

Dale Jacquette

"Margolis on the Progress of Pragmatism"

In: Dirk-Martin Grube and Robert Sinclair (Eds.) (2015). *Pragmatism, Metaphysics and Culture—Reflections on the Philosophy of Joseph Margolis* (pp. 52–75). Nordic Studies in Pragmatism 2. Helsinki: Nordic Pragmatism Network.

ISSN-L 1799-3954 ISSN 1799-3954 ISBN 978-952-67497-1-6

Copyright © 2015 The Authors and the Nordic Pragmatism Network.

This work is licensed under a Creative Commons Attribution-NonCommercial 3.0 Unported License.

CC BY NC For more information, see http://creativecommons.org/licenses/by-nc/3.0/



Nordic Pragmatism Network, Helsinki 2015

www.nordprag.org

Margolis on the Progress of Pragmatism

Dale Jacquette University of Bern

1. Philosophy's past and future

There are three major moments in the structure of Joseph Margolis's book, *Pragmatism Ascendent: A Yard of Narrative, a Touch of Prophecy* (2012). Considering the last several hundred years of philosophy as background to his forecast for the future of the discipline, Margolis develops the following stackable interpretive components, presented in this order as the book's argument unfolds:

- Favorable discussion of Hegel's criticisms of Kant's Critical Idealism, in which Hegel's humanized approach to knowledge triumphs over Kant's excessively rationalist, persistently dogmatic, and finally, in support of the above criticisms, internally insupportable apriorist methodology.
- 2. Favorable discussion of Peirce's pragmatist (pragmaticist) theory of knowledge, and in particular of Peirce's fallibilistic epistemology and regulative concept of truth as a preferred model for implementing Hegel's criticisms of Kant's apriorism.
- 3. Optimistic prediction about the future course of knowledge theory as involving a Hegelianized pragmatism or pragmatized Hegelianism. A humanistic practical social evolutionary structure is envisioned that in its exercise of an approved knowledge-ascertaining methodology is self-conscious of its fallibility, and of the extent to

which its conception of problems, directions for and methods of inquiry, and all explanatory apparatus, are encultured, and in particular enlanguaged, and hence of the extent to which its truths are relative, its discoveries and conclusions human sociological artifacts.

As I understand the book's divisions, items (1) and (2) are the *yard of narrative* Margolis promises in the subtitle, covering Hegel versus Kant (1), and Peirce (2), respectively. The critical-historical philosophical narrative in (1) and (2) in turn prepares the ground for moment (3), in which Margolis presents an optimistic future direction for a Hegel-humanized Darwininfluenced pragmatic philosophy in his *touch of prophecy*. The following discussion tests the historical assumptions of Margolis's expectations for the future of philosophy. Margolis's prophecy for the future of philosophy is predicated on progress in the directions he would like to see for a Hegel-friendly pragmatism. The future he divines can be at least as adequately if not more advantageously supported by a Kant-friendly theory of knowledge, based on a more sympathetic reading of Kant, than from Hegel's critique of Kant's supposedly unconditional apriorism.

2. German idealist philosophical background to Peirce

Margolis marks the epoch with the temporary ascent of Kant's late eighteenth century transcendental Critical Idealism. Kant's philosophy is cut down in its prime less than a century later, according to Margolis's interpretation, by Hegel's observations about how knowledge is actually acquired by real time investitures of human inquiry.¹ This is not Kant's topic, nor the focus of his philosophical interest in establishing the transcendental synthetic *a priori* foundations of these human cognitive activities.

Kant's epistemology remains answerable in principle to the objection that it may not be sufficiently defeasible and relativistic. But only if it can first be shown that greater defeasibility and relativism are virtues rather than defects of a scientific metaphysics of the sort to which Kant aspires, and only if Kant's philosophy is rightly interpreted as troubled with these defects. In the first instance, someone will have to attack Kant's philosophical aspirations, which we do not find Margolis's Hegel trying to do, and for the sake of which we will need more clearly to understand Kant's purpose in advancing the method and conclusions of his Critical Idealism.

¹ Throughout, I assume Margolis's exposition of Hegel at face value, and I do not question Margolis's interpretation of what Hegel in particular thought or dig into Hegel's texts to ascertain his exact criticisms of Kant.

Hegel seems to accept Kant's objective, at some fundamental level, for which he presents what he considers an improved alternative completion where Kant's philosophy failed to honor its noble ambition. The question for Margolis's exposition is therefore unavoidable, whether Hegel's criticism of Kant as Margolis presents it is sound, fair and accurate in its attribution of philosophical positions to Kant as targets of criticism, and generally whether the objections to Kant's Critical Idealism that Margolis finds in Hegel are just, whether they are about Kant and what Kant teaches and practices in the first place.

If the choice for the philosophically most intriguing dance partner for Peirce in the mid-nineteenth, early twentieth century is a great German thinker of the eighteenth or nineteenth century, then I think that I would break out of the limited choices Margolis considers in favor of Arthur Schopenhauer, first, and then Kant, anyway, before Hegel. Peirce seems to have read Schopenhauer, but not to have taken much documented interest in his metaphysics. Schopenhauer is no ideological or methodological opponent of pragmatism. Quite the contrary, Schopenhauer's dual-aspect metaphysics of the world as Will and representation, and his account of the explanation of all individualizable spacetime phenomena under the fourfold root of the principle of sufficient reason, fit very comfortably within the Peircean scientific model of explanation. Direct philosophical influence does not seem to be the issue for Margolis's polemical design anyway. The question is rather who makes the most promising German predecessor to put together with Peirce in the most promising imaginary collaboration for the future direction of philosophy.

A Kant-friendly version of Margolis's (1)-(2) \rightarrow (3) works as powerfully with Kant in place of Hegel as Peirce's ultimate ideal philosophical collaborator. Margolis describes a trajectory leading up to Peirce in the philosophical background of the previous century. He seeks road-building precedents in predominant currents of thought somehow preparing the way for Peirce. Among the most important movements in philosophy during the period historically this can only mean Germany. Hegel is chosen enthusiastically over Kant, and the interesting question is why. Hegel should not be preferred merely because he is a great German thinker of the nineteenth century who cast a shadow across the Atlantic, and hence also over Peirce. There is no sufficient reason to partner Peirce with Hegel merely for the reason that Hegel seems to have shown that Kant overlooks what in retrospect is the obvious fact that it is human beings who try to know, and that in so doing in real time to the best of their limited abilities they can make mistakes. Margolis in proposing a synthesis of Hegel with Peirce does not exploit any specific features of Hegel's phenomenology of world spirit and its historically inevitable progression toward self-realization. Margolis makes Hegel no more than the boy who saw emperor Kant in his new clothes, hawking an insupportable apriorism that Hegel and Margolis after him must falsely assume Kant intended to be unconditional. On the same grounds, it appears in Margolis's first half-yard of narrative that the defects of Kant's apriorist epistemology and metaphysics are so glaring that anyone could have done history of philosophy the same meager service as Hegel in pointing out this fact. Kant's howling mistakes, if such they are, significantly do not seem to be uniquely accessible to or dependent on any of the rest of Hegel's philosophy. Hegel makes a grandstanding cameo in Margolis's narrative only incidentally from the specific standpoint of his later suitability for passing the torch of humanized epistemology to Peirce's fallibilism later in the nineteenth and early twentieth centuries.

Hegel proves that a certain type of apriorism is unworkable. His attack is directed against an unconditional apriorism that Kant never accepts. The contrary is true. Kant presents the apriorism of Critical Idealism as conditional on specific explicit assumptions. He takes the development of natural science conditionally as given, and asks what must then be true in order for what is given to be possible. It is only by the *must* in the consequent of the above conditional that any necessary conclusions are supposed to enter into Kant's metaphysics. The method of transcendental reasoning stands in stark contrast with that of dogmatic rationalists, therefore, whose conclusions Kant is trying to expose as inadequately supported by reason or experience in developing a correct application of synthetic a priori metaphysics as science. Kant, unlike Descartes, does not argue directly, for example, that there are three categories of substance, mental, physical, and infinite (God), but rather conditionally that if Newton's science is correct, then a Transcendental Aesthetic would need to support the conclusion that space and time are pure forms of intuition, and that the category of causation is also innate, among other transcendental inferences.

This is a very different kind of apriorism from that which Margolis applauds in Hegel's critique of Kant. Kant's purpose is to critically examine the absolute presuppositions of received natural science. His inquiry is conditional at every step, applying the method of transcendental reasoning to uncover the presuppositions of a given natural science. Kant begins for obvious reasons in his time with the System of the World, in Newton's (1687) *Philosophiae Naturalis Principia Mathematica*. Kant proposes to expose the synthetic *a priori* truths in metaphysics that must hold *if* Newton's System of the World is to be possible. Kant does not try to make any unconditionally *a priori* conclusions part of any scientific metaphysics. Kant may finally accept that there are unconditionally *a priori* truths. However, outside of mathematics, he may agree only when the statement is limited to true analytic *a priori* judgments, such as the tautologies of logic, but not to include the true substantive synthetic *a priori* judgments of metaphysics. As a further sign of Kant's conditional apriorism, it is significant to find that Kant is not interested in what would be true *if* Newton's System of the World were *not* taken as given, or if perception were *not* the given experience of discrete objects distributed and causally interacting in space and time, that most linguistically competent perceiving subjects report, and as a complete unconditional apriorism would need to consider.

Kant understood that his conditional synthetic a priori conclusions could get things wrong. He says that others might advance an improved alternative to his Critical Idealism. This is the point where one would think an unconditional apriorism would need to stand on its utmost guard, at the very heart of Kant's scientific philosophical enterprise. Kant insists only that future thinkers not ignore his questions, and the need to provide adequate answers to the problems he has raised. If this is not rhetorical flourish for Kant, who doubtless thinks he has already gotten everything right, Kant thereby acknowledges precisely the kind of fallibilist sensitivity in philosophy generally, in metaphysics and theory of knowledge, and philosophical anthropology, that jointly support a humanization of knowledge. It can be more especially appreciated in comparison with the classical rationalist epoch against which Kant valiantly rebels. It is arguably the same humanization of knowledge that Margolis seems to think comes about in the history of philosophy only with the advent of Hegel's critique of Kant's apriorism. The American Transcendentalists, beginning with Ralph Waldo Emerson, already have Hegel, insofar as some of them were expecting a new age of dawning transcendental consciousness in the universe, much like Hegel's world-soul or Absolute. Kant, on the present interpretation of these contentious matters, is as suitable and in some ways more appropriate than Hegel as the German giant underwriting Peirce's later Brown Decades contributions to American pragmatism.

3. Kantianized pragmatic ideal

The proposal throughout is that Margolis's description of the progress of pragmatism proceeds more convincingly from Kant's theory of knowledge, sympathetically and correctly interpreted, than from Hegel's misdirected critique of Kant's apriorism. By this is not meant that Hegel's humanized epistemic stance is wrong, as against that of Kant's apriorism, but only that Hegel's advocacy of a humanized epistemology is not reasonably considered the polar alternative to Kant that Margolis takes from his reading of Hegel.

The first step along the way will be to distinguish between conditional and unconditional apriorisms. The next is to argue on this basis that Margolis's support of Hegel's objections to Kant apply only to an *unconditional* apriorism to which Kant is not actually committed. Kant accepts instead a modally weaker *conditional* apriorism that stands outside the reach of Hegel's and Margolis's criticisms. Kant additionally voices his support explicitly for philosophical anthropology, and hence for an important place in philosophy for the humanized perspective that for Margolis is supposedly unrepresented until Hegel, rather than and historically in opposition to Kant. Again, the historical basis for this interpretation is not equivocal, but clear in its support of Kant, despite Hegel's mistaken criticisms. Finally, Kant in the *Prolegomena* argues that his conclusions could in principle be overturned by those with better insights into the questions he has found indispensable to metaphysics as a science or *Wissenschaft*, in the sometimes overly generous sense of this German word.

We can arrive on the basis of such a rationale instead at a parallel version of the above argument attributed to Margolis, modified now as $(1') + (2') \rightarrow (3')$. It is modeled on fundamentally the same expository structure, after substituting positive for negative references to Kant, and making Kant rather than Hegel the best philosophical precursor and cross-decades potential intellectual collaborator with Peirce in progressing toward a mature future pragmatism. The alternative application of Margolis's historical explanatory and predictive scheme can then be charted in this explicitly and deliberately parallel Kant-friendly adjusted form:

1'. Favorable discussion of Kant's Critical Idealism, in which Kant's humanized approach to knowledge triumphs over Leibniz's excessively rationalist, persistently dogmatic and finally, in support of the above criticisms, internally insupportable apriorist methodology, in a process started by the Leibnizian, Christian Wolff, in which Kant also plays a role toward a subjective epistemology.

- 2'. Favorable discussion of Peirce's pragmatist (pragmaticist) theory of knowledge, and in particular of Peirce's fallibilistic epistemology and regulative concept of truth as a better model for implementing Kant's *conditional* apriorism, to the improvement of scientific knowledge and philosophical understanding.
- 3'. Optimistic prediction about the future course of knowledge theory as involving a Kantian pragmatism or pragmatic Kantianism, further integrating Darwin's natural selection theory of speciation, as applicable to competition in the social world as in the biological habitat. A humanistic practical social evolutionary structure is envisioned that in its exercise of an approved knowledge-ascertaining methodology is self-conscious of its fallibility, and of the extent to which its conception of problems, directions for and methods of inquiry, and all explanatory apparatus, are encultured, and in particular enlanguaged, and hence of the extent to which its truths are relative, its discoveries and conclusions are human sociological artifacts.

The burden of argument here is not immediately to support the proposition that Kant's Critical Idealism makes a better, but at first only an equally acceptable, partner for Peirce's pragmatism, in comparison with Hegel's anti-Kantian anti-apriorism. Kant applies his method of transcendental reasoning to something given. He does not also make what is given, and his method is not responsible for what it is given. Were that true, then, trivially, by definition, it would *not* be *given*, whether in experience or in working out the metaphysics of a special science whose transcendental grounds Kant's method is supposed to reveal.

If anyone takes issue with what Kant describes as given, say, in the Transcendental Aesthetic, in an immediate moment of vivid perception, then they are always welcome to apply the method to whatever is given to them instead. If their experience is very different than the eighteenth century Enlightenment bourgeois German bachelor philosopher takes his to be, then critics might in principle uncover interestingly different transcendental grounds of their experience in hammering out an alternative to Kant's Critical Idealism. The same thought is considered in more detail below in application to Kuhnian scientific paradigm shifts during periods of conceptual revolution in science, say, from Aristotle to Galileo, Descartes, Leibniz and Newton, Einstein, Heisenberg, and beyond. Not only is Kant's apriorism not dogmatic or excessively rationalistic by virtue of being conditional rather than unconditional, but the method is also plastic in its implications, depending in every instance on the givens to which it is applied, which are generally logically contingent rather than in any sense necessary.

Synthetic a priori judgments in the metaphysics of science are justified by transcendental reasoning, and Kant in demonstrating the method of transcendental reasoning intelligently chooses Newtonian science as the given for analysis. The assumption is that, like anything else theoretical, Newtonian science is a product of human ingenuity. Kant is not going to be shaken by that information, and he knows that his own Critical Idealism is equally a product of human ingenuity. He knows in all these cases then that Critical Idealism is subject to all the frailties, intrusions of correct and incorrect judgments, and the like, to which human ingenuity is prey. The specific features for which Margolis credits Hegel in moving beyond Kantian apriorism are already present in Kant, however invisible they remain to Hegel, once Kant's apriorism is understood as undogmatically conditional rather than dogmatically unconditional. If Hegel has objections to Kant's method, or to Kant's applications of the method, then he would more profitably concentrate his criticism on these supposed failings of Kant's Critical Idealism. Margolis withholds the juicy details, on the basis of which alone we can judge whether and when Hegel scores anything more than a polemical point against Kant.

4. Critique of Margolis's historical narrative and prediction

To proceed it may be worthwhile to suggest, *first*, that Margolis, like Hegel, is too hard on Kant, by virtue of targeting Kant as committed to an unconditional rather than conditional apriorism. Margolis follows Hegel all too easily here, and does not consider the substantial resources and resilience of Kant's Critical Idealism in responding to Hegel's objections. *Second*, I argue that Kant properly understood is a potential *ally* rather than a road-bump in the history of philosophy on its way to the kind of hybrid two-part pragmatism that Margolis forecasts as part of the subject's most promising future possibilities. Margolis's overall picture of the progress of pragmatism can thereafter be regarded as strengthened by the consideration that it holds up in essentials equally well with Kant as with Hegel in his critique of Kant, partnering down the road with Peirce, under the broader cultural impact of Darwin's effectively abductive explanation of the evolution of species by natural selection.²

² The literature on Peirce and Darwin or Darwinism is vast. Recommended in particular, despite their vintage, are Skagestad (1979), and Fisher and Wiener (eds.) (1972).

Since Kant did not have the pleasure of reading Hegel, such a defense can only be considered by commentators judging the matter after the fact. Kant's apriorism is not to be denied, only correctly understood, in this first part of critically evaluating Margolis's Kant-Hegel narrative and Hegelian-Peircean prophecy. More sympathetically interpreted, Kant's Critical Idealism already brings the knowing subject into the explanation of perception, knowledge, and other intentional relations to the given contents of the subject's sensorium. Knowledge of the world is subjectified for Kant, but from beyond that given starting-place, it is transcendental in uncovering the necessary presuppositions of whatever is given. Kant is the real pioneer of human subject-based philosophy of knowledge, already in the previous century at the height of the Deutsche Erklärung. Kant does precisely what the rationalist tradition from Plato on had scorned to do, by bringing explicitly into philosophy the conditions for the subjective experience of what a science assumes as its phenomena to explain, in the same generally humanized way for which Hegel and Margolis rightly but not always relevantly campaign.

Unconditional apriorism, with some justice, is epistemically objectionable on the grounds of being inflexible, impractical, empirically insupportable, and otherwise circular. Kant, however, is no unconditional apriorist, but emphatically adopts an explicitly conditional apriorism. Hegel's and a fortiori Margolis's salvos ostensibly against Kant are widely misaimed insofar as they apply only to an unconditional rather than conditional apriorism. It is not that Kant does not humanize knowledge and Hegel does. Both philosophers humanize knowledge, albeit in different ways. One might not approve of Kant's humanization of knowledge, but Kant cannot be informedly criticized for failing to humanize knowledge in the Transcendental Aesthetic, full stop. Kant, exercising the method of transcendental reasoning, does not assert dogmatically, as Descartes, Leibniz, Newton and others unhesitatingly do, for example, that the world of phenomena exists in an infinitely extended and infinitely divisible rectilinear Euclidean space and time receptacle. Kant says only that *if* the world is as Newton explains it, then these and what follows are among the transcendental synthetic *a priori* truths that must be the case in a comprehensive metaphysics and transcendental grounds of the mathematics needed for Newton's System of the World to stand as a possible description of the phenomenon of physical objects in motion.

Infinite rectilinear space and a unidirectional passage of continuous time are not to be found as such in experience for Kant. Nor does Kant dogmatically produce them as a conjury of pure reason. The very opposite. Kant is among the first thinkers to notice and comment upon the fact that if we make the phenomenological experiment of trying to perceive space or time, looking however hard and with whatever perfect acuity we may, we never perceive space or time themselves, but only physical things distributed and moving in space and time. The explanation of the cognitive status of propositions about space, time, and causation, precisely because they are nonetheless real for falling outside the limits of immediate perceptual experience and pure reason, is nevertheless as philosophically compelling for Kant as it seems to be psychologically irresistible as a problem of inquiry. Kant finds that space and time are subjective preconditions of sense perception, which we could never empirically discover within experience, as we can come upon a new previously uncatalogued species of insect in our field net, if we were not already appropriately equipped with these transcendental necessities of three-dimensional experience. Perception in this respect is like the other passions, which are objective only in an attenuated sense, derived from agreements among different perceiving subjects effecting with greater or less success to communicate the properties of their subjective experiences in a common language to clarify and try to share their impressions.

5. Margolis's anti-Kantian argument

Margolis admits that there is a pragmatic undercurrent in Kant, just as there is in Hegel. This makes a good start, although it is tempered by the consideration that there must be an element of pragmatism in all serious thinkers if pragmatism is true. Margolis nevertheless unmistakably favors Hegelian pragmatism over Kantian, and the reader must wonder why.

The only reasonable answer seems to be that Margolis is convinced by Hegel's criticism of Kant's apriorism. We have seen that if Kant's conditional apriorism is not effectively refuted as failing to yield up the proper synthetic *a priori* conclusions in Kant's applications. If Kant's method of transcendental reasoning is not more directly undermined as somehow godlike or superhuman, then there is no reason why Margolis could not encourage the development of a more Kantian pragmatism as the gateway to Peirce and the prophecized future human-science oriented pragmatic synthesis. Especially is this so because Margolis knows that Peirce read with admiration and instruction Kant's *Critique* virtually every day of his mature philosophically active life, or says he did, anyway. Peirce

describes himself on the evangelical religious analogy as a reconstructed Kantian. We have no comparable declarations from Peirce concerning his reading of Hegel, which we nevertheless know he did. We find no recognition in Peirce himself of a shared dissatisfaction with Kant's apriorism that would have driven him toward Hegel and what Margolis describes as Hegel's anti-Kantian unqualified anti-apriorism.

According to Margolis, Kant got it wrong by adhering to apriorism and transcendentalism in coming to Newton's metaphysical rescue. Hegel called Kant on these untenable assumptions, thus reversing Kant and clearing the field for his brand of post-Kantian idealism involving the unfolding of the Absolute world-soul. Never mind the Absolute world-soul business, Margolis forges ahead by concentrating exclusively on Hegel's negative criticism of Kant. Margolis focuses in particular on what he takes to be Hegel's inaugurating a new era in the history of philosophy, in which subjective conditions of perspective are made a precondition for philosophical investigation, in a way that Kant could never have allowed. Margolis writes in a key passage:

The essential paradox (in Kant), then, is this: that although Kant abandons canonical rationalism's epistemological and metaphysical presumptions (restricting his own reflexive analysis to what is "possible" for humankind alone), he manages to recover the universalism of the rationalists "by other means," by reclaiming it (illicitly) in the work of human reason itself. There you have one way of formulating the essential premise that Kant's transcendentalism cannot possibly supply, that Johann Gottlieb Fichte and Hegel (and, in effect, Peirce and Ernst Cassirer) confirm from entirely different vantages.

Margolis 2012, 90

Kant further limits the Transcendental Aesthetic to the presuppositions of an absolute infinite and rectilinear Euclidean geometry of space and time as a playing field for physical projectiles under the applied mathematical principles of a Newtonian kinematics. Kant's reliance on Newton as a starting place for transcendental reasoning in the *Critique* is supposed to be further evidence of Kant's impacted way of thinking. It is the iron grip of apriorism that was historically broken only by Hegel's rejection of the transcendentalism of Kant's Critical Idealism. Here is reason, then, briefly to take up the relation of Kant's reliance on Newton.

Kant's commitment to Newton's presuppositions for the experience of a world of moving objects in infinitely extended and divisible rectilinear space and orthogonal time, as the basis for transcendental reasoning as to what must be true in order for the experiential given to be logically possible, is sometimes cited as proof that Kant's methodology was too hide-bound to adapt to changing scientific discoveries and commitments to new facts. The shift from Euclidean to non-Euclidean geometries in physics and from absolute space and absolute time to relative spacetime in Einstein's relativity physics after Kant's era is mentioned in this connection as evidence that Kant's methodology itself must be faulty. Faulty in another way Kant's method of transcendental reasoning may yet be, but it does not appear that Kant himself would need to have been troubled by these scientific "paradigm shifts", as Thomas Kuhn would later call them in *The Structure of Scientific Revolutions* (1962). Kant, predictably, could simply apply the method of transcendental reasoning to these new givens instead, as presuppositions of an evolved science, rather than to the presuppositions of an outmoded Newtonian physics.

Before turning to the textual evidence in Kant's writings to support this interpretation, consider only a mostly unasked but vitally important question in criticism of Kant's procedure in the Critique of Pure Reason. Imagine that Kant is called upon to apply the method of transcendental reasoning to Einstein's instead of Newton's physics, given the presuppositions of each of these alternatively relativistic versus absolutistic views of space and time. Kant, in this fantasy scenario, now asks the same questions of Einstein's worldview that he had previously asked of Newton's. How different, then, if different at all, are Kant's conclusions concerning the Transcendental Aesthetic? Would not Kant, we ask rhetorically, equally conclude within the non-Euclidean relativistic framework of the new science that spacetime is not empirically discovered? Einstein's revolution in physics, relativizing physical properties to moving and inertial frames of observers of physical phenomena, in preference to Newton's fixed space and time universalism, only makes Kant's general observations even more poignantly and persuasively.

Kant does not maintain that space and time are infinite in Euclidean rectilinear extent and divisibility. He takes it conditionally instead as a given for the method of transcendental reasoning. He does the same for a very different given, in proposing his (1785) *Grundlegung zur Metaphysik der Sitten*. There Kant's method of transcendental reasoning uncovers the transcendental ground underlying the possibility of moral responsibility judgments as given. Give, start out with, a different given, and the same method of transcendental reasoning produces different consequences, as does any proper method. Since we do not expect the same

transcendental ground to be uncovered by Kant's method of transcendental reasoning in the case of physics as in the case of axiology and moral thinking more generally, why should we not anticipate that Kant's method of transcendental reasoning applied to Einsteinian rather than Newtonian physics could also potentially yield different transcendental consequences, and hence that Kant's Critical Idealism is conditional rather than dogmatic.

Kant might be expected to conclude once again, if that is what the method reveals, that space and time considered as spacetime is a pure form of intuition, albeit non-Euclidean and relativistic rather than Euclidean and absolute. Kant might after all draw something like this inference. It is no mark against Kant's humanized method, especially as compared with his immediate philosophical antecedents among the classical rationalists, if it makes no difference to the general conclusions of the Transcendental Aesthetic whether one takes as given a Newtonian or more modern or contemporary starting place in the physical sciences for an exercise of transcendental reasoning. Kant's transcendental method is not to blame for the incongruence of his original Newton-based conclusions with developments in recent science and the changing presuppositions in the scientific conceptual landscape against its metaphysical background. The method of transcendental reasoning is applied in these instances to a science in which commitments to Euclidean or non-Euclidean geometry are part of the given. Transcendental reasoning is responsible for the synthetic a priori conclusions it advances with respect to an assumed given, but it is not responsible for the given itself. Given what is given, transcendental reasoning asks, what must be true for the given to be possible? The choice of a given in applying the method of transcendental reasoning is a matter of philosophical interest. Kant primarily chooses then prevalent Newtonian physics and moral judgments as the givens of two of his most significant exercises of the method of transcendental reasoning.

Kant's method and the synthetic *a priori* propositions of his Critical Idealism, accordingly, cannot reasonably be blamed for the fact that a Euclidean infinitary applied mathematics is given along with the science whose presuppositions are chosen to be uncovered by the transcendental reasoning of a scientific metaphysics. Those assumptions are included in this instance in the Newton package that Kant's method takes as given in the first *Critique*. A different package, different in the right sorts of ways, could in principle support a different set of synthetic *a priori* judgments, although it would not always need to, depending conditionally on the

sciences taken as given to which the method of transcendental reasoning is applied.

6. Kant's Prolegomena conditionalization of the a priori

The Kant that Margolis presents is not familiar. Perhaps Margolis, and possibly even Hegel as Margolis reads Hegel, have misjudged Kant and withheld from him sufficient credit for the flexibility of his method and adaptability to precisely the kinds of considerations that Margolis sees arriving on the philosophical scene only with the rise of Hegelianism, and especially in Hegel's criticism of Kant's apriorism. These are features that may have been concealed virtues of Kant's methodology all along. Margolis concludes:

In this way, Hegel summarily rejects Kant's apriorism, though without disowning its newfound legitimative function (if suitably revised). At the same time, Hegel attempts to redefine the inchoate paradigm he finds in Kant, which Kant's own transcendental "prototype" disables. Implicitly, Hegel deflates all the needless conceptual extravagances of the entire Idealist company (himself included),who (following Fichte and Friedrich von Schelling) correctly understand the intolerable muddle of remaining at the point of Kant's uncompromising subjectivism. Margolis 2012, 26

Kant provides the essential clue to the more charitable interpretation, not in the first *Critique*, where he later tells us his method needs to be synthetic, but in the more analytic metaphilosophical (1783) *Prolegomena* to Any Future Metaphysics that Can Come Forth as Science. There Kant writes:

I offer here such a plan which is sketched out after an analytic method, while the *Critique* itself had to be executed in the synthetical style, in order that the science may present all its articulations, as the structure of a peculiar cognitive faculty, in their natural combination. But should any reader find this plan, which I publish as the *Prolegomena to Any Future Metaphysics*, still obscure, let him consider that not everyone is bound to study metaphysics... Kant 1977, 8

[T]hat many minds succeed very well in the exact and even in deep sciences more closely allied to intuition while they cannot succeed in investigations dealing exclusively with abstract concepts. In such cases men should apply their talents to other subjects.

Kant 1977, 8-9

Then, most revealingly:

But he who undertakes to judge or, still more, to construct a system of metaphysics must satisfy the demands here made, either by adopting my solution or by thoroughly refuting it and substituting another. Kant 1977, 9

Kant in this key passage admits that he would be satisfied in principle were his Critical Idealism to be refuted, and another synthetic *a priori* metaphysics-cum-epistemology offered in its place. Kant is sufficiently gratified even in such an event that he has in any case set the terms by which metaphysics can proceed thereafter, *if* metaphysics is to be an epistemically respectable *Wissenschaft*, rather than just an imaginative literary exercise. Kant is fully prepared to be reversed in the conclusions of his constructive efforts to present 'a system of metaphysics', if his metaphysics is thoroughly refuted and another stronger and a better system substituted in its place.

Kant's only fixed expectation is that his Critical Idealism be replaced by something superior within the Prolegomena framework of meta-theoretical metaphilosophical demands to be satisfied by metaphysics as a science. Scientific metaphysics could be different for Kant than it was in his time, as he knows it is different from what it has been in the past. Science itself can evolve, and in authoritative judgment, improve. However, what it means for metaphysics to be a science Kant thinks must remain unalterable. Naturally, Kant must stand for something. It is the choice that matters. Kant does not try to put his foot down about how many substances there are, or whether space and time are Euclidean rectilinear infinitely extensive and divisible physical dimensions. Kant can envision his metaphysical system being replaced, and he presumably knows that it would need to do so if science changed significantly in the right sort of ways. Kant will be content, or so he says, provided that his successor supplanting Critical Idealism better meets the requirements for any metaphysics as science that the Prolegomena prescribes. From this chain of interpretations, it seems reasonable to conclude once again that Kant is not rigidly bound to any of the contentful details of any of his theoretical philosophy. He does not practice an unconditional apriorism, amounting to the dogmas of classical rationalism he rejects. His requirement is only the method and aggregate of meta-theoretical demands to be fulfilled by any metaphysics as science, as he characterizes them in Critique of Pure Reason and the Prolegomena.

Historically speaking, Newton is not the dispensable basis for Kant's Transcendental Aesthetic. Kant is obligated by the exercise of transcen-

dental reasoning in its historical-cultural context to take Newton as his starting place. Had Kant been active instead in 1930, he most probably would have inquired instead about the absolute metaphysical presuppositions of Einstein's rather than Newton's physics. Kant is nevertheless not wedded by his method to any of Newton's empirically unsupportable absolute presuppositions about space, time, or even causality. There is no reason within Critical Idealism for Kant to deny that transcendentalism is achieved from, by and for the human encultured, enlanguaged, perspective. That is precisely where the given is to be found. Kant's starting place is always the perceiving, thinking, morally and aesthetically judging subject, the moments of consciousness that the method sometimes requires him to examine. Whether or not he officially renounces specifically Kantian transcendentalism, Hegel in many places does the same thing. The method by now is in our philosophical blood. It may always have been there if Kant's particular style of argument by contradiction or *reductio ad* absurdum is as pervasive as appears, although many philosophers do not know or do not want to acknowledge that it is Kantian. The point is that such a method is explicit in Kant, where it depends on a rigorous argument structure for verifying the necessary existence of a transcendental ground in order for something given to be possible.

Margolis acknowledges that Hegel does not get everything exactly right. Else there would be no need for a contemporary or still future grand synthesis of Hegel and Peircean pragmatism to complete Margolis's narrative arc (Margolis 2012, especially 36-41; 48-49). Kant is not the dogmatist of any single predetermined choice of supposedly logically necessary unconditional *a priori* conclusions. His thought throughout, as repeatedly emphasized, is an explicitly and deliberately mannered conditional apriorism: If the best science teaches p, he proposes, then the absolute presuppositions of *p* are revealed by transcendental reasoning as necessary a priori truths required by the given science in order for proposition *p*, not yet to be true, but merely logically possible. Nothing delivers these modalities except methods of argument as powerful as *reductio*, and that is how Kant's arguments proceed. The method of transcendental reasoning allows a practitioner to choose any historically presented given, and consider what must be true in order for the given to be possible by systematically reviewing the relevant *reductios* that might be made against candidate transcendental grounds. Only what is logically necessary leads to a logical contradiction with the assumption of anything given in a reductio ad absurdum inference structure.

The Transcendental Aesthetic and Transcendental Analytic of Kant's Critical Idealism, are conditioned in all their conclusions by their givens. If Newton's science is given, you might arrive at Kant's *Critique*. Choose another science, say, Einstein's, and Kant or a later Kantian may or may not return the same exact conclusions in an updated *Critique*+. Kant or protégé can now say that non-Euclidean spacetime is a pure form of intuition. Then the original conclusions based on Newton's Euclidean geometrical physics as given and articulated in Kant's first *Critique* would continue to remain the ideal model in addressing the same kinds of questions for new theories as science progresses, at least perhaps for the conceivable future. The key words remain 'condition', 'conditional' and 'conditioned'.

Do we need a different Transcendental Aesthetic for Einstein as for Newton? Who has seriously undertaken the task of answering this question on Kant's behalf? What is remarkable in part about Kant's Critical Idealism, is that it seems a necessary intellectual task to be undertaken whenever there is what in the days after Kuhn is often called a significant scientific paradigm shift. Science may live through that sort of conceptual reorientation in transitioning from Newtonian to Einsteinian physics to quantum mechanics and relativistic quantum theory. If our conception of physical reality departs further and further from the Newtonian, then eventually, if we are Kantians, we must consider rewriting Kant's Critique, as with correct foresight he surely would have wanted, regardless of the outcome for metaphysics in relation to Kant's first efforts. One might say that this is what Hegel tries to do, in order to refashion Kant, before a new science is in place. Whether or not anyone does so, the fact that some may feel the need for a new Critical Idealism is in that sense already a triumph of what and how Kant hoped to re-instate metaphysics as a genuine science. Kant need not expect an evolved Critical Idealism to stand or fall with the historical acceptance of any particular science. Kant's transcendental reasoning is conditioned in its conclusions in precisely the evolving, pragmatically sensitive way that Margolis holds out only for the latter Peircean inheritors of Hegel's insights about what are portrayed as Kant's insupportable apriorism.

Since, as we have seen, the mechanism of Kant's apriorism as implemented by the method of transcendental reasoning is nothing other than a particular style of *reductio* inference, does Hegel propose to dismiss *reductio* reasoning generally on the grounds that it is also too inhumanistic? That arguing for anything by *reductio* is inherently objectionable because it is excessively rationalistic and *a priori*? It is hard to see where Hegel is

supposed to get his hold on Kant, the latter of whom is considerably more subtle than his erstwhile critic. What does Hegel have to complain about? Kant begins where Hegel and Margolis want to begin, with what is given to real culturally contexted thinking subjects. Is it a misguided project to ask what must be true in order for something given to be possible? Is it inappropriate to offer *reductio* reasoning in support of a candidate transcendental ground of a philosophically interesting given? Are there problems with this manner of reasoning in any of its particular applications in Kant's inquiries? If so, we always have Kant's open invitation to do a better job, to choose a different given or to discover different transcendental grounds than those his *reductios* have revealed. If we are unable to refute the reasonableness of asking what must be true in order for something given to be possible, however, if we are unable to refute the method of *reductio* reasoning in general terms, or as an instrument for discovering synthetic a priori (the a priori has to come from somewhere) transcendental grounds of any particular given, and if we are unwilling or unable to produce a plausible alternative to Kant's Critical Idealism, then we are not criticizing Critical Idealism, but merely venting frustration at the inability to uncouple Kant's wagons.

If we think of Kant as truly making metaphysics a science that takes natural philosophy as found for its starting point in transcendental reasoning, then, had Kant lived to see Einstein's relativism triumph over Newton's absolutism in physics, and with it Reimannian non-Euclidean geometry over Euclidean geometry in the applied mathematics of relative physical spacetime, it remains an open, scientific, question as to what a neo-Kantian Transcendental Aesthetic would look like, conditional upon the details of Einstein rather than Newton to which the method of transcendental reasoning is then applied. By this route, we may or may not reach the same general Kantian conclusion that space and time are not objective or discovered within real-time moments in the experience of objects-in Einstein's world as much as in Newton's. If spacetime turns out to be a synthesis of transcendent, subjective pure forms of intuition, regardless of whether space and time are absolute, Euclidean rectangular, or curvilinear, or topologically open or closed surface, finite or infinite in divisibility and extent, as applied mathematical dimensions in which phenomena occur, and in which science must seek to explain them, or relative and non-Euclidean, Riemannian, or something yet again. If and when respectable science in the future were to take another dramatic turn, then certain parts of Kant's Critical Idealism might in principle stand in

need of an upgrade, as Kant understands. This is then a Collingwoodian interpretation of Kant's project in the *Critique of Pure Reason* and *Prolegomena to Any Future Metaphysics That Can Come Forth as Science*, based on Collingwood's *An Essay on Metaphysics* (1940). Collingwood presents what he takes to be a Kantian model for metaphysics as the uncovering of any discipline's absolute presuppositions. The present interpretation reads this purpose back through Collingwood into Kant as its independently confirmable source of inspiration.

Kant understands his project as in some sense a modernized Enlightenment version of the kind of metaphysical service Thomas Aquinas had already rendered to Aristotle's ancient Greek science. Kant does approximately the same kind of thing, but with enormous improvements and avoidances of Aristotelian naiveties, in light of Newton's then dominant geometrical analogical System of the World. Since Kant knew that Aristotle could be supplanted by Descartes, and Descartes by Newton, he was presumably capable of understanding that Newton could be supplanted by yet another, later and still more perfected science of physics. Kant's transcendental method is designed to apply conditionally to any such development, for which it can wait indefinitely patiently as science takes its course alongside other cultural phenomena. As such, Kant's Critical Idealism can hardly be charitably described as anything but humanized, contextualized, enlanguaged and encultured, in precisely the way that Margolis sees as the valuable contribution to philosophy only in the future unfolding of pragmatism. Kant's Critical Idealism tracks science in arriving conditionally at synthetic *a priori* judgments of metaphysics that result when the method of transcendental reasoning takes something inquiry-appropriate as its given.

Kant is moreover the progenitor of *philosophical anthropology*, giving it the name *pragmatischer Anthropologie* for the first time in German in his (1798) book, *Anthropologie*. As is often the case, Kant is not the sole inventor, but can number among his predecessors Jean-Jacques Rousseau, David Hume, Etienne de Condillac and even Voltaire. Kant no doubt believes that in the first *Critique* he has understood everything exactly right. His conclusions nevertheless remain only conditional on the starting places with which his inquiry expressly begins, and on which his assumptions epistemically depend. If, as *Prolegomena* allows, Kant imagines someone else to undertake the investigation more satisfactorily, more penetratingly, perhaps, albeit along the same lines that he believes himself to have first properly identified, then the synthetic *a priori* judgments systematized in and as his Critical Idealism cannot consistently be considered dogmatic or excessively rationalistic. If Kant is not so rigidly bound, as Margolis's Hegel seems to believe, and if we can consider Kant's method being applied to later developments in the natural sciences, uncovering their metaphysics of absolute or transcendental presuppositions by means of transcendental reasoning, then we need not excessively admire Hegel's criticism of Kant's philosophy. Kant's method and framework of metatheoretical demands generally are either irrelevant to, or can fully accommodate, Hegel's objections as represented by Margolis.

These points of interpretation are emphasized, not because one imagines Margolis does not know his Kant. The hope is rather that in seeing Kant's philosophical virtues and advantages, portrayed in this way, especially for Margolis's purposes, presented in support of an alternative historical-philosophical narrative, Margolis might soften simultaneously his opposition to Kant and advocacy of Hegel, as the best predecessor German idealist philosopher to partner later synthetically imaginatively with Peirce. Why, however, as philosophy moves forward into the new millennium should we expect it to take any particular direction? Why should philosophy, as it enters new territory, with new topics and expertise, not remain joyously splintered? Philosophy thereby does what philosophy does best, what makes it irreplaceable by any science or nonphilosophical belief system, which is to pilot the free exploration of conceptual space. Do we want to know what are the real options for the future of philosophy, and how can we assess their advantages and disadvantages in choosing a good course? Margolis provides an answer, but no argument to suppose that his sense of things, to be taken seriously and respectfully, is the only or even the best answer. Surely there are possibilities worth considering that do not include Peirce as part of the picture at all, and others built on Peirce in very different ways, that do not include either Hegel or Kant as part of their prominent philosophical foreground. Margolis, for all the sensitivity of his thumb on the throbbing pulse of philosophical trends, in the end offers only a tunnel vision view of its future. Where there are so many unconsidered alternative possibilities that we would need to compare in order to pretend to know the course philosophy will take, we can accept Margolis's prophecy for the ongoing direction of philosophy only if we recognize that there are many other tunnels through which a very different but in many instances equally compelling glimpse of the future of philosophy can also be viewed. Some of these imaginable futures might even be found equally appealing in comparison with any that synthesize

or transition ideologically or methodologically historically from Hegel in particular to Peirce.

7. Methodological concerns in Margolis's inquiry

Margolis, finally, owes further clarification as to why following the past as a clue to the future in philosophy has any expectation of leading to a probable or even plausible truth about philosophy's next great step. Why should it do so?

It is surprising to find Margolis relying on the interpreted past as a model by which to predict the future course of philosophy, without first trying to justify the category of explanations it is supposed to afford. Margolis, of all recent writers on topics in ontology, has repeatedly demonstrated what itself may be a cultivated, certainly an educated, sensitivity to the cultural contexts in which philosophical concepts are advanced, distinctions made, principles articulated, defended and applied, arguments constructed and considered, and inferences drawn.

Why, then, does Margolis turn to the nineteenth century, with its astonishingly different social and material culture, not to mention intellectual climate, for an explanation of what is likely to occur in the history of philosophy as we enter more fully into a new millennium and look to the horizon for the future? Does the same model explain the emergence of empiricism out of rationalism in the transition from seventeenth to eighteenth century philosophy? Does it explain the classical opposition of Plato and Aristotle over twenty years of Aristotle's association with the ancient Academy, through the course of what must have often been an entertaining student and teacher dialectical interaction? Why not say that we are still living in the more powerful synthesis of Plato and Aristotle than anything to be made up out of Hegel and Peirce? Why not describe contemporary analytic philosophy as a kind of grand synthesis of Plato's rationalism in philosophy of logic and mathematics, and Aristotle's empiricism, functionalism, and physical substance realism, in a dualistic ontology of physically real and transcendentally ideal entities? Real atomic particles, Aristotelian primary substances, are posited, on the one hand, allowing though not necessitating a naïve realism in the applied epistemology of empirical science. Platonic transcendentally ideal logical and mathematical entities, propositions, properties, and the like, are included without a blush on the other, claiming the modality of an appropriate necessity that Kant generally reserves for the *a priori*. If the existence of

these entities, including propositions, are in any sense necessary, then why not should the apriorism watchdogs be concerned if the synthetic *a priori* propositions of Kant's Critical Idealism lay title to the same necessity?

Nor need analytic philosophy automatically get swallowed up in a ravenous Kantian pragmatism, when analytic philosophers move to adopt a Kant-based pragmatic stance. There can be a Kantian pragmatic analytic philosophy, and there can be a Kantian analytic pragmatism. The two are no more logically exclusive than are the categories of realist analytic and analytic realist, or idealist and constructivist philosophy, or the like. Ludwig Wittgenstein is already a prime example of a rigorous Kantian pragmatic analytic thinker, both in Tractatus Logico-Philosophicus and in the posthumous writings, beginning with the Blue and Brown Books and Philosophical Investigations. Analytic philosophy continues to evolve a distinctive synthesis. It stands defiant against detractors who would like to depict it as being caught hopelessly on the thesis or antithesis side of philosophical deadlock. There is on balance no further reason in support of Margolis's intuitive sense of things to suppose that analytic philosophy cannot transform itself and emerge in this centuries-long competition in the marketplace of ideas, as contributing to another more significant and philosophically attractive future Kantian-[Darwinian]-Peircean synthesis or further elaboration of the more eminent, virtually irresistible, Platonic-Aristotelian synthesis.3

References

- Collingwood, R.G. (1940). *An Essay on Metaphysics*. Oxford: The Clarendon Press. Revised edition 1998, with an introduction by Rex Martin. Oxford: Oxford University Press.
- Darwin, Charles (1859). On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life. 6th edition, The Origin of Species. London: John Murray.
- Fischer, John and Wiener, Philip P. (eds). (1972). *Evolution and the Founders of Pragmatism.* Philadelphia: University of Pennsylvania Press.
- Jacquette, Dale (1986a). "Margolis on Emergence and Embodiment". *The Journal* of Aesthetics and Art Criticism 44, 257–61.

³ A previous version of this essay was read at the Conference on The Metaphysics of Culture—The Philosophy of Joseph Margolis, Helsinki Collegium of Advanced Studies, Helsinki, Finland, 20-1 May 2013. I am grateful to participants, and especially to Joe, for questions and lively discussion from which I have benefited in preparing this revision.

- Jacquette, Dale (1986b). "Émergence et incorporation selon Margolis". *Philosophiques* 13, 53–63 (French translation of Jacquette 1986a).
- Jacquette, Dale (1994). "The Type-Token Distinction in Margolis's Aesthetics". *The Journal of Aesthetics and Art Criticism* 52, 299–307.
- Jacquette, Dale (1999). "Margolis and the Metaphysics of Culture", in: M. Krausz and R. Shusterman (eds.), *Interpretation, Relativism, and the Metaphysics of Culture: Themes in the Philosophy of Joseph Margolis*, (pp. 225–61). Amherst, New York: Humanity Books.
- Jacquette, Dale (2006). "Intention, Meaning, and Substance in the Phenomenology of Abstract Painting". *The British Journal of Aesthetics*, 46, 38–58.
- Jacquette, Dale (2011a). "Evolutionary Emergence of Intentionality and Imagination", in: C. Taliaferro and J. Evans (eds.), A New Book of Nature: Philosophical Essays on the Imagination, Nature and God (pp. 67–90. Oxford: Oxford University Press.
- Jacquette, Dale (2011b). "Intentionality as a Conceptually Primitive Relation". *Acta Analytica* 26, 15–35.
- Jacquette, Dale (2014). "Art, Expression, Perception, and Intentionality". *Journal of Aesthetics and Phenomenology* 1:1, 63–90.
- Kant, Immanuel (1965) [1929]. *Critique of Pure Reason. Kritik der reinen Vernunft* (1781–87) by Norman Kemp Smith. New York: St. Martin's Press.
- Kant, Immanuel (1977) [1783]. Prolegomena to Any Future Metaphysics that Will be Able to Come Forward as Science. Translated by James W. Ellington. 2nd Edition. Indianapolis: Hackett Publishing Company, Inc.
- Kuhn, Thomas (1962). *The Structure of Scientific Revolutions*. Chicago: University of Chicago Press.
- Margolis, Joseph (1959). "The Identity of a Work of Art". Mind 68, 34-50.
- Margolis, Joseph (1965). *The Language of Art and Art Criticism: Analytic Questions in Aesthetics.* Detroit: Wayne State University Press.
- Margolis, Joseph (1974). "Works of Art as Physically Embodied and Culturally Emergent Entities". *The British Journal of Aesthetics* 14, 187–96.
- Margolis, Joseph (1977). "The Ontological Peculiarity of Works of Art". *The Journal* of Aesthetics and Art Criticism 36, 45–50.
- Margolis, Joseph (1978). *Persons and Minds: The Prospects of Nonreductive Materialism* (Boston Studies in the Philosophy of Science, 57). Dordrecht: D. Reidel Publishing Company.
- Margolis, Joseph (1979). "A Strategy for a Philosophy of Art". *The Journal of Aesthetics and Art Criticism* 37, 445–54.
- Margolis, Joseph (1980). Art and Philosophy. Atlantic Highlands: Humanities Press.
- Margolis, Joseph (1984a). *Culture and Cultural Entities: Toward a New Unity of Science*. Dordrecht and Boston: D. Reidel Publishing Company.
- Margolis, Joseph (1984b). *Philosophy of Psychology*. Englewood Cliffs: Prentice Hall, Inc.

- Margolis, Joseph (1984c). 'Artworks and the History of Production'. *Communication and Cognition* 17, 89–106.
- Margolis, Joseph (1986). 'Constraints on the Metaphysics of Culture'. *The Review* of *Metaphysics*, 39, 653–73.
- Margolis, Joseph (1999). What, After All, Is a Work of Art? Lectures in the Philosophy of Art. University Park: Penn State Press.
- Margolis, Joseph (2012). *Pragmatism Ascendent: A Yard of Narrative, a Touch of Prophecy*. Palo Alto: Stanford University Press.
- Midtgarden, Torjus (2007). "Peirce's Epistemology and its Kantian Legacy: Exegetic and Systematic Considerations". *Journal of the History of Philosophy* 45, 577–601.
- Newton, Isaac (1687). *PhilosophiæNaturalis Principia Mathematica*. 2nd edition. *Sir Isaac Newton's Mathematical Principles of Natural Philosophy and his System of the World*. Translated from Latin to English by Andrew Mott (1729); revised and edited by Florian Cajori (1913). New York: Greenwood Press, 1969.
- Peirce, C.S. (1877). "The Fixation of Belief". Popular Science Monthly 12, 1–15.
- Peirce, C. S. (1981-2000). Writings of Charles S. Peirce: A Chronological Edition. Peirce Edition Project (editors). 6 volumes. Bloomington: Indiana University Press.
- Putnam, Hilary (1971). *Philosophy of Logic*. London: Routledge. Routledge Revival editions, 2010.
- Quine, W. V. (1960). Word and Object. Cambridge: The MIT Press.
- Skagestad, Peter (1979). "C. S. Peirce on Biological Evolution and Scientific Progress". Synthese 41, 85–114.