative case can be made that evolutionary accounts emphasized such intelligent action as adaptation, which occurs on both a mental and somatic level. Arguably, this partly accounts for the influx of motor theories of mind in the late 19<sup>th</sup> and early 20<sup>th</sup> centuries. The advent of experimental science played an additional role in updating understandings of mind, while simultaneously supply-

ing links between Kant and pragmatists. This is because experimental science makes progress by actively manipulating and thus altering the world. Kant took inspiration from this and argued that the world must be altered and brought into conformity with cognition to be coherently registered. Pragmatists, also drawing insights from experimental science, maintained something similar, only in this case discussing how bodily activities pull experience into coherent form. Nelson Goodman (1978, x) was accordingly on mark—though for reasons he perhaps did not completely grasp since he did not stress embodiment—when he suggested that Kant pioneered a movement that set the stage for pragmatic philosophies of world-making.

As is likely evident, I strongly believe in the legitimacy and fruitfulness of embodied approaches and consequently defend them, attending especially to pragmatic contributions to their development. I also dislike *casual* dismissals of past intellectual traditions insofar as they are almost invariably unwarranted and follow from misconstruals of what people meant in the historical contexts in which they thought.<sup>1</sup> I accordingly challenge those who neglect the relevance of Kant's philosophy to embodied views, along with those who dismiss the Kantian *a priori* as a dead end. In the hands of pragmatists and like-minded thinkers such as Maurice Merleau-Ponty, the Kantian *a priori* has evolved into embodied positions that shed considerable light on human experience and have a range of practical implications extending well beyond academic philosophy.

## 2. Kant and James

British empiricists provoked both Kant and James. For Kant it was David Hume; for James it was primarily Herbert Spencer. Kant of course re-

---

<sup>1</sup> Note that it is not criticism I object to, but rather casual dismissals. R. G. Collingwood (1939), for example, complained that his Oxford University students often dismissed texts without warrant, particularly through failing to grasp that they answer historically specific problems. This also applies on a more immediate level, so that the meaning of the statement, *I threw the ring in the garbage*, varies depending on whether the question was, *Where is your wedding ring?* or *Where is that cheap novelty ring?* That identical statements have different meanings when answering different questions indicates that we cannot understand texts merely by reading the words in them. We must also investigate problems they were intended to answer. I maintain that an examination along Collingwood's lines can uncover standpoints from which great figures in the history of philosophy make sense, even if one ultimately disagrees and wishes to criticize. In addition to this, and unless there is a widely accepted incorrect view, I think it is more fruitful and pragmatic to focus on what past thinkers got right.

spected Hume enough to recognize that the latter's well-known skeptical conclusions could not be dismissed out of hand. Kant's solution was not to deny the empiricist position with rationalist fortifications, but to effect a reconciliation. In this regard, Kant may be compared to James, even though he was sometimes scathing of his enlightenment predecessor (cf. James 1890II, 275; 1992 [1898], 1096). James agreed with empiricists that it is by experience that beliefs are justified. He added, however, that beliefs and especially interests can arise independently of experience. These direct our focus and lead us to make rational connections, thereby giving experience coherent form it would otherwise lack (for review cf. Crippen 2010, 2011). In his early and middle works, James (e.g., 1992 [1878a], 1890II, Ch. 28) accordingly claimed to side with *a priori* psychologists, even while rejecting their emphasis on logical limits.

In responding to British empiricists, Kant and James both inverted the way that Western philosophers had looked at knowledge. According to Kant (1998 [1787]), thinkers before him had held that "cognition must conform to the objects" (B XVI).<sup>2</sup> Citing difficulties with this approach, Kant explored an alternative possibility, "namely that we can cognize of things *a priori* only what we ourselves have put into them" (B XVIII). In other words, we can only register what is brought into conformity with the structure of our cognition. Kant described his approach as analogous to that of Nicolaus Copernicus, who decided to assume that the Sun is at rest, and see what follows (B XVI). This thought literally changes how we must picture planetary paths if we are to picture them coherently at all. Our cognition thereby pulls objects into an arrangement, makes them appear in conformity with it, rather than the reverse. Kant conjectured that the same occurs on a more basic level, arguing that people have knowledge and coherent experience only insofar as the world is *actively* pulled into conformity with certain *a priori*, that is, logical limits (cf. B XVI–B XIX). James likewise maintained there are "*a priori* element[s] in cognition" (James 1992 [1878a] 897, fn.; also see James 1900II, Ch. 28). Only where Kant specified ones such as "quality" and "quantity", James spoke of subjective interests. He asserted that interests and functionally similar mechanisms

---

<sup>2</sup> In the pages that follow, I summarize claims from the second edition of Kant's *Critique of Pure Reason*. No synopsis of Kant could be uncontroversial to anyone familiar with his work and its diverse receptions, but I shall presume—without argument—that readers who have long pondered Kant will recognize my approach as defensible. I will cite sections of Kant's *Critique* that have especial weight, giving page numbers of the second edition as republished within the standard German edition of Kant's works, Kant's *Gesammelte Schriften*, edited by the Royal Prussian (later German) Academy of Sciences.

limit what things we notice and how we proceed “rationally to connect them” (James 1879a, 12; James 1890 I, 287). James accordingly suggested that “interests precede” our experience of “outer relation[s]” (James 1992 [1878a], 897, fn.; also cf. James 1992 [1878b], 1890 I, Ch. 11).

That Kant and James shared this commonality led them to adopt analogous, albeit not identical, approaches to metaphysics—metaphysics here understood as a field concerned with the conditions under which anything can be said to have “reality” at all. Taking a cue from the burgeoning experimental sciences, Kant (1998 [1787]) maintained that reality can only be registered through some sort of active manipulation of it (B XII–B XIV)—that the mind not only acts to impose form on reality, thereby reconfiguring it, but that it must act so in order to coherently register anything as reality at all. The mind does so, again, by operating within *a priori* limits that dictate how reality—which here means the phenomenal world—is put together (B 161–B 166). This “putting together” is an interpretive act; things are united or synthesized—albeit often automatically and pre-reflectively—by means of *a priori* conceptual forms; and synthesizing acts are, in effect, judgments, that is, acts in which affirmations are made about certain things. Kant implied, accordingly, that human experience of reality itself is necessarily judgmental.

Kant’s approach to metaphysics, then, was not to start with a theory about how reality is and from there go to an account of what sorts of judgments can legitimately be made about it. Rather, he began with the assertion that mind is limited to making certain kinds of judgments and from there developed a theory about how reality must be for the mind—a theory, that is to say, about the structures to which reality must be made to conform if it is to be registered at all. His approach, therefore, to legitimating metaphysical judgments such as the principle of causality was not to show that the principle is a fact observed in reality, but that it is a necessary condition of humans experiencing reality as they do. For Kant (1998 [1787]), this meant that the experiential basis upon which empiricists challenge the principle actually presupposes it, thus rendering their refutation self-contradictory (B 233–B 248).

Where Kant justified certain metaphysical judgments on the basis that they are pre-conditions of having any experience of reality whatever, James justified them on the grounds that they are pre-conditions of particular kinds of experiences. James thus approached metaphysics from the same inverted direction, but understood metaphysical inquiry more narrowly as “nothing but an usually obstinate attempt to think clearly and con-

sistently” about fundamental tenets underlying a given field of human thought (James 1890I, 145). Put otherwise, he understood metaphysics as the elucidation of fundamental guiding beliefs that enable particular forms of life activity and therewith certain experiences, and underlying all this, for James, was subjective interests. Oncologists, for example, encounter their world armed with an interested belief that cancer necessarily has causes. In the same way that a statistician can only account for that which is quantifiable, oncologists can only explain that to which causes can be ascribed. This is where they focus their attention, accordingly. In Kantian terms, oncologic realities can only appear as realities insofar as they conform to the principle of causality. Thus the principle demarcates a boundary beyond which oncologists cannot see. The principle is justified, then, not because oncologists show it to be an observable fact in the realities they encounter, but because it is a precondition of them encountering and dealing practically with the reality of cancer as they do.

A point at which James noticeably departed from Kant, accordingly, was in his refusal to recognize any clear separation between what Kant called “constitutive” and “regulative” principles. A constitutive principle is one such as the principle of causality, which, for Kant, is a necessary condition of anything appearing coherently to us. Because constitutive principles delimit how things must appear, they also delimit the sorts of objects about which one can have knowledge (Kant 1787, B 218–B 21). A regulative principle, by contrast, is essentially a pragmatic principle; it is a guideline for action, a teleological rule “*for seeking something we desire*” (Axinn 2006, 85). A regulative principle does not, on Kant’s account, play a role in constituting how reality appears, and consequently does not postulate the existence of objects about which humans can have knowledge. Kant (1998 [1787]) cited belief in God as an example (B 647). The belief guides human action, particularly in moral spheres (B 661–3). Yet God, Kant insisted, is not a reality about which one can have genuine knowledge (B 667–B 670). James agreed that belief in God can only be justified on pragmatic grounds. However, he also held this to be so of causality, especially the principle of causality (cf., James 1890II, 671). Against Kant, furthermore, and approaching an embodied view, he urged that any belief affecting human action is constitutive of experience, and thus of how reality is experienced by us (cf., James 1987 [1902], 460–5).

More broadly, James broke with Kant by extending—and some would say conceptually confusing—the *a priori* to include interests, inclinations and personally held beliefs. Kant tried to show that logical constraints

delimit *a priori* how reality must appear to all conscious beings who encounter things under the spatiotemporal conditions that humans do. In calling these constraints “logical”, Kant asserted that they are universal and necessary. In some sense, James recognized that *a priori* constraints limit how reality appears. Yet he added that while many are necessary, relatively few are universal. That is, he suggested many constraints are only *a priori* or necessary in relation to particular purposes, activities, biological constitutions and psychological dispositions (cf. James 1890 II, Ch. 28). Thus his task was not one of establishing logical limits, but of breaking them down by denying their universality. This denial contributed to his anti-skeptical project, for a metaphysical judgment about all reality is a negative judgment. Materialism, for example, makes the universal claim that all real objects are physical. More formally, it states that for any  $x$ , if  $x$  is real, then  $x$  is physical  $\forall x (Rx \rightarrow Px)$ , and this is equivalent to negating the existential claim that there is no  $x$  such that  $x$  is real and not physical  $\neg \exists x (Rx \wedge \neg Px)$ . Thus on a concrete or existential level, the universal statement is a negative or skeptical judgment about certain kinds of reality. By denying the universality of metaphysical judgments, James did not abrogate skeptical practices, but rather restricted how far we may cast our skeptical nets in a given instance.

Where James fundamentally agreed with Kant, however, and where he arguably amplified one of Kant’s profound insights, was in his conviction that we add to reality. “In point of fact”, he wrote, our world

seems to grow by our mental determinations . . . Take the ‘great bear’ or ‘dipper’ constellation in the heavens. We call it by that name, we count the stars and call them seven, we say they were seven before they were counted, and we say that whether any one had ever noted the fact or not, the dim resemblance to a long-tailed (or long-necked?) animal was always truly there. But [. . . w]ere they explicitly seven, explicitly bear-like, before the human witness came? Surely nothing in the truth of the attributions drives us to think this. They were only implicitly or virtually what we call them, and we human witnesses first explicated them and made them ‘real.’ A fact virtually pre-exists when every condition of its realization save one is already there. In this case the condition lacking is the act of the counting and comparing mind.

James 1904, 472–3

Our judgments, James concluded, change reality; or “[our] judgments at any rate change the character of future reality by the acts to which they lead” (James 1904, 473).

### 3. Bodily evolutions of the *a priori* in James and Dewey

The fact that James's primary target was specifically Spencer—though passed over earlier—is important. It is so because Spencer in fact offered an evolutionary variant of empiricism in a neo-Lamarckian vein. Neo-Lamarckism was indeed an extension of the British empiricist thesis that the environment directly molds organisms. Only it extended the shaping influence to encompass the body as well as mind, and expanded it further to include pressures exerted on both individuals and their ancestors. Though often presented otherwise, Lamarckism—whether in its original or “neo” form—was not mutually exclusive of evolution by natural selection, first made public by Charles Darwin and Alfred Russell Wallace in 1858. In line with this, Darwin left increasingly more room for it in each edition of *On the Origin of Species*. Nonetheless it offered an alternative, and James's rebuttal of Spencer drew on Darwinism, especially its notion of independent cycles of operation, which James (1992 [1880], 622) lauded as “the triumphant originality” of the theory.

In Darwinian evolution, this independence simply means that variations occur for some reason, but are random in regard to whether or not they are adaptive; and then, in a second cycle, the environment either promotes or thwarts variations based on how well they contribute to survival and reproduction. This insight was central to the account of mind James developed in his early and middle period for two related reasons. First, he noted the enormous complexity of the brain, and speculated it is correspondingly instable and accordingly prone to ejecting new ideas not solicited by the environment. Then, based on whether the idea is adaptive or not, it either persists or perishes. Second and more importantly, James maintained environments supply sensory variation, and then depending on our interests or concerns, we either notice or ignore them. Those that enter our notice affect us more. Without the chiseling effect of interests, James insisted experience would be “utter chaos” and consciousness “a gray chaotic indiscriminateness, impossible [...] to conceive” (1992 [1878b], 929; also cf. 1890I, 402–3). This is because we would attend to everything at once; we would consequently register little, and our experience might even be rendered contradictory. For example, in the case of Necker cubes, we might see opposing planes as simultaneously being front and back, thereby rendering something unpicturable (cf. Crippen, 2015).

A key parallel, then, between James and Kant—and later I will add Dewey—that is worth re-stressing is that they did not believe minds are mimetic devices. James—to repeat—saw his account as similar to Kant’s, only with interests supplanting a more formally logical scheme. As James put it in an early work, interests are “the real *a priori* element in cognition” (James 1992 [1878a], 897, fn.), and about 12 years later he claimed to be siding with the “*a priorists*” (James 1890 II, Ch. 28). What I want to argue is that this was the beginning of a pragmatic shift of the *a priori* from the mental to the bodily. It was, to begin with, because it emphasized visceral components in cognition. Although James sometimes drew a line between interests and emotions, he occasionally acknowledged overlap. And leaving aside what he said, conceptual overlap binds the two—for example, to be in love is to be intensely interested in someone. Recent research also establishes neurobiological overlap (e.g., Damasio 1999, esp. 273–4; Gregory *et al.* 2003, Matthias *et al.* 2009, Buldeo 2009). Emotions have a visceral aspect, something most accounts, including James’s, along with everyday life, affirm. This makes them emphatically bodily.

A more literal transition from the mental to bodily occurs with Dewey, and this too relates to shifts that evolutionary theory brought to the intellectual landscape, as well as Kantian debates ongoing in his day. Darwinism—not to mention Lamarckism—stresses adaptation. Adaptation is emphatically related to the body but also intelligence, thus providing a link between motoricity and mind (cf. Schulkin 2004, 8; Nyíri 2014, 136, fn.; Crippen 2017a, 118–9). In line with this, motor theories of mind abounded in the late 19<sup>th</sup> and early 20<sup>th</sup> centuries, with Dewey and numerous of his contemporaries anticipating figures such as Merleau-Ponty and in some cases more or less stating what enactivists such as Alva Noë state today.

Dewey in fact granted the rationalist position that we bring certain structures to bear upon our worlds and actively work them into coherent form, while agreeing with empiricists that experience is the basic stuff of mind and knowledge. However, he criticized both schools for overemphasizing the mental side of this. As he put it, “[e]xperience carries principles of connection and organization within itself” by virtue of arising out of “adaptive courses of action, habits, active functions, connections of doing and undergoing” and “sensori-motor co-ordinations” (Dewey 1920, 91). He reasoned that this means even presumably non-conscious organisms such as amoebae have at least preconditions of experience. Dewey later added, in a mix of rationalist and empiricist terminology, that perception is an “act of the going out [. . .] in order to receive” (Dewey 1934, 53).

Thus when we reach out to receive, caress and handle a ceramic jar, glassy smoothness and roundness are realized as perceptual effects; and whereas we can roll the jar between our palms, the same action and hence same experience is impossible with a crate. Here bodily structure and things encountered limit actions and hence experience, supplying a rough analogue to the Kantian *a priori*.

From this it follows—along lines comparable to those expressed by James and Kant—that we can only know things by messing about with them, a view also characteristic of experimental science. In addition to accounting for some of the commonalities between pragmatists and Kant, the scientific backdrop helps explain why Kantian and neo-Kantian views are in the lineage leading to figures such as Merleau-Ponty (cf., e.g., Matherne 2016). In the case of James, who imported scientific methods before they became formalized, the assertion could be both metaphorical and literal. As discussed, he maintained that emotions and interests chisel away at the sensory environment, meaning coherent experience depends on altering things. More literally, he held that beliefs are measured by willingness to act, and actions can have world-changing consequences that supply empirical verification or refutation for our beliefs (e.g., James 1882). Dewey, in addition to appropriating scientific methods, specifically adopted ideas from quantum mechanics and relativity, which posit that observing things changes them and that properties—even so-called primary ones—vary with standpoint, specifically, velocity relative to observation.

Dewey saw all this as variations of what goes on in everyday life where perception and cognition are not internal representations, but qualities of world-altering interrelations in which both extra-organic things and organisms partake. On this view, knowledge is likewise a product of looking around corners, picking up things, prodding, hefting and otherwise systematically altering conditions under which we observe them (cf. Dewey 1929, 87). What we call “sensations”—here distinguished from perception—are primarily important as provocations to consequence-generating action (Dewey 1920, 89–90; Dewey 1929, 112). The fact that our actions and therewith consequences are always necessarily limited means that we cannot believe whatever we want. Perceptual experience is likewise constrained by limits on bodily action. Arms, legs, fingers and other appendages cannot just do anything. Moreover, while they could in principle move in unsynchronized directions, they nearly always fall into coordinated rhythms when dealing with things (cf. Crippen 2014; Crippen

2016a). This happens, for example, when typing. Movements of fingers, arms, gaze, neck and torso all coordinate. It also happens when walking. A hiker's stride presses into a sandy trail, and the trail presses back, modulating and patterning the hiker's gait, so that a series of interactions integrates into experience. Here experience is not merely integrated in the sense that it pulls together, but also because it arises out of a "thoroughgoing integration of what philosophy discriminates as 'subject' and 'object'" (Dewey 1934, 277). Again, the yielding sand modifies the hiker's tread, the hiker's tread the sand; and through this mutual shaping—this integration of one to the other—the sandy quality of soft give is realized and brought concretely into experience.

These explanations have obvious Kantian undertones, and Dewey's account of mind and experience in fact emerged in his ongoing efforts to circumnavigate debates between rationalists and empiricists (e.g., Dewey 1906, 469–75; Dewey 1920, 81–91; Dewey 1922, 30–1; also cf. Crippen 2016b, 2017b). After Kant, the debate mostly transmuted into one between *a priori*ists and empiricists. As in pre-Kantian days, however, it remained centrally a dispute over the extent to which mind imposes form on the world or the other way around. Against rationalists, Dewey (1922) chided that our ways of cognizing follow from our ways of inhabiting worlds, which is to say, from embodied habits. "Ideas [ . . . ] are not spontaneously generated. There is no immaculate conception," he wrote. "Reason pure of all influence from prior habit is a fiction" (Dewey 1922, 30–1). But so too are the "pure sensations" of empiricists, for they "are alike affected by habits" (*ibid.*, 31). Empiricists, Dewey went on to say,

usually identify experience with sensations impressed upon an empty mind. They therefore replace the theory of unmixed thoughts with that of pure unmixed sensations [ . . . ]. But distinct and independent sensory qualities, far from being original elements, are the products of a highly skilled analysis [ . . . ]. To be able to single out a definitive sensory element in any field is evidence of a high degree of previous training, that is, of well-formed habits. A moderate amount of observation of a child will suffice to reveal that even such gross discriminations as black, white, red, green, are the result of some years of active dealings with things in the course of which habits have been set up. It is not such a simple matter to have a clear-cut sensation. The latter is a sign of training, skill, habit. Dewey 1922, 31

In sum, Dewey attacked rationalists for not being empiricists, that is, for not recognizing the priority of experience; yet this is, funny to say, also

why he attacked empiricists. “Our ideas”, he wrote, “truly depend on experience, but so do our sensations. And the experience upon which they both depend is the operation of habits” (ibid., 32).

While criticizing both rationalism and empiricism, Dewey—despite his emphasis on experience—sympathized with the rationalistic view that worlds are brought into conformity with mind; and that it is by virtue of minds having similar structures that common worlds arise, making them possible objects of shared experience and knowledge. Dewey, however, went on to add the world is subject matter for experience and knowledge insofar as we have developed according to the structures of worlds in which we commonly exist. We accordingly find some of our structures “concordant and congenial with nature, and some phases of nature with [ourselves]” (Dewey 1925, 277, also cf. Dewey 1929, 208–22). So far this sounds like empiricism. However, Dewey steadfastly insisted that we—and indeed all organisms—contribute to the habits and patterns of interrelating that make our worlds. As he explained, “habits incorporate an environment within themselves”, and in this sense conform to it, yet they are also “adjustments of the environment, not merely to it” (Dewey 1922, 52). It is to be expected, therefore, that experiences will be similar insofar as we have similar bodies and needs, and thus deploy similar actions in the environment, impacting it and responding to it in comparable ways, the intersection of all this constituting our worlds or experiences.

This position clearly resonates with Dewey’s idea (1981 [c. 1951], 361) of experience as culture, expressed near the end of his life. While meant literally, Dewey also employed the idea metaphorically in earlier writings, once again to challenge the notion of experience as a correspondence of inner life to an outer environment. “Any account of experience must”, he explained, “fit into the consideration that experiencing means living; and that living goes on in and because of an enviroing medium, not in a vacuum” (Dewey 1917, 8). While this is—or at least should be—obvious,

this fact is [...] ignored and virtually denied by traditional theories. Consider for example, the definitions of life and mind given by Herbert Spencer: correspondence of an inner order with an outer order. It implies there is an inner order and an outer order, and that the correspondence consists in the fact that the terms in one order are related to one another as the terms or members of the other order are connected within themselves. [...] [B]ut the genuine correspondence of life and mind with nature is like the correspondence of two persons who “correspond” in order to learn each one of the acts, ideas and in-

tents of the other one, in such ways as to modify one's own intents, ideas and acts, and to substitute partaking in a common and inclusive situation [or world] for separate and independent performances. [...] The aim is [...] to form a new scheme of affairs to which both organic and environmental relations contribute, and in which they both partake. Dewey 1925, 282–3

In other words, experience is pre-eminently a mutually shaping transaction, as in a conversation.

This implies, once more, that there are always limits on experience and therewith cognition. It also means that both are actively constituted. Even in periods of relative repose, experience is still structured around possibilities of actions, instilled habitually through past dealings. The structure of bodily capacities and things encountered accordingly become something like transcendentals that limit possibilities of experience by constraining possibilities of action—points Dewey expressly acknowledged (e.g., Dewey 1920, 90–1), despite his and James's occasional hostility to Kant. In the case of Dewey, along with James, Kantian frameworks were not extinguished, as numerous scholars recognize (e.g., Carlson 1997, Pihlström 2010). Rather, in the hands of James and Dewey, the Kantian *a priori* evolved from the mental to the bodily.

#### 4. Contemporary implications

In addition to marking an evolution from the mental to the somatic, the pragmatic views outlined—which I have argued are a bodily variant of Kantianism—mesh with recent cutting edge ideas about perception and cognition. This is so in areas ranging from neuropathology to J.J. Gibson's theory of affordances to enactive cognitive science to robotics and AI. For the last part of my chapter, I will explore contemporary implications.

I will begin by elaborating on James's account of interests in order to better locate it in recent work. In addition to roots in Darwinism, James's ideas about interests have antecedents in C. S. Peirce's philosophy. Peirce (1982 [1878]) formalized the first pragmatic definition of meaning when he stated that to ascertain the meaning of an idea, we need only "[c]onsider what effects, which might conceivably have practical bearings, we might conceive the object of our conception to have" (266). An object conceptualized as "hard" conceivably has the effect of marring things which it comes into contact with; one that is "hard" and "heavy", to give a more Jamesian illustration, the consequence of injuring toes upon which it falls.

While borrowing from his slightly older contemporary, James departed from Peirce by stressing the degree to which individual interests decide what effects are attributed to conceived objects. People, he explained, focus on effects that they value, so that a mechanic might see oil primarily as a combustible or lubricator; a carpenter, as a darkener of wood (James 1992 [1879b], 952).

Although James did not emphasize it as much as he might have, conceptual overlaps, as already discussed, connect interests to emotions. There are also neurobiological overlaps, which James of course did not have means of detecting. But in his appropriately titled “The Sentiment of Rationality” (1992 [1879b]), he at least outlined how emotional feelings intertwine with decision-making and belief formation. Inconsistencies—to give one example—clog thought. We find this blockage irritating, and accordingly endeavor to escape, and the flow from thwarted confusion to “rational comprehension” comes with feelings of “relief and pleasure” (James 1992 [1879b], 950). This suggests we are emotionally driven to seek rational comprehension, and emotions often mark when we have arrived.

The claim that emotion guides thought is not of course original to James, with thinkers such as Hume (2000 [1740]) and Friedrich Nietzsche (1954 [1888]) endorsing like positions. However, Hume and Nietzsche maintained that most of our beliefs are consequently without basis, whereas James insisted otherwise, arguing that emotions help disentangle the irrational from the rational, and push us towards the latter. This is not to dispute that there is a great deal of emotionally driven irrationality, as seen in today’s political situation in the United States and elsewhere. At the same time, when it comes to most of the immediate doings dominating everyday life, we do tolerably well. Thus while most of us enjoy foods that are bad for us in excess, we are also emotionally inclined towards nutrient dense fare and adverse to pathogen infected substances that elicit disgust. In this case, our emotional sense of agreeableness and disagreeableness is consistent with our concern for health. Our emotions and interests are accordingly grounded in what colloquially may be called “reality” and to courses of action that are correspondingly rational.

The eminent neuropathologist Antonio Damasio has echoed essentially the same position, albeit focusing overmuch on ideas first expressed in James’s famous 1884 article “What is an Emotion?”, while neglecting ideas introduced in “The Sentiment of Rationality” and similar writings. Specifically, he postulates that holding knowledge in awareness is possible only insofar as one can “draw on mechanisms of basic attention, which

permit the maintenance of a mental image in consciousness to the relative exclusion of others” (Damasio 1994, 197). This thesis, though Damasio again seems unaware, is at the heart of James’s concept of consciousness as “*a selecting agency*” that chooses “one out of several of the materials so presented to its notice, emphasizing and accentuating that and suppressing as far as possible all the rest” (James 1890I, 139). In James’s scheme, such operations require interests; in Damasio’s, they demand emotion, which overlaps conceptually and neurobiologically with interests.

As an illustration, consider a patient of Damasio’s known as Eliot. Eliot was a young man, who suffered brain damage after having a tumor removed. In consequence, he had significantly reduced emotional experience, accompanied by sharply diminished decision-making ability, even though his capacity to weigh pros, cons and repercussions remained intact. His situation appeared analogous to one unable to choose between menu items due to lack of preference and hence emotional pull. Not surprisingly, his professional and personal life fell to tatters. As of 1994, Damasio had 12 other patients with comparable damage, all exhibiting similar deficiencies in emotion and decision-making. A stroke had incapacitated one to the point that she appeared to have locked-in syndrome. However, upon talking to her after she experienced some recovery, Damasio determined this had not been the case. She reported having felt little, and consequently had not found her former state alarming. Accordingly, she had not felt emotionally inclined to express anything. In Damasio’s (1994) words, there appears to have been “no normally differentiated thought and reasoning”, and correspondingly “no decisions made [. . . or] implemented” (73).

Expanding on challenges of his patients, Damasio (1994) yet again almost exactly repeated James’s views. In the case of Eliot, he theorized that his cold-blooded reasoning had “prevented him from assigning different values to different options, and made his decision-making landscape hopelessly flat”. An added problem may have been that this “same cold-bloodedness made his mental landscape too shifty and unsustained for the time required to make response selections” (51). In James’s language, it appears that Eliot’s lack of emotional engagement left him unable to differentially value competing options and to stay interested in and focused on tasks.

From James and Damasio’s standpoints, then, it follows that thinking at least in part depends on emotions and interests. A Jamesian line of analysis, with a little extrapolation, suggests the same for perception.

We might see a river as navigable, as an obstruction, perhaps cooling, drinkable, freezing or dangerous. This means perceiving it in terms of possible actions and their consequences on us, which is to say, in terms of use-values and hence interests. If we did not encounter a surging torrent as emotionally threatening, and waded recklessly in, or a wall as a barrier, colliding with it, onlookers might conclude we are blind. This is more so in light of Gibsonian theories of perception, which are pragmatically inspired (cf. Reed 1988, Heft 2001, Chemero and Käufer 2016), with Gibson (1979, 138) in fact hinting that affordances are emotional. Gibson's theory can accordingly be grasped as a tacit theory of values insofar as it frames perception as the capacity to discern emotionally colored use-values (cf. Crippen 2016c).

Dewey (1934) arguably went beyond James in emphasizing affective aspects of perception. He observed that we "do not have to project emotions into the objects experienced. Nature is kind and hateful, bland and morose, irritating and comforting, long before she is mathematically qualified or even congeries of 'secondary' qualities" (16). He thereby insisted that the perceptual world is emotional all along and that we would not perceive as we do—or as fully—were it not. We experience emotional tugs almost constantly, as when a familiar face pulls our attention or an interesting or threatening street invites us in or repulses us. Later in the same book, Dewey characterized how values, emotions and interests infuse lived space and time:

Space is room, *Raum*, and room is roominess, a chance to be, live and move. The very word "breathing-space" suggests the choking, the oppression that results when things are constricted. [...] What is true of space is true of time. We need a "space of time" in which to accomplish anything significant. Undue haste forced upon us by pressure of circumstances is hateful. Dewey 1934, 209

Such is commonplace in experience and accordingly knowledge, which are nearly always value-laden, as pragmatists especially emphasize (cf. Skowroński 2018). When caught in suffocating traffic, for example, we feel moments thickening and our surroundings weighing in on us, and this characterizes our lived understanding of time and space.

Reinforcing James and Dewey's views and tying them to Gibson is a body of research on affordance theory. The theory holds we perceive things in terms of actions we might take. Lending support to the outlook, experiments have found that participants judge distant grades steeper when in poor health, fatigued, laden with heavy backpacks or suffering

low blood sugar (Proffitt *et al.* 1995, Bhalla and Proffitt 1999, Proffitt 2006, Schnall, Zadra and Proffitt 2010; Zadra *et al.* 2010). Perceived steepness comes with deflation or sometimes excitement if one is a fit and enthusiastic hiker. These emotional timbres, in turn, correspond to the difficulty or ease of navigating one's body, which is to say, the world as a given individual encounters it. Conventional understandings would of course take this as evidence of the non-veridical nature of perception. However, the foregoing account suggests that the just mention perceptual variations follow from the fact that agents are objectively equipped to do different things in given environments and that they accurately register these differences.

This last point applies fairly generally. Thus, for example, it is no mere mental variation that differentiates the human experience of caressing lacquered wood with fingertips from that of a cat digging into it with claws (Crippen 2017a). It is a difference realized in action, and actions delineate the worlds of organisms. Moods and emotions likewise can reflect objective capacities relative to the environment at a given time. They can accordingly delineate worlds by motivating or diminishing actions, with perception reflecting this. To offer an illustration, it turns out that lethargic, depressed moods correlate with aesthetic preferences for enclosed and hence protected spaces. Conversely, energetic moods correlate with preferences for open and therefore explorable spaces (Mealey and Theis 1995). Accounts from phenomenological quarters—both philosophical and psychological—reinforce comparable points, as with Martin Heidegger's (1962 [1927]) discussions of the world delineating implications of care and concern or Nico Fijda's (1986) characterization of emotions as situational, action prompting characteristics. In short, insofar as our attitude is nearly always one of wanting to do, get or avoid something and therefore one of concern or interest, our worlds are emotionally and therefore behaviorally qualified all along.

While emphasizing the interested or emotional and hence visceral aspects of our perception, these accounts are specifically related to the way we deploy actions and habits when dealing with things. Insofar as the body and its relation to environments are at the heart of all this, these outlooks connect to embodied approaches, including Dewey's, but also more recent views. Echoing Dewey's views, for instance, is Herbert Simon's (1996, 51) well-known illustration in which an ant moves intricately as a function of the complexity of the contours over which it crawls. Simon's observations, like Dewey's earlier ones about the amoeba, mesh with recent experiments in which John Long (2011) created "tadpole robots" or

“Tadros” to model evolutionary processes in aquatic environments. Long varied the robots’ tail stiffness, allowing them to compete in a kind of evolutionary game for the equivalent of food, in this case, light, with more successful variations incorporated into the next generation. He reported that successive generations developed better feeding behavior. As he put it, “in a real sense, they got smarter”. Crucially, however, “they did so by evolving their bodies, not their brains” or CPUs (95).

Without insinuating his devices are future Nobel laureates, Long (2011) stressed that “by virtue of being goal directed, autonomous, and physically embodied”, they “have intelligence” (95–96). In the case of Tadros and in fact living organisms, much of the processing occurs through dynamics of agent-environment interactions, with only sparse CPU control—or the neural analogue—exercised (Pfeifer *et al.* 2007, 81). The bodies of Long’s (2011) robots, for example, automatically solve complex physical problems in the process of interacting with water: “In response to the tail’s coupled internal and external force computations, the body, to which the tail is attached, undergoes the yaw wobbles—recoil and turning maneuvers”. Its body accordingly calculates and performs patterns of “acceleration that interact to produce the overall motion of the Tadros according to Newton’s laws of motion” (104). Long argued further that human-like intelligence requires both a body and brain, and accordingly predicted human-level AI will only come in the form of an embodied robot (97). Though speculative, this is generally consistent with other contemporary embodied thinkers, with Noë (2009), a leading enactive cognitive scientist, stating that “[m]eaningful thought arises only when the whole animal is dynamically engaged with the environment” (Noë 2009, 8).

Notice in this scheme that bodily capacities once again set limits on what can be done, and by setting limits, allow for the possibility of at least preconditions of something functionally similar to human cognition. Put another way, bodies fall into coordinated behaviors by dealing with things in the world, and this forms an essential basis for perception and cognition. It might therefore be said that bodily mechanisms stand in for logical ones, and, by shaping activity, structure perceptual and cognitive engagement. Though Long, who is not a philosopher, exhibits no awareness of Kant, James or Dewey, his work displays insights generated by all three. His work also illustrates how Kantian philosophy read through the lens of Dewey and likeminded scholars such as Merleau-Ponty and more recent figures such as Noë can be rendered bodily, and, by this means, go further in explaining the nature of intelligence and future directions in AI.

The connections between visceral, rational and perceptual processes offer similar leads. In addition to their meaning for human subjectivity, they have implications for the dream of conscious AI and in fact suggest a conscious android such as Data from *Star Trek* who possesses formal logic but no emotion would be a contradiction—a point illustrated when Data expresses a preference for doing this or that, which has no basis absent emotion.

## 5. Conclusion

Although this chapter has covered a lot of historical detail—and necessarily so given my injunction about not dismissing the past, combined with the fact that I have focused on Kantian and pragmatic philosophy—my ultimate aim has been to show that the past very much applies to the present. While not all of the contemporary figures discussed show significant awareness of pragmatism, some such as Damasio do. Others not discussed draw extensively on it, for example, ranking neuroscientists such as Jay Schulkin (e.g., 2004) in his many books, along with a growing number of cognitive scientists, for example, Anthony Chemero (2009), Shaun Gallagher (2017) and Richard Menary (2007). By extension, they also build on Kantian debates that shaped the trajectory of pragmatism, albeit doing so almost entirely without any explicit recognition, yet understandably since this is not their focus.

What I hope to have done in this paper, accordingly, is not only to have outlined pragmatic variants of Kantianism, but also to have suggested applied merits and continued relevance of such outlooks. I have endeavored to do this by pointing to how everything from rationality to enactivism to affordance theory to AI can be understood and developed more richly through an understanding of pragmatic evolutions of the Kantian from the mental to the bodily.

## References

- Axinn, Sidney (2006). "The First Western Pragmatist, Immanuel Kant". *Journal of Chinese Philosophy* 33: 83–94.
- Bhalla, Mukal and Proffitt, Dennis (1999). "Visual-Motor Recalibration in Geographical Slant Perception". *Journal of Experimental Psychology: Human Perception and Performance* 25, 1076–96.
- Buldeo, Nitasha (2015). "Interoception: A Measure of Embodiment or Attention?". *The International Body Psychotherapy Journal* 14, 65–79.

- Carlson, Thomas (1997). "James and the Kantian Tradition", in: R. A. Putnam (ed.), *The Cambridge Companion to William James*. New York: Cambridge University Press.
- Chemero, Anthony (2009). *Radical Embodied Cognitive Science*. Cambridge, MA: MIT Press.
- Chemero Anthony and Käufer, Stephen (2016). "Pragmatism, Phenomenology, and Extended Cognition", in: R. Madzia and M. Jung (eds.), *Pragmatism and Embodied Cognitive Science: From Bodily Interaction to Symbolic Articulation* (pp. 55–70). Berlin: De Gruyter.
- Collingwood, Robin (1939). *An Autobiography*. Oxford: Oxford University Press.
- Crippen, Matthew (2010). "William James on Belief: Turning Darwinism against Empiricistic Skepticism". *Transactions of the Charles S. Peirce Society* 46, 477–502.
- Crippen, Matthew (2011). "William James and his Darwinian Defense of Freewill", in: M. R. Wheeler, (ed.), *150 Years of Evolution: Darwin's Impact on Contemporary Thought and Culture* (pp. 68–89). San Diego: San Diego State University Press.
- Crippen, Matthew (2014). "Body Phenomenology, Somaesthetics and Nietzschean Themes in Medieval Art". *Pragmatism Today* 5, 40–45.
- Crippen, Matthew (2015). "Pictures, Experiential Learning and Phenomenology": in: A. Benedek and K. Nyiri, (eds.), *Visual Learning, vol. 5: Saying by Showing, Showing by Saying—Pictures, Parables, Paradoxes* (pp. 83–90). Frankfurt: Peter Lang.
- Crippen, Mathew (2016a). "Dewey on Arts, Sciences and Greek Philosophy", in: A. Benedek and A. Veszelszki (eds.), *Visual Learning: Time—Truth—Tradition* (pp. 153–59). Frankfurt: Peter Lang.
- Crippen, Matthew (2016b). "Dewey, Enactivism and Greek Thought," in: R. Madzia and M. Jung (eds.), *Pragmatism and Embodied Cognitive Science: From Bodily Interaction to Symbolic Articulation* (pp. 229–246). Berlin: De Gruyter,
- Crippen, Matthew (2016c). "Intuitive cities: Pre-reflective, Aesthetic and Political Aspects of Urban Design." *Journal of Aesthetics and Phenomenology*, 125–145.
- Crippen, Matthew (2017 a). "Embodied Cognition and Perception: Dewey, Science and Skepticism". *Contemporary Pragmatism* 14, 121–134.
- Crippen, Matthew (2017 b). "Group Cognition in Pragmatism, Developmental Psychology and Aesthetics". *Pragmatism Today* 7, 185–197.
- Damasio, Antonio (1994) *Descartes' Error: Emotion, Reason, and the Human Brain*. New York: G. P. Putnam.
- Damasio, Antonio (1999). *The Feeling of What happens: Body and Emotion in the Making of Consciousness*. New York: Harcourt Brace.
- Dewey, John. (1906). "Experience and Objective Idealism". *The Philosophical Review* 15, 465–481.

- Dewey, John (1917). "The Need for a Recovery of Philosophy", in: J. Dewey et al., *Creative Intelligence: Essays in the Pragmatic Attitude* (pp. 3–69). New York: Henry Holt and Company.
- Dewey, John (1920). *Reconstruction in Philosophy*. New York: Henry Holt and Company.
- Dewey, John (1922). *Human Nature and Conduct: An Introduction to Social Psychology*. New York: Henry Holt and Company.
- Dewey, John. (1925). *Experience and Nature*. Chicago: Open Court Publishing Company.
- Dewey, John (1929). *The Quest for Certainty*. New York: Minton, Balch and Company.
- Dewey, John (1934) *Art as Experience*. New York: Minton, Balch and Company.
- Dewey, John (1981 [c. 1951]). "Unfinished Introduction", in: J. A. Boydston (ed.), *The Later Works, 1925–1953, Volume 1* (pp. 361–364.). Carbondale and Edwardsville: Southern Illinois University Press.
- Frijda, Nico (1986). *The Emotions*. Cambridge: Cambridge University Press.
- Gallagher, Shaun (2017). *Enactivist Interventions: Rethinking the Mind*. Oxford: Oxford University Press.
- Goodman, Nelson (1978). *Ways of Worldmaking*. Indianapolis: Hackett Publishing Company.
- Gregory, Lloyd, Yaguez, Lidia, Williams, Steve C., Altmann, Christian, Coen, Steven J., Ng, Virginia W. K., Brammer, Michael J., Thompson, David G., Hobson, Anthony H. & Aziz, Qasim (2003). "Cognitive Modulation of the Cerebral Processing of Human Oesophageal Sensation Using Functional Magnetic Resonance Imaging". *Gut* 52, 1671–77.
- Heft, Harry (2001). *Ecological Psychology in Context: James Gibson, Roger Barker, and the Legacy of William James' Radical Empiricism*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Heidegger, Martin (1962 [1927]). *Being and Time*, J. Macquarrie and E. Robinson (trans). New York: Harper and Row.
- Hume, David (2000 [1740]). *A Treatise of Human Nature*, D. Norton and M. Norton (eds.). Oxford: Oxford University Press.
- James, William (1992 [1878a]). "Remarks on Spencer's Definition of Mind as Correspondence," in: G. E. Myers (ed.), *William James: Writings 1878–1899* (pp. 893–909). New York: Library of America.
- James, William (1992 [1878 b]). "Brute and Human Intellect," in: G. E. Myers (ed.), *William James: Writings 1878–1899* (pp. 910–949). New York: Library of America.
- James, William (1879 a). "Are We Automata?". *Mind* 4, 1–22.
- James, William (1992 [1879 b]). "The Sentiment of Rationality", in: G. E. Myers (ed.) *William James: Writings 1878–1899* (pp. 950–985). New York: Library of America.

- James, William (1992 [1880]). "Great Men, Great Thoughts and Their Environment," in: G.E. Myers (ed.), *William James: Writings 1878–1899* (pp. 618–646). New York: Library of America. [Reprinted as "Great Men and Their Environment" in: W. James 1897, *The Will to Believe and Other Essays in Popular Philosophy*.]
- James, William (1882) "Rationality, Activity, and Faith". *Princeton Review* 2, 58–86.
- James, William (1884). "What is an Emotion?". *Mind* 9, 188–205.
- James, William (1890). *The Principles of Psychology*, vol. I. New York: Henry Holt and Company.
- James, William (1890). *The Principles of Psychology*, vol. II. New York: Henry Holt and Company.
- James, William (1998 [1898]) "Philosophical Conceptions and Practical Results," in: G.E. Myers (ed.), *William James: Writings 1878–1899* (pp. 1077–1097). New York: Library of America.
- James, William (1987 [1902]). *Varieties of Religious Experience*, in: B. Kuklick (ed.), *William James: Writings 1902–1910* (pp. 1–477). New York: Library of America.
- James, William (1904). "Humanism and Truth". *Mind* 13, 457–75.
- Kant, Immanuel (1998 [1781, 1787]). *Critique of Pure Reason* [first and second editions]. Paul Guyer and Allen W. Wood, (trans.). Cambridge: Cambridge University Press.
- Long, John (2011). *Darwin's Devices: What Evolving Robots can Teach us about the History of Life and the Future of Technology*. New York: Basic Books.
- Matherne, Samantha (2016). "Kantian Themes in Merleau-Ponty's Theory of Perception". *Archiv für Geschichte der Philosophie* 98, 193–230.
- Matthias, Ellen, Schandry, Rainer, Duschek, Stefan and Pollatos, Olga (2009). "On the Relationship between Interoceptive Awareness and the Attentional Processing of Visual Stimuli." *International Journal of Psychophysiology* 72, 154–59.
- Mealey, Linda and Theis, Peter (1995). "The Relationship Between Mood and Preferences among Natural Landscapes: An Evolutionary Perspective." *Ethology and Sociobiology* 16: 247–56.
- Menary, Richard (2007). *Cognitive Integration: Mind and Cognition Unbounded*. Basingstoke: Palgrave Macmillan.
- Nietzsche, Friedrich (1954 [1888]). "Twilight of the Idols", in: W. Kaufman, (ed. and trans.), *The Portable Nietzsche* (pp 463–563). New York: Penguin.
- Noë, Alva (2009). *Out of our Heads: Why you are not your Brain, and other Lessons from the Biology of Consciousness*. New York: Hill and Wang.
- Nyíri, Kristof (2014). *Meaning and Motoricity: Essays on Image and Time*. Frankfurt: Peter Lang.
- Peirce, Charles, S. (1982 [1878]). "How to Make our Ideas Clear", in: Kloesel, C.J.W. (ed.), *Writings of Charles S. Peirce: A Chronological Edition*, vol. 3. (pp. 257–276). Bloomington: Indiana University Press.

- Pfeifer, Rolf, Lungarella, Max, Sporns, Olaf and Kuniyoshi, Yasuo (2007). "On the Information Theoretic Implications of Embodiment—Principles and Methods", in: M. Lungarella, F. Iida, J. Bongard and R. Pfeifer (eds.), *50 Years of Artificial Intelligence: Essays Dedicated to the 50th Anniversary of Artificial Intelligence* (pp.76–86). New York: Springer.
- Pihlström, Sami (2010). "Kant and Pragmatism". *Pragmatism Today* 1, 50–61.
- Proffitt, Dennis, Bhalla, Mukal, Grossweiller, Rich and Midgett, Jonathan (1995). "Perceiving Geographical Slant." *Psychonomic Bulletin and Review* 16: 970–972.
- Proffitt, Dennis (2006). "Embodied Perception and the Economy of Action", *Perspectives on Psychological Science* 1, 110–22.
- Reed, Edward (1988). *James J. Gibson and the Psychology of Perception*. New Haven: Yale University Press.
- Schnall, Simone, Zadra, Jonathan and Proffitt, Dennis (2010). "Direct Evidence for the Economy of Actions: Glucose and the Perception of Geographical Slant." *Perception* 39: 464–482.
- Schulkin, Jay (2004). *Bodily Sensibility: Intelligent Action*. Oxford: Oxford University Press.
- Skowroński, Krzysztof Piotr (2018). "Does the Pragmatist Reflection on the Ethical and Aesthetic Values need the Kantian Axiology for its (Pragmatist) Future Developments?", in: K. P. Skowroński and S. Pihlström, *Pragmatist Kant*. Helsinki: Nordic Pragmatism Network.
- Zadra, Jonathan, Schnall, Simone, Weltman, Arthur and Dennis Proffitt (2010). "Direct Physiological Evidence for the Economy of Action: Bioenergetics and the Perception of Spatial Layout." *Journal of Vision*: 10, 54–54.