

Peirce, perfect knowledge, and the Gettier problem

Peirce, conhecimento perfeito e o problema de Gettier

Risto Hilpinen

University of Miami – USA

hilpinen@miami.edu

Abstract: C. S. Peirce characterized “perfect knowledge” as an opinion that is “quite settled” so that it cannot be undermined by future inquiry. Peirce’s “perfect knowledge” is a forward-looking concept, thus genuine (perfect) knowledge is extendable and requires the ability to defend the knowledge claim against objections. Such knowledge claims are not vulnerable to Gettier-type counter-examples. Peirce’s condition for perfect knowledge may be satisfied even if an inquirer’s belief lacks “internal” justification or is based on some false evidential propositions. Inaccurate experimental results which are sufficiently close to the truth can sometimes justify true conclusions.

Keywords: Perfect knowledge. Peirce’s condition. Siger’s condition. Extendability. Conclusive evidence.

Resumo: C.S. Peirce caracterizou o “conhecimento perfeito” como uma opinião “definitivamente formada” e, assim, não podendo ser prejudicada por investigações futuras. O “conhecimento perfeito” de Peirce é um conceito avançado, portanto o conhecimento genuíno (perfeito) é extensível e requer a capacidade de defender a alegação do conhecimento contra objeções. Tais alegações de conhecimento não são vulneráveis a contra-exemplos do tipo Gettier. A condição de Peirce para conhecimento perfeito pode ser atendida mesmo que o investigador careça de justificativa “interna”, ou seja baseado em algumas proposições evidenciais falsas. Resultados experimentais incorretos suficientemente próximos à verdade podem, ocasionalmente, justificar conclusões verdadeiras.

Palavras-chave: Conhecimento perfeito. Condição de Peirce. Condição de Siger. Extensibilidade. Evidência conclusiva.

1 Peirce on perfect knowledge

Peirce’s epistemology was mainly a theory of inquiry and scientific method; he did not seem to have much interest in the kind of definition or analysis of knowledge that has become one of the main concerns of epistemology since the 1960’s. However, in chapter 6 of his ‘Grand Logic’ of 1893 he gives a partial characterization of what he calls “perfect knowledge”:

Suppose our opinion with reference to a given question to be quite settled, so that inquiry, no matter how far pushed, has

no surprises for us on this point. Then we may be said to have attained *perfect knowledge* about that question. (CP 4.62).

In the fourth lecture of his 1903 Lowell Lectures Peirce makes the following observation about the difference between what *one knows* and what one *has sufficient reason to be entirely confident of*, that is, the distinction adequately justified belief and knowledge (CP 4.523):

The only difference, that there seems to be room for between these two, is that what one *knows*, one always will have *reason to be confident of*, while what one now has ample reason to be entirely confident of, one may conceivably in the future, in consequence of a new light, find reason to doubt and ultimately to deny. Whether it is really possible for this to occur, whether we can be said truly to have sufficient reason for entire confidence unless it is manifestly impossible that we should have any such new light in the future, is not the question. Be that as it may, it still remains *conceivable* that there should be that difference, and therefore there is a difference in the *meanings* of the two phrases.

According to Peirce, this forward-looking feature of the concept of knowledge illustrates the logical relevance of *time*, even though time “has usually been considered by logicians to be what is called ‘extra-logical’ matter,” and adds that he has “never shared this opinion.” (loc. cit.) The purpose of inquiry is the fixation of belief (CP 5.374-384; Peirce 1877/2014, 55-68), and when he characterizes “perfect knowledge” as “the state of fixed belief” (CP 5.420), he means belief which will not require revision in the future. Having “ample reason to be entirely confident” of something can here be regarded as a counterpart of the justification condition or evidence condition of the recent attempts to analyze the concept of knowledge. Thus Peirce in effect adds to the justified true belief account of knowledge a fourth condition as a condition for perfect knowledge, namely, that new evidence should not undermine the reasons for the inquirer’s confidence in the truth of her belief. I shall call this feature of perfect knowledge “Peirce’s condition”.

Peirce’s condition can be understood in two ways. It can be regarded as a prediction about the effect of new evidence on the inquirer’s knowledge claim:

(CSP-F) An inquirer R knows that h only if new evidence will not undermine R’s claim to know that h.

Peirce’s condition can also be given a stronger interpretation, as requiring that no evidence that the inquirer could acquire in the future world undermine the inquirer’s claim to know that h.

(CSP-E) R knows that h only if there is no true proposition k such that if R were to learn that k (acquire the knowledge that k), R would no longer be justified in believing that h.

(CSP-F) is simply a prediction, a statement about what will in fact happen in the future, whereas (CSP-E) concerns future possibilities, the possible changes in the inquirer's belief system. If (CSP-E) is satisfied, (CSP-F) is also satisfied, but not vice versa. In recent epistemology the latter condition has been expressed as an *indefeasibility* condition, as the requirement that no new evidence could possibly undermine a valid knowledge claim. (LEHRER and PAXSON Jr., 1969; HILPINEN, 1971; HILPINEN, 1988, p. 166-67; see also GRUNDMANN, 2011.) If new evidence forces an inquirer to withdraw a previously justified knowledge-claim that *h*, we should say, according to both conditions, that she did not know that *h*, not that she lost her knowledge as a result of acquiring the new evidence.

2 Knowledge as a forward-looking concept

On the basis of Peirce's statements about truth as the opinion "ultimately agreed to by all who investigate" (CP 5.407, CP 3.432) or "as the predestined result to which sufficient inquiry would ultimately lead" (CP 5.494, CP 8.41), it may be suggested that Peirce's distinction between having "sufficient reason to be entirely confident of" the truth of a proposition *b* and knowing that *b*, is simply the distinction between adequately justified belief and adequately justified *true* belief. However, if we take the "final opinion" to be a proposition accepted at the end of inquiry as an answer to a question, such an opinion may already have been, and probably has been, reached on "a vast multitude" of questions. According to Peirce, "every directory, guide-book, dictionary, history, and work of science is crammed with such facts," that is, true propositions which will not be rejected or disconfirmed in the future (CP 8.43). An individual opinion at any given time may "chance to coincide" with the settled final opinion (CP 7.336, n. 11). Such an opinion (belief) is true, but it may conceivably in the future become doubtful on the basis of new evidence ("new light", in Peirce's words), even though the inquirer's earlier confidence in its truth was amply justified by her evidence at that time. According to Peirce's condition (CSP-F), under such circumstances the inquirer cannot be said to know that *b* despite having fully justified true belief that *b* ("ample reason to be entirely confident" of the truth of *b*).

According to this interpretation of the Peirce's text, knowledge claims are forward-looking, and entail the prediction that future evidence will not undermine the claim. An opinion counts as ("perfect") knowledge only if it will not be undermined by future investigation. Perfect knowledge differs in this respect from true beliefs which are fully justified within the inquirer's current belief system or acquired by a reliable procedure of belief acquisition. If an inquirer believes that *b*, adequate evidence or justification entitles her the claim to know that *b*, but such a knowledge claim or self-ascription of knowledge is potentially defeasible, and can be undermined by future evidence. Peirce remarks (CP 4.63): "Perhaps we may have already attained to perfect knowledge about a number of questions; but we cannot have an unshakeable opinion that we have attained such perfect knowledge about any given question."

Some analyses of knowledge proposed in the 20th century literature fail to do justice to the forward-looking aspect of the concept of (perfect) knowledge. Frank P. Ramsey's reliability analysis of knowledge is a case in point. Ramsey writes: "I

have always said that a belief was knowledge if it was (i) true, (ii) certain, and (iii) obtained by a reliable process.” (1929/1990, p. 110). This account, like its more recent versions, is entirely backward looking. In the justified true belief account proposed by a number of philosophers in the 1960’s and criticized by Gettier (1963), justification is usually understood as a backward-looking notion, as justification in an investigator’s current belief system or as based on her current and past evidence.

Peirce is not the only philosopher who has recognized the forward-looking character of knowledge-claims. The thirteenth-century philosopher Siger of Brabant formulated a forward-looking condition slightly different from Peirce’s condition. According to Siger, a person who knows something should be able to defend her view successfully against objections:

Finding truth presupposes the ability to solve any objection or dubitation against the proposition accepted as true. For if you do not know how to solve the objections that may arise, you are not in possession of the truth, since in that case you have not assimilated the *procedure of finding truth* and thus will not know whether or when you have arrived at truth.¹

This condition may be called “Siger’s condition”:

(CK.S) An inquirer R knows that *b* only if R is able to refute all objections to the claim that *b*.

The effect of Siger’s condition is essentially similar to that of Peirce’s condition. If an inquirer is able to refute all possible objections to her knowledge claim, new information cannot force her to change her opinion, and her belief that *h* is an instance of what might be called perfect argumentative or discursive knowledge (Cf. LEHRER, 2000). When Peirce’s condition for perfect knowledge is satisfied, we may say (using Siger’s expression) that the inquirer has *arrived* at the truth.

In the 20th century epistemology Jaakko Hintikka has characterized the concept of knowledge in terms of forward-looking conditions similar to Siger’s condition and Peirce’s condition. According to Hintikka:

I am not in a position to say “I know” unless my grounds for saying so are such that they give me the right to disregard any further evidence or information. [...] Whoever says “I know that *p*” proposes to disregard the possibility that further information would lead him to deny that *p*. (HINTIKKA, 1962, p. 20).

Hintikka calls this the “strong” sense of the word “know” (1962, p. 19-20). A person who says “I know that *p*” in the strong sense is in effect claiming that new information would not force her to change her view: “He commits himself to the view that he would still persist in saying he knows that *p* is true—or at the very least persist in

1 Quoted from KENNY and PINBORG, 1982, p. 27. The reference is to Siger of Brabant, *Quaestiones super librum de causis*.

saying that *p* is in fact true—even if he knew more than he now knows.” (Ibid., p. 20-21). In other words, knowledge in Hintikka’s “strong sense” is *extendable* and cannot be undermined as a result of learning something new. In this respect it is like Peirce’s “perfect knowledge”. Moreover, the statement “*a* knows that *p*” implies that “the person in question is in a position to defend a statement to the effect that he knows that *p* is the case.” (HINTIKKA, 1962, p. 21).

3 Perfect knowledge, the Gettier problem, and the weak sense of “know”

Adding Peirce’s condition or Siger’s condition to the analysis of knowledge makes it immune to many Gettier-type counter-examples to the justified true belief analysis. Gettier-type examples are usually descriptions of a possible situation in which an inquirer seems to know something; her belief is true and supported by convincing evidence or has been acquired by a reliable method of belief formation. However, additional facts about the situation lead us to withhold the knowledge ascription. If the inquirer were to learn these additional facts, she would no longer be fully justified in making the original knowledge claim. Thus Peirce’s condition can be used to explain why many Gettier-type examples are not instances of knowledge, and obviously not instances of perfect knowledge in Peirce’s sense. Peirce’s condition and Hintikka’s condition were formulated independently of the Gettier problem; thus the problem does not arise for Peirce’s account of perfect knowledge or for Hintikka’s strong sense of knowledge. Here is a Gettier-type example discussed in the 14th and 15th centuries by Peter Alboini of Mantua and Cajetan of Thiene (BOH, 1985, p. 95, 102 n. 33; BOH, 1994, p. 114; PASNAU, 1995, p. 348-349):

Let it be assumed that Plato is before you, and you know that he is running and that you believe that he is Socrates, with the result that you believe firmly that Socrates is running, But Socrates is running in Rome, although you don’t know it.

We may assume here that Plato is in disguise and looks like Socrates, thus you have convincing perceptual evidence that the man you see running is Socrates, and consequently your belief that Socrates is running is both true (because Socrates is running in Rome) and well justified. Your belief that Socrates is running is not an instance of perfect knowledge, because the additional information that the person before you is Plato would undermine your knowledge claim. If you were to learn that the running man before you is Plato, you would not be able to defend the belief that Socrates is running.

The forward-looking character of knowledge-claims means that if an inquirer knows that *h*, then the possibilities inconsistent with *h* are ruled out *conclusively* in the sense that the inquirer will not have to consider them at a later time, whereas even true and well-justified beliefs, can be undermined by new information. Hintikka’s use of the expression “strong sense” of the word “know” suggests that the word is also used in a weaker sense, and other philosophers have made a somewhat similar distinction between the strong or strict and the weak or broad sense of “know”. For example, Norman Malcolm (1952, p. 182) has noted that when “know” is used

in a “weak sense”, one may respond to a doubt about the truth of a proposition, say the arithmetical propositional that $92 \times 16 = 1472$, by saying: “I know that it is so, but I will calculate it again to make sure”. On the other hand, when “know” is used in what Malcolm calls its “strong sense”, the statement “I know that p is true” implies that “no future experience or investigation could prove to me that I am mistaken.” (Ibid., p. 186). The 14th century philosopher William Heytesbury (1335/1988, p. 436) has observed: “The word ‘know’ (*scire*) is used in many ways, but whether it is taken broadly or strictly, nothing is known by a person that is in doubt for that person.”

In some situations the word “know” does not mean much more than having a true belief, but in other contexts knowing requires conclusive reasons or arguments. Heytesbury’s distinction between the strict and the broad sense of “know” can be regarded as analogous to Hintikka’s and Malcolm’s distinction between strong and weak knowledge. Our ordinary everyday knowledge (in Heytesbury’s words, *scientia communiter loquendo*) need not satisfy Peirce’s condition or Siger’s condition.

An inquirer may know something in the weak (broad, ordinary) sense even if her knowledge-claim is not justified by the propositional evidence in her current belief system. An inquirer’s belief system does not always contain the evidence which originally justified her beliefs, as G. E. Moore (1925/1959, p. 44) has observed:

If, for instance, I do know that the earth had existed for many years before I was born, I certainly only know this because I have known other things in the past which were evidence for it. And I certainly do not know exactly what the evidence was. Yet all this seems to me to be no good reason for doubting that I do know it. We are all, I think, in this strange position that we do *know* many things, with regard to which we *know* further that we must have had evidence for them, and yet we do not know *how* we know them, i.e. we do not know what the evidence was.

Alvin Goldman (1979, p. 14) has made a distinction between historical and current time-slice theories of justification and justified belief. According to current time-slice (or synchronic) accounts, the epistemic status of a belief at a given time depends on the inquirer’s belief system at that time, that is, on her current perceptual and propositional evidence, whereas historical (diachronic) accounts of justification let the epistemic status of a belief depend on the way in which it was acquired. Much of our everyday knowledge consists of beliefs which cannot be justified on the basis of our current beliefs, but to qualify as knowledge, such beliefs must have been acquired by means of some reliable belief acquisition procedure. For example, I know that the speed of light in vacuum is approximately 300,000 kilometers per second. I also know that I learned this a long time ago from some source of information which I regarded as reliable, but I do not know (remember) what the source was. Knowledge in the weak sense is not merely true belief; to deserve to be called knowledge, it should possess some cognitive merit in addition to truth. I propose here to regard as such a merit the fact that the belief has been produced by a reliable method or procedure of belief formation. If I know something in this weak sense, my future experiences and evidence may undermine the knowledge-

claim; in that case I will no longer know what I knew earlier. Even if it is possible to know something (in the weak sense) without a synchronic evidential justification, it should not be possible to know that *h* if one has evidence against *h*. However, even weak knowledge may turn out to be perfect knowledge in Peirce's sense if the beliefs acquired in the future will not force the inquirer to give it up.

Insofar as the "foundation" of an inquirer's knowledge consists of immediate perceptual beliefs expressed by indexical propositions which refer to objects *qua* perceptual objects, objects in the inquirer's perceptual field, the evidence cannot be preserved in the inquirer's belief system which changes or remains the same over time. The object of perceptual belief is usually identified by a demonstrative expression or other "essentially occasional expression" which can be understood only in the circumstances of its utterance or acceptance. (HUSSERL, 1913-1921/2001, v.1, p. 197, and v.2, p. 217-218). Moritz Schlick has described this feature of the foundation of empirical knowledge by stating that it consists of observation propositions (*Konstatierungen*) which have "no duration" and "cannot be written down". (SCHLICK, 1934/1979, p. 382-386; HILPINEN, 1982, p. 71-72; 1999, p. 18-25).

If my belief about the speed of light were challenged, I would not try to defend it by means of my other beliefs, but by consulting an external source of information, the kind of source from which I believe I acquired the belief. Assume that I am leaving my house and have just locked the door to the house. I know that the door is now locked, but a friend who is with me says: "Are you sure that it is locked? I do not think it is locked." I could say: "Yes, I am sure, I clearly remember locking the door by turning the key." However, a more effective response to my friend's doubt is to show him that the door is locked by trying to open it without the key. This response would use new evidence to refute the critic's objections. This is often the most plausible and convincing way of defending one's beliefs. When a scientist wants to convince skeptical colleagues that her conclusions are correct, it is often better to get new evidence (for example, perform a new experiment) than merely analyze old data. (Cf. HINTIKKA, 1999, p. 9; 2007). An inquirer may be able to defend her claim successfully even if the evidence which originally justified her belief has been lost if, to use Siger's locution, she "has assimilated the procedure of finding truth", in other words, if she knows how to find sufficient new evidence for *h* (assuming that *h* is true). Thus an inquirer need not have an "internal" justification for her beliefs if she knows how to find new evidence to answer possible objections and refute *prima facie* counterevidence to her knowledge-claim. Thus the inquirer's belief may satisfy Peirce's condition despite her lack of a synchronic "internal" justification for it. Peirce's condition may be satisfied even if an inquirer's evidence for her belief that *b* is includes some false evidential propositions. Peirce's condition is consistent with the view that valid knowledge claims can sometimes be grounded on some false premises or intermediate steps. Relatively vague knowledge claims can be justified by "sharp" (highly informative) false beliefs which are sufficiently close to the truth. This is not unusual in science, where inaccurate experimental results can lead to true conclusions. In such cases the inquirer may be said to have arrived at the final opinion about the research question under consideration if further inquiry into the question would lead to the same conclusion despite some minor inaccuracies in her evidential data. (See HILPINEN, 1988, p. 164; FRANKLIN, 1986, p. 140-64; 1988, p. 146; KLEIN, 2008, p. 48.).

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Endereço/ Address

Prof. Risto Hilpinen
Department of Philosophy
University of Miami
Coral Gables – FL
33124-4670 – USA

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