Book Reviews

The Relevance of Charles Peirce
Eugene Freeman, editor
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No reader of *The Relevance of Charles Peirce* will fail to be impressed by what Max Fisch calls "The Range of Peirce's Relevance."[1] This exciting volume invites scholars in many of the fields of contemporary philosophy to see what Peirce has to contribute to their methods and their conclusions. Articles in the collection offer a more divided interpretation, however, of the meaning of Peirce's relevance. For some, Peirce's relevance is "extensive": like a Renaissance genius, his intellect surveys the universe of human expression, and, by Jove, he has something smart to say about everything! The authors of these articles show us how Peirce enriches the various, established disciplines of philosophy of interest to them, pointing out both the significance and the limitations of his contribution. For others, Peirce's relevance is "intensive": like some philosophic physician, Peirce struggles to cure a malady that infects the Cartesian-Kantian tradition to which he ultimately belongs. Selecting particular instances of this struggle, the authors of these articles try to show how Peirce challenges accepted practices in contemporary philosophy, succeeding in his critical task without necessarily offering unproblematic alternatives.

As a whole, the collection successfully promotes the first interpretation of Peirce's relevance, but fails to give sufficient attention to the second. Perhaps the failure is prudent. For the sake of attracting interest among the uninitiated, *The Relevance of Charles Peirce* offers the most Peirce with the least offense. For that, we are indebted to Eugene Freeman, editor of the collection, as well as of *The Monist Library of Philosophy*. Freeman first proposed devoting two issues of *The Monist* to "Peirce's Relevance" (Vol. 63, No. 3, and Vol. 65, No. 2), then did us the service of publishing the present volume by binding *The Monist* articles together with five other already published pieces.

Writing this review for the already initiated, I'll devote less attention to Peirce's genius (amply advertised in Fisch's introductory essay) and more to his curative struggles. As we'll see, this struggle leads him to criticize both poles of the philosophic dialectic endemic to the Cartesian-Kantian tradition. Reviewing selected essays from the collection, I'll argue that the lingering problems they disclose in Peirce's philosophy reflect his inability to remove himself from the environment of epistemological uncertainty which spawned that tradition.

The essays in the collection appear in apparently arbitrary order. Roughly following the order of Peirce's 1902-03 classification of the sciences,[2] I'll review them according to their contributions, respectively, to mathematics, phenomenology, the logic of science and metaphysics.

The Temptations of Mathematical Foundationalism

According to Peirce's mature, or post-1905, pragmatism, philosophic foundationalism is a response to over-generalized epistemological uncertainty. Convinced that our uncertainties cannot be motivated by particular, and therefore resolvable, behavioral errors, the foundationalist assumes they are motivated by general inadequacies in our inherited traditions of knowledge. To repair our uncertainties, therefore, the foundationalist searches for norms of reasoning which are independent of those traditions: locating them either in our manner of perceiving the world, or in our manner of interpreting what those perceptions mean. Foundationalists are, therefore, of two kinds: intuitionists, who search for means of constructing epistemological criteria; and logicists, who seek to discolse the rules of reasoning that define criteria. For some Peirce scholars, Peirce's philosophy of mathematics exposes the shortcomings of logicism; for others, it seems to recommend intuitionism as an alternative.

To expose the shortcoming of logicism, Jaako Hintikka argues that scholars need to pay more attention to "C. S. Peirce's First Real Discovery":

> that there are two kinds of necessary reasoning, which I call
> the Corollarial and the Theorematic.[3]

In corollarial deduction, our imagining certain premises compels us to perceive certain conclusions. In theorematic deduction, we have to experiment with our image of the premises in order to proceed to the conclusions of the corollarial deduction. Modeled on Euclid's theory of the proposition, Peirce's distinction was "something of a commonplace" in his time (p. 109). Geometers recognized that, in order to demonstrate certain theorems, they had to perform constructions not explicitly dictated by the general statement of the theorem. "Peirce's brilliant insight is that this geometrical distinction can be generalized to *all deductive reasoning*" (p. 109). It suggests that not all geometrical theorems can be formalized or, in other words, that symbolic logicians need to recognize a form of deduction" in which we must envisage other individuals than those needed to instantiate the premise of the argument" (p. 100).

Yet, says Hintikka,

> there is a strong tradition in the philosophy of logic and mathematics (. . . the mainstream of modern logic during the whole crucial period from Frege to Herbrand . . .) which denies the possibility of any general logical distinction which like Peirce's turns on the concept of construction. (pp. 109, 115)

This denial, he continues, is no longer tenable. Recent developments in model-theoretic approaches to logic (from Beth to Hintikka to Rentala) have begun to vindicate and supplement Peirce's approach: recognizing the iconic or intuitive element in necessary reasoning.

Does this mean, on the other hand, that Peirce recommends an intuitionism? Followed by Karl-Otto Apel,[4] Charles Dougherty seems to think so. In "Peirce's Phenomenological Defense of Deduction," Dougherty argues that, for Peirce, all mathematical reasoning is diagrammatic (or iconizing) and, therefore, all necessary reasoning is diagrammatic. From this he concludes that the products of mathematical reasoning "ground the normative sciences" (p. 176).

I think we have a problem here. According to Justus Buchler's analysis of 1939,[5] Dougherty may be reducing Peirce's theory to a kind of in-

tuitionism by overlooking the difference between the diagrams with which mathematicians initiate their inquiry and the "rules of trans- formation" they employ to draw generalizations from those diagrams. Peirce argues that mathematicians first construct diagrams according to given, abstract precepts.[6]   These diagrams are hypothetical, which means they substitute a class of icons for the precept: reducing the amount of information we have about the precept, in the very act of offering us some semantically meaningful way of identifying it.   The mathematicians then observe regularities among the class of diagrams constructed, employing rules of interpretation irreducible to the rules of construction.[7]   Apparently ignoring this irreducibility, and over- looking the loss of information entailed in construction, Dougherty is able to over-estimate the strength of the pre-logical aspect of math- ematical or necessary reasoning.   This, I believe, enables him to inter- pret Peirce as a transcendentalist whose "phenomenological method achieves for our understanding of deductive logic a result remarkably similar to that of Husserl" (pp. 175-6).

In defense of his argument, Dougherty could cite Peirce's own work. For some of Peirce's most carefully studied texts — "The Lectures on Pragmatism," "The Minute Logic," and "The Lowell Lectures of 1903" — express his own foundationalist attempt to find an alternative to the Cartesian epistemology.[8]   I'll label this attempt Peirce's "normative inquiry."   In it, in Cartesian fashion, he sets out to discover an ultimate norm for logical inquiry, while at the same time hoping to avoid both Cartesian intuitionism and the logicist alternative.   To carry out the project, Peirce unwittingly pursues two parallel but contradictory forms of foundational reduction.   In the first, he tries to locate the ultimate norm of inquiry in the conditions of doubt which motivate inquiry. This leads him to locate the ultimate norm, progressively, in logic, in voluntary behavior, in ethical choice, then, in logical goodness defined as strong argumentation.   He claims this argumentation is grounded in perceptual judgments of experience.   In the second reduction, he tries to locate the ultimate norm in the predispositions to act which inquiry recommends.   This leads him to locate the norm, progressively, in logic, ethics, aesthetics, then, in logical goodness defined as valid argumentation, or mathematical reasoning.   He claims this reasoning is

grounded in perceptual judgments of our inner purposes. The whole project ended when Peirce discovered (a) that neither form of inquiry provides an adequate account of itself; and (b) that each appeals, ultimately, to the same norm: the purposiveness which is disclosed through our perceptual judgments. In its conclusion, the normative inquiry simply hypostatizes its premise: the hope that, without appealing to traditional epistemological authorities, we may have immediate access to means of representing the purposiveness of the outside world.

In the apparently non-foundational inquiries he pursued after 1903, Peirce revises his theory of perceptual judgment.[9] He says these judgments are always and exclusively indices of our inner purposes, iconized either as abstract precepts or as precepts of action. In mathematical reasoning, we iconize inner purposes through constructions performed independently of our behavioral responses to the outer world. In empirical, or pragmatic, reasoning, we iconize inner purposes through procedures for correcting our behavioral errors. In either case, perceptual judgments disclose to us mere hypotheses about what our inner purposes may be. In each case, the hypotheses are tested through comparable procedures of inquiry and, in each case, we have certain knowledge only of what is falsified through these procedures.

Texts expressing Peirce's normative inquiry give Peirce scholars reason to interpret him either as transcendentalist and intuitionist, or as naturalist and positivist. While his later texts recommend neither form of reduction, his ambiguous treatment of phenomenology makes transcendentalism perhaps the greater temptation.

Pragmatic Critique of Phenomenology

Phenomenology is a troublesome science. If it "brackets" empirical interest, from where is it supposed to receive its premises? Even after abandoning his foundational inquiries, Peirce never seems to have fully corrected his transcendentalist claim that phenomenology borrows its premises from mathematics. After all, it does seem to make sense. Phenomenology prescinds from the perceptual field the most general elements of consciousness. To do this, it must presuppose the general, which is possible only if the general is "in the mind habitually."[10]

And the science through which we construct diagrams of what is in the mind habitually is none other than mathematics.

According to Peirce's mature pragmatism, this line of reasoning is faulty on two counts. For one, it fails to identify what the science of phenomenology itself contributes to its own subject of study. Does the phenomenologist discover certain categories or impose them? In other words, what conditions of doubt motivate phenomenological inquiry and how are those conditions reflected in the conclusions of that inquiry? For two, it unjustifiably identifies all efforts to iconize inner purposes with the activity of mathematical science. These two faults are corrected in the following redefinition of phenomenology. Phenomenology and mathematics are independent sciences, analogous in their methods of drawing necessary conclusions from different sorts of premises. The mathematician interprets abstract precepts, iconized independently of empirical interest; the phenomenologist interprets precepts of action, iconized on the occasion of behavioral error.[11] The mathematicians' conclusions, therefore, are tested only by other mathematicians. The phenomenologists' conclusions are tested by philosophers, for whom they are as yet unexplicated hypotheses for repairing behavioral error.[12]

Articles by Charles Hartshorne and Mihai Nadin both contribute to this pragmatic redefinition of phenomenology. (In related studies, Bertrand Helm, on "The Nature and Modes of Time," offers remarks on the difference between mathematical and real time in Peirce's work. E. F. Kaelin, with "Reflections on Peirce's Aesthetics," reviews Morris' applications of Peirce's theory of a semiotic of art.)

In his "Revision of Peirce's Categories," Hartshorne wants to cleanse Peirce's phenomenology of its numerology and its synechism, which is to cleanse it of two symptoms of Peirce's foundationalism. Hartshorne's revision is to define the categories in terms of three modalities of relation, instead of three ways of quantifying relation. Firstness will signify "independence of some things " (p. 82), Secondness, "dependence on some things" (p. 82), and Thirdness, having "nondependence with respect to definite particulars and dependence with respect to more or less general outlines" (p. 83). I believe Hartshorne has recommended the three possible ways of iconizing our responses to behavioral

error. Secondness diagrams our consciousness of behavioral error, which is dependent on a falsifying experience; Firstness diagrams our consciousness of behavioral alternatives, which are recommended independently of our actual behavior; and Thirdness diagrams our consciousness of the real possibility that behavior will be corrected by accommodating our recommendations to the demands of experience. From this perspective, Peirce's numerology expresses his misguided attempt to ground phenomenology in mathematical science.

In criticizing Peirce's "overindulgence in the admiration of continuity" (p. 89), Hartshorne does not appear to realize the full force of his extra-mathematical revision of Peirce's categories. Peirce's synechism belongs to his foundationalist project. Despairing, like the Cartesians, of having inherited reliable rules for behaving in the world, Peirce sought a *mathematical* model of *experiential* continuity. Such a model would provide formal demonstration of the potential intelligibility of our experience, thereby giving us hope that we can, after all, discover reliable rules for behaving in the world. The proposition, "reality is continuous," is a way of characterizing our hope that, in the future, the behavioral discontinuities we suffer will be remedied. The failure of Peirce's normative inquiry did not invalidate his hope; it simply discouraged his attempts to fulfill that hope in either mathematical or logicist forms of foundationalism. Consequently, after 1903, Peirce lost interest in the mathematical definitions of continuity he had previously adopted from Georg Cantor and others.[13] This is not because these definitions were faulty in themselves, but, rather, because they failed to serve the extra-mathematical use to which Peirce wanted to put them.

According to Nadin ("The Logic of Vagueness and the Category of Synechism"), Peirce's non-Cantorean studies of continuity represent a pragmatic, as opposed to a semanticist, approach to the logic of vagueness. This approach anticipates contemporary applications of formal analysis to the inexact phenomena of natural language (p. 163). Semanticists, such as Russell and Carnap, have argued that linguistic vagueness is a remediable obstruction in our manner of representing objects. Peirce's foundational studies, Nadin could have added, participate in the semanticist project. As mathematical foundationalist, Peirce was

trying to eliminate all vagueness from his definition of experiential continuity. As mature pragmatist, however, Peirce argued that the pragmatic or semiotic relation, between signs and their interpretants, cannot be reduced to the semantic relation, between signs and their objects. Vagueness is a remediable character of the semantic relation. But it is an irremediable character of the pragmatic relation, according to which a sign reserves "for some other possible sign or experience" the function of completing its determination.[14]

Peirce's treatments of continuity are therefore of two kinds.[15] When he says "generality and continuity are the same thing,"[16] he generally speaks as a semanticist, referring to the continuity of possibility or ideal space and not of the real possibility inherent in semiotic processes. When he identifies vagueness and continuity, however,[17] he speaks as a pragmatist, referring to the continuity of real things in the world. This is not the continuity studied in contemporary topology. Rather, it corresponds to the "fuzziness" Zadeh, Nadin and others attribute to "fuzzy sets,"

> that is, to classes with unsharp boundaries in which the transition from membership to non-membership is gradual rather than abrupt.[18]

In sum, Peirce's mature pragmatism does not impose on the mathematician the task of grounding phenomenological and therefore philosophic science. By definition, mathematicians treat pragmatic, or real, relations as if they were merely semantic relations. In semiotic terms, therefore, mathematical definitions of experiential continuity are degenerate. For genuine definitions, the philosopher must appeal to the logic of vagueness, which is a pragmatic science.

Pragmatic Critique of Transcendentalist Epistemology

Peirce's contribution to the logic of science is to distinguish between the semantic and pragmatic dimensions of language and, thereby, to delimit the scope of mathematical-and-foundational logic in empirical inquiry. Most of the contributions to this collection address this aspect

of Peirce's work.   Risto Hilpinen ("Peirce's Theory of the Proposition
. . .") neatly articulates Peirce's contribution to game-theoretical seman-
tics, reflecting Peirce's sensitivity to the pragmatic dimension of speech
acts.   Robert Almeder ("Peirce on Meaning") offers a plea for con-
temporary epistemologists to take seriously Peirce's critique of the kind
of narrow verificationism Quine proposes.   James Harris and Keven
Hoover ("Abduction and the New Riddle of Induction") advertise
Peirce's theory of inquiry as a means of criticizing the narrow linguistic
positivism of Nelson Goodman.   And T. L. Short ("Peirce and the In-
commensurability of Theories") reviews for us ways in which Peirce
anticipates contemporary criticisms of positivism.   Two contributions
address this aspect of Peirce's work in particularly comprehensive and
somewhat troubling fashion: Eugene Freeman's "Peirce and Object-
ivity in Philosophy"[19] and Karl-Otto Apel's "C. S. Peirce and the Post-
Tarskian Problem . . ."

Freeman's overall point is that, except when he gets into trouble,
Peirce argues for "rule" as opposed to "factual objectivity" (pp. 59ff).
Factual objectivity is achieved by hypostatizing what we've called the
semantic dimension of language; "rule objectivity" by hypostatizing the
pragmatic dimension.   In these terms, the distinction Freeman makes
is itself a semantic one: between the way scientific language intends
its object (the world) and the way it intends its interpretant (the opinion
of the community *as* alternative object).   To provide an account ade-
quate to Peirce's pragmatism, we must either (a) emend rule objectivity
by offering some concept of the *facts* in relation to which rule compe-
tence is objective; or (b) draw a distinction between scientific theoriz-
ing and pragmatic behavior.

Peirce appears to pursue the first alternative in two ways.   First, he
asserts that science is predestined to hit on the (factual) truth in the
long run.   Freeman cites, with apparent favor, Popper's rejection of this
"manifest theory of truth" (p. 62).   Second, he adopts what Freeman
calls his unwarranted "Ontological Postulate," that "the structure of
logic is the mirror of the structure of reality" (p. 70).   In rejecting
both emendations, Freeman is in fact rejecting the twin expressions
of Peirce's foundationalism: the naturalistic foundation on the one
side and the transcendentalist one on the other.[20]   In their place, Free-

man offers Peirce's semiotic description of the pragmatic rules for determining objectivity: (1) reasoning is diagrammatic (better put, perceptual judgments are diagrammatic!), (2) the ultimate test of objectivity consists of denotative (indexical) procedures; (3) meaning must be defined pragmatically (p. 72).

The only problem here is that Freeman may be replaying Peirce's transcendentalism in more subtle fashion: by hypostatizing the methods of science as if they, in themselves, determined what is objective and what is not. Freeman does not make explicit what the interpretant is for this set of rules. For the mature Peirce, these rules are themselves phenomenological descriptions of the way we act in response to interruptions in our normal behavior. The purpose of science is not to mirror reality, but to repair errors in our particular manner of mirroring reality. The criteria for "rule objectivity" guide our methods of repair; possessing what Peirce calls "validity," but not strength. Criteria for "factual objectivity" are not available in science: they belong to the precritical dispositions that, we trust, guide our behavior as biological and social beings. Freeman's third, or pragmatic, rule for determining objectivity provides a link between the two sets of criteria: the pragmatic meaning of scientific activity lies only in its relevance to extra-scientific practice and purpose.

Apel's monumental work also replays Peirce's transcendentalism. It offers a comprehensive argument against the semanticist epistemology of Morris, Carnap and Tarski. Yet, its transcendentalist alternative has value mostly as means of appropriating Peirce within the interpretive tradition of German Kantianism. However critical they may be of classical foundationalism, Apel and Habermas do not divest their own tradition of the inveterate idealism which Peirce struggled so many years to overcome. Therefore, despite their sophistication, they tend to participate in, rather than resolve, the dialectic that animated Peirce's normative studies.

Apel argues that the semanticists fail to provide an "adequate explication of the truth-conception that underlies modern empirical science" (p. 289). Abstracting from the pragmatic dimension of actual language use, they fail to account for the situation-bound employment of performatives. To defend their position, says Apel, the semanticists appeal to a semiotic axiom (or prejudice):

> that we cannot conceive of a thematization of the whole
> actual triadic-relation of semiosis. . . . Hence there cannot
> . . . be a semiotical equivalent to the transcendental episte-
> mology of a Kantian or Husserlian type. (p. 192)

Apel's response is to argue that semiosis *can* be thematized and that
Peirce shows how.

Unfortunately, Apel fails to consider a third option, that we cannot
and need not thematize the pragmatic dimension of language. Accord-
ing to Peirce's pragmatism, we thematize only what we doubt and all
doubt is conditioned by interruptions or discontinuities in natural
semiosis. We thematize semiosis, therefore, only in its degenerate forms:
another way of explaining the inadequacy of mathematical models
of experiential continuity.

In rejecting this third option, Apel displays the Cartesian assumption
he shares with the semanticists: that, independently of science, we lack
certain knowledge of how to behave in the world. To avoid the seman-
ticists' more thoroughgoing skepticism, Apel argues that natural lan-
guage provides its own criteria for founding reliable methods of veri-
fication. Following Descartes, Kant and Habermas, he identifies the
cogito as the source of this criteriology. To avoid solipsism, he "re-
deems" this cogito in "an inter-subjectively valid synthesis or unity of
sign-interpretation" (p. 197). Described as unitary or communal, how-
ever, the cogito is still the cogito. It hypostatizes our hope that we
possess some means of repairing behavioral errors, but does not itself
represent such a means.

Apel appears to have replayed for us one pole of Peirce's 1902-03
foundationalist dialectic, even if, with Freeman, he expresses it in more
sophisticated language. Attempts to prescind the pragmatic dimension
of langauge belong to the semanticists' and not the pragmatists' pro-
ject. The scientist thematizes natural semiosis only on the occasion
of its failures, thus only as degenerate semiosis. Semanticists accurately
describe semiosis in the degenerate form in which they encounter it.
They err only when they over-generalize this form, as if it applied as
well to natural language.[21]   Scientists *qua* scientists must disclaim
knowledge of the pragmatic dimension, which is known only in the

prereflective doing. They cannot replace those members of society --
judges, sages and saints — whose semantically unself-referential behavior
exemplifies this dimension.

Pragmatism, Metaphysics and Cultural History

The pragmatic dimension of natural language is disclosed more clearly
to the cultural historian than it is to the epistemologist. The articles
in this collection which are most attentive to the spirit of Peirce's post-
1905 pragmatism tend, therefore, to draw our attention away from
Peirce's own logico-mathematical specializations. They lead us to ask:
to what broader problems is Peirce's philosophy a response?

John Smith's "Community and Reality"[22] introduces this considera-
tion of Peirce's "intensive relevance." Restated in the language of this
review, Smith locates Peirce's greatness in his bold attempt to examine
the pragmatic dimension of language with the precise tools of the se-
manticist. The product is a tripartite theory of reality. As realist,
Peirce argues that reality is *independent* of particular thoughts we may
have and that it commands our attention *forcefully*. As idealist, Peirce
argues that reality is, nonetheless, *thought-like*: which means that it
shares with human cognition a semiotic character. As pragmatist, Peirce
claims to resolve apparent tensions between his realism and idealism.
The real, he says, is what *would be* disclosed through the ultimate
opinion of a community of inquirers. The inquiry, it must be assumed,
is pragmatic: that is, a means of accommodating behavior to the in-
trusive demands of experience.

For Smith, Peirce's otherwise impressive metaphysics has three prob-
lems (pp. 54-55). The real as ultimate opinion of a community is "real
possibility." But real possibility still means the possibility of the real
and not the real itself. This futurism, furthermore, does not offer us
a means of articulating the reality of things and of persons in the *pre-
sent*. In Peirce's metaphysics, we lose the "present integrity of the
real individual" (p. 57). Finally, Peirce limits knowledge of the real to
knowledge of what can be disclosed through science. Peirce is there-
fore not free of "the great error of much modern philosophy," which is
to believe that the reality of things is exhausted in "their being material
for knowledge" (p. 57).

I believe we can resolve the problems Smith raises by interpreting Peirce's metaphysics pragmatically: as symptom of his response to certain behavioral problems, rather than as an attempt to describe reality, with whatever subtlety. This approach requires interpreting Peirce's epistemological definition of pragmatism as mere corollary of the motivational theory of doubt-belief he adopted from Bain:[23] in short, that intellectual activity is stimulated by crises of doubt that do not also appear as explicit objects of the intellectual activity. Confusion arises when the intellectual activity is allowed to become self-referential: generating conceptual systems, rather than guiding modifications in the behavioral conditions which produced the crises of doubt. Seen in this way, pragmatism offers a method of repairing intellectual confusion by referring self-referential intellectual activity back to its behavioral conditions. From the remaining essays in the collection, we can glean instructions about how to apply such a pragmatic critique to Peirce's own metaphysics.

William Gavin ("Peirce and the Will to Believe") draws our attention to the affective dimension of Peirce's metaphysics, displayed in Peirce's tenacious advocacy of the scientific method of pragmatism. For the motivational theory of pragmatism, emotions are indices of frustrated responses to some behavioral problem. The emotive force of Peirce's metaphysical writings may serve, therefore, as an index of the behavioral problem which motivated his inquiry. Without entering here into difficult biographical interpretations, let us suppose that Peirce shares with the rest of us one of the characteristics of modernity: a sense of unrootedness in the world and in society, or a lack of certainty about how to behave in the world and in relation to others. We may then suppose that this sense motivates Peirce's epistemological research. We may conclude that Peirce was attracted to the Cartesian-Kantian tradition of philosophy because he shared its members' epistemological uncertainties and, therefore, epistemological needs. Members of this tradition promote their formally "disinterested" methodologies out of a passionate interest in repairing their own crises of doubt.

On the other hand, Peirce was not a very contented member of the Cartesian-Kantian tradition. His philosophical polemics are always directed against either one of the dialectical alternatives the tradition generated.

Peirce's realism is a polemical response to Cartesian-Kantian idealism, subjectivism and solipsism: the tradition's transcendentalist option. Against this option, Peirce argues that reality is forceful and independent of what we think about it.

Peirce's idealism is a polemical response to Cartesian-Kantian object-ivism: the tradition's naturalist or positivist option. David Gruender's "Pragmatism, Science and Metaphysics" offers a comprehensive analy-sis of Peirce's critique of positivism, represented, for example, by Carnap. While sharing many of the positivists' epistemological premises, Peirce objects to their abstracting them into a metaphysical framework beyond the pale of scientific criticism. Like transcendentalism, positivism en-tails a methodological solipsism which "blocks the road of inquiry."

In short, the traditional practice of epistemology served to exacerbate, rather than resolve, Peirce's crisis of doubt. Following Gavin, this is where Peirce's "will to believe" comes into play. Because he needed one, Peirce insisted that there must be an epistemological alternative to the Cartesian-Kantian approach. That very insistence, however, betrayed the lesson of his motivational theory of pragmatism: that pragmatism is a critique of foundational epistemology, not a replace-ment for it. As critic, Peirce argues that inquiry is not a mirror of the world, but a means of repairing our extant behavior in the world. Cor-rect behavior is the only mirror we have. As epistemologist, he tries to argue that our manner of repair is itself a mirror. Committing the very error he criticizes in the Cartesian-Kantian tradition, Peirce hy-postatizes this epistemology, producing the pragmatic metaphysics with which John Smith finds fault. The metaphysics is scientistic be-cause it mistakenly identifies corrected behavior with the scientific inquiry which corrected it. It is futuristic because it describes corrected behavior from the perspective of science, which knows behavior only when it needs repair and which therefore knows corrected behavior only as the ultimate result of its own activity. For the scientist, cor-rected behavior is a real possibility; for the human being unburdened by doubts, correct behavior is the reality that, without tolerating recog-nition, provides us the only knowledge we have of the world and of others.

Used properly, Peirce's pragmatism is a means of deconstructing,

rather than replacing, the Cartesian-Kantian epistemologies. It deconstructs by referring the epistemologies back to the conditions of doubt which motivated them and, further, back to the system of un-cognized behavior in terms of which, alone, that doubt has meaning. In the collection, Sandra Rosenthal's essay on "Meaning as Habit" offers a helpful review of the ways in which Peirce articulates the reality of these uncognized systems.   In her essay, "Descartes, Peirce and the Cognitive Community," Susan Haack undertakes the actual work of referring both Peirce's and Descartes' epistemologies to at least a general statement of the conditions of doubt which motivated them.

Haack's project is to evaluate Peirce's claim that Descartes' method of doubt is both impossible and pointless. She shows convincingly that the method is pointless, but not impossible: Peirce, in fact, employs it. I believe we can attribute this misguided half of Peirce's anti-Cartesianism to his own foundational probject. Peirce's pragmatism does *not* work as a general epistemology: as Haack shows, we cannot claim that all doubts are motivated by specific conditions of experience. It does work, nonetheless, as a means of criticizing the specific error of Cartesian epistemology: dogmatism. In Haack's helpful terms, the dogmatic epistemologist is both too pessimistic and too optimistic (p. 254). He is too pessimistic in assuming that "*all* our beliefs could be wrong," too optimistic in insisting that "*some* of our beliefs could *not* be wrong." Against both extremes, Peirce's fallibilism maintains that "*any* but not *all* of our beliefs could be mistaken."

We don't fully understand Peirce's objections to Descartes, however, until we deconstruct further: uncovering what Peirce may have assumed to be the motivational grounds of the Cartesian project. He may have sensed that Descartes, like Peirce himself, was motivated by uncertainties about the Christian *Weltanschaaung* he inherited. Distrusting the consequences of this uncertainty even more, Peirce wanted to find fault with the Cartesian project without yet disclaiming his own agnosticism. I say agnosticism, because Peirce argues on behalf of faith in God without yet submitting to the authority of any particular exegetical tradition. Very much in the Cartesian-Kantian tradition, Peirce wants to obey his God autonomously.

John Boler offers us a final clue about Peirce's complex relationship

with this tradition. In "Peirce, Ockham and Scholastic Realism," Boler evaluates Peirce's professed "neo-scholasticism," identifying just what Peirce shares with the scholastics and what not. With the medievals in general, Peirce says there is no one-to-one correspondence between words and things, and there is no thing unknowable in itself. With the nominalist Ockham, Peirce says we think through signs, mediated by a linguistic community; he assimilates the phenomena of universality and relation. Against Ockham, Peirce refuses to identify these phenomena with mental events. With the medieval realists, then, Peirce maintains that being is intelligible. Against them, however, he denies the neutrality of matter and, perhaps most significantly, "does not think that there is any actual case of knowledge that can be identified as such" (p. 105). Intelligibility and, with it, reality, are only real possibilities.

Given these differences, why does Peirce call himself a scholastic realist? Because, as Smith reminds us, Peirce's philosophy is polemical. Peirce's immediate complaint is against those contemporary positivists and transcendentalists whose epistemologies failed to repair his own crisis of doubt. Arguing deconstructively, he referred their epistemologies back to Descartes' and referred Descartes' back to a non-pragmatic and therefore misguided response to certain conditions of doubt. Descartes was troubled by certain, real problems in scholastic traditions of thought and behavior. Rather than address these piecemeal, however, Descartes over-generalized the condition of doubt, forcing himself to adopt a dogmatic foundationalism, as if to replace the complex tradition to which he still belonged. In fact, Descartes' foundationalism simply absolutizes selected elements of that tradition, which elements Peirce identifies with medieval nominalism. For the mature Peirce, every thinker is bound to a finite tradition of thought and behavior which he/she ought to reaffirm, albeit fallibilistically. While close to Descartes in many ways, Peirce praises scholasticism to offset Descartes' excessive anti-scholasticism. While close to the medieval nominalists in many ways, Peirce praises realism to offset Descartes' excessive anti-realism.

The Relevance of Charles Peirce closes[24] with a delightful essay whose subject matter cannot be considered here, but whose methodology illustrates the kind of work that is yet to be done on Peirce. Peter Skag-

estad ("Peirce on Evolution and Progress") shows how Peirce's polemics against Darwin fit the pattern of his polemics against Descartes. Not over-reacting positively or negatively to Peirce's actual words, Skagestad refers those words back to the conditions of doubt and belief in terms of which they have meaning. He doesn't fight the words, that is, treat them as if they extended to the interpreter the privilege of determining them however he saw fit. Instead, he asks the words where they came from and, in so doing, learns something about the person who uttered them and about the conditions which motivated the utterance. This is the procedure for disclosing a thinker's "intensive relevance."

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NOTES

1.   Title of the collection's introductory essay.

2.   *Collected Papers of Charles Sanders Peirce,* eds. Hartshorne and Weiss (Cambridge, 1931-32), Vol. 1, Par. 180 ff. and 1.203 ff. Hereafter, references will be made only to volume and paragraph number.

3.   Charles Peirce, *The New Elements of Mathematics,* ed. Eisele (The Hague, 1976), Vol, 4, p. 49.

4.   See below, pp. 130-132.

5.   *Charles Peirce's Empiricism* (New York, 1939), pp. 213 ff.

6.   See 2.330 ff: 1902; 5.137 ff: 1902-03; and 5.567: 1901. See also 3.419 (1892).

7.   Peirce calls these rules colligation, iteration and erasure (5.579 and elsewhere). Within the stage of deduction, they are analogues of the three stages of logical inquiry: abduction, deduction and induction.

8.   5.123-150; 2.175-202; and 1.591-615. I reconstruct the foundationalist arguments underlying these texts in "Charles Peirce's Metaphysical Conviction," Ph.D. dissertation, Yale, 1979.

9.   For example, in "The Basis of Pragmatism," 1905-6: 1.573-4, 5.549-554, 5.497-501, and 1.350-2.

10.   Like mathematical reasoning, Phenomenology engages in what I'll lable a "precissive abduction" from the perceptual field. Peirce's characterization of hypothetical inference (8.64: 1891) suggests a way of formalizing this abduction:

(a) Some P (a class of hypostatized predicates) has the class-characters c'c".

(b) This particular C (a class of constructions) is observed to display the characters c'c" def.

(c) (i) C has the characters c'c". . . .
    (ii) By hypothesis, C is a case of P.

Here, the major premise is "in the mind habitually." The abductive conclusion is achieved both by hypostatizing the predicate c'c" . . . and by prescinding it from other elements in the predicate (def). See 1.549n1: 1911.

11. See above, pp. 124-125.

12. See Peirce's logic of inquiry, 6.471: 1908.

13. His alternative was a metaphysical definition, that "any thing in the world, determined to be real, is a continuous whole, where such a whole is one whose parts without exception whatsoever conform to one general law to which same law conform likewise all the parts of each single part" (7.535n7: 1908). On this definition, see V. Potter and P. Shields, "Peirce's Definitions of Continuity," *Transactions*, XIII, No. 1 (Winter, 1977), pp. 20-34; and P. Ochs, "Peirce's Metaphysical Equivalent of War," *Transactions*, XVII, No. 3 (Summer, 1981), pp. 253-258.

14. 5.505: 1904 (erroneously cited as 4.505 in Nadin's text).

15. Focusing only on Peirce's successful contributions, Nadin overlooks the confusion in Peirce's foundational treatment.

16. E.g., 4.172: 1897.

17. E.g., 4.530 ff: 1906 and 5.438 ff: 1905.

18. L. Zadeh, "Foreword" to A. Kaufman, *Introduction to the Theory of Fuzzy Sets* (New York, 1975), Vol. 1, p. 5. Cited in Nadin, p. 163.

19. Reprinted from 1968.

20. See above, pp. 124-125.

21. Cf. Rulon Wells' critique of Peirce's "pseudo-generalization": "Criteria for Semiosis," in *A Perfusion of Signs*, ed. Sebeok (Bloomington, 1977), pp. 1-21. Wells argues that Peirce includes in the class of signs things which may be so only by analogy. This, in fact, is a symptom of Peirce's foundationalism, replayed in the semanticists' over-generalizations.

22. Reprinted from 1965.

23. As Peirce himself recommends, 5.12: 1902. See Susan Haack's article, pp. 241 ff.

24. Followed by Christian Kloesel's helpful update of recent work on Peirce, 1976-1981.