



James Jakób Liszka

“Peirce’s Revolutionary Concept of Rhetoric”

In: Bergman, M., Paavola, S., Pietarinen, A.-V., & Rydenfelt, H. (Eds.) (2010). *Ideas in Action: Proceedings of the Applying Peirce Conference* (pp. 118–133). Nordic Studies in Pragmatism 1. Helsinki: Nordic Pragmatism Network.

ISSN-L 1799-3954

ISSN 1799-3954

ISBN 978-952-67497-0-9

Copyright © 2010 The Authors and the Nordic Pragmatism Network.

This work is licensed under a Creative Commons
Attribution-NonCommercial 3.0 Unported License.

 For more information, see
<http://creativecommons.org/licenses/by-nc/3.0/>



Nordic Pragmatism Network,
Helsinki 2010

www.nordprag.org

Peirce's Revolutionary Concept of Rhetoric

James Jakó b Liszka
University of Alaska Anchorage

1. Introduction

In an earlier work, I attempted to show that Peirce's critical logic – that is, his theory of inference – was ultimately dependent upon his universal rhetoric, that is, his theory of inquiry (Liszka, 1996, pp. 75–77). Since the validity of the three principal types of inference – abduction, deduction, and induction – 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.

In a subsequent work, I provided a historical context for Peirce's new rhetoric (Liszka, 2000). Going against a trend beginning with Descartes, Peirce joined together what had been sundered by the modernist tradition, namely, logic and rhetoric – but, in the process, revolutionized the notion of rhetoric as the logic of inquiry and, thereby, transformed the role and understanding of rhetoric generally. Whereas Descartes's method was intuitionist, subjective, deductive, and could be exercised in an inner monologue independent of a community of investigators, Peirce's methodic was experimental, public, dialogic, and required a community of inquiry to succeed. Inquiry was part of logic, rhetoric was formulated as the study of inquiry, and inquiry itself was thought of as a way of life, bound by certain sentiments, norms, and appropriate processes of communication. Pure reason or pure logic alone was not enough to discover knowledge; it required the effort of a historical community of inquirers, cooperating in the right sort of community.

Ignoring Peirce's work altogether, the separation of logic and rhetoric became particularly sharp among Russell and the positivists, who thought formal logic alone was the vehicle by which we could account for scientific knowledge, and had removed rhetoric to the warehouse of indifference. But as that strategy for a formal language of logic began to fail, philosophers of science, beginning with Popper, and continuing with Kuhn and Larry Laudan, began to appreciate what Peirce had already discovered many years previously – namely, that there had to be attention to the process of inquiry and not just the formal character of inference. The evolutionary, historical, and developmental practice of scientific inquiry had to be taken into account to understand how science worked. As “the highest and most living branch of logic” (CP 2.333), rhetoric as a theory of inquiry completed and comprehended a formal theory of inference; but, thereby, Peirce had transformed the role of rhetoric from simply prudential advice on how to communicate effectively to how to render signs sufficiently effective to be scientifically successful, in the broadest sense of the term.

What I hope to do in this paper is to clarify and expand this previous work, with the help of a wide range of scholarly perspectives on Peirce's third branch of semeiotic, in order to give a more cogent account of what is truly Peirce's revolutionary concept of rhetoric (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; Johansen, 1993; Santaella-Braga, 1999; Bergman, 2000; 2009; Colapietro, 2007). In doing so, I also want to show why formal or speculative rhetoric – more than any other branch of semeiotic – points to the importance of taking up the study of ethics, as the second of Peirce's triad of normative sciences.

2. The dependence of critical logic on formal rhetoric

There is a simple and elegant line of argument in the body of Peirce's work that shows the dependence of critical logic on formal rhetoric, that is, the dependence of a theory of inference upon a theory of inquiry. The validity of the three principal types of inference – abduction, deduction, and induction – depends on the validity of their leading principles (CP 2.463). 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 5.172–3). 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; W 4:246). 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.

The very idea of probability and of reasoning rests on the assumption that 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

Formal rhetoric or methodetic has the critical goal of showing how reliable methods of inferencing (deduction, different forms of induction, and logics of discovery) are comprehended within the larger framework of the *practice* of scientific inquiry.

3. The roles of rhetoric

Formal or speculative rhetoric is principally about inquiry, and inquiry requires not only a reliable method 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, the recognition of science’s social and public character, particularly with respect to the “solidarity of its efforts” (CP 7.87).

The latter role for rhetoric is a traditional and consistent one. It is often characterized – from ancient times to modern – as a study of the most effective means of communication to create solidarity in a community, and to move the community or an audience to a certain course of action. Certainly for Aristotle this is true of political oratory (1952, 1358b). Cicero emphasizes the importance of rhetoric in moving us toward an understanding of the common good (1960, 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” (1892, III, p. 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*” (1950, pp. 22, 43). As Peirce says in this regard, “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). Indeed, several of Peirce's many definitions of formal or speculative rhetoric are consonant with this general role for rhetoric: the power of symbols to appeal to a mind (CP 4.116, CP 1.559, CP 1.444); the conditions for the intelligibility of symbols (MS 340:34, MS 774:9-11, W 1:175); the clarity of ideas (MS L 75, MS 322:12); the study of the transmission of ideas (CP 1.445, CP 2.93); the study of the consequences of accepting beliefs (NEM 4:291); and how to render signs effective (MS 774:2). 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, p. 19).

To provide a better understanding of Peirce's formal or speculative rhetoric, we might indeed frame it in a manner similar to the classic divisions in Aristotle – an account with which Peirce was likely familiar (see CP 2.553, CP 2.554, CP 2.11). As is well known, Aristotle divided the modes of persuasion into *ethos*, or by testimony through the character of the person; *pathos*, or by means of putting the audience to the right frame of mind; and, *logos*, that is, by argument. *Logos*, in turn, divided into invention, style, and arrangement (1952, 1356a). However, to apply this framework to Peirce's notion of rhetoric, we need to transpose these roles. Peirce's concept of rhetoric is more about a cooperative process of inquiry than an orator attempting to persuade an audience, and so requires adjustment accordingly. In this sense, the audience is not a passive listener to an argument, but invited to join a community of inquiry. *Ethos*, then, is more broadly concerned with both the character of the inquirer and the character of the community of inquiry; *pathos* is not concerned so much with affecting the emotions and sentiment of an audience, but cultivating the proper sentiments in inquirers, conducive to inquiry. *Logos* plays a similar role in Peirce as it does in classic rhetoric, but it is refined in the sense that it has to do with the principal types of inferences developed in critical logic that are conducive to the *scientific* attainment of truth. Peirce's formal rhetoric appears to be the proper use of those inferences in inquiry, as stated in several definitions: the ordering and arranging of inquiries (MS 478, MS 452:9;

CP 3.430, 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); the management and economy of testing hypotheses (MS L 75).

One thing that strikingly distinguishes Peirce's formal or speculative rhetoric from more traditional theories is its incorporation of a strong historical and evolutionary dimension. This, I would argue, is the result of the very nature of inquiry which is inter-generational and, also, of Peirce's convergence theory of truth – which is inherently a historical and evolutionary process. Thus, Peirce defines formal rhetoric also as the study of the growth of Reason (NEM 4:30-31); the science of the general laws of a symbol's relation to other systems of symbols (W 1:258); the evolution of thought (CP 2.108, CP 2.111); the advancement of knowledge (MS 449:56); the influence of ideas (NEM 4:31); and a concern with systematic and architectonic matters (MS 346:3; CP 4.116).

Putting all this together, we can say the role of formal rhetoric is to articulate the *ethos*, *pathos*, and *logos* of inquiry, understood as a purposive, evolving, and historical process. In this regard, as Vincent Colapietro notes, formal or speculative rhetoric focuses on thick descriptions of actual practices (2007, p. 19). As such, Peirce's rhetoric is not only concerned with the effective use of scientific inference in the *practice* of inquiry, but also the analysis of the essential features of the practice of inquiry, such as the constitution of a community that is optimal for inquiry, including its normative ideals, the epistemological virtues of inquirers, and the proper sentiments requisite for good successful inquiry. In general, formal rhetoric should be the study of inquiry, understood as a practice involving a method of reasoning, embedded in a certain kind of community with certain kinds of norms and presuppositions; as cultivating certain sentiments and virtues in practitioners; as privileging certain forms of communicative practices, and as involving a historical identity and purpose. If this account has merit, it shows why Peirce's formal or speculative rhetoric logically leads to the second normative science – ethics – much more clearly than Peirce's grammar or critical logic.

4. The *pathos* of inquirers

Precisely because of his perspective on formal rhetoric and his holistic approach to inquiry, Peirce, I believe, 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, pp. 86 ff). Christopher Hookway makes this clear: “Peirce claims that sentiment has an ineliminable role in reflective deliberation and scientific inquiry” (1997, p. 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 express an attitude toward continuing inter-generational inquiry. This is well developed by Peirce in his notion of “evolutionary love”. Evolutionary love is more or less an expression of the sentiment consequent to Lamarckian forms of evolution. This, according to Peirce, is a form of evolution likely more explanatory of development experienced at the cultural level in human affairs than the tychistic, Darwinian form of evolution, which better models biological evolution (CP 1.103–109). The core of Lamarckian evolution 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 cultural evolution – the obvious example being rapid advances in technology, as witnessed in 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, strike 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.

5. The *ethos* of inquiry

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.

5.1 The ethos of communities 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 explains 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, will generally speaking 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 5.381–2). 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 certainly uniformity of thought (CP 1.60).

The method of tenacity engenders an isolated community, xenophobic and fearful of new ideas. Its forms of communication, like the method of authority, must be highly censorious to maintain its purpose of comfort and stability (CP 5.378). 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 one tends already to believe by framing them as natural and universal (CP 5.383). Only science communities have the purpose of the inquiry into truth, and even though stability is not its purpose, ironically stability is the more likely result if truth is the purpose. The method of authority might lead to the convergence of belief quite quickly and for large numbers, but Peirce’s point is to stress that the corresponding practices of inquiry of such a type ultimately yield inherently unstable results.

The so-called scientific method, on the other hand, engenders an ethos contrary to these other methods of fixing belief. Science requires a commu-

nity that is open to beliefs; it relies on something independent of authority and independent of inquirers by which to measure the veracity of beliefs; it requires an opportunity to criticize and evaluate beliefs, and obligates those who assert beliefs to publicly accessible demonstration of those beliefs. In genuine scientific inquiry, the purpose is the truth for its own sake (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.

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 specific 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.

5.2 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, 2009). Bergman, in particular, makes it clear that the study of communication ought to be considered part of Peirce's rhetoric (2000, p. 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; see 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 asserter: the claim of truth, the claim of intelligibility, the claim of sincerity (that is, does the asserter believe what she says), and the claim of rightfulness (does the asserter have the authority to make such an assertion) (Habermas, 1990, pp. 57 ff; see Johansen, 1993, pp. 303 ff; Liszka, 1996, p. 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, pp. 35–47). 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, which is consistent with Peirce's general outlook on essential communicative practices for genuine inquiry, is reached by both thinkers. 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, pp. 194 ff), 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, p. 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, p. 34). Citing kinship with Dewey in this respect, he seems unfamiliar with an even stronger kinship with Peirce's thought on this matter (2000, p. 34).

6. The *logos* of inquiry

Just as *logos* in classical rhetorical theory is concerned with persuasion by means of a well-formulated argument, so the *logos* of Peirce's theory of inquiry is concerned with the application of the methods of inference, developed through the labor of his critical logic, to the practical matter of inquiry. For the scientist, the real workhorse and the most manifest dimension of inquiry is *logos* in this sense, although inquiry cannot accomplish its purpose – yet alone begin – without a proper community of inquiry, and inquirers without the proper virtues and sentiments.

In an earlier article, I proposed that a critical dimension of Peirce's formal or speculative rhetoric had to do with the application of his theory of scientific inference, developed in the critical logic, to the matter of practical inquiry (Liszka, 2000). This captured several of the many definitions which Peirce gave of speculative rhetoric, including the ordering and arranging of inquiries (MS 478, MS 452:9; CP 3.430, CP 2.106–10); 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 L 75). In order to show that this was the role of speculative rhetoric, I suggested that these functions, so described, could be roughly patterned – in a more abstract way – after the different functions of Cicero's classic division of rhetoric into invention, arrangement, memory, elocution, and delivery, or, perhaps Aristotle's more condensed version of invention, style, and arrangement (Liszka, 2000, pp. 465 ff; see Cicero, 1960, I.9; Aristotle, 1952, Bk. III.1), which I summarize here.

Cicero defines invention as “the discovery of valid or seemingly valid arguments to render one's cause plausible” (1960, I.9). The obvious counterpart to invention in Peirce is abduction: “methodeutic has a special interest in abduction”, and may concern “abduction alone” (MSL75, Draft D, 329). In this regard, the purpose of methodeutic 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. (MS L 75, Memoir 27, Draft D, 279). It determines whether a hypothesis should be the first among the justifiable hypotheses to be considered (MS L 75 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 L 75, 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 L 75, Memoir 28, 388). Most of Peirce's work in this area is done in 1879 (CP 7.139-157), and it is also outlined in his Carnegie grant application in 1902.

In classical rhetoric, style or elocution concerns the manner in which an argument is delivered. Cicero defines it as "the fitting of the proper language to the invented matter" (1960, I.9). For Peirce, this focuses on the clarity of ideas – also emphasized in the rhetorical tradition of Campbell and Whately, in which he was tutored as a young man (see Brent, 1993, p. 38; MS 774; see Campbell, 1823, Bk. II, chap. vi; Whately, 1855, Part III, chap. 1). Clear and distinct ideas are also, of course, a focus of Descartes's methodology and the Port Royal Logic, and the target in "How to Make Our Ideas Clear". Peirce clearly considers this topic part of his *methodeutic* (MS L 75, 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; MS 793:20).

Arrangement, as an important aspect of classical rhetoric, is understood by Cicero as the distribution of arguments in the proper order (1960, I. 9). In Peirce, this could be understood as the proper ordering and interrelation of the three principal types of inferences: abduction, deduction, and

induction. Peirce cautions readers that “abduction... is the first step of scientific reasoning, as induction is the concluding step. Nothing has so much contributed to present chaotic or erroneous ideas of the logic of science as failure to distinguish the essentially different characters of different elements of scientific reasoning ...” (CP 7.218). Abduction, as the process of reasoning concerned with invention or the discovery of a hypothesis based on surprising observations, is followed by deduction – “that which is to be done with the hypothesis is to trace out its consequences by deduction” – which is then followed by an induction: “to compare them [the consequences] with the results of experiment by induction, and to discard the hypothesis, and try another, as soon as the first has been refuted; as it presumably will be. How long it will be before we light upon the hypothesis which shall resist all tests we cannot tell; but we hope we shall do so, at last” (CP 7.220). It should also be mentioned that for Peirce, arrangement could also be reflective of Peirce's notion of architectonic, that is, the systematic organization of accumulated concepts and knowledge, including the proper ordering and classification of the sciences themselves (MSL75, *Memoir* 31, 391; see Liszka, 2000, p. 466).

To emphasize the rhetorical flavor of these matters, it is interesting to point out a parallel here with Whately's recommendation concerning the proper arrangement of the ordinary argumentative composition – realizing, of course, that Whately is one of Peirce's mentors in logic and rhetoric: clear statement of thesis, discovery of proofs for it, the proper ordering and arrangement of those proofs, critical judgment of the thesis on the basis of those proofs (see 1855, pp. 35 ff). In other words, a good composition, like the good proof of a hypothesis, involves the proper organization of elocution, invention and arrangement.

7. Rhetoric, purpose, and convergence to the truth

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, aesthetics. This is the case since these normative sciences in particular concern the nature of purposes and ends. In the context of the rhetoric of scientific writing, Peirce defines the traditional sense of rhetoric as “the doctrine of the adaptation of the forms of expression of a writing to the

accomplishment of its purpose" (CN 3:180). This is a striking parallel to Campbell's definition of rhetoric as "that art or talent by which the discourse is adapted to its end" (1776, p. 28). In many ways, if modified, this could serve as a good definition of the broadest aspect of his formal rhetoric: "the doctrine of the adaptation of inquiry to the accomplishment of its purpose." As Peirce argues in many places, the purpose of inquiry is truth; that truth is the end of inquiry: "by the true is meant that at which inquiry aims" (CP 5.557). Taken in these terms, formal rhetoric becomes the study of how best to adapt inquiry to achieve truth.

It would appear that in order to do formal rhetoric, we would need to understand the nature of truth in order to adapt the practice of inquiry accordingly. Yet, Peirce famously defines truth as "the predestined result to which sufficient inquiry would ultimately lead" (CP 5.494); or, elsewhere that "the opinion which is fated to be ultimately agreed to by all who investigate, is what we mean by the truth . . ." (CP 5.407). It is not so much that something is true because inquirers agree to agree that it is, but because each would, through a sufficient process of inquiry, come to the same conclusion. "Let any two minds investigate any question independently and if they carry the process far enough they will come to an agreement which no further investigation will disturb" (W 3:17). Indeed, Peirce insists that if steadily persisted in, induction will cause someone's conclusion "to converge to the truth as its limit" (CP 7.110), or "in the long run produce a convergence (though irregular) to the truth" (CP 2.775).

However, all of this results in apparent circularity. The purpose of inquiry is the attainment of truth, yet truth is defined as the final result of inquiry. This generates a paradox similar to Meno's dilemma: the purpose of inquiry is to know, yet if we do not know, how can we inquire? We know not where to begin, nor do we know when we have reached the end, even if we came across it quite by accident, not knowing it, we would not recognize it.

Peirce's solution to this paradox, and one that helps to inform the whole of his theory of inference, as well as his theory of inquiry, is found in his theory of errors (see Mayo, 1996, pp. 412 ff). In his astronomical work, Peirce learned very clearly the importance of the method of least squares in finding the line of best fit among clusters of reported observations for stars. Most reported observations clustered into the bell-shaped Gaussian curve. This allowed the recognition of a central tendency in those observations, which by the method of least squares predicted the likely position of the star. The theory of errors becomes a model of inquiry precisely be-

cause it solves Meno's paradox. The theory of errors argues that we know primarily by means of error production; by taking the Socratic stance, that everyone is ignorant, we can infer the likely answer by considering the history of our errors. In trying to find the truth, sufficiently long inquiries will begin to converge. But it is important that inquiry proceed in order to produce these errors – so the process must be open and inclusive – but it must also be self-corrective, so that truth eventually converges in the process. As Wilfrid Sellars argues, "empirical knowledge, like its sophisticated extension science, is rational, not because it has a foundation, but because it is a self-correcting enterprise which can put any claim in jeopardy, though not *all* at once" (Sellars, 1956, p. 300). In this case, there is a selection of hypotheses based on least error, that is, a selection of the optimal hypothesis. Thus, Peirce's convergence theory of truth fits well with a corresponding theory of inquiry:

All our knowledge of the laws of nature is analogous to knowledge of the future, inasmuch as there is no direct way in which the laws can become known to us. We here proceed by experimentation. That is to say, we guess out the laws bit by bit. We ask, What if we were to vary our procedure a little? Would the result be the same? We try it. If we are on the wrong track, an emphatic negative soon gets put upon the guess, and so our conceptions gradually get nearer and nearer right. The improvements of our inventions are made in the same manner. The theory of natural selection is that nature proceeds by similar experimentation to adapt a stock of animals or plants precisely to its environment, and to keep it in adaptation to the slowly changing environment. CP 2.86

Peirce's speculative rhetoric gives us a strong reminder of the importance of Socrates's most famous dictum, made in a final plea to his fellow citizens: "a life without inquiry is not worth living".

References

- Aristotle (1952). *The Rhetoric. The Works of Aristotle*, vol. XI. W. D. Ross (Ed.) (W. Rhys Roberts trans.). Oxford: Clarendon Press.
- Bacon, F. (1892). *The Advancement of Learning*. G. Bettany (Ed.). London: Ward, Lock, Bowden.
- Bergman, M. (2000). "Reflections on the Role of the Communicative Sign in Semeiotic." *Transactions of the Charles S. Peirce Society*, 36(2), 225–254.
- Bergman, M. (2009). *Peirce's Philosophy of Communication*. New York: Continuum.

- Bird, O. (1959). "Peirce's Theory of Methodology." *Philosophy of Science*, 26, 187–200.
- Brandom, R. (2000). *Articulating Reasons*. Cambridge, MA: Harvard University Press.
- Braun, J. (1981). "The Speculative Rhetoric of Charles Sanders Peirce." *Philosophy and Rhetoric*, 14, 1–15.
- Brent, J. (1993). *Charles Sanders Peirce: A life*. Bloomington, IN: Indiana University Press.
- Brock, J. (1981). "An Introduction to Peirce's Theory of Speech Acts." *Transactions of the Charles S. Peirce Society*, 17(4), 319–326.
- Burke, K. (1950). *A Rhetoric of Motives*. New York: Prentice Hall.
- Campbell, G. (1823). *The Philosophy of Rhetoric*. Boston: Charles Ewer.
- Cicero. (1960). *De Inventione*. (H. Hubbel trans.). Cambridge, MA: Harvard University Press.
- Colapietro, V. (2007). "C.S. Peirce's Rhetorical Turn." *Transactions of the Charles S. Peirce Society*, 43(1), 16–52.
- Habermas, J. (1990). *Moral Consciousness and Communicative Action*. (C. Lenhardt and S. Nicholsen trans.). Cambridge, MA: MIT Press.
- Hookway, C. (1997). "Sentiment and Self Control." In J. Brunning & P. Forster (Eds.), *The Rule of Reason* (pp. 201–222). Toronto: University of Toronto Press.
- Johansen, J. (1993). *Dialogic Semiosis: An Essay on Signs and Meaning*. Bloomington, IN: Indiana University Press.
- Johnson, H. (1968). *The Speculative Rhetoric of Charles Sanders Peirce*. Unpublished Master's Thesis, University of Florida.
- Kevelson, R. (1984). "C. S. Peirce's Speculative Rhetoric." *Philosophy and Rhetoric* 17(1), 16–29.
- Krois, J. (1981). "Peirce's Speculative Rhetoric and the Problem of Natural Law." *Philosophy and Rhetoric*, 14, 16–30.
- Liszka, J. (1996). *A General Introduction to the Semeiotic of Charles S. Peirce*. Bloomington, IN: Indiana University Press.
- Liszka, J. (2000). "Peirce's New Rhetoric." *Transactions of the Charles S. Peirce Society*, 36(4), 439–476.
- Lyne, J. (1978). *C.S. Peirce on Rhetoric and Communication*. Unpublished Ph.D. Dissertation, University of Wisconsin.
- Lyne, J. (1980). "Rhetoric and Semiotic in C.S. Peirce." *The Quarterly Journal of Speech*, 66, 155–68.
- Mayo, D. (1996). *Error and the Growth of Experimental Knowledge*. Chicago: University of Chicago Press.
- Michael, E. (1977). "A Note on the Roots of Peirce's Division of Logic into Three Branches." *Notre Dame Journal of Formal Logic*, 18, 639–640.

- Misak, C. (2000). *Truth, Politics, Morality: Pragmatism and Deliberation*. New York: Routledge.
- Santaella-Braga, L. (1999). "Methodematics, the Liveliest Branch of Semiotics." *Semiotica*, 124(3/4), 377–395.
- Savan, D. (1988). "Peirce and the Trivium." *Cruzeiro Semiotico*, 8, 50–56.
- Sellars, W. (1956). "Empiricism and the Philosophy of Mind." In Herbert Feigl & Michael Scriven (Eds.), *Minnesota Studies in the Philosophy of Science*, vol. 1 (pp. 253–329). Minneapolis, MN: University of Minnesota Press.
- Whately, R. (1846). *Elements of Rhetoric* (7th ed.). D. Ehninger (Ed.). Carbondale, IL: Southern Illinois University Press.