

4 Reflections on Inquiry and Truth Arising from Peirce's Method for the Fixation of Belief

My paper of November 1877, setting out from the proposition that the agitation of a question ceases when satisfaction is attained with the settlement of belief. . . goes on to consider *how the conception of truth gradually develops* from that principle under the action of experience, beginning with willful belief or self-mendacity, the most degraded of all mental conditions; thence arising to the imposition of beliefs by the authority of organized society; then to the idea of settlement of opinion as the result of fermentation of ideas; and finally reaching the idea of truth as overwhelmingly forced upon the mind in experiences as the effect of an independent reality.

CP 5.564, "Basis of Pragmatism." 1906. (italics not in original)

The third philosophical stratagem for cutting off inquiry consists in maintaining that this, that, or the other element of science is basic, ultimate, independent of aught else, and utterly inexplicable – not so much from any defect in our knowing as because there is nothing beneath it to know. The only type of reasoning by which such a conclusion could possibly be reached is *retroduction*. Now nothing justifies a retroductive inference except its affording an explanation of the facts. It is, however, no explanation at all of a fact to pronounce it *inexplicable*. That, therefore, is a conclusion which no reasoning can ever justify or excuse.

CP 1.139 "The First Rule of Logic." 1899

Abduction consists in studying facts and devising a theory to explain them. Its only justification is that, if we are ever to understand things at all, it must be in that way.

CP 5.145 "Harvard Lectures on Pragmatism." 1903

[Scientific procedure] will at times find a high probability established by a single confirmatory instance, while at others it will dismiss a thousand as almost worthless.

Frege 1884: 16

I

"The Fixation of Belief" was published in 1877 as a popular essay. But Peirce must have attributed to it not simply the literary felicity that we find in it, but high philosophical importance. For in the ensuing decades he constantly returned to this paper as a focus for the clarification of his thoughts, either entering corrections and amplifications or else adapting it to new philosophical initiatives. Some of the amendments were designed to adjust the essay to the projects of "The Grand Logic" and "The Search for a Method." Our chief concern here will be with the essay as Peirce came to reread and rewrite it, rather than with the essay in its original condition. The first of our epigraphs, which is dated 1906, is surely the product of one of these rereadings.

Not only does "Fixation" appear at least as important as Peirce supposed. There radiate from it some of the grandest themes of modern philosophy – the nature of truth, for instance, and the relation truth has to meaning when meaning is operationally or pragmatically conceived; inquiry and the ethics of belief; the epistemic status of perceptual experience; and the proper aspiration or aspirations of hypothesis. Once it is seen in proper conjunction with other Peircean claims into which it leads, the essay will even promise a line of response to Hume's doubts about the rational basis of our efforts to argue from the known to the unknown.

What has prevented philosophers from investing the paper with the sort of importance in connection with truth that we find Peirce attributing to it in our first epigraph? Maybe the tendency to read the paper itself as a phase in a one-issue philosophical campaign to demystify the idea of truth by *redefining it* as the eventual, if

not predestinate, opinion of those who open-endedly and resolutely pursue the business of inquiry. Only for a small minority who still espouse some sort of verificationism or "prope-positivism" (Peirce's term) could such a campaign be interesting or convincing.

Recently, Peircean scholars¹ have pointed to the implausibility of attributing to the exponent of a theory of signs and signification as special as that of Peirce the project of offering an analytical decomposition of the concept of truth (or of any other concept). In the light of this doubt, it will no longer do to suppose that, at any time, let alone in 1906, by which point he had recanted the worst exaggerations of "How to Make Our Ideas Clear" (1878), Peirce would have approved a report, *given in our language as used by us*, to the effect that Charles Sanders Peirce thought that an opinion's being true and its being the eventual opinion were simply, analytically, or necessarily one and the same thing. Not only is that a questionable report. Unless some quite peculiar sense is attached to "the eventual opinion," it appears inconsistent with that which we read toward the end of "The Fixation of Belief" and read again in Peirce's subsequent reports of its content (e.g., that quoted from 1906). It is time to supersede the form of words that Peirce took the risk of using when he wrote: "The opinion which is fated to be ultimately agreed by all who investigate is what we mean by truth, and the object represented in this opinion is the real" (CP 5.407, 1877). For, if Peirce's ideas are to reach again into the bloodstream of philosophy, then we need not only fresh studies of his texts but speculative transpositions of these ideas – transpositions recognized as speculative but given in language that can be understood without any reference to special or peculiar stipulations. (To the extent that our chosen vehicle of expression is philosophical language, let us confine ourselves to such portions of it as are securely cantilevered from the everyday language of those who are wont to listen to what they are saying.)

Under the transposition I shall propose here, the exact meanings of "ultimately" and "end of inquiry" will no longer be any great issue, and the relation between truth and inquiry will be a degree or two more indirect than Peirce was accustomed to allow. Another Peircean preoccupation we shall abandon is Peirce's thought that proper conduct of inquiry not only comprises the motive and means for correcting its own conclusions but is *bound in the long run to iron out every error*. This perilous claim will be no part of the core

Peirceanism that is here to be consolidated and defended. What then will remain? Above all, the idea of inquiry, seen always as a process that gathers rational strength as it gathers force and gathers force as it gathers rational strength, a process at once communal and personal, in which participants receive benefits that are indefinitely divisible among them and reciprocate, in the light of their own experiences and reflections, however they can or are permitted to do.

II

Peirce says in "Fixation" that, with respect to any question that concerns us, belief or opinion is the state we seek to attain and doubt (not knowing what to think about this or that) is the disquieted, dissatisfied state that we seek to end. The essay reviews four different but developing methods: the method of dogmatism or tenacity, the method of authority, the a priori method, and the method of experience, which Peirce himself approves and commends to his reader. This last method embraces logic, in the broad nineteenth-century sense of the term. The "distinction between good and bad investigation . . . is the subject of the study of logic. . . . Logic is the doctrine of truth, its nature and the manner in which it is to be discovered" (CP 7.320–1, 1873). In Peircean usage, logic is the general art of reasoning – nothing less than everything which "The Fixation of Belief" opens out into – and it subsumes the art of making inferences from the known to the unknown. Logic embraces not only deduction, not only induction, which is the testing of hypotheses, but also abduction, which is the framing of explanatory hypotheses. "Reasoning is good if it be such as to give a true conclusion from true premisses and not otherwise [good]," (CP 5.365, 1877) Peirce wrote. Later, he amended this sentence to say "Reasoning is good if it be dominated by such a habit as generally to give a true conclusion from true premisses" (CP 2.111, 1902).

Nineteenth- and twentieth-century conceptions of the province of logic are interestingly different. Each conception insists, however, on the incompleteness of the canon that we shall recognize at any point for good reasoning. Twentieth-century logicians have stressed the essential incompleteness of canons of provability, an incompleteness demonstrated for purposes of strictly deductive logic by meta-mathematical investigation initiated in the nineteen-thirties.

For Peirce, the incompleteness of logic in his broader sense is made manifest in constant extensions of the methods of scientific argument and the concomitant renewal of the abductive initiative of a community of inquirers. "Each chief step in science has been a lesson in logic" (Fixation, W₃, 243, 1877)."² In so far as a Peircean philosophy of truth will elucidate truth by reference to inquiry itself and inquiry by reference to a struggle against doubt (= not knowing what to think about this or that) which finds its final fruition in the dispassion of a pure science of unbounded aspiration, it is not to be expected that the elucidation will have the effect of circumscribing truth itself or limiting it to that which is discoverable by any particular research method or aggregation of research methods.

The insatiability of the inquiring mentality, like the ordinary discomfort (from which the scientific outlook originates) of not knowing what to think about some particular question, is one part of the background for the very idea of belief or opinion. So too is the calmness and satisfactoriness of knowing what to believe. Christopher Hookway³ has been troubled that Peirce should at once have condemned psychologism in logic and intruded psychological facts into his account of inquiry. But if we see these background facts as conditioning the emergence of fully fledged opinion or belief – if we see the concern for truth as latent already within the nature of opinion and belief themselves, inquiry being the expression of that very concern – then I hope we can exempt Peirce from the charge that he allows mere contingencies to corrupt his conceptions of logic and truth themselves. These are not mere contingencies. They are the enabling facts for the existence of belief itself – and of any normative science of that which *deserves* (however tentative and fallible) belief.

III

It might be questioned how exactly and faithfully, dating from 1906, our first epigraph reflects Peirce's intentions of 1877.⁴ But it matters far more for present purposes – and it matters especially for the Peircean conception of truth – how Peirce himself, in his full maturity, wanted to read or reread or rewrite "Fixation" and what place he came to want it to occupy within the context of his mature position. If "Fixation" read with the emphases Peirce suggests in 1906 can

help us to see the conception of truth “gradually” and “under the action of experience” emerge from the abandonment of dogmatism and authoritarianism, and make us see it emerge thence by virtue of the workings of the principle that the agitation of a question ceases when satisfaction is attained with the proper settlement of belief, then the next task for the philosopher of inquiry will be to speculate what it is about the notions of truth and belief that fits them to cohere and consist with one another in this way. For beliefs, truth must be the first dimension of assessment of their goodness and badness (of their eligibility, so to speak), even as true opinion must be our preeminent aspiration if we ask “What shall I believe about such and such or so and so?” These are normative claims of a sort, conceptually founded. Under both aspects, they are more or less indispensable to the correctness of Peirce’s conception of inquiry – and, in so far as plausible, supportive of it.

IV

Our first epigraph recapitulates “Fixation,” but a longer commentary is needed. This may usefully begin with Peirce’s claim that belief or opinion is the state we seek to attain and doubt the state of irritation we seek to end. The latent complexity of this simple-seeming declaration may be brought out by an analogy.

Suppose that someone has appealed to me for my help, I make an excuse, and then I feel ashamed of letting them down. Finding it hard to live with this failure, I try at first to forget all about the matter. (After all, I didn’t owe the person any help, rather the reverse perhaps. And there are all sorts of other people they could have appealed to.) Suppose that, within my own mind, this doesn’t work and I start to wonder why I haven’t had a simpler, more straightforward thought: oughtn’t I to go back to the person and see if there is anything left that I still can do? Suppose that, pursuing that very thought, I minister directly to the object of disquiet and then, like a cloud, the disquiet itself disappears.

Mutatis mutandis, compare now the disquiet/dissatisfaction of not being sure what to think about whether . . . (some particular question, that is). Should such disquiet be remedied by attention to the state of mind, vexatious as it is, or to the object of the state? If Peirce had been asked this question – and what a pity he wasn’t – then how

would he have replied? I don't know. But I think his reply ought to have been this: the first two of his methods of fixation seek to work directly upon the state; the third method is transitional; the fourth works directly upon the object of the disquiet. As we review the four methods, however, let the reader verify this for himself or herself.

Concerning the method of tenacity or dogmatism, Peirce says that the social impulse, which comprises the inner compulsion to pay anxious heed wherever others think differently from oneself, practically guarantees the total ineffectiveness of this method to implant or maintain conviction or forestall the disquiet of not knowing what to believe.

The second method is the method of authority, consisting of dogmatism supported by the repression of social impulses that unsettle prescribed opinion. Here Peirce's prescription is this:

Let [men's] passions be enlisted, so that they may regard private and unusual opinions with hatred and horror. Then, let all men who reject the established belief be terrified into silence. (W 3, 250 "Fixation," 1877)

[L]et it be known that you seriously hold a tabooed belief, and you may be perfectly sure of being treated with a cruelty less brutal but more refined than hunting you like a wolf. (W 3, 256 "Fixation," 1877)

Even though this method holds better promise for the end of doubt than the first, and its past triumphs are manifest, Peirce then declares – in passages which seem in the light of recent events in Eastern Europe not only prophetic but vividly illustrative of why, under those kinds of conditions, things will almost inevitably tend to work out in a certain way – that such a policy will be powerless in the end to counter the irritation of doubt or to stabilize opinion:

[N]o institution can undertake to regulate opinions upon every subject. Only the most important ones can be attended to, and on the rest men's minds must be left to the action of natural causes. (W 3, 251 "Fixation," 1877)

For that reason, Peirce holds, once some people are led by unregulated convictions to reject that which is officially prescribed for general belief, more and more others will come to think that their own adherence to this or that approved opinion may be owed to "the mere accident of having been taught as [they] have." Where people are already tending toward doubt, the beliefs that they think they owe to this source are bound to come adrift.

Evidently then,

a new method of settling opinions must be adopted, which shall not only produce an impulse to believe, but shall also decide what proposition it is which is to be believed. Let the action of natural preferences be unimpeded, then, and under their influence let men, conversing together and regarding matters in different lights, gradually develop beliefs in harmony with natural causes. (W 3, 252 "Fixation," 1877)

Peirce calls this third method, the a priori method, new. But all that "new" needs to mean (I suggest) is that he has put it next after tenacity and submission to authority in his enumeration of remedies for doxastic disquiet. For he says of the a priori method "so long as no better method can be applied, it ought to be followed" because "it is the expression of instinct, which must be the ultimate cause of belief in all cases." Under this aspect, the a priori method is only a resumption of protorational ways of information gathering. Self-evidently, then, even when dignified as a method for "the fermentation of ideas," (CP 5.564, 1906) the method can only restore the state where we were before we turned to these other expedients. It is not surprising then if (as Peirce claims)

its failure has been the most manifest. It makes of inquiry something similar to the development of taste; but taste, unfortunately, is always more or less a matter of fashion . . . [And] I cannot help seeing that . . . sentiments in their development will be very greatly determined by accidental causes. Now, there are some people, among whom I must suppose that my reader is to be found, who, *when they see that any belief of theirs is determined by any circumstance extraneous to the facts, will from that moment not merely admit in words that that belief is doubtful, but will experience a real doubt of it, so that it ceases to be a belief.* (W 3, 253, "Fixation," 1877 my italics)

The last sentence is one of the most important sentences in Peirce's whole essay. It suggests *inter alia* that those who practice the first or second methods have misunderstood the nature of the disquiet or irritation of not knowing. Once they understand this better, they will return to the *object* of their disquiet, namely the particular thing not known. Would that Peirce had said more here, and would that he had attended separately to the aspects of the matter that appear to the individual inquirer and those that appear under a collective aspect. But the last sentence quoted is the point of transition to Peirce's fourth

method of countering our disquiet at not knowing or not knowing for sure:

To satisfy our doubts, therefore, it is necessary that a method should be found by which our beliefs may be caused by nothing human, but by some external permanency – by something upon which our thinking has no effect. . . . [That external permanency] must be something which affects, or might affect, every man. And, though these affections are necessarily as various as are individual conditions, yet the method must be such that the ultimate conclusion of every man shall be the same. Such is the method of science. Its fundamental hypothesis, restated in more familiar language, is this: There are real things, whose characters are entirely independent of our opinions about them; those realities affect our senses according to regular laws, and, though our sensations are as different as are our relations to the objects, yet, by taking advantage of the laws of perception, we can ascertain by reasoning how things really and truly are, and any man, if he have sufficient experience and reason enough about it, will be led to the one true conclusion. The new conception here involved is that of reality. (W 3, 253–4 “Fixation,” 1877)

Here, in so far as we are influenced by the gloss of 1906, we shall understand Peirce to say something like this: that anyone who has the idea that the proper response to their doubt or disquiet about this or that is to work on the particular object of their dissatisfaction and initiate some careful inquiry is in a position to discover that this apparently simple aim *must*, if they are to escape their disquiet, comprehend within it nothing less than this: that any opinion or belief they arrive at to the effect that *p* should be determined by circumstances that are not extraneous to the fact that *p*. Meanwhile, the philosopher of inquiry, reflecting on the aim that an ordinary inquirer will have if he feels the dissatisfaction of not knowing what to believe, must be tempted to think that this need of the inquirer's, this wanting his or her belief to be determined in just such a way, is exactly what is needed for us to begin to understand the idea of “a reality” to which the belief that *p* is answerable.

Here it helps to distinguish very deliberately the roles of inquirer and of philosopher of inquiry. Normally, when we engage as inquirers in some investigation, we do not think, in the abstract, about methodology. The Peircean philosopher of inquiry knows that. But if, even as inquirers submit to experience, they do reflect abstractly about their procedures and the rationale of what they do, then,

according to Peirce, the thing they are bound to find they have discovered is the ideas of truth, of fact, and of a reality or (as Peirce rewrote some passages of "Fixation" to say) "a Real." The corresponding role of the philosopher of inquiry is to make the however inexplicit working ideas of inquirers *more* explicit, thus harvesting the outcome of the apparently meager resources that the methodology of inquiry starts out with.

Amid this harvest, once it is properly examined, along with the ideas of truth, fact, and reality (Real), the theory or philosophy of the practice of inquiry will also find "the fundamental hypothesis," which speaks of our taking advantage of our perceptions and the "laws of perception," in order to ascertain "by reasoning how things really and truly are."⁵ Consideration of this hypothesis will force upon a philosopher of inquiry the task of arriving at a proper conception of experience. For experience is that by which we can and do expose our minds to realities/Reals and make our beliefs answerable to realities/Reals. The forcible element in our experience is what Peirce calls "secondness."⁶ "It may be asked," Peirce notes, "how I know that there are any realities [Reals]." To this question Peirce gives four replies, of which the most striking, interesting, and conclusive is this one:

The feeling which gives rise to any method of fixing belief is a dissatisfaction at two repugnant propositions. But here already is a vague concession that there is some one thing to which a proposition should conform. Nobody, therefore, can really doubt that there are realities [Reals], or, if he did, doubt would not be a source of dissatisfaction. The hypothesis, therefore, is one which every mind admits. So that the social impulse does not cause me to doubt it. (W 3, 254 "Fixation," 1877)

There is more to say about realities (Reals) (see Section IX) and reality and there is more to be said also about the extent of Peirce's commitment to causal realism (see Section VI), but such in bare outline is Peirce's doctrine. Before we can convert any of this into a distinctively Peircean contribution to the philosophy of truth, however, some further explanation and defense is needed of Peirce's conception of belief, of the abductive coloration that he gives to the idea of experience, and of his idea of abduction itself. We shall attend to each of these things, in Sections V, VI, and VII.

V

At the outset, Peirce says that belief in a particular proposition is a calm and satisfactory state. It is a state "we do not wish to avoid, or to change to a belief in anything else. On the contrary, we cling tenaciously not merely to believing but to believing just what we do believe." (CP 5.372, 1902–03) In the same tenor he writes,

With the doubt... the struggle begins, and with the cessation of doubt it ends. Hence, the sole object of inquiry is the settlement of opinion. We may fancy that this is not enough for us, and that we seek, not merely an opinion, but a true opinion. But put this fancy to the test, and it proves groundless; for as soon as a firm belief is reached we are entirely satisfied, whether the belief be true or false. And it is clear that nothing out of the sphere of our knowledge can be our object, for nothing which does not affect the mind can be the motive for a mental effort. The most that can be maintained is that we seek for a belief that we shall *think* to be true... and, indeed, it is a mere tautology to say so. (W 3, 248 "Fixation," 1877)

From this conclusion about the thoughts first-order inquirers can have Peirce derives three attractive corollaries, corollaries that maintain the impossibility *cum* pointlessness, in the absence of real and living doubt, of any general project or plan of exposing everything to question. (Contrast Descartes.) I like that and shall return to one aspect of its most distinctive importance in Section XV. But one ought not to permit the claim that the sole object of inquiry is the fixation of belief to escape criticism just because it delivers conclusions that we have other reasons to find attractive. So the claim needs more extended comment. Indeed it requires emendation.

The directive "seek a true belief," Peirce seems to argue, has no more practical content than "seek a belief you think true." And then he continues, "we think each one of our beliefs is true. It is a mere tautology to say so." If doubt irritates us, Peirce seems to say, his advice to us is "seek for a belief," not "seek for a true belief."

This does not look right. If it is wrong, moreover, room can and must be made in our transposition of Peirce's theories of inquiry and truth to correct the mistake. The defect of Peirce's way of arguing becomes very evident as soon as we recall that similar claims used to be made to the effect that there is no practical difference between the directives "do your duty" and "do what you think is your duty."

Makers of such philosophical claims always paid too little attention to the fact that it is not without consequence which of these directives you second. One who fails to think hard what his duty is but does what he *takes* to be his duty obeys the directive to do what he thinks is his duty, but he does not necessarily do his duty. In Peirce's manner of argument about seeking a belief, there is a closely parallel oversight. One wishes he had not said what he says. It will miss the point, though, to insist too much upon it. For, as we have already seen, it becomes clear slightly later in Peirce's essay – see the transition from the third to the fourth method – that he is deeply impressed by a particular and special point about belief and the conditions that are constitutive of belief, namely that the belief that *p*, once challenged, is a state which needs, on pain of extinction, to see itself as a state *not* "determined by circumstances extraneous to the facts [concerning whether or not *p*]." By its nature, belief is a touchy, uncomplacent condition of the mind, a disposition which will not and cannot stay around on just any old terms. This is one of the things that bring into being the normative science of logic.

Once we absorb these points, charity will suggest that we should see Peirce's insistence that the sole object of inquiry is the settlement of opinion as tantamount to his saying this: "Believe what you will – end the irritation of doubt however you like – only provided that the belief with which you conquer doubt will *stick*, provided it really *will* conquer doubt."⁷ So understood, the prescription suggests that, given the *exigence* that Peirce finds latent in the state of belief and given the *object-directedness* of the disquiet of not knowing, the injunction to get oneself a belief in order to end the irritation of some doubt can never be satisfied by possessing oneself of just any opinion or just any substitute for a belief that gives dissatisfaction or disquiet. Once a question arises that one cares about, one can only be satisfied by an answer to it that one takes oneself to have acquired in a manner that is proper to the content of the answer.⁸

What then ought Peirce to have said was the whole aim of inquiry? It would have been better, and much less open to misunderstanding, if he had said that the whole aim of inquiry was to end the irritation of not knowing (whether/who/when/what/. . . .) by bringing into being the proper conditions for the settlement of opinion with respect to the matter that is in question. The whole aim is to secure *everything that it takes* to obtain this settlement. Once we say that, let it

be noted, there is scarcely any temptation at all to make Peirce's mistake of saying that there is no difference between seeking an opinion and seeking a true opinion. No doubt the notion of truth lurks within the notion of the "proper condition for the settlement of opinion." But we are already prepared for any disappointments this holds for the project of philosophical analysis. Analysis as such is not the only possible aim. See Sections I and XII.

VI

So much for belief. Now let us continue the description of Peirce's fourth method, and fill out the account of the fundamental hypothesis, of realities (Reals), and of that "external permanency upon which our thinking has no effect" which will under the right conditions prompt beliefs to us.

When Peirce speaks of "realities/Reals affect[ing] our senses according to regular laws" or speaks of anyone with sufficient experience and willingness to reason "taking advantage of the laws of perception" in order to "ascertain by reasoning how things really and truly are," the cases that first come to mind as illustrations of this strange – seeming doctrine are singular empirical judgments relating to the past and present as treated by the causal theories of memory and perception. It would be a pity if these were the only cases that were tractable by Peirce's theory of inquiry. Nevertheless, let us start in the area that is easiest for the doctrine and begin by asking what kind of reasoning it is that leads there to that ascertaining, and how, in the most straightforward perceptual case, Peirce envisages its workings.

The answer to the question is that this reasoning is abductive or retroductive, though in a special way. Even for the normal case, of perception or memory, Peirce offers no systematic account of the relation between perception and abduction or memory and abduction. We do, however, get some indications of the link he saw between hypothesis or abduction and states such as memory or perception:

I once landed at a seaport in a Turkish province; and as I was walking up to the house which I was to visit, I met a man upon horseback, surrounded by four horsemen holding a canopy over his head. As the governor of the

province was the only personage I could think of who would be so greatly honoured, I inferred that this was he. This was an hypothesis.

Fossils are found; say, remains like those of fishes, but far in the interior of the country. To explain the phenomenon, we suppose the sea once washed over this land. This is another hypothesis.

Numberless documents and monuments refer to a conqueror called Napoleon Bonaparte. Though we have not seen the man, yet we cannot explain what we have seen, namely, all these documents and monuments, without supposing that he really existed. Hypothesis again.

As a general rule, hypothesis is a weak kind of argument. It often inclines our judgment so slightly toward its conclusion that we cannot say that we believe the latter to be true; we only surmise that it may be so. But there is no difference except one of degree between such an inference and *that by which we are led to believe that we remember the occurrences of yesterday from our feeling as if we did so.* (W 3, 326–7, “Deduction, Induction, and Hypothesis,” 1878, my italics.)

This is the case of memory. For the case of perception, we have the following:

... abductive inference shades into perceptual judgment without any sharp line of demarcation between them; or, in other words, our first premisses, the perceptual judgments, are to be regarded as an extreme case of abductive inferences, from which they differ in being absolutely beyond criticism. The abductive suggestion comes to us like a flash. It is an act of *insight*, though of extremely fallible insight. (CP 5.181, 1903)

What did Peirce have in mind when he claimed that perception and memory were abductive? Any adequate answer for the case of perception would need to cohere with two other Peircean doctrines (the first not, in the light of our earlier mention of “secondness,” unexpected):

... this direct consciousness of hitting and getting hit enters into all cognition and serves to make it mean something real (CP 8.41, c.1885)

and, second,

The chair I appear to see makes no professions of any kind, essentially embodies no intentions of any kind, does not stand for anything. It obtrudes itself upon my gaze; but not as a deputy for anything else nor “as” anything. (CP 7.619, 1903)

A full reconstruction of Peirce's doctrine would not only have to cohere with these clues and with his fallibilism (which suggests that what is "beyond criticism" must be not a perceptual belief but the perceptual state itself which may or may not *sustain* a belief). It would also need to cohere with Peirce's numerous but sketchy hints about the distinct roles in perception of *percept*, *percipuum*, and *perceptual judgment*. In lieu of such a reconstruction, I offer an interim statement. It is intended to respect most of these constraints, but it is not given in Peircean language.

Suppose object and perceiver encounter one another in perception. Then independently of will or reason, the perceiver may be moved to report what he sees by uttering the words "Six windows obtrude, it seems, upon my gaze." No abduction yet. But for the perceiver to *take* what he is confronted with *for* six windows just is – whether he knows it or not – for him to take it that the best explanation of his perception is that *there are* six windows there. *Mutatis mutandis* it will be the same for the remembering case. From remembering (or its being as if one remembers) the messenger giving one a letter yesterday, one concludes that the messenger did indeed give one a letter yesterday. Nothing else (here) will explain (here) one's conviction that he did. Again, whether one knows this or not, the conclusion is abductive. Rather it is a limiting case of abduction, or so Peirce supposes. In so far as one *takes* oneself to remember, one is committed to accept the conclusion of an abduction of course, this is a third person remark about the legitimacy of what the inquirer does, not a reconstruction of his thoughts.

Can we generalize this? Well, it seems the relation of experience and belief must be this: that the experience creates, by its nature as experience, a fallible presumption that what we are moved to report that we see or remember is that which accounts for our being so moved to report. Rather than attribute thoughts of this kind to ordinary percipients or intellectualize that which needs not to be intellectualized, one might say that the acceptability of abduction is quietly and tacitly *institutionalized* in our exercise of our faculties, in our practice and in the title that perceivers could claim that the use of senses or memory affords for them to make empirical claims. Echoing a formulation that appealed at one time to A. J. Ayer, the philosopher of inquiry can say that it is the outcome of the exercise of these faculties which, with respect to certain indispensable

judgments, gives ordinary inquirers in ordinary circumstances *the right to be sure*. Such normative claims as this are undergirded by nonnormative laws whose special dependability would legitimate an abduction.

VII

Here ends the interpretation and explication of "The Fixation of Belief" (at least with respect to judgments conforming to the easiest empirical paradigm). Indeed, in one way, we are well beyond the end of the paper itself. But we are not yet at the end of expounding the fourth method, the method of experience, which is still in the condition of a program needing to be worked out. The fourth method depends on abduction, not only in the (limiting) perceptual case but for almost everything else that we can then build upon perception. In order to enlarge upon the method, we now have to set out certain details that Peirce gives in other writings that he devoted to logic and his theory of inference.

Peirce classifies inferences as deductive/analytic/explicative and as synthetic/ampliative. And the synthetic/ampliative he subdivides into (1) abduction, hypothesis, or retrodution (these terms are close to synonymous in Peirce) and (2) induction.

Let us begin with induction:

Induction is where we generalize from a number of cases of which something is true, and infer that the same thing is true of a whole class. Or, where we find a certain thing to be true of a certain proportion of cases and infer that it is true of the same proportion of the whole class. (W 3, 326, "Deduction, Induction and Hypothesis," 1878)

Hypothesis, on the other hand,

is where we find some very curious circumstances, which would be explained by the supposition that it was a case of a certain general rule, and thereupon adopt that supposition. Or, where we find that in certain respects two objects have a strong resemblance, and infer that they resemble one another strongly in other respects. (W 3, 326, 1878)

Or as Peirce describes abductive thought elsewhere:

The first starting of a hypothesis and the entertaining of it, whether as a simple interrogation or with any degree of confidence, is an inferential step

which I propose to call *abduction*. This will include a preference for any one hypothesis over others which would equally explain the facts, as long as this preference is not based upon any previous knowledge bearing upon the truth of the hypotheses, nor on any testing of any of the hypotheses, after having admitted them on probation. I call all such inference by the peculiar name, *abduction*. . . (CP 6.525 "Hume on Miracles," 1901)

Here the restrictions we see Peirce start to draft may need very careful statement. For we shall also need to prevent this form of inference from allowing into the place of a hypothesis – into the place marked by "A" in our next citation – suppositions that are contrary to things in the reasoner's evidential background or that are gratuitous relative to that background. The thought that some such preclusion is needed becomes even more evident when abduction is set out as starkly as it is here:

The hypothesis cannot be admitted, even as an hypothesis, unless it be supposed that it would account for the facts or some of them. The form of inference, therefore, is this:

The surprising fact, C, is observed;
But if A were true, C would be a matter of course;
Hence, there is reason to suspect that A is true.

Thus, A cannot be abductively . . . conjectured until its entire content is already present in the premise, 'If A were true, C would be a matter of course.' (CP 5.189, 1903)

When the form of this reasoning is set out in this way, the question that takes shape is whether (subject to the restrictions Peirce gives in 6.525, cited) just any supposition, any supposition at all which would make "C" a matter of course, should be permitted to count as a hypothesis, and as something ready to move up to the next stage of being subjected to confirmation/disconfirmation.⁹ Must there not be criteria for the interrogation and selection of things that shall count as hypotheses?¹⁰ And where do *they* spring from? Do they entirely spring from the need to stabilize belief on belief's own terms, etc.? How much does it help to reflect that, in hypothesizing, "man divines something of the secret principles of the universe, because his mind has developed as a part of the universe and under the influence of these same secret principles"? I shall not answer these questions here.

According to Peirce's doctrine, retrodution or abduction (however we enlarge upon it) is a distinctive mode of thinking. It is reducible neither to deduction, whose role is the ancillary one of drawing out the consequences of hypotheses, nor yet to induction, to which Peirce assigns the special role of testing (refuting or supporting) the hypotheses that are submitted to it by abduction. Induction itself, as Peirce sees it (and note that Peirce does not deny that there is any such thing as reasonable induction), can *support* generalizations but, pace Nicod, it does not license us, in or of itself, to go from positive instances of an arbitrary putative generalization toward the assertion of that generalization. Before that can happen, the generalization has to enjoy the status of a hypothesis. It can only attain that status if, in the right way, it renders less surprising something else that has seemed surprising or wanted explaining. From this it follows that no methodological paradoxes such as Hempel's (of the ravens, etc.) or Goodman's (of "grue," etc.) can gain any purchase on the Peircean account of inquiry. For there is nothing in that account that corresponds to Nicod's postulate. If a white shoe really did confirm to some degree that "all nonblack things are nonravens" – this would be the effect of Nicod's postulate – then it would have to confirm to the same degree its contrapositive equivalent "all ravens are black." And that, in any normal setup, is absurd. Here a thousand confirmatory instances are worthless. In Peirce's conception of inquiry, appositioning work in the way it does between induction and abduction, there is no place for Nicod's postulate.¹¹

VIII

How does a putative subject matter need to be if Peirce is to allow that it constitutes a proper field of genuine inquiry? A similar (or equivalent?) question: to what standard must a putative subject matter attain, and what must be its condition, for the judgments it throws up to count as properly answerable to Peircean realities/Reals?

Suppose there is a mode of thinking, neither purely perceptual nor relating only to what is remembered, that is well enough manageable for the following to hold: if you engage in the form of thinking in question, then "secondness jabs you perpetually in the ribs" (CP 6.95, 1903). Suppose that, practicing this mode of thinking, you can reach by patient labor a complex and many-layered state of readiness

and then arrive, when jabbed, at a belief. This is to say that, at some crucial point in your thoughts or explorations, something that is not up to you but is of the right sort to do this can bring it about that you are convinced, fallibly but fully. Suppose that in this field you can arrive at a belief (as Leibniz would say) *malgré vous*. Then, whatever the distance at which this form of thinking lies from the perceptual case or the memory case, your search cannot help but represent a genuine form of inquiry – a form within which the judgment that you arrive at can be answerable for its correctness to some reality/Real. Or so it seems. If Peirce's accounts of the fourth method and of secondness have any generality at all, then the only doubt there can be concerning whether there is any such reality/Real is a doubt relating to the credentials themselves of the form of thinking that purports to invoke the Real in question.

Such is the distance that it appears one can put between Peirce's theory of inquiry and any uniformly causal picture. Support might also be mustered here from Peirce's philosophy of mathematics, where Peirce describes the sort of secondness that can arise from experimenting by pencil and paper with a representative diagram, running through all possible cases and finding (say) that some apparent plurality of alternatives reduces to one case. See, for instance, CP 4.530, 1905 3.516, 1896. Nevertheless, it may be said, there is an objection. Consider Peirce's own phrase "determined by circumstances not extraneous to the facts." What can these words mean, it will be asked, unless Reals are items with a distinctively causal role?

If this objection is right, then either we must abandon every kind of thinking that trespasses outside the paradigm furnished by the causal theories of memory and perception (as arithmetical thinking surely does) or else we must try to unpack the phrase "determined by circumstances not extraneous to the facts." The second response seems more promising. Nor are we the first to think this. In the course of one of his rereadings of "Fixation," Peirce made an annotation against the words (already quoted in Section IV) "To satisfy our doubts, it is necessary that a method be found by which our beliefs may be caused by nothing human, but. . . by something upon which our thinking has no effect." Peirce's annotation requires the word "caused" to be replaced by the word "determined."¹² It suggests that he wanted to construe "[beliefs or opinions] determined by circumstances not extraneous to the facts" in a way that *allowed*

but did not require such determination to be simple causal determination.

In order to set out some of the options that this creates for the different kinds of case that Peirce needs to accommodate here (they are far too many for comfort, but let us see whether anything at all can be said at this level of generality), we must begin with a concession to causality. Opinions arise from thoughts and thoughts are produced by earlier thoughts. "If we mount the stream of thought instead of descending it, we see each thought caused by a previous thought" (W 3, 34, 1872). Taking our cue from this dictum and tracing the sequence from later to earlier, let us accept that the opinion or conviction that a thinker reaches at the end will be the product or effect of some secondness experience (as one might say). Let us allow too that, at the earlier point, the secondness experience itself must be traced back to its proper ancestry in some reality that it presents. These ancestries will come in different varieties, however.

In an ordinary causal case, there is a causal-*cum*-perceptual transaction between (say) the Cathedral at Chartres and a conscious, properly recipient subject *S*; and then, on the strength of this event, *S* believes justifiably and correctly that the Cathedral at Chartres has two spires. Here it is by virtue of the causal perceptual transaction that the Real consisting in the cathedral's having two spires determines *S*'s belief that the cathedral has two spires. (In a fuller treatment one would attend separately of course to the cases of seeing *x* and of seeing that *x* is φ .)

That is the familiar case. But now suppose that the initiator of belief was not perception but some "elaborative process of thought" (W 3, 42), one leading into a gradual accumulation of reasons that culminated at the moment of secondness in the thinker's finding nothing else to think but that (...). Here the thing which brought the thinker to the point of conviction was not just any causal effectiveness. Still less was the thinker's finding that there was nothing else to think but that (...) the outcome of some reality's/Real's causally effective agency.¹³ Rather the reason why the thinker was unable to find anything else to think but that (...) was that *there is nothing else to think*. If there is nothing else to think, no wonder the thinker thought that! You can say, if you wish, that some reasonable being's finding himself unable to discover anything else to think causally explains his finally arriving at the opinion that (...). But at the

temporally first link in the chain, the *reasonableness* of the thinker and the *reasoned* character of his thought is essential to the explanation. It is in this essentially normative way that we satisfy Peirce's requirement that the inquirer's opinion that (...) should be determined by a circumstance not extraneous to the facts. It is satisfied because the circumstance of there being nothing else to think but that (...) is not something extraneous to the facts. Rather, this circumstance bears a (so to speak) constitutive relation to the reality/Real that consists in the fact that (...).¹⁴

IX

I hope that the proposal just offered is in the spirit of Peirce's annotation and correction. It shows how the purely causal case need only be one among many others. Elsewhere, I have tried to illustrate the formal pattern given in the previous section. I shall give again here two examples, doubtful though it is that Peirce would have approved of the second.

(A) Peter believes that $7 + 5 = 12$. He has learned this neither by rote nor yet by reading that famous passage of Kant's *Critique of Pure Reason* where $7 + 5 = 12$ serves as an example. Why then *does* he believe it? Well, the explanation begins with the fact that all the other answers to the question "what is the sum of 7 and 5?" are blocked or excluded. In a full version of the explanation, this exclusion could be proved by reference to the calculating rules. In a maximal version, one would also rehearse the irresolvable difficulties attaching to proposals for different rules. Once so much was set down, the explanation might continue as follows. Peter knows those calculating rules. Moreover, in espousing the answer 12, Peter is going by the rules. So no wonder it is his opinion that $7 + 5 = 12$. So, in this case, Peter's belief that $7 + 5 = 12$ *is* determined (as Peirce requires) by a circumstance not extraneous to the fact that $7 + 5 = 12$. His reasoning summarily recapitulates the very reason why seven plus five *is* twelve. Indeed the full explanation of Peter's belief precisely vindicates Peter's belief.

(B) Paul believes, let us suppose, that slavery is unjust and insupportable. Suppose that, in seeking to explain why Paul believes this, we inquire into his reasons for thinking this, and suppose we then look for further amplifications and elucidations of those reasons,

drawing on the whole ethical background that we share with Paul. This will take a long time, but suppose that, as we proceed, it appears more and more clearly that the only way to think anything at variance with the insupportability and injustice of slavery is to opt out altogether from any moral viewpoint that can make sense of asking the question "What is one to think of the supportability or justice of slavery?" For suppose that at some point, in heaping consideration onto consideration, we find we have *enough* and it becomes apparent that *there is simply no room* in which to form another opinion. No doubt there will be many ethical cases where we do not reach this point and we do not know how to close off every avenue. But, in the case where we really can see Paul's belief as downwind of reasons like the convincing ones that we have imagined someone's eventually rehearsing about slavery, surely we can say "No wonder Paul believes what he believes! There is nothing else to think." In other words, Paul's belief about slavery is determined by circumstances (namely the considerations that we are supposing to have been rehearsed and to impinge on one who understands the moral question) not extraneous to the fact that slavery is unjust and insupportable. For Paul's reasons for thinking what he thinks do summarily recapitulate that in virtue of which slavery *is* wrong and insupportable.

Peirce would have been sceptical, I fear, whether our example (B) could be worked out in the way I have imagined. He could not object in principle, though, to the idea that a mass of considerations can culminate in conviction. For he speaks in other connections of reasons "not form[ing] a chain which is no stronger than its weakest link but a cable whose fibers may be ever so slender provided they are sufficiently numerous and intimately connected" (W 2, 213, 1868).

X

It is evident – and a search for more examples would make it even more evident – that the generality to which Peirce aspires in his theory of inquiry involves us in a bewildering and indefinite variety of different ways in which thinkers in different areas of concern can satisfy the Peircean requirement on which we have laid such stress. It is no less evident, though, that in so far as we want to persist at that level of generality, the answer we give to the question proposed

at the beginning of Section VIII, will have to be as follows: the thing that is minimally required in order to secure pragmatic content to a subject matter is this: that there, in that subject matter, a belief to the effect that p can be determined by circumstances not extraneous to the fact that p .

More generally, the conclusion to which we are drawn is that for any genuine belief, whether true or false, there has to be something it is answerable to and sensitive to. This last may as well be called a Real. But instead of rushing into a new ontology of Reals, let us look carefully to the status of our familiar form: *whoever sincerely inquires whether p seeks to ensure that any belief of theirs to the effect that p be determined by circumstances not extraneous to the fact that p* . This is only a schema. Reals are not here objects quantified over. The sentence letter " p ," being not a variable, functions by holding a place for a sentence in use. On these terms, the minimal claim about the formation of the belief that p is a notionally simultaneous assertion of all instances of the italicized sentence form with all possible sentential fillings for the letter " p ." In putting forward this schema, we *gesture* (if you like) at something entirely general, something that would be gestured at by these countless assertions. But we only gesture. For, strictly speaking, there is only a pattern here, nothing more. If we do proceed in this way, though, there is another advantage. We can also give notice that not all these assertions work in the same way. The secondness requirement, the nonextraneousness condition, and the other requirements on the determination of the inquirer's belief are to be understood in the divers ways that are appropriate to different examples. If what Peirce says about Reals is interpreted or elucidated, logically speaking, in this way, then the philosophical effect is that the schema is grammatically and philosophically filled out for different kinds of cases according to the subject matter – and in the light of whatever Peirce's logic can add to his characterization of the fourth method.

XI

If the fourth method as now explained and enlarged upon is the only method of satisfactorily settling opinion (albeit fallibly, always fallibly), what conception of truth do theorists of inquiry have to see as animating and constraining the epistemic efforts of those who

practice the method? And how are theorists further to elaborate or elucidate this conception?

Let us begin with some of the materials of "Fixation" itself. In a footnote to a passage that I quoted in Section V, continuing that passage into an afterthought dated 1903, Peirce writes:

1. CP 5.375: [T]ruth is neither more nor less than that character of a proposition which consists in this, that belief in the proposition would, with sufficient experience and reflection, lead us to such conduct as would tend to satisfy the desires we should then have. To say that truth means more than this is to say that it has no meaning at all.

This is the kind of statement that has given pragmatism such a bad name. Apart, however, from the warnings already urged in section I, there are other reasons to be careful here. If I say that the character of being red is nothing more nor less than the character of being the color thought by blind people to be well grasped by a comparison with the sound of a trumpet, does my claim have to be interpreted as a definition? If, in addition, we take the characterization in passage (1) to be a definition of truth that is intended to bring out what is so good about truth, then we misunderstand Peirce even more unfairly. Not only do we attribute to him a cynical instrumentalism that is utterly alien to his actions, his character, and his expressed views of science and life itself. We interpolate into his theories something that is entirely alien to the later sections of "Fixation." It is true that, in other places, Peirce gives a pragmatic reinterpretation of the notions of "reality"/"Real"/"external permanency" that play such an important role in "Fixation." But that reinterpretation is precisely not intended to *blunt the force* of the later sections of "Fixation." The intention (whether successful or unsuccessful) is rather to explicate these notions – in the spirit of "look[ing] to the upshot of our concepts in order rightly to apprehend them" (CP 5.3, 1901).

We need more Peircean testimony, testimony beyond that already displayed in Section IV, about the idea of truth:¹⁵

2. CP 2.135, 1902: You certainly opine that there is such a thing as Truth. Otherwise reasoning and thought would be without a purpose. What do you mean by there being such a thing as Truth? You mean that something is SO... whether you, or I, or anybody thinks it is so or not. ... The essence of the opinion is that there is *something* that is SO, no matter if there be an overwhelming vote against it.

3. CP 5.553, 1905: That truth is the correspondence of a representation with its object is, as Kant says, merely a nominal definition of it. Truth belongs exclusively to propositions . . . the proposition is a sign . . . thought is of the nature of a sign. In that case then, if we can find out the right method of thinking and can follow it out – the right method of transforming signs – then truth can be nothing more nor less than the last result to which the following out of this method would ultimately carry us. In that case, that to which the representation should conform, is itself something in the nature of a representation, or sign – something noumenal, intelligible, conceivable, and utterly unlike a thing-in-itself.

CP 554: Truth is the conformity of a representamen to its object, *its* object, ITS object, mind you. . . . Here is a view of the writer's house: what makes that house to be the object of the view? Surely not the similarity of appearance. There are ten thousand others in the country just like it. No, but the photographer set up the film in such a way that according to the laws of optics, the film was forced to receive an image of this house. . . . So, then, a sign, in order to fulfil its office, to actualize its potency, must be compelled by its object. This is evidently the reason of the dichotomy of the true and the false. For it takes two to make a quarrel, and a compulsion involves as large a dose of quarrel as is requisite to make it quite impossible that there should be compulsion without resistance.

4. CP 5.565, 1901, "Truth and Falsity and Error": Truth is that concordance of an abstract statement with the ideal limit towards which endless investigation would tend to bring scientific belief. . . . Reality is that mode of being by virtue of which the real thing is as it is, irrespectively of what any mind or any definite collection of minds may represent it to be. The truth of the proposition that Caesar crossed the Rubicon consists in the fact that the further we push our archaeological and other studies, the more strongly will that conclusion force itself on our minds forever – or would do so, if study were to go on forever. An idealist metaphysician may hold that therein also lies the whole *reality* behind the proposition; for though men may for a time persuade themselves that Caesar did *not* cross the Rubicon, and may contrive to render this belief universal for any number of generations, yet ultimately research – if it be persisted in – must bring back the contrary belief. But in holding that doctrine, the idealist necessarily draws the distinction between truth and reality.

5. CP 5.416, 1905: [A truth is] that to a belief in which belief would tend if it were to tend indefinitely to absolute fixity . . .

Let us begin with (2). (2), like the beginning of (3), effectively reinforces the manifest purport of Peirce's rationale for the fourth method. It reinforces the concluding message of "Fixation" but does not carry us beyond.

In (3), the object of a representamen must surely be the very same thing as its Real. The analogy with one view or aspect, as given in the photograph of Peirce's own house, echoes a sentence (CP 5.549, 1905) where Peirce claims that a fact is something "so highly prescissive"¹⁶ that it can be wholly represented as a simple proposition." But, however striking the analogy may appear that we find in (3), and however helpful this may promise to be, the ontology that it imports is full of difficulty. The problem is familiar. We think a proposition should be true by satisfying its truth-condition. But, if we think that, then we need to be able to state the truth-condition in such a way that the proposition can be false as well as true. Peirce claims that "a proposition is true if it conforms to its object," and he indicates in the passage cited in (3) (which I have abbreviated) that here he is reaching beyond the correspondence theory. But then we must ask what to say, according to the account he is developing, if the proposition is false. For in that case there will be no such thing as ITS object.¹⁷ There will be nothing the proposition has failed to be "compelled by." On the other hand, if the proposition is true, its object will exist and there will be no need to enter further into questions about conformity or compulsion. For its object exists and that alone will be enough.

"Corresponds to the facts," as the correspondence theory has it, where "facts" is plural, appears to be a merely stylistic variant on "true." Understandably, this provokes us to try to find a proper relation here between a proposition and some one thing, its representatum, so to say (CP 5.384). But the auguries are not good, it has already appeared, for the theory which we see Peirce picking his way toward in our citation (3). The counterattractions will be further evident of the approach we adopted in Section X. On that approach the schematic letter, by standing hostage in each case for a sentence that is reality-involving, does a sort of justice to the realism of Peirce's view of the search for truth. But it does this without ontological commitment to facts, realities, or Reals and it dispenses entirely with all relations of conformity and compulsion between a belief and a particular item, whether fact or object. This may seem to suggest the possibility of replacing Peirce's effort in CP 5.554 (cited earlier) with some scheme for truth that is more anodyne, less troublesome, and entirely general. But I have tried to show in another place that, here too, no general account of truth itself is to be had – at best

a thought which, consistently and sincerely pursued, leads straight into paradox.¹⁸

The proposals (4) and (5) bring us closer to the formulation from "How to Make Our Ideas Clear" which we rejected in Section I. Proposals (4) and (5) are intended to give the effective or pragmatic meaning of the manifestly correct "merely nominal" conceptions expressed in proposals (2) and (3). In (4), such pragmatic proposals, even the idealist ones, are defended from the charge of losing the distinction between truth and reality. So far, so good, and no doubt these proposals also have other merits. Nevertheless, when read literally, they all seem to depend for their acceptability upon the supposition that no information of the kind that would be needed to test plausible guesses already made or discover truths as yet unknown (e.g., concerning that which is past or is presently hidden) *ever perishes* or becomes unavailable to inquiry. For if, always and constantly, such information is being lost, then it is neither here nor there that inquiry can be constantly renewed, constantly corrected, and open-endedly prolonged. Moreover, such perishing, as Hilary Putnam points out, is not only a fact but a fact that is implied by modern physics.¹⁹

Peirceans may respond to this crippling objection by reading proposals (4) or (5) less literally. But then the construal will need to lean heavily on our understanding of that which (4) and (5) purport to define/explain/elucidate. It is also worth remarking that, once the reference of "that to which inquiry would tend," etc., is sufficiently carefully distinguished from any particular set of propositions that has been redacted or will have been redacted at any particular point in the future, the phrase "that to which inquiry would tend," so far from distilling an effective or pragmatic meaning from the truisms that figure in (2), is a form of words that stands in radical need (as radical a need as any expression ever could) of pragmatic elucidation!

XII

Is all then entirely lost so far as truth is concerned? Can it be that truth waits in the wings, is latent in the inquirer's project of deciding what to think (see again our first epigraph), can be clearly seen emerging in the thoughts of someone who moves through the first, second, and third methods into the method of experience, abduction, and the rest – and yet is a character that defies all identification or

elucidation? No. Surely we can find for Peirce some form of words that fastens down and promises in due course to help elucidate, in terms that essentially involve the business of inquiry and the method of "experience," the nature of that property, namely truth, which (unless we are complete strangers to opinion or doubt) is already familiar to any or all of us. Once we allow ourselves to speak of a property that is already known to us, and once we dissociate ourselves from Peirce's numerous and uniformly unsuccessful attempts to arrive at the property from pragmatist would-be determinations of the extension of "true," several suitable forms of words stare us in the face:

6. Truth is the property that it is the aim of inquiry as such to find beliefs possessed of.

7. Truth is the character which, if only we follow the fourth method of inquiry, we may *justifiably hope* will be enjoyed by beliefs that survive however long or far inquiry is pursued or prolonged.

8. Truth is the property that anyone will want for his or her beliefs who sincerely inquires whether *p* (or not) and who seeks to ensure that any belief of his or hers to the effect that *p* (or not *p*) should be determined by circumstances not extraneous to the fact that *p*.

Such formulations might not have pleased Peirce, but they hold a place for a view to which he could lay claim if he wanted.

XIII

Suppose that, in the cause of further elucidating²⁰ the property of truth, we were to deploy the identities given in (6), (7), and (8) and we were to elaborate the plurality of linkages holding between truth, on the one side, and inquiry, experience, secondness, hypothesis, . . . , on the other. Suppose that, proceeding in this way, we were to present our findings as the marks, in Frege's sense,²¹ of the concept *true*, and suppose that, in the same effort, we tried to explore the logical properties of the concept of truth (ascertain what properties the property of truth implies, excludes, etc. in a thing thought or said). Then what would follow from the fact the whole basis on which this elucidatory exercise was conducted was a link between a notion of truth awaiting further specification and the notion of inquiry that is already developed (cp. IV, V, VI) and is partially definitive of

pragmaticism as a philosophical position? If, proceeding in the way indicated and adducing our understanding of inquiry, we look in this spirit of pragmaticism “to the upshot of our conception [of truth] in order rightly to apprehend [it],” then what do we learn about that conception? Will our findings have the effect of subverting the ordinary (“realist”) presumption that the truth is perfectly independent of us (except, of course, in so far as some judgment that is in question relates to doings of ours, or relates to the effects of such doings)? Will the pragmaticist outlook have the effect of undermining the ordinary idea – compare citation (2) – that the truth is “there anyway,” definitely and determinately? Will it move us toward the position that Michael Dummett has called antirealism?²²

It is hard to find very much in Peirce’s texts that conforms to these expectations. Nor is there any anticipation in any logical writings by Peirce of the classic antirealist position developed by Michael Dummett under the influence of mathematical intuitionism and the strong emphasis that intuitionism places on the relation between grasping a proof of a proposition and understanding it. (The intuitionist emphasis is philosophically akin to the logical positivists’ foundational idea that to understand a Satz is to know the method of its verification.) The antirealist whose position Dummett develops is one who affirms the laws of noncontradiction (no statement is true and false) and of *tertium non datur* (no statement is neither true nor false) while *withholding assent* from the principle of bivalence (every statement is either true or false). Such assent is withheld by virtue of the absence of any assurance that, with regard to every well-formed assertion, either it or its negation can be proved or established to be true. (Dummett points out that, for the same sort of reason, the positivists would have been well advised to withhold that assent.)

Things seem very different with Peirce. In all his logical explorations, he never raises doubts or questions of principle about the status of the law of double negation elimination. Since double negation elimination elides the subtle difference between *tertium non datur* and bivalence, committing anyone who accepts the former to the latter, it would appear that Peirce can have had no premonition at all of an antirealism such as Dummett’s. It is true that, in a more philosophical context, Peirce writes (using the name excluded middle where modern antirealists might prefer bivalence) that “Logic requires us, with reference to EACH question we have in hand, to

hope some definitive answer to it may be true. That HOPE with reference to EACH case as it comes up is, by a SALTUS, stated by logicians as a law concerning ALL CASES, namely the law of excluded middle. This law amounts to saying that the inverse has a perfect reality."²³ But the hope Peirce speaks of here relates to truth, not to proof or verification; and the substance of the hope surely relates to truth as ordinarily conceived. For, as I shall try to show in the next pages, the confidence that Peirce speaks of as presupposed by the logical principle in question smacks more of Peirce's confidence in the significance or Sinn of declarative sentences that are properly answerable to experience or experiment than it can of any faith of Peirce's in declarative sentences or their negations all having proofs or verifications. At least in Dummett's sense, Peirce is not an antirealist. In Peirce, the key to having significance or sense (and to grasping significance or sense) is not the actual prospect of proof/disproof or verification/falsification but proper engagement with the business of inquiry and of *reaching for* verification or falsification.

If (as I venture to think) pragmatism leaves truth just as it was, what then is the real purport of pragmatism in its connection with truth and meaning? What is the intended import of such dicta as these? –

There is no conception so lofty and elevated that it cannot be fully defined in terms of the conceptions of our homely, instinctive everyday life (MS 313 p. 29, quoted in Misak 1991: 119)

or the familiar foundational claim

Consider what effects that might conceivably have practical bearings we conceive the object of our conception to have. Then our conception of these effects is the whole of our conception of the object.²⁴ (CP 5.402, "How To Make Our Ideas Clear," 1877)

According to the transposition of Peirce's thoughts that I offer in these reflections, the real purport is relatively simple. Even though Peirce is a realist about truth, he is an operationalist about meaning. There is no specifically pragmatist conception of truth,²⁵ but there is a pragmatist conception of sense/significance/Sinn. A Peircean pragmatist, a pragmatist (as Peirce was led to say in order to make room for the differences between William James and himself), will scarcely think it worth saying that there is more to reality than could

ever be put into however many propositions – that, truth being what it is, there are all sorts of truths we shall never formulate and never could. His key concern is with the propositions we *shall* ourselves arrive at, express, affirm, or believe. It is with the real purport or meaning of our actual utterances, and the illusions we so easily fall into about what we can mean by what we say. The pragmatist's chief contribution to these questions, and the source of his critique of "vagabond ideas that tramp the public roads without any human habitation" (CP 8.112, 1900), lies where the citation last given indicates that it does. It lies in Peirce's account of the grades of clarity that can be attained in our understanding of the terms that enter into meaningful sentences and in our grasp of the concepts that enter into the propositions that such sentences express. Where concept-terms are concerned, we have the first grade of clarity, according to Peirce, if we can apply the term to things in our experience. We have the second grade when we can produce the kinds of explanation that pass muster as dictionary definitions or the like. At the third grade, if we are to attain that, our recognitional capacity must have been elaborated into a further and better state of practical readiness, a fully operational state, so to speak, one that engages with inquiry, experience, secondness, guessing, retroduction . . . with these things as they are or can be in life. See again the recently displayed citations. The practical conceptions mentioned in the second relate to habits of action. They also involve a rather specific orientation toward possible or actual future experience. (Compare CP 8.194.) It is at the third grade (presupposing and not superseding the first and the second) that the grasp of sense/significance/Sinn of a symbol has to be made complete.

The third grade of clarity can only be attained if, independently of any particular person's efforts, there awaits one who seeks to grasp the meaning of a given term some publicly completed or completable meaning for a sufficiently determined thinker to grasp. Peirce offers no unitary or full answer to the question what it is that completes this meaning or saturates the Sinn of the symbol. (See Misak 1991: 12–35). Supposing, though, that somehow this saturation has been achieved or is in the process of being achieved, we may expect the proposition expressed by a sentence comprising such symbols to depend on the Sinn of its constituent parts. Thinkers' corresponding grasp of the proposition and its truth-condition, arrived at through

their understanding of a sentence's mode of composition, may or may not put them into a position to verify or falsify the proposition expressed by the sentence. Where thinkers can verify or falsify, it needs to be no accident that that is so. But being placed to verify or falsify is not the general form of the kind of readiness which Peirce is concerned with.

XIV

Such in outline is the semantic operationalism which, using language more current than the language of Peircean semeiotic, I speculatively reconstruct for the author of "Fixation" at the time of the rereadings and rewritings recorded in our first epigraph. Leaving intact the ordinary ideal of truth, the position counsels, no doubt, that often the best we can hope to achieve is approximation to truth – and nothing wrong with that. If, on the one side, there is truth itself (truths themselves), which propositions seek to track down, then on the other side there are propositions, and the senses of sentences in use. These are our artifacts. As such, they depend on us for their completion. The properly significant sentence, by being the sentence it is and having its sense determined by whatever senses with which we contrive for the senses of its constituents to be saturated, sets itself a goal that it either attains or does not attain. Whether this goal is attained or not is in no way up to us. But what sentence it is that has been propounded, with what sense, and engaging in what way with inquiry, this *is* up to us. It is a highly nontrivial achievement on our collective part for a sentence to set itself such a goal. It is an achievement not contrivable at all unless the conditions for truth are coordinated with the demands that are placed on an inquirer to avail himself or herself, in the right way, of experience. Such realism and such operationalism are made for one another.

One word more, about bivalence. Suppose that in a context *c* there is a sentence *S* each of whose components has a sense that is lexically and contextually fully determinate, operationally complete, and ready and waiting in *c* for the comprehension of any thinker who is ready to attain to the third grade of clarity with respect to it and ready to grasp the Sinn of the sentence that all these components make up. Suppose that the proposition expressed by *S* in *c* will be true if and only if ..., where "..." is a fully determinate condition (determinate in *c*, even if not necessarily verbally completely

explicit). If so, then the proposition conveyed by *S* will be so determinate that it is determinate what it is for things to be *otherwise* than they are when. . . . In that case, given such determinacy for *S*, nothing obstructs the full determinacy of the sense of the negation of *S*. For whatever in *c* circumscribes the sense of ". . ." will determine the sense of "things are otherwise than they are when. . . ." Such a form of stipulation seems ideally suited to the rule Peirce gives at CP 4.492 for his system of existential graphs, to the effect that two SEPS (signs of exclusion), "the one enclosing the other, but nothing outside that other, can be removed." (See CP 4.490–8, 1903 and 4.572, 1905) This is equivalent to the law of double negation.²⁶ An antirealist might demur, but Peirce himself entertains no doubts at all about the pragmatic meaning of a SEP-sign that conforms to such a rule.

XV

Inquiry conducted along the lines of Peirce's fourth method, inheriting as it does the merits of various predecessors, is a process that gathers rational strength, we have claimed, as it gathers force and gathers force as it gathers rational strength. On the proper understanding of this process, we have said, truth is conceived as the property that we can hope to steer our enquiry to home upon; the beliefs that inquiry furnishes to us are beliefs that it is rational for us, however fallibly, to persist in until specific grounds for doubt present themselves; and the method of inquiry makes room for any or all modes of research or criticism, whether commonsensical or scientific, that promise to reach beliefs by routes not extraneous to the facts they are concerned with. One who conducts himself on these principles will be no more eager to define "rational" than he is to circumscribe legitimate methods of exploration and discovery; but such a person will surely insist that the method of inquiry is a fully rational way of arguing from the known to the unknown – that it is a paragon of rationality.

Such an attitude will appear to conflict with something commonly regarded as one of the great insights of David Hume. Hume points out in *Enquiry Concerning Human Understanding* that all reasonings concerning matters of fact are founded in the relations of cause and effect, and the foundation of our understanding of these is experience. But here he claims to find a problem. How may I

rationally infer from past bread-eatings' *having* nourished me that similar eatings *will* nourish me? If there is such an inference it is not *intuitive* (knowable without demonstration); nor yet is it *demonstrative*. What is it then?

It is *experimental*, Hume imagines your saying. But to this he replies that experimental reasonings already presuppose that the future will resemble the past. How then, presupposing this, can they show or even suggest that the future will resemble the past? Hume infers that it is not reasoning that engages us to suppose the future will resemble the past. It is habit, not reason.

What ought Peirce to say? Peirce would begin by agreeing that inference from the known to the unknown is a matter of habit and is not demonstrative. But habits, he would insist, can be good or bad. And good habits can exemplify a distinctive form of reasonableness. (See Section II.) After all, we *need* to argue from the known to the unknown. If we need to, then it is reasonable for us to do so (intuitively rational you can say, if you wish) and it is irrational for us not to do so – provided that we do not entrust ourselves to a particular policy that there is reason for us to regard as reckless (as exposing our vital needs to risks there is no necessity for us to incur) or as ill-calculated to bring us to beliefs we shall accept for reasons nonextraneous to the facts. If Hume wants to make a point about habit, let him make it as a point about the relevance of habits to the science of logic. It is a good point, and Peirce would second it. (Cp. Section II.) But it is no excuse for an assault on reason as such – unless Hume's aim is to put himself at the center of a long-running controversy.

It is easy to imagine that, if he were allowed a response, Hume would still press upon the question how Peirce can argue non-question-beggingly from past nourishings by bread to future nourishings by bread, if this presupposes the *general* claim that the future will resemble the past – which is something yet harder to establish than future nourishings by bread.

To this Peirce would surely reply (here anticipating Popper) that good arguments from the known to the unknown had better *not* presuppose that the future will resemble the past. For it is not even true that it will!

Nature is not regular. . . . It is true that the special laws and regularities are innumerable; but nobody thinks of the irregularities, which are infinitely more frequent. (W 2, 264)

Moreover, when we argue from past nourishings by bread to future nourishings by bread, we are *not*, according to Peirce, simply extrapolating a past regularity. That is never, in his view, a valid procedure. If that was what Hume was attacking, then Hume was right, Peirce will say, but far short of the conclusion that Hume was aiming for. When we extrapolate a regularity, there has to be another reason to do so beside the fact that the regularity has held so far. Even in the special case of the “particular methods” beloved of the inductive reliabilists, Peirce would say, it would be utterly invalid to argue from the mere past success of a method to its future success. With any method, there has to have been something else to commend it. And here is the role of abductive thought. (Compare Section VII.)

Let us distinguish here two cases. The first is that of the ordinary person with an ordinary need not to starve, who wants to prolong life and needs some determinate way, here and now, of sorting the nourishing from the nonnourishing. Any such sorting must either deploy existing categorizations such as “bread” or deploy improvements upon the categorizations the person already has. There is nowhere else for him to work from. In so far as “bread” is one of the categorizations on which the person habitually relies and on which he acts, he is committed to think that there is something about bread – a substance that he can identify where necessary with some precautionary care – which would explain why it nourishes. Under interrogation he would appear to be committed to think there is some generalization about bread and nourishing (one he may not know how on demand to formulate very carefully or articulately) which would not, if it were tested, be falsified. (Compare our discussions of perception and memory at Section VI.) If the question were raised why, once formulated or reformulated, any such generalization should be relied upon, the person might reply first that faith in this is a much more reasonable faith than faith in the future’s resembling the past; and second that *some* such generalization has to be relied upon if life is to go on. There is no alternative. It would be irrational then not to act on the basis he is acting on. Criticize that basis and he will look for something better, for something that is adequate for the matter in hand. But the only point of departure in the search for something better is the place where we are. Cp. Plato *Phaedo* 10 1D (ad fin.); Aristotle *Nicomachean Ethics* 1095^{b2}.

As one makes more and more explicit that which an ordinary person might say in defense of his habit of taking bread to be nourishing,

one converges on the case where a more theoretical answer is to be given. That theoretical answer is not, according to the pragmatist, essentially different, only more discursive. It begins in the same place. If we are to do what we are naturally committed to do and argue in this case from the known to the unknown, then we must begin by trying to understand the thing that is known. So the thing we must understand better is bread. The problem of understanding or singling out this particular kind is not, however, one we need to solve on its own, or without any reference to the state of our inquiries into other empirical questions. We can only approach it from where we are at any given point in our inquiry. Looking at things from where he is, the inquirer notices the remarkable phenomenon that some have nothing to eat and starve and die while others who eat, and eat bread among other things, sustain their life. (See the third epigraph.) If bread nourished then it would be a matter of course that those who ate it sustained life. So it seems, according to the abductive hypothesis, that bread nourishes. This is a generalization worthy to test; and in the interim it is one to live by, pending any refinement or refutation that it may suffer.

Hume or his followers will notice that the Peircean strategy leans here upon the fundamental hypothesis. So they are bound to inquire what grounds the fundamental hypothesis itself. One tempting answer is: "Nothing holds or is so or obtains but that there is some reason why it is so." Readers of Leibniz will recognize the thought.²⁷ It is true that the claim is quite as general as the claim that the future will resemble the past, but it is a far better candidate to be the regulative assumption of inquiry. At least it suggests nothing that is *manifestly* false. Still better, it scarcely needs to be thought of as an empirical generalization about reality. It proposes rather a certain attitude toward reality – an attitude that it would be unreasonable for us not to share in if we are to do that which we shall perish by not doing.

What then is the connection between Sufficient Reason and the twofold procedure that Peirce commends to us? Suppose our methodological stand is that nothing holds unless there is a reason why it should. Then we are committed to think that, if some phenomenon *C* obtains, something must be true which explains why *C* obtains. But then it must be possible for us to argue backwards, against the current of deductive sequence, and to infer from *C*'s obtaining whatever

best explains why *C* obtains. But here we come back to abduction, which supplies selected materials to induction. (See VII end.) If stuffs like bread nourish, there must be something or other about them in virtue of which they do that. . . . Of course "bread" may be the wrong basis for an abduction and ensuing generalization. But this is a question that we can only attempt from the midst of a large background, already given, of collateral beliefs, nonarbitrary suspicions, conjectures, questions, and the rest. The label "bread" is our provisional place-holder for some stuff or other that makes a difference to life's being sustained. (Cp. CP 4.234, 1902) "Bread" provides us with the materials for a hypothesis that can be tested, qualified, reformulated, tested again, and so on. In practice and so far, some hypotheses have stood up. When they fail, we will start repairing them. It would be arbitrary to proceed in any other way and worse than arbitrary not to proceed in this one. Of this, indeed, we can be *intuitively* certain.

None of this proves that bread will continue to nourish. Such a proof was not what Hume took himself to be entitled to ask for. What he asked was what kind of reasonable inference it is that gives the conclusion (however fallible) that bread will nourish. The answer to his question is that it is a fallible extrapolation, which we should be practically irrational not to attempt, from an abductive hypothesis that we should have been practically irrational not to try to formulate and test, an abductive hypothesis arrived at from wherever we actually are, and made in accordance with the branch of thinking that the nineteenth century called logic. Except in so far as it subsumes the science of deduction, it is not the business of such logic, and it does not need to be its business, to furnish infallible directions by which to argue from the known to the unknown²⁸ – only directions that it would be unreasonable not to employ. Let those who are expert in the classification of forms of reasonableness now classify the various elements of this response to Hume's challenge and let them assign them variously to the intuitive, the demonstrative, and the experimental.²⁹

NOTES

1. See Misak (1991: ch. 1, for instance), who alerts us to the consistently and strictly pragmatic signification of Peirce's use of words such as "mean."

2. See Short (2000: 2, and n3). Another citation given by Short: "The method of science is itself a scientific result" (CP 6.428, 1893).
3. Hookway (1985: 52f).
4. The importance of this citation is pointed out by Skagestad (1981: 141).
5. It is worth comparing the indispensability of this hypothesis with one of the several roles of Leibnizian Sufficient Reason. For all these roles, see Wiggins (1996: 117–32).
6. Here there is rich collateral evidence of Peirce's intentions. Especially, perhaps, we should take note of a manuscript of 1893–5 that Cheryl Misak draws to our attention:

As for the experience under the influence of which beliefs are formed, what is it? It is nothing but the forceful element in the course of life. Whatever it is . . . in our history that wears out our attempts to resist it, that is experience. . . . The maxim that we ought to be "guided" by experience means that we had better submit at once to that to which we must submit at last. "Guided" is not the word; "governed" should be said. MS 408, p. 147, 1893–95, quoted in Misak (1991: 83)

7. An analogy may be helpful. Augustine wrote "*Dilige [deum] et quod vis fac.*" The exhortation "Love God and do what thou wilt" may seem to be utterly permissive. It seems so until you reflect that such an injunction requires you to desire nothing God would not wish you to desire (or nothing you think he would not wish you to desire). It does not entail that you should do whatever you will. (There is no doubt how Augustine's double direction is to be understood. No doubt it is a question whether our "imperative logic" would need general modification lest "conjunction elimination" destroy the sense of such double commands. Better though to show the dispensability of imperative logic.)
8. In something he wrote before "The Fixation of Belief," Peirce had already noted that there is an important difference between the settlement of opinion which results from investigation and every other such settlement. Investigation "will not fix one answer to a question as well as another, but on the contrary it tends to unsettle opinions at first, to change them and to confirm a certain opinion which depends only on the nature of investigation itself" (CP 7.317, 1873). By the time someone has reached for the fourth method, he will be fully prepared for this.
9. Peirce sometimes talks like this: "Abduction commits us to nothing. It merely causes a hypothesis to be set down upon our docket of cases to be tried" (CP 5.602, 1903). Elsewhere, he is troubled by the fact that "it is well within bounds to reckon that there are a billion hypotheses that a fantastic being might guess would account for a given phenomenon." See Peirce (1929:269–83). For his response to this difficulty, see the sentences from "Guessing" cited at the end of the paragraph to which the present note attaches.

10. See Misak (1991: 99).
11. On Nicod, see Hempel (1945).
12. See Short (2000: n 9).
13. Here one is eager to allow on Peirce's behalf for the full force of a remark that he made in 1902 – I owe the reference to Skagestad (1981: 39) – “In reasoning, we have the singular phenomenon of a physiological function which is open to approval and disapproval” (CP 2.152).
14. Compare “[T]he truth of the pure mathematical proposition is constituted by the impossibility of ever finding a case in which it fails” (CP 5.567, 1901). We shall supersede in the next section the apparently relational mode of discourse adopted in the sentence to which the footnote is annexed.
15. Useful collations of sources on truth will be found in Haack (1997: 91–107) (which sets out some wicked, curious, and instructive contrasts between her two subjects) and in Migotti (1999).
16. That is to say that the fact that *p* *prescinds* from the aspects of reality with which it is not concerned.
17. Compare P. F. Strawson (1965).
18. See Wiggins (2002).
19. See Putnam (1995b).
20. In order to elucidate a predicate (without necessarily defining it or giving necessary and sufficient conditions for its application) one deploys the predicate and puts to use the concept that it introduces in ways that exhibit the character of the concept and reveal its connection with other concepts that are established, coeval, or collateral with it, and already intelligible in their own right. (For the pedigree of the term elucidation, see Wittgenstein 1921: 3.263, 4.026, 4.112.)
21. For various attempts of my own to pursue this line of inquiry, see the article cited in note 18 and the bibliography there.

Marks. The marks of the (first level) concept *horse* are the (first level) properties possessed by all things that fall under the first level concept *horse*. Thus we arrive at the marks of the concept *horse* by asking, of things that share the property of being a horse, what properties they have. The answer in this case will be the properties of having a head, four legs, a solid hoof, a flowing mane and tail, a voice that is a neigh. . . . Similarly then, what properties do things have that possess the property of truth?

22. See Misak (1995: 121, 125, 127).
23. NE 4.xiii, undated, emphasis as cited in Misak (1991:157).
24. Cp. “We must look to the upshot of our concepts in order rightly to apprehend them” (CP 5.3, already cited).
25. As we saw in the first epigraph, Peirce thinks that truth is *identifiable by reference* to the concept of inquiry. In Section XII, I have exploited that very thought. But truth is *not* for that reason an epistemological

or inquiry-based notion. It is a misunderstanding of the nature of elucidation to suppose that the concept of truth had to be epistemological *just because* one elucidatory route to truth was through the concept of inquiry. The method of elucidations neither retraces a prior process of contagion nor yet leaves contagion in its tracks.

26. In a comparable formulation devised in the service of a different conception of assertion, Dummett says that "a statement, so long as it is not ambiguous or vague, divides all possible states of affairs into just two classes. For a given state of affairs, either the statement is used in such a way that a man who asserted it but envisaged that state of affairs would be held to have spoken misleadingly, or the assertion of the statement would not be taken as expressing the speaker's exclusion of that possibility" (Dummett, 1959: 149–50). For Dummett this claim is part of the build-up for a proof of *tertium non datur*. ("If a state of affairs of the first kind obtains, the statement is false; if all actual states of affairs are of the second kind, it is true. It is thus *prima facie* senseless to say of any statement that in such-and-such a state of affairs it would be neither true nor false.") One part of Dummett's dialectical framework here is the verifiability principle to the effect that "a statement cannot be true unless it is in principle capable of being known to be true." For that reason Dummett holds that his own dichotomy principle falls short of implying bivalence. In the absence from Peirce's thought as we have reconstructed it of any such verifiability principle, it is hard to see what could prevent Peirce's semantic operationalism from delivering full bivalence. An illuminating critical commentary on Dummett's argument will be found in Ian Rumfitt (forthcoming).
27. Leibniz puts the claim to a theological use. Indeed, he sometimes tries to prove by its means the existence of God. But Sufficient Reason itself is neither theological nor teleological in its original purport. For more on some of these matters, see note 4.
28. Or even to furnish procedures that "will, if persisted in long enough, assuredly correct any error concerning future experience into which [they] may temporarily lead us" (CP 2.769, 1905). Peirce does make such claims, but they are inessential to his contribution to the "problem of induction." (On the status of these Peircean claims, see Misak (1991: 111, 115). See also Sections I, XI.)
29. Peirce refers to Hume rather infrequently. But see CP 6.500, 1906 6.605, 1891 5.505, 1905.