Peirce's Semeiotic[①] and the Normative Basis of Inquiry

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Abstract: Peirce's formal rhetoric is the least developed of his three branches of semeiotic. I argue that Peirce intended formal rhetoric to be a general theory of inquiry. Peirce recognized that semeiotic requires a cooperative effort by inquirers guided by certain methodological and normative principles and was thus one of the three normative sciences. Thus formal rhetoric is subject to normative considerations. The purpose of this paper is to give some body to the skeleton outline originally provided by Peirce.

I start with an outline of his formal rhetoric and conclude that Peirce appeared to treat three dimensions of inquiry: 1) a proper community of inquirers; 2) a proper method of inquiry; and 3) the proper goals of inquiry. Each of these three dimensions has a normative aspect which makes the connection between semeiotic and ethics much clearer.

The most important factors in scientific inquiry have been the moral ones such as love of truth and recognition of science's social and public nature. These normative factors have an impact on inquiry in at least three respects: 1) the ethos of the community of inquiry; 2) the cultivation of feelings and sentiments, forms of communication, and the virtues of inquirers; and 3) the goals of inquiry necessary for success in the long run.

The normative aspect of inquiry leads to speculative rhetoric which privileges certain forms of communication and certain goals of inquiry. Spelling these out in detail leads to Peirce's novel point that pure reason or pure logic alone is not enough to discover knowledge, but that it requires the effort of a historical community of inquirers, cooperating in the right sort of community.

Keywords: formal rhetoric; community of inquiry; pragmatic

① Semeiotic was his preferred spelling.

dimension; normative theory of inquiry; goals of inquiry; pathos and ethos of inquiry; normative pragmatics

Of the three branches of Peirce's semeiotic—formal grammar, critical logic, and formal rhetoric—the latter is the least developed in his thought, and the least studied among Peirce scholars. Yet, as Peirce claims, formal, speculative, or universal rhetoric, as he variously calls it, would grow into a "colossal doctrine" that would "lead to the most important philosophical conclusions" (CP 3.454), so that it would become "the highest and most living branch of logic" (CP 2.333).

Because of the rather sketchy character of Peirce's formal rhetoric, there have been a variety of interpretations by Peirce scholars over the years (see Bird 1959; Johnson 1968; Braun 1977, 1981; Michael 1977; Lyne 1978, 1980; Fisch 1978; Krois 1981; Kevelson 1984; Savan 1988; Perreiah 1989; Bybee 1991; Liszka 1991, 1996; Johansen 1993; Santaella-Braga 1999; Bergman 2000; Colapietro 2007). However, understood in the context of the other two branches of semiotic, I would argue that the most plausible interpretation is that Peirce intended formal rhetoric to be a general theory of inquiry, comprehending formal grammar and critical logic (see Liszka, 1996, pp. 75—77). If grammar studies the formal conditions by which sign agents can acquire information about the world, and critical logic studies the more assured ways in which we can reason from that information, then formal rhetoric is the study of the more effective processes by which a community of inquirers can collectively advance knowledge. If this reading of Peirce is feasible, it suggests that Peirce was considerably ahead of his time.

Whereas most philosophers in the early 20th century focused on the equivalent of critical logic as the principle means by which knowledge could be advanced, Peirce recognized that logic was one dimension of inquiry which, in a larger picture, required a cooperative effort of inquirers, guided by certain methodological and *normative* principles. Karl Popper (1962) was one of the first of the 20th century thinkers, followed by Thomas Kuhn (1962), to recognize the larger role of communities of inquiry, but they still did not entirely consider its normative dimensions. In this regard Peirce argued that, as a whole, logic, or semeiotic was one among three normative sciences, and dependent upon both ethics and aesthetics, as he defined it (CP 1.191). To say that the proper use of deduction and induction will more likely lead to true claims, is also to prescribe a certain way of thinking as best. Thus logical reasoning is good reasoning and, perforce, a species of the good—consequently, a normative activity (CP 1.191; CP 8.191). It is evident from other passages that when Peirce speaks of logic he intends the whole of semeiotic, not just critical logic (CP 1.36) and, thus,

includes his formal rhetoric too. Consequently, formal rhetoric, as a theory of inquiry, is subject to normative considerations as well: there are good and bad ways to inquire. To the extent that inquiry has purposes and ends, it is also subject to the last of the normative sciences—esthetics—as Peirce defines it (CP 1.573; CP 1.191)—which, in this case, addresses the proper ends of inquiry. In the end, Peirce comes to recognize that the normative dimensions of inquiry also model a way of life that can serve communities. The purpose of this paper is to present Peirce's normative theory of inquiry—as sketchy as that is—and give some body to the skeleton outline he provides in his original publications and manuscripts. In doing so, one of the principal themes that will be stressed is how the normative dimensions of inquiry for Peirce are as critical as the logical dimensions in the pursuit of knowledge.

1. An Outline of Peirce's Formal Rhetoric

Before discussing the normative framework of Peirce's theory of inquiry, let me start with a brief outline of his formal rhetoric. Given that Peirce had some seven different names for this subject, and thirty different definitions, it is clear that this branch of semeiotic was in its formative stages (see Liszka 2000: 440). Nonetheless, Peirce was led to the recognition of a need for a theory of inquiry through conclusions drawn from his study of critical logic—the second branch of his semeiotic. Specifically, Peirce came to this conclusion by analyzing what he called the leading principles of the three principal types of logical reasoning: abduction, or the logic of hypothesis discovery; scientific deduction, understood as the logic of inferring testable consequences of hypotheses; and induction, as the logic of testing hypotheses (Liszka, 1996, pp. 75—77). Since the validity of these three principal types of inference rested on the validity of its leading principles (CP 2.463), and all three leading principles required appeal to an indefinite community and practice of inquiry, then a universal rhetoric explicating the features of inquiry was essential. The ultimate leading principle of induction is that such a method, "if steadily adhered to, would at length lead to an indefinite approximation to the truth, or, at least, would assure the reasoner of ultimately attaining as close an approach to the truth as he can, in any way, be assured of attaining" (CP 2.204; see also CP 1.93). The ultimate leading principle of abduction is that the human mind is so akin to the order of things that in a finite number of guesses it will light upon correct hypotheses (CP 5.172—173). Given enough minds, effort, and time, inquirers generally will hit upon the truth. The ultimate leading principle of deduction is that if a particular logical principle is valid, then in no analogous case will it lead to a false conclusion from true premises (CP 2.204, 2.267, 4.477, W4: 246). Thus, all three leading principles of inference appeal to an indefinite community of inquiry, not just

formally, but as a real, historical community of inquirers, engaged in the practice of inquiry. As Peirce writes:

> The very idea of probability and of reasoning rests on the assumption this number [of inferences] is indefinitely great ... logicality inexorably requires that our interests shall not be limited. They must not stop at our own fate, but must embrace the whole community. This community, again, must not be limited ... Logic is rooted in the social principle (CP 2.654).

Given the dependence of the ultimate validity of these various types of inferences on a community of inquiry, formal rhetoric has the critical goal of showing how reliable methods of reasoning are comprehended within the larger framework of the *practice* of scientific inquiry. As Peirce says succinctly: "... the social principle is rooted intrinsically in logic" (CP 5.354).

As a *practice*, inquiry appears to have at least three dimensions: first, it occurs within some community of inquiry and, so, formal rhetoric must pay attention to the conditions for a proper community and communication requisite for successful inquiry; second, inquirers must employ some *method* of inquiry that will more likely attain knowledge than other methods; and third, inquiry must be a living practice that stretches across generations, and works toward some goal that has practical consequences for members of such a community. Peirce soon discovers that each of these three aspects of inquiry has a normative dimension and, thus, the connection between semeiotic and ethics becomes much more transparent.

A. A Proper Community of Inquirers

In the context of the analysis of the community of inquiry, formal rhetoric is primarily concerned with what constitutes a community and an analysis of communication. For this reason, it is variously defined as the power of symbols to appeal to a mind (CP 4.116; CP 1.559; CP 1.444), or conditions for the intelligibility of symbols (MS 340: 34; W1: 175; MS 774: 9—11), or the clarity of ideas (MS L75; MS 322:12); it is concerned with the transmission of ideas (CP 1.445; CP 2.93), the consequences of accepting beliefs (NEM 4: 291), or how to render signs effective (MS 774: 2). Peirce makes it clear that community and semiosis are correlative (see Liszka, 1996, p. 84). Without sign ability, communication is impossible and, consequently, community impossible. Community is forged on the possibility of a co-communication among agents that is directed toward mutual benefit of some sort. This is consistent with more traditional accounts of rhetoric as the study of the most effective means of

communication to create solidarity in a community, and move the community or an audience to a certain course of action. Certainly for Aristotle this is true of political oratory (*Rhet* 1358b). Cicero emphasizes the importance of rhetoric in moving us toward an understanding of the common good (*De inventione*, I. ii. 3). Francis Bacon makes this clear: "the duty and office of Rhetoric is to apply Reason to Imagination for the better moving of the will" (*Adv. Learn. Works*, III, 409). Similarly, as Kenneth Burke noted, "the classical principles of persuasion are put to the task *of inducing cooperation in beings that by nature respond to symbols*" (Burke, *Rhetoric*: 22, 43). As Vincent Colapietro summarizes it, for Peirce, speculative rhetoric is about "the power of signs to move agents and to change the habits so integral to their agency" (2007: 19).

Community also rests on a sense of continuity—captured by Peirce's notion of synechism—a continuity from the past through the future. Without such continuity, historical identities are not possible: "All communication from mind to mind is through continuity of being" (CP 7. 572). This continuity allows an identity *for* a community and *with* a community:

> The course of life has developed certain compulsions of thought which we speak of collectively as Experience. Moreover, the inquirer more or less vaguely identifies himself in sentiment with a Community of which he is a member, and which includes, for example, besides his momentary self, his self of ten years hence; and he speaks of the resultant cognitive compulsions of the course of life of the community as Our Experience (CP 8.101).

Semiosis and community are correlative in part because the existence of a community depends on the possibility of coordinate communication among its members. Thus, an important aspect of formal rhetoric is articulating the more formal conditions of communication. An essential feature of a sign-agent is that it is capable of literally being in-formed, that is, capable of receiving information (L 196). Secondly, it must have the capability of interpreting that information in a way that is meaningful to it; that means, essentially, that sign-agents as such must be able to coordinate that information triadically: Given the ability to receive information, it must be capable of correlating that information as about something while, thirdly, interpreting that information in a manner that allows it to understand that information as representing something about the thing it is about. When that occurs, the information or signs transmitted become meaningful (see Liszka, 1996, p. 88ff; Liszka, 2000, p. 76).

In addition to the formal make-up of communication, Peirce is also keen to explain the purposes of communication, in the context of inquiry. The goal of

communication is to reduce indeterminacy by reducing the latitude of interpretations of any signs or information (CP 5.447). As his classic article, "How to Make Our Ideas Clear" demonstrates, Peirce clearly considers this topic part of his methodeutic (MS L75 Memoir 32: 391). Of course, for Peirce, the clarity of ideas is best expressed by the pragmatic maxim. There are two functions of pragmatism in this regard: the riddance of all unclear ideas, and help in rendering clear ones distinct (CP 5.206). As Peirce articulates it in his famous *Popular Science Monthly* article, the pragmatic method emphasizes that the understanding of a concept is achieved through the systematic conception of its practical or ultimate interpretants, and in science that means articulating a hypothesis, by deduction, in terms of its testable, experimental consequences (CP 7.220). Indeed, some of Peirce's definitions of his formal rhetoric connote this aspect of it: "the science of the essential conditions under which a sign may determine an interpretant sign of itself and of whatever it signifies, or may, as a sign bring about a physical result" (MS 774: 5); or, "the doctrine of the general conditions of the reference of symbols and other signs to the interpretants which they determine" (CP 2.93; cf. MS 793: 20).

B. The Best Methodology for Inquiry

Besides the concern with community and communication, formal rhetoric is also about methods of inquiry. In this sense, Peirce defines it as the ordering and arranging of inquiries (MS 478; MS 452:9; CP3.430; CP 2.106—110); the study of the general conditions under which a problem presents itself for solution (CP 3.430); how truth must be properly investigated (MS 320:27; MS 606: 15, CP 1.191); and the management and economy of testing hypotheses (MS L75). The purpose of methodeutic, as he calls this particular focus of formal rhetoric, is "to develop the principles which are to guide us in the invention of proofs, those which are to govern the general course of an investigation, and those which determine what problems shall engage our energies (L75 Memoir 27 Draft D 279). It determines whether a hypothesis should be the first among the justifiable hypotheses to be considered (MS L75 Memoir 13 Draft E: 164). Because it is concerned with what problems an inquiry should invest in, and which hypotheses should be considered for testing, invention is a problem of economics. "The economics of research," Peirce says, is, so far as logic is concerned, the leading doctrine with reference to the art of discovery" (MS L75 Memoir 27 Draft D: 330). Part of the purpose of the economy of research is (to) determine those areas of investigation which prove the most profitable, relative to the value for science (MS L75 Memoir 28: 388). Most of Peirce's work in this area is done in 1879 (cf. CP 7.139—157), and it is also outlined in his Carnegie grant application in 1902.

C. The Proper Goals of Inquiry

In the third aspect of formal rhetoric, Peirce is concerned to articulate the ultimate goals and purposes of inquiry, that is, the teleological dimensions of inquiry. In this respect, formal rhetoric is concerned with the transmission of ideas (CP 1.445; CP 2.93), the consequences of accepting beliefs (NEM 4: 291), or how to render signs effective (MS 774: 2). In addition, speculative rhetoric also studies the growth of Reason (NEM 4: 30—31), the science of the general laws of a symbol's relation to other systems of symbols (W1: 258), the evolution of thought (CP 2.108; CP 2.111), the advancement of knowledge (MS 449: 56), and the influence of ideas (NEM 4: 31). Finally, it is concerned with building systems of thought, that is, developing an architectonic of knowledge (MS 346: 3; CP 4.116).

In sum, Peirce's formal rhetoric aims to argue for a theory of inquiry on the basis of a proper community of inquirers, who employ a methodology likely to be successful in accumulating knowledge, all of which is directed toward a proper purpose or end.

2. The Normative Basis of Inquiry

Formal or speculative rhetoric is principally about inquiry, and inquiry requires not only reliable methods of reasoning, but a community of inquiry, as well as a community of right-minded inquirers. "The most vital factors in the method of modern science have not been the following of this or that logical prescription—although these have had their value too", says Peirce but, on the one hand, "moral factors", such as the love of truth and, on the other hand, the recognition of science's social and public character, particularly in respect to the "solidarity of its efforts" (CP 7.87). The normative dimensions of inquiry have an impact on inquiry in at least three respects. First, in terms of the ethos of the *community* of inquiry. As Peirce makes clear in his classic work, "The Fixation of Belief", inquiry can only be successful in the long run under certain types of communities. In this article, he outlines what the normative structure of a community should be in order for scientific inquiry to flourish. Second, an important normative dimension of inquiry is manifested in the cultivation of sentiments, forms of communication, and the virtues of inquirers that are conducive to successful inquiry. Finally, there is an important normative dimension in terms of the ends and purposes of inquiry that must be taken into consideration for its success in the long run.

A. The Ethos of the Community of Inquiry

In "The Fixation of Belief", Peirce focuses on some of the normative

features of different types of communities of inquiry. In this well-known article for *Popular Science Monthly*, Peirce articulates some of the basic methods of inquiry, and why the method most closely associated with science is the optimal one. Based on our understanding of such communities, the method of authority, for example, generally speaking, will engender an *ethos* that favors strong hierarchies, emphasizes the virtues of obedience and loyalty, discourages curiosity, cultivates a trust toward any authority, and stresses top-down, asymmetrical communicative practices (CP 5.381—382). The purpose of such communities of inquiry is really not truth but the legitimization of those in authority. This could result in general stability, but also a uniformity of thought that would inhibit genuine inquiry (CP 1.60).

The method of tenacity results in an isolated community that strives to insulate itself against new ideas. What makes science successful is its openness to new ideas; consequently, such a community that remains dogmatic and obstinate in its beliefs is bound to fail as a community of inquiry (CP 5.378). A third method, the "*apriori*" method is a form of intellectual dogmatism—it is a form of authoritarianism disguised as reason. Its goal is often to legitimize beliefs a community tends to already believe by framing them as innate, natural, or universal (CP 5.383). A genuine scientific community adopts a fallibilist attitude, one which is always open to the possibility that even the most intuitive, natural, or cherished beliefs may be false, while still assuming those beliefs that have no reason to be doubted.

A scientific community, on the other hand, engenders an ethos contrary to these other methods of fixing belief. Science requires a community that is open to beliefs; it relies on something independent of authority and independent of inquirers by which to weigh evidence and measure the veracity of beliefs; it requires opportunities for its members to criticize and evaluate beliefs, and obligates those who assert beliefs to back them up with publicly accessible demonstrations. In genuine scientific inquiry, the purpose is the truth for its own sake, even if one recognizes that it will have practical utility (CP 1.44; 5.384):

> Science is to mean for us a mode of life whose single animating purpose is to find out the real truth, which pursues this purpose by a well-considered method, founded on thorough acquaintance with such scientific results already ascertained by others as may be available, and which seeks coöperation in the hope that the truth may be found, if not by any of the actual inquirers, yet ultimately by those who come after them and who shall make use of their results (CP 7.54).

Even though the primary purpose of scientific inquiry is truth, indirectly the

result is the fixation of belief and, ironically, with more success in the long run than those methods that have it as their direct purpose.

B. The Moral Sentiments of Inquirers

Peirce is one of the earliest philosophers of science to recognize the importance of the cultivation of certain sentiments and feelings in inquirers, as fundamental to the process of inquiry (see Liszka, 1996, p. 86ff). Christopher Hookway makes this clear: "... Peirce claims that sentiment has a necessary role in reflective deliberation and scientific inquiry" (1997:201). What is most important for the *pathos* of inquirers is the establishment of a genuine sentiment toward inquiry:

> ... I ... put forward three sentiments, namely, interest in an indefinite community, recognition of the possibility of this interest being made supreme, and hope in the unlimited continuance of intellectual activity, as indispensable requirements of logic (CP 2.655).

These sentiments are precisely ones that would promote intergenerational inquiry, something necessary for prolonged inquiry. The history of science shows that progress is made by standing on the shoulders of others. Scientific progress rests on the belief that progress is possible and the contributions that scientists make today will have an impact on future discoveries, even if those current scientists will not be the beneficiary of those future discoveries. This altruistic sentiment is well developed by Peirce in his notion of "evolutionary love". Evolutionary love has a more Lamarckian character to it than Darwinian, the latter, of course, modeling biological evolution (see CP 1.103—109). The characteristic of the Lamarckian theory is evolution by acquired characteristics, that is, the power of agents for habit-taking and habit-change (CP 6.300). The ability to select, retain, and "pass-on" fruitful habits catalyzes evolution—the obvious example being rapid advances in technology, as witnessed in our history. However, the impulse to pass on what is beneficial is, from a certain standpoint, rather puzzling, since it involves benefits to unknown future generations which the present generation will never see. Thus, the act is a form of altruism, and there is no particular reason why such habits must be shared or transmitted:

> ... the individual strives to produce that which he himself cannot hope to enjoy. One generation collects premises in order that a distant generation may discover what they mean. When a problem comes before the scientific world, a hundred men immediately set all their

> energies to work upon it. One contributes this, another that. Another company, standing upon the shoulders of the first, strikes a little higher, until at last the parapet is attained (CP 7.87).
>
> A problem started today may not reach any scientific solution for generations. The man who begins the inquiry does not expect to learn, in this life, what conclusion it is to which his labors are tending. Strictly speaking, the inquiry never will be completely closed. Even without any logical method at all, the gradual accumulation of knowledge might probably ultimately bring a sufficient solution. Consequently, the object of a logical method is to bring about more speedily and at less expense the result which is destined, in any case, ultimately to be reached, but which, even with the best logic, will not probably come in our day (CP 7.185).

Whence this altruistic impulse? This is the puzzle that "evolutionary love" attempts to explain. However, no matter what the explanation, inquiry cannot succeed without it.

C. The Virtues of Inquirers

Whereas the *pathos* of inquiry concerns the sorts of sentiments that must be present for successful inquiry, the *ethos* of inquiry concerns the sort of character inquirers must have to be good inquirers, but also the character of the community of inquiry which will allow optimal research results. In addition to the *ethos* of the community, there is a certain *ethos* of inquirers as well, who must have the right sort of epistemological virtues and sentiments. First, scientists should not be corrupted in their purpose, which is the purpose of truth, by ulterior motives, such as money, or even particular moral beliefs. If scientists use inquiry to make money, or to prove a certain moral belief, they have already corrupted the process of inquiry (CP 1.619; 1.642). "A scientific man must be single-minded and sincere with himself. Otherwise, his love of truth will melt away, at once. He can, therefore, hardly be otherwise than an honest fair-minded man" (CP 1.49). The scientist must have humility: "he is keenly aware of his own ignorance, and knows that personally he can make but small steps in discovery ... " (CP 8.136). Honesty itself is essential to scientific practice.

3. Speculative Rhetoric

3.1 Privileging Certain Forms of Communication

Inquiry also requires proper paradigms of communication. Peirce's theory of communication has been studied by a number of thinkers, most notably by

Johansen (1993), Liszka (1996), Santaella-Braga (1999) and Bergman (2000). Bergman, in particular, makes it clear that the study of communication ought to be considered part of Peirce's rhetoric (2000: 247).

However, rather than revisiting the whole of Peirce's theory of communication, I would like to point out how Peirce's theory of assertion in particular generates certain kinds of normative claims that align with his account of communities of inquiry, and in a manner that is consistent with Jürgen Habermas's universal pragmatics and Robert Brandom's notion of normative pragmatics. Inquiry requires making assertions, and commentators on Peirce's theory of assertion have noted that his account anticipates speech act theory in many respects (see Brock 1981; and CP 2.333). In his brief account, Peirce makes clear the normative structure of assertion:

> An assertion belongs to the class of phenomena like going before a notary and making an affidavit, executing a deed, signing a note, of which the essence is that one voluntarily puts oneself into a situation in which penalties will be incurred unless some proposition is true (CP 8.313).

For Habermas, a whole kind of normative pragmatics falls out of discursive practices such as assertion. Any assertion implicitly entails four validity claims which can be made against the assertor: the claim of truth, the claim of intelligibility, the claim of sincerity, that is, does the assertor believe what she says, and the claim of rightfulness—does the assertor have the authority to make such an assertion (Habermas 1990: 57ff; see Johansen 1993: 303ff; Liszka, 1996: 138 n. 30). In effect, these are exactly the sort of normative claims one would make and be expected to make against fellow inquirers. Communities of authority, tenacity, and the like, inhibit or forbid one or more of these types of claims.

However, some Peirce scholars, Cheryl Misak in particular, have attempted to show some fundamental differences between Habermas's universal pragmatics and Peirce's rhetoric in this regard (see Misak 2000: 35—47). Although, I believe it is not so much the difference in the ultimate types of norms each thinker promotes, as it is in the method by which those norms are justified. However, if the universal pragmatics of Habermas is not in line with Peirce's thinking, I think it is much easier to note at least a strong similarity with Robert Brandom's notion of normative pragmatics. In any case, a similar point is reached by both thinkers that is consistent with Peirce's general outlook on essential communicative practices for genuine inquiry. In engaging in assertion practices, for example, Brandom claims that one implicitly has certain deontic commitments, such as

standing accountable and providing evidence for what is asserted, and the audience has certain corresponding entitlements in this respect (2000: 194ff), exactly the claims Peirce makes in the passage cited above. These types of language practices are, according to Brandom, something that emerges as a particular constellation in cultural processes (2000: 33). Brandom recognizes what he calls Hegel's pragmatism, that is, the view that conceptual activity is translated in practice, specifically in the *normative* features of related social practices (2000: 34). Citing kinship with Dewey in this respect, he seems unfamiliar with an even stronger kinship with Peirce's thought on this matter (2000: 34).

3.2 The Goals of Inquiry

Inquiry is a real, historical, evolving, and purposive process. The last and most comprehensive aspect of formal rhetoric addresses this teleological dimension of inquiry. In addition to the normative dimensions of the process of inquiry, this aspect of inquiry also points toward the second of the normative sciences, ethics, as well as the third of the normative sciences, esthetics.

Peirce's pragmatism argues that the core of any belief is the habits of action it engenders in the believer. A belief, after all, is "that upon which we are willing to act" (CP 1.636). "Every proposition has its practical aspect. If it means anything it will, on some possible occasion, determine the conduct of the person who accepts it. Without speaking of its acceptance, every proposition whatsoever, although it has no real existence but only a *being represented*, causes practical, even physical, facts. All that is made evident by the study which I call *speculative rhetoric*" (NEM 4: 291). To the extent that beliefs are likely true beliefs, they correspondingly engender appropriate habits of action that are likely to match reality and guide us properly through experience. In the long run, true beliefs and their corresponding habits are more likely to become "fixed" than false ones. When beliefs are deliberately adopted, that is, selected on the basis of evidence, then the habits of action that result are self-controlled in Peirce's terminology.

This is why, as he notes in his well-known article, "The Fixation of Belief", it matters importantly which method a community of inquirers adopts for fixing beliefs. When beliefs are deliberately adopted on the basis of evidence, experience, and experiment, and the consequent habits are realized, then, in effect, such a community of inquiry is moving toward what he calls "concrete reasonableness" (CP 5.3; CP 5.433). In Peirce's mind, this is the ultimate ideal and purpose of communities of inquiry. It is the concrete reasonableness of inquirers and institutions of inquiry that create a feedback loop which catalyzes more positive gains in knowledge. Communities that are concretely reasonable

are ones that generate deliberate, self-controlled, and self-corrective practices that enable inquirers to accumulate knowledge which, in turn, has all the practical benefits which knowledge brings. In this sense, inquiry itself becomes a way of life, bound by certain sentiments, norms, and appropriate processes of communication. Peirce's novel point is that pure reason or pure logic alone is not enough to discover knowledge, but requires the effort of a historical community of inquirers, cooperating in the right sort of community.

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