

# Eleven Challenges to the Pragmatic Theory of Truth<sup>1</sup>

The intention here is to discuss what Robert Almeder calls the “received view” of Peirce’s definition of truth.<sup>2</sup> This is the view that Peirce defines truth as the settled opinion that inquiry ultimately will or would result in if inquiry would continue long enough. This view is generally referred to as the pragmatic theory of truth.<sup>3</sup> It is clear that this definition is cast in terms of a conditional. The truth of a proposition is defined as follows: *if* the proposition is inquired into long enough, *then* this will ultimately result in a settled belief that P.

That Peirce’s theory of truth hinges upon a definition formulated as a conditional seems to make the theory easy to refute. One only has to conceive of a true (or false) proposition on which opinion will never get settled no matter how long inquiry may continue. Peirce realizes this, and in “How to Make Our Ideas Clear” raises an important objection to this type of definition, an objection that is commonly called the buried secrets objection:

But I may be asked what I have to say to all the minute facts of history, forgotten never to be recovered, to the lost books of the ancients, to the buried secrets ... Do these things not really exist because they are hopelessly beyond the reach of our knowledge? (W 3.274, 1878)<sup>4</sup>

The possibility of such buried secrets is not the only kind of counterexample one can raise against the pragmatic definition. At least eleven classes of counterexamples can be distinguished, each of which may refute, or require a refinement of the definition Peirce proposes. After listing them, I will show, first, that if we allow the pragmatic definition to be read as a counterfactual, they can all be reduced to the following three: propositions that cannot be inquired into; propositions such that inquiry, due to accidental circumstances, will not lead to a settled belief in the proposition; and, finally, propositions such that inquiry cannot lead to a settled belief in the proposition no matter how favorable the circumstances are. Next I show that there cannot be any

counterexamples in either of these three classes. To show that the pragmatic definition discussed here can be ascribed to Peirce, and to show how it fits in with his thought, I begin with a derivation of Peirce's pragmatic definition of truth along the lines sketched in "How to Make Our Ideas Clear."

For Peirce, our conceptions of truth and reality originate when the knowing subject discovers that sometimes the beliefs of others are to be preferred above one's own. Consider Peirce's example of a child who is told that the stove is hot (W 2.202, 1868). Initially, the child refuses to believe that it is hot, as "hot" and "cold" apply only to what it touches and not to what it sees. However, when the child, ignoring the warning, touches the stove, it will find the testimony strikingly confirmed. In this manner the child learns that on some occasions the testimony of others is a more reliable source of knowledge than what has been obtained through the senses. The discovery that sometimes testimony is to be preferred above one's own direct experience is for Peirce a decisive moment in the development of the individual mind. It is here that the distinctions between self and external world, between reality and fiction, and between truth and error, all find their origin.

This common origin of truth and reality also shows the close bond between the two. Our conception of reality originates precisely when we discover that there is an unreal, an illusion; that is, when we first correct ourselves (W 2.239, 1868). This relates error directly to the unreal, and the absence of error to the real; or, as Peirce formulates it: true cognitions are those "whose objects are real," and untrue cognitions are those "whose objects are unreal" (*ibid.*). The term "object" stands in this context for "anything that comes before a mind in any sense; so that anything mentioned or thought of is an object" (MS L482, n.p., n.d.).<sup>5</sup> By the object of the cognition is meant here the thing, concept, general, possibility, etc., as it is immediately (*re*)presented in the cognition. Peirce also calls this the immediate object.<sup>6</sup> So, we must read the above statement as follows: true cognitions are those whose immediate objects are real; untrue cognitions are those whose immediate objects are unreal. As Peirce puts it in a draft of his rejoinder to Dr. Carus: "My view is that the real is nothing but the immediate object in a true cognition" (MS 958.205; 1893).

The first step in the development of a theory of truth is to make precise how the concept of truth is to be understood. To that purpose Peirce distinguishes in "How to Make Our Ideas Clear" between three grades of clarity which a particular concept can obtain. A concept reaches its first grade of clarity when it is recognized whenever it is met with and is not confused with any other concept (W 3.258, 1878). For Peirce, our everyday conceptions of truth and reality attain this first grade. The proverbial 'man in the street' uses the terms with perfect confidence, not doubting for a second that he understands them (W 3.271, 1878).

A concept reaches the second grade of clarity when it not only *seems* clear at the outset, as with the first grade, but when it is also demarcated with

enough precision to sustain the test of dialectical examination; meaning that no discussion can bring to light points of obscurity connected with it (W 3.259, 1878). This second grade of clarity, which comes close to the Cartesian notion of clear and distinct ideas, is obtained by providing abstract criteria that determine unambiguously to what the concept applies, and to what it does not.

According to Peirce, our conception of reality reaches this second grade of clarity with a definition that can be traced back to Duns Scotus (MS 642.11, 1909). On this definition something is real when it is independent of what you or I or anyone in particular thinks it to be (W 2.467, 1871). This definition gives a precise demarcation of reality, by “considering the points of difference between reality and its opposite, fiction,” with which it provides a clear-cut rule for distinguishing what is real from what is not (W 3.271, 1878; cf. CP 5.525, 1905).

The relation between truth and reality noted above makes it relatively easy to reconstruct Peirce’s conception of truth on the second grade of clarity. We saw that, for Peirce, a cognition is true when its immediate object is real. This gives us the following definition of truth pertaining to the second grade of clarity: A cognition is true when its immediate object is independent of what you, or I, or anyone in particular thinks it to be.

So far, the definitions of truth and reality are entirely abstract. They are only a stipulation of how one should use the terms if one seeks to avoid unclarity and indefiniteness. The Scotistic definition, for instance, does not say whether it applies to anything, nor does it give any guidelines for determining whether a specific object of thought is independent of what you or I or anyone in particular thinks it to be. This shows that definitions of the second grade of clarity are not yet fully worked out.

This brings us to the third and final grade of clarity. The third grade of clarity is obtained by applying the pragmatic maxim to the definition that makes up the *second* grade of clarity, as this provides the most precise rendition of the concept in question. On this maxim we must

Consider what effects, which 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. (W 3.266, 1878)

If we apply this maxim to Scotus’ definition, our conception of reality becomes the conceivable practical bearings we conceive real objects — that is, those objects that are independent of what you or I or anyone in particular thinks them to be — to have. Now the *only* effect such objects *can* have upon us, Peirce claims, is to produce belief. Therefore, *if* our conception of these effects is the whole of our conception of “real object,” as the pragmatic maxim asserts it is, then the *belief* that these real objects *can* have an effect upon us is

our whole conception of those real objects (W 3.271f., 1878). This means that “reality” can mean nothing *other* than the object of permanently settled belief or opinion.

Where does this take us with regard to the notion of truth? Returning to the claim that a cognition is true when its immediate object is real, we get the following: A cognition is true when its immediate object is the object of permanently settled belief. As Peirce puts it: “The opinion which is fated to be ultimately agreed to by all who investigate, is what we mean by the truth, and the object represented in this opinion is the real” (W 3.273, 1878); or as Peirce puts it in one of his later accounts of pragmatism: “the pragmatistic doctrine must be that the *immediate* object of that conception of things in which minds *would* ultimately concur, if inquiry were to be pushed far enough, is the very reality itself” (MS 322, 1907; emphasis added).

Apart from the immediate object Peirce also distinguishes what he calls the dynamical object, which is “the Object in such relations as unlimited and final study would show it to be” (CP 8.183, 1903). This means that for a true cognition the immediate object of the cognition coincides with its dynamical object. In all other instances the cognition is false. In the remainder of this paper I will focus on propositions rather than cognitions; a proposition being a cognition worked up into a judgment of fact (CP 6.522, 1901).

The above account should not be taken as the claim that the opinion that ultimately will be reached is expected to coincide with the truth, as if we were predicting a future empirical fact, but as the claim that “truth” and “final opinion” are synonymous. To say that proposition P is true means nothing other than to say that if P were inquired into long enough this will eventually result in the settled belief that P. Thus:

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. (CP 5.565, 1902)

The conceptions of truth and reality thus arrived at have a distinct advantage over the definitions of the second grade of clarity. Whereas the latter are created fully in the abstract, after which they are superimposed upon the process of inquiry, the conceptions that acquire the third grade of clarity are directly related to the process of inquiry itself. Definitions formed in this manner — i.e., by applying the pragmatic maxim to definitions that attain the second grade of clarity — I will call “pragmatic definitions” (not to be confused with practical definitions).

Application of the pragmatic maxim to Peirce’s conceptions of truth and reality thus results in the following pragmatic definition of truth:

Proposition P is true if and only if, if inquiry into P (by an indefinite community of inquirers) continues long enough, this inquiry will ultimately result in a permanently settled belief that P (among an indefinite community of inquirers).

The belief that ultimately results is the last belief, in the sense of one that terminates a series of beliefs that result from a series of inquiries (CP 5.608, 1903). The underlying idea is that this ultimate belief is reached when all that can be inquired into for a proposition is inquired into, so that no future inquiry can possibly reveal anything new of it. Therefore, the ultimate belief — or, as Peirce also phrases it, the final opinion — is a permanently settled belief.<sup>7</sup> The phrase “permanently settled belief” thus refers to a belief that no future inquiry can undermine; that is, no future inquiry can show that P is false, nor can it cast any doubt on P. The locution “by an indefinite community of inquirers” is added to filter out any distorting elements that may result from “the limitations in circumstances, power, and bent of the individual” (W 2.468, 1871). As this element of the definition only occasionally bears on the present subject (apart from some instances under class ten and class eleven counterexamples where it will be discussed), I will temporarily omit it from the definition.

The aspect of the definition I will concentrate upon is its conditional nature. To say that P is true is to say that *on the condition* that P is inquired into long enough, P will in the long run become the object of a permanently settled belief of a community of inquirers. So, Peirce’s pragmatic definition of truth can be rephrased as follows:

P is true = if *p* then *q*,

where *p* stands for “P is indefinitely inquired into,” and *q* stands for “there will be a permanently settled belief that P.”

Casting a theory of truth as a conditional clearly seems to give the upper hand to those who seek to refute it, since they only have to conceive of a situation where the definiens is true and the definiendum false, or *vice versa*.<sup>8</sup> This means testing the theory of truth against the background of our conceptions of the first and second grades of clarity. As Peirce rightfully remarks: with every step in the clarification of a concept “it is the lower order of clearness to which the higher is obliged to conform” (MS 1573.456, c.1894). Hence:

If our abstract definition of the real [or of truth, etc.; CdW] were in decided conflict with the familiar use of the idea, it would be the abstract definition which would have to be altered. And again, when we seek to make this more clear by translating the whole into what is directly known to us, that is ideas, if this translation did not fit the abstract

definition, it is the translation that would have to give way.  
(*ibid.*)

At the same time it must be admitted that on occasion our notions on the first or second grade of clarity, need revision, and not the pragmatic definition. Peirce himself seems to take this second path, for instance, when he claims that saying that a proposition is true is merely the expression of a hope that future inquiry into the proposition will lead ultimately to a settled belief in it (cf. CP 6.610, 1893). Each such revision, however, must be shown to be more than a mere *ad hoc* admission added solely to save the definition. Because Peirce's revisions result from considerations other than meeting the objections raised here (like his recognition of the principle of continuity and his criticism of necessitarianism), I will limit myself here to Peirce's early view and examine its merit.

In examining the vulnerability of the pragmatic definition against counterexamples it is helpful to distinguish the different classes of counterexamples that can be brought against it. I believe that an extensive set of such classes can be given, and will give an admittedly provisional inventory of them. Each of these classes marks a specific challenge to the pragmatic definition of truth, and the mere possibility of propositions in any one of them suffices for demanding a modification or perhaps even the abandonment of the pragmatic definition. At least eleven classes can be distinguished:

1. Propositions P that are true, but that because of accidental circumstances are never inquired into (in which case the antecedent is not fulfilled).
2. Propositions P that are true, but that because of accidental circumstances cannot be inquired into (in which case the antecedent cannot be fulfilled).
3. Propositions P that are true, but that cannot be inquired into no matter how favorable the circumstances are (in which case the antecedent cannot be fulfilled).
4. Propositions P that are true, but such that inquiry into them accidentally leads to the settled belief that not-P (in which case the consequent is not fulfilled).
5. Propositions P that are true, but such that inquiry into them must lead to the settled belief that not-P (in which case the consequent cannot be fulfilled).
6. Propositions P that are true, but such that inquiry into them accidentally changes the truth value of P, and leads to the belief that not-P.
7. Propositions P that are true, but such that inquiry into them *must* change the truth value of P, and leads to the belief that not-P.

8. Propositions P that are true, but such that inquiry into them accidentally changes the truth value of P, but still leads to the belief that P.
9. Propositions P that are true, but such that inquiry into them *must* change the truth value of P, but still leads to the belief that P.
10. Propositions P that are true, but that because of accidental circumstances do not become the object of permanently settled belief (in which case the consequent is not fulfilled).
11. Propositions P that are true, but that cannot become the object of permanently settled belief (in which case the consequent cannot be fulfilled).

This list does not exhaust all options. First, for each class it is assumed that P is true. Second, one might want to add propositions that are neither true nor false. Such propositions also can result in counterexamples, for instance, when they lead to the settled belief that they are true, or when inquiry changes their truth value. If we accept the principle of bivalence, however, this last group will be empty and the first will mirror exactly our initial list, as a false proposition is only a proposition the negation of which is true.

Another set of propositions omitted from the list are propositions for which inquiry into them affects the wider belief in a way that makes the pragmatic definition problematic. Suppose that P is "The interest rate increase by the Federal Reserve at  $t_0$  leads to a recession." and that P is true *independently* of whether P is inquired into or not. Suppose, further, that an inquiry into P, by drawing wide attention to the rate increase, expedites (though does not cause) the recession. This may lead concurrently to the correct belief that P is true, and the false belief that it is the inquiry that caused the recession (i.e., P is wrongly characterized as a self-fulfilling prophecy). Such counterexamples need not be examined separately, however, as they can be considered as compound. The mistaken belief to which the inquiry gives rise concerns in fact a different proposition, namely: "The recession is caused by inquiring into P." Let us call this Q. Given the earlier assumption that P is true independently of whether P is inquired into, Q is false. So, the case here reduces to a situation where an inquiry into Q would lead in the long run to the (mistaken) settled belief that Q. This allows us to reduce this case to a class four or a class five counterexample. (More precisely, since Q is false, as a mirror case of them.) This being said, let us turn our attention to the eleven classes distinguished above.

The first class of counterexamples, the possibility of propositions that are never inquired into, does not seem to pose any problem at all, as the definition does not require that the proposition be actually inquired into. All it requires is that *if* the proposition is inquired into, this will lead in the long run to a per-

manently settled belief that P. This agrees fully with our intuitions concerning the notion of truth. The truth of the proposition “Cleopatra sneezed three times on her fifth birthday” is clearly understood to be independent of whether the proposition is inquired into. What determines its truth value is whether the young Cleopatra sneezed three times that day or not.

This suggests that the kind of conditional that is relevant here is not material implication, but what Peirce calls an “ordinary conditional proposition” which,

asserts not merely that here and now either the antecedent is false or the consequent is true, but that *in each possible state of things throughout a well-understood range of possibility* either the antecedent is false or the consequent is true. (NEM 4.169, 1898; emphasis added).

The state of things in which there would be information on Cleopatra’s sneezing, e.g. through the reports of eye witnesses, can be taken as a possible state of things. Hence, the acceptable interpretation of the pragmatic definition turns out to be a hybrid of a factual and a counterfactual conditional.<sup>9</sup> One can reformulate the pragmatic definition of truth thusly:

Proposition P is true if and only if, if all that could be inquired into with respect to proposition P were inquired into long enough, this would ultimately result in a permanently settled belief that P.

The second class of counterexamples concern propositions that because of accidental circumstances cannot be inquired into. Suppose I put a copy of Descartes’ *Meditations* on my desk and the very next moment all intelligence in the universe is permanently wiped out. In that case we can still say that it was true that I put a copy of Descartes’ *Meditations* on my desk, even though the proposition cannot be inquired into. This again forces us to allow the definition to be read as a counterfactual conditional; meaning that had intelligent beings still been around, they would have come in the long run to the belief that I did put Descartes’ *Meditations* on my desk that day.

The situation is different where the obstruction of the inquiry is intrinsic to the proposition itself; i.e., where the proposition is such that it cannot possibly be inquired into. At least two cases can be distinguished: first, propositions the object of which lies without the realm of *human* inquiry; and, second, propositions the object of which lies without the realm of *any* inquiry.<sup>10</sup> As Peirce readily allows for an extension of the community of inquirers to all rational beings, whether they are human or not, I will address only the second.<sup>11</sup>

As far as the object of a proposition is cognizable, it can become subject of

at least some inquiry. The only situation in which the object of a proposition falls beyond the realm of *any* inquiry is when its object is absolutely incognizable. Applying Peirce's criterion of meaning to a proposition P the object of which is incognizable, shows this proposition to be meaningless. On the pragmatic maxim our conception of P is precisely the sum of the effects we conceive P to have. If P is incognizable, P cannot have any effects, since, should there be any such effects, P could be cognized through them, and would thus not be incognizable. In sum, as meaning can be ascribed only in terms of effects, and insofar as an incognizable proposition cannot have any effects, no meaning can be ascribed to an incognizable proposition. Now, a meaningless proposition cannot be true or false. As counterexamples of this class require that the proposition under consideration be true, this means that there cannot be any counterexamples of class three.

To these first three classes of counterexamples it might be objected that they are not genuine counterexamples to begin with, as the nonoccurrence or even the impossibility of the antecedent does not rule out the consequent. The consequent may be brought about by something entirely different, such as divine revelation or Descartes' evil genius. This objection, however, misses an important point. Truth is not defined merely as permanently settled belief, but is defined in terms of the *entire* conditional. Put differently, the issue is not whether obtaining a permanently settled belief is possible, but whether inquiry ultimately leads to that belief. So, on the pragmatic definition, we can only say that what God reveals is true if, were we to probe the matter ourselves, this would result ultimately in a settled belief in it and would have done so also had God not revealed it.

The fourth class of counterexamples consists of propositions P such that inquiry into them accidentally leads to the settled belief that not-P (in which case the consequent is not fulfilled). For an example of this class one might think of the Clever Hans phenomenon: researchers aiming to discover whether animals have an intelligence like our own, interact with their test subjects in such a manner that the animals come to display a behavior that seems intelligent to the researchers, but which is nothing beyond a quite basic stimulus-response reaction.<sup>12</sup> In the case of Clever Hans, a horse named Hans knew when to stop "counting," by observing minute involuntary movements of his trainer, the German schoolteacher Wilhelm von Osten, that betrayed when he wanted Hans to stop banging his hoof. In this manner, so the objection to the pragmatic definition might continue, the proposition "Animals are unable to do arithmetic." can, because of the nature of the inquiry into its truth value, inadvertently lead to the mistaken settled belief that the proposition is false.

Earlier we characterized settled belief as a belief such that no future inquiry can change it. On this characterization the belief that Clever Hans can do simple arithmetic would not count as a settled belief — not even when it is for a long time firmly believed in — insofar as future inquiry *can* change it, as it did

here. Put differently, this class of counterexamples can be upheld only if it is possible for an accidental interference to remain entirely undetected, no matter how long inquiry into the issue continues. There are only two cases in which this can occur: first, when the interference in the inquiry cannot itself be inquired into; and, second, when the interference can be inquired into, but cannot result in a settled belief regarding its impact on the inquiry. For the first, this means that the counterexample reduces to a class three counterexample. Since it has been shown earlier that there cannot be any such counterexamples, there also cannot be any class four counterexamples of this kind. For the second, the counterexample reduces to a class ten or a class eleven counterexample, depending on whether the interference is accidental or not. Precisely the same answer can be given for the fifth class of counterexamples, which concern propositions  $P$  such that inquiry into them *must* lead to the settled belief that not- $P$ .

The sixth class of counterexamples concerns propositions  $P$  such that inquiry into them accidentally changes the truth value of  $P$ , and leads to the belief that not- $P$ . With a little modification, the example of the interest rate given above can again be used here. Suppose again that  $P$  is "The interest rate increase by the Federal Reserve at  $t_0$  leads to a recession," and that inquiring into  $P$  draws attention to this interest rate increase. This time suppose that the recession occurs *only* when the proposition is actually inquired into, meaning that it is precisely the occurrence or nonoccurrence of the inquiry that determines whether  $P$  is true or not.

This counterexample can be dealt with along the same lines as both previous ones. Here again problems arise because the inquiry interferes with its subject. This interference, again, either can be detected or it cannot. If the interference cannot be detected, the case reduces to a class three counterexample. If, on the other hand, the interference can be detected, this can lead, either to a settled belief detailing the influence of the interference on the truth value of its object in a way that allows the interference to be corrected for, or it cannot lead to a settled belief. If the interference by the inquiry can be thus corrected for, it is not a counterexample. If the interference cannot be thus corrected for, the case reduces to a class ten or a class eleven counterexample.

Now one might object that the recognition by the inquirers that the inquiry itself changes the truth value of the object inquired into shows that the claims "It is true that  $P$ " and "If  $P$  would be inquired into long enough this will lead to the settled belief that  $P$ " have different truth values, and hence that the latter cannot be a clearer formulation of the former that is identical to it. This objection, however, fails fully to integrate into the inquiry the discovery that the inquiry affects the truth value of  $P$ . This discovery reveals an important characteristic of  $P$ , namely that inquiry into  $P$  changes the truth value of  $P$ . If obtaining a settled opinion on how this inquiry affects the truth value of  $P$  is possible, and if we wish to know whether  $P$  was true before the inquiry began,

or under the assumption that the inquiry never took place, then we could do so by correcting for the interference by the inquiry. One might even say that it is the duty of the inquirer to ensure that the inquiry does not affect the truth value of the proposition inquired into. In this way, inquiry, if continued long enough (a process in which all possible interferences by the inquiry are also accounted for), will lead to the settled belief that P, meaning that the pragmatic definition of truth holds as an adequate representation of our notion of truth.

The seventh class of counterexamples concerns propositions P such that inquiry into them *must* change the truth value of P, and leads to the belief that not-P. Suppose P is "Nobody will ever inquire into whether anybody ever inquired into anything."<sup>13</sup> Suppose also that P is true. Clearly an inquiry into the truth of P *ipso facto* involves an inquiry into whether anybody ever inquired into something, by that making it false that nobody will ever inquire into whether anybody ever inquired into anything. In short, an inquiry into P can never show that P is true, as the process of conducting the inquiry will make P false.

The situation here differs from the previous case in that this time the interference with the inquiry is not contingent. Still, the reply given there applies here as well. The interference can either be detected or it cannot. If it can be detected, this can either lead to a settled belief about the interference, or it cannot. Given the impossibility of any class three counterexamples, this class of counterexamples therefore reduces again to class ten or class eleven counterexamples. The same strategy applies also to the eighth and the ninth class of counterexamples which concern true propositions the truth value of which is changed when they are inquired into, but for which inquiry nonetheless leads to a settled belief that the proposition is true.

At this point we are left only with class ten and class eleven counterexamples. The tenth class concerns true propositions P such that inquiry, because of accidental circumstances, cannot lead to a permanently settled belief that P. Given the earlier discussion of class three counterexamples, I will limit myself to only those instances where inquiry is possible, or is even conducted, but where due to circumstances other than the proposition itself, inquiry will never lead to a permanently settled belief. The proposition "Cleopatra sneezed five times on her fifth birthday" serves as a good example. Given that this proposition failed to receive any attention till this day, it is most unlikely that we will ever discover whether it is true. As noted, Peirce refers to cases like these as "buried secrets" (W 3.274, 1878).<sup>14</sup>

Several times Peirce argues that such buried secrets can still be recovered. In his review of Nichols' *A Treatise on Cosmology*, for instance, he discusses Napoleon's having winked one night when he was in absolute darkness. To say that such an event is insignificant is misguided, Peirce answers, and he adds that even an event like this will leave enough traces to make a reconstruction of the event possible:

How many trillions of corpuscles are involved in the action, through how many million times their diameters they move, and during how many billions of their revolutions in their orbits the action endures, I will not undertake to calculate. But certainly you cannot yourself think that so vast an operation will have had no physical effects, or that they will cease for ages yet to come. (CP 8.195, 1904)

This answer does not seem particularly strong, however, as the critic can easily reply by raising the same objection over again, this time with respect to the propositions describing the subatomic events that shaped Napoleon's wink. There is a second reason Peirce's answer is not all that convincing. In his evolutionary cosmology, Peirce ascribes a central role to real spontaneity, or absolute chance. This means that not all events are derivable from later states of the universe.

To further examine this class of counterexamples, let us look again briefly at the notion of a buried secret. Given how the counterexample is set, the buried secret brought forward by the objector must be the object of a proposition that is either true or false. This means that, for something to count as a buried secret it must be conceivable. As for Peirce the absolutely incognizable is absolutely inconceivable (W 2.238, 1868), a buried secret cannot be absolutely incognizable. However, if buried secrets cannot be absolutely incognizable, then one must admit that a cognitive being endowed with the proper faculties, etc., *would* perceive it if it were present and were to inquire into it. Consequently, if we allow the pragmatic definition of truth to be read counterfactually (see the argument given for class one counterexamples), there cannot be any buried secrets of this kind, as the very nature of a buried secret entails that an inquirer could have been present.<sup>15</sup> On this interpretation, to say that "Cleopatra sneezed three times on her fifth birthday" is true, simply means that had inquirers been present that day, and had they inquired into it, and were this inquiry continued long enough, this would ultimately result in the permanently settled belief that Cleopatra sneezed three times that day. This interpretation also agrees with our common intuitions on truth. It is generally accepted that something may be true, even if we are unable in practice to discover whether this is so. In other words, even if it is true that some things will remain buried secrets to us, this does not imply that they are buried secrets of the kind that is fatal to the pragmatic definition of truth, as we can always conceive of inquirers who, had they been present and inquired into the matter long enough, they would ultimately reach a settled belief on the matter.<sup>16</sup> This means that there cannot be any class ten counterexamples.

I take this class of counterexamples to include also Nicholas Rescher's objection that occasionally a final opinion cannot be reached because the inquiry becomes prohibitively expensive.<sup>17</sup> This objection becomes especially potent

when used to construct the following class of counterexamples (not described by Rescher):

Propositions P that are true, but that cannot result in a permanently settled belief that P because the resources of the universe are insufficient for inquiry to come to conclusion.

This insufficiency of resources will be either contingent or not. If it is not contingent, then it is properly a class eleven counterexample, and is to be addressed there. If it is contingent, we can apply again the recipe given above for class ten counterexamples on the ground that the mere fact that our resources for inquiry are limited seems no valid reason for declaring P to be false. By resources in this context is meant not interpretative resources, like the number of faculties, but resources in the sense of financial or material resources. Now one might argue that saying that it will take trillions of years for a settled opinion to be reached may very well be acceptable, but that the same cannot be said for material resources, for instance, when certain inquiry requires pieces of equipment that are trillions of light years in diameter. Intuitively, it seems that a universe that allows for such grand pieces of equipment must be so different from ours that casting the truth of a proposition in a counterfactual that includes a reference to them as part of the antecedent, is too farfetched. That is to say, it does not count as a possible state of things throughout a well-understood range of possibility (NEM 4.169, 1898; cited above under the first class of counterexamples).

It is not clear, however, whether a case can be made that there will be propositions for which such "impossible" resources are indeed required. As Peirce very well points out, one and the same conclusion can often be obtained by radically different means. The rotation of the earth, for instance, can be correctly and fully derived from evidence as widely diverse as the movement of the heavens, the aberration of light, or the way in which a swinging pendulum turns round and changes its direction of oscillation (W 3.55, 1872). Along this vein, Peirce takes it as unphilosophical to declare as impossible what we presently cannot conceive to be possible. A favorite example of his is Comte's claim that we would never be able to determine the chemical composition of the stars, made shortly before Kirchhoff's discovery of spectroscopy.<sup>18</sup>

However, even should this all fail, we can still conceive of the possibility of a continuum of observers, each slightly differently equipped physically,<sup>19</sup> in which through testimony a chain can be formed linking the observations made on the one end with conclusions drawn at the other. In this manner, information could be had about what is very remote to us in size, distance, time, etc. It is here that the notion of an indefinite *community* of inquirers, which is part of Peirce's original definition (see above), is relevant. The possibility of a continuum of observers allows us to conclude that there can be no class ten counter-

examples.

The situation is quite different for propositions P that are true or false, but that cannot lead to a permanently settled belief that P *no matter how favorable* the circumstances may be. This brings us to the eleventh and final class of counterexamples. The solution proposed for class ten counterexamples cannot be used here, because that solution depends on the removal of the (contingent) unfavorable circumstances that prevent a settled belief from being reached. Class eleven counterexamples can be subdivided as follows:

- 11a. Propositions P that are true, but that cannot become the object of permanently settled belief due to non-accidental constraints that affect all possible inquiry or all possible inquirers alike.
- 11b. Propositions P that are true, but that cannot become the object of permanently settled belief because the proposition *itself* is such that inquiry cannot result in a permanently settled belief.

11a counterexamples can be further subdivided into two cases: either [1] the constraints that preclude the opinion from getting settled can be noticed, or [2] they cannot possibly be noticed. The latter case can be dismissed by applying the same argument used for class three counterexamples. If these constraints cannot possibly be noted, they are incognizable, and thus inconceivable. So, to say that inquiry is thus constrained is all but to utter a meaningless phrase. This means that no counterexample can be raised that relies on such constraints, and thus that there cannot be any counterexamples of this kind.

This solution does not apply to [1], because the constraints, though they affect all possible inquirers alike, are here assumed to be such that they *can* be noticed. To examine case [1] I will again expand upon Rescher's economic objection to Peirce's realism, and look at the possibility of propositions for which inquiry will always outrun the resources needed for obtaining a settled belief. The following counterexample can be taken as representative:

Propositions P that are true, but that cannot result in a permanently settled belief that P because the resources required for acquiring such a belief will always outrun the resources available, so that inquiry cannot come to conclusion.

Here the situation is such that all inquirers are affected alike by certain constraints, which can become the object of inquiry, and which preclude opinion from getting settled. Such counterexamples would allow for the possibility that an inquiry into the *constraints* set upon the inquiry into the truth of P re-

sults in the settled belief that those constraints are such that the inquiry into the truth of P can never result in a settled belief that P. Should this be possible, then the pragmatic definition of truth must be abandoned, or at least modified, as it is then shown that there can be true propositions for which opinion cannot get settled.

Given the manner in which class eleven counterexamples are subdivided above, what constrains the inquiry must here be taken to be something *other* than the object of the proposition inquired into. Moreover, for a counterexample of this type to count as a class eleven counterexample, the constraints set upon the inquiry must be such that they cannot be removed in any conceivable situation. The implication of this, however, is that for a counterexample of this kind the constraints inquiry encounters must be intrinsic to the object one is inquiring into. This means that it is the object of the proposition inquired into that makes it so that opinion cannot get settled. Consequently, there cannot be any counterexamples of this subclass, meaning that any situation where inquiry is constrained, and this constraint can be noted, must be either a class ten counterexample (i.e., when those constraints can be lifted), or else a class 11b counterexample where inquiry is constrained by the object of the proposition inquired into.

Class 11b counterexamples would occur where the proposition itself is such that inquiry cannot result in a permanently settled belief. As cases where the proposition cannot be inquired into are already proven untenable (see class three counterexamples), 11b counterexamples must be such that the object of the proposition *can* be inquired into. Moreover, to count as a genuine class 11 counterexample the proposition must be true also. Thus we have a true proposition, the object of which can be inquired into, but for which the nature of this object is such that inquiry can never come to a close. This means that a successful class 11b counterexample must meet at least the following three criteria: certain elements cannot be discovered, since otherwise inquiry would come to a close; these elements must be discoverable; and their discovery must make a difference (if only by bringing inquiry to a close). However, these three requirements are irreconcilable, especially when we allow for the continuum of observers referred to above. If something is discoverable, it can be discovered, and so, given the concession that the pragmatic definition of truth may be read as a subjunctive conditional allowing for counterfactuals, it would be discovered if everything that could be inquired into were inquired into, and this inquiry were to continue long enough. This is all we need.

To this one might object that it fails to cover those situations where there are two elements (each of which can be inquired into so as to lead to a settled belief regarding that element), but where inquiry into one precludes an inquiry into the other, and vice versa. Suppose, for instance, that there is some underlying irregular but precisely defined motion of an electron. Would this not be an irretrievable buried secret, if Heisenberg's indeterminacy principle is true?

On this principle, we can know *either* the position of an electron *or* its momentum, but not both.

Casting the definition in terms of subjunctive conditional, and allowing for counterfactuals, a counterexample can be handled quite easily. Knowledge of the precise motion of an electron could be obtained, were we to *combine* the knowledge we *would* obtain by using light of a short wavelength — which would reveal the electron's position but distort its momentum — with the knowledge we *would* obtain by using light of a long wavelength, which would not affect the electron's momentum, but due to its width would leave us in the dark as to its precise location. This result might even be obtained in actuality. Future discovery of time travel, for instance, would allow for both measurements to be made in sequence.<sup>20</sup>

This brings us to the following general conclusion. If the pragmatic definition may be read as a counterfactual conditional, something Peirce himself allows, the eleven counterexamples raised here can all be met. First it has been shown that in that case the eleven classes of counterexamples can all be reduced to either the third class, in which the proposition is such that it cannot be inquired into, or to the buried secrets objection, which comes in two different versions, one (class ten) in which the fact that no settled belief can be reached is due to accidental circumstances, and one (class eleven) in which no settled belief can be reached no matter what the circumstances of the inquiry are. Finally, it is shown that there cannot be any counterexamples of either of these three classes.

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## NOTES

1. Earlier versions of this paper were read at the C.S. Peirce Society meeting at the 20th World Congress of Philosophy in Boston (August 10-16, 1998), and at the 91st annual meeting of the Southern Society for Philosophy and Psychology in Louisville (April 1-3, 1999). I would like to thank Susan Haack, Nathan Houser, and especially Christopher Hookway who was commentator on the first occasion, for their valuable comments and criticisms. I would also like to thank the Charles S. Peirce Society for generously providing me with a stipend, which allowed me to read an earlier version at the World Congress in Boston.

2. See (Almeder 1985), page 86ff.

3. See, for instance, Kirkham's discussion in the *Routledge Encyclopedia of Philosophy* (Kirkham 1998), and in his textbook on theories of truth (Kirkham 1992: 79-87). This conception of truth is also not confined to Peirce. A view very similar can be found, for instance, in William James, who in 1909 characterizes truth as "an ideal set of formulations towards which all opinions may be expected in the long run to converge" (James 1977: 143). The conception is also subscribed to by Dewey. In the *Logic*, Dewey calls Peirce's definition "the best definition of *truth*" (Dewey 1982:

345n6).

4. References to Peirce's writings take the following form: W [vol#]. [page#] refers to (Peirce 1982-); CP [vol#]. [paragraph#] refers to (Peirce 1931-1958); NEM [vol#]. [page#] refers to (Peirce 1976); MS [manuscript#]. [page#] refers to (Peirce 1966), numbering of the manuscripts is in accordance with (Robin 1967); S [manuscript#]. [page#] refers to (Peirce 1986), and is in accordance with (Robin 1971).

5. Although Peirce refers here to the 13th century invention of the substantive *objectum*, there is a clear parallel here with Locke's conception of ideas as "whatsoever is the Object of the Understanding when a Man thinks." (*Essay*, I.i.8; Locke 1975: 47).

6. This immediate object is "the Object as cognized in the Sign" (CP 8.183, 1903); that is, in its immediate relation to the perceiver with all the latter's "limitations in circumstances, power, and bent" (W 2.468, 1871).

7. Instead of the phrase "final opinion," Peirce also uses "ultimate opinion" (CP 5.430, 1905), "the ultimate destination of opinion" (CP 8.104, 1900), the "ultimate state of habit" (CP 5.420, 1905), "final and compulsory belief" (CP 2.29, c.1902), and "final interpretant" (CP 8.184, n.d.). In a letter to Victoria Welby of March 14, 1909 Peirce give the following description of the final interpretant: "the Final Interpretant is the one Interpretative result to which every Interpreter is destined to come if the Sign is sufficiently considered" (Peirce 1977: 111).

8. For an extensive discussion of the different kinds of problems definitions that are phrased in terms of a conditional can run into, see (Shope 1978); and (Shope 1987).

9. For a recent discussion, see (Migotti 1999).

10. The objects referred to in this context cannot be immediate or dynamic objects, since that would make counterexamples of these two kinds impossible in a question begging manner. One might introduce a new term to denote this particular class of objects (e.g. intended object), but as Peirce's argument is precisely the denial of the possibility of any object that cannot in principle become an immediate object, I will refrain from doing so.

11. Cf. W 2.470, 1871: "the catholic consent which constitutes the truth is by no means to be limited to men in this earthly life or to the human race, but extends to the whole communion of minds to which we belong, including some probably whose senses are very different from ours." See also: W 3.35, 1872; CP 5.47, 1903.

12. See (Sebeok 1979), and (Sebeok 1981).

13. This example is suggested to me by Christopher Hookway.

14. An excellent discussion of the problem of buried secrets can be found in (Misak 1991).

15. Although I speak of buried secrets as if they are all about the past, this is by no means necessary.

16. This holds even should the present state of the universe be such that some events are fully beyond the reach of any current or future inquirer (which is a contingent fact about our universe). If there is real spontaneity in the universe, as Peirce contends, so that past states of the universe cannot be derived from its present state, and if past states are not otherwise accessible (e.g., by traveling back in time), then it is likely that given the current state of the universe certain events will be eternally lost.

17. See (Rescher 1978: 19-39); and (Rescher 1978: 250-252).
18. CP 6.556, 1887; CP 1.139, c.1899.
19. I take it that this may include a difference in location.
20. See (Jardine 1986), and (Misak 1991).

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