Some Reflections on Peirce's Semiotics：On the Occasion of the 100th Anniversary of His Death

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Abstract：Although significant scholarly work has been done on the semiotic theory of Charles S. Peirce，there are still a number of areas that present challenges for the Peirce scholar，and those interested in the theory of semiotic. Although there has been much scholarship on the differences between the two founders of semiotic—Peirce and Saussure—there has not been as much recognition of their similarities. Despite much work on the notion of the interpretant，there is still more to do in clarifying the complexities of this very key idea in semiotic. This is also true of his triadic concept of the sign. One area of special interest to explore is Peirce's differing notions of information and how they might be used to explicate semiotic processes. Finally，Peirce's third branch of semiotic—formal or universal rhetoric—stands incomplete. Providing an able and coherent account of his ideas，based on the various fragmentary efforts in his extant work，would be both a helpful and fruitful effort for Peirce scholarship and the theory of semiotic.

Key words：Charles S. Peirce，semiotics

反思皮尔斯的符号学：纪念皮尔斯逝世 100 周年

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摘　要：尽管学界在查尔斯·S·皮尔斯符号学理论研究方面有了长足

的进展，但皮尔斯学者以及符号学理论研究者们依然面对着来自多重领域的挑战。比如，虽然有许多研究致力于皮尔斯与索绪尔这两位符号学创始人的差异研究，但探究二位理论的相同点的研究则罕见。许多学者讨论皮尔斯有关"解释项"的观点，但如何进一步理清这一关键概念，显然还有更多的事情要做；符号的三元观念也同样面临这样的问题。此外，本文特别关注皮尔斯有关信息的概念，并且讨论皮尔斯是如何利用它们来解释符号过程的。最后，本研究还要对皮尔斯符号学的第三个分支，即形式修辞学（或普遍修辞学）进讨论。本文试图说明的是，以皮尔斯现存的大量散乱的研究材料为支撑，为其理论提供一个可能的、连贯的解释，这将有助于推进皮尔斯研究以及符号学理论研究，并会为其带来丰富的研究成果。

关键词：查尔斯·S·皮尔斯，符号学

Charles Peirce passed away on April 19，1914，destitute and frustrated with his inability to give final formulation to his most significant work. Nonetheless，despite that，he was able to express many of these ideas sufficiently to capture the interest of many scholars since. It is a shame that he was not able to see the fruits of his labor and take some consolation in their influence on others. Among several of his contributions，his theory of semiotic has proven to be of significant interest to scholars in a number of fields，including logic，biology，linguistics，social science，cultural studies，science，communication theory，anthropology，music，and the arts. On the occasion of the 100th anniversary of the death of Charles Peirce，I would like to reflect a little on some of the themes in Charles Peirce's semiotic theory and their significance for future studies in the field.

Peirce and Saussure

The history of thought shows several examples of the development of a theory by scholars independently of one another. One that comes readily to mind is the development of the calculus by Isaac Newton and Gottfried Leibniz roughly around the same period of time. Others include the development of logarithms by John Napier and Joost Burgi，the discovery of oxygen by Carl

Scheele and Joseph Priestly，and the theory of evolution by Charles Darwin and Alfred Russel Wallace，among many more. Semiotic was a similar case，developed independently by Charles Peirce and Ferdinand de Saussure，the Swiss linguist，both around the late nineteenth and early twentieth century. I would also point out the work of Yuen Ren Chao，who developed the idea of *Fú-Hào Xué* in early work on linguistic sign systems.

Even though semiotic was developed by these founders in the early twentieth century，the theories really did not come to prominence until much later in the twentieth century. It was as if the scholarly world was not quite ready to appreciate the idea of semiotic at that time.

Peirce and Saussure have been viewed traditionally as a source of divergent thinking in regard to semiotics. Peirce，the logician，philosopher，and scientist，was more focused on the epistemological side of signs：How do signs convey information；what can we infer truthfully from signs，and how can they be used to advance inquiries? Saussure，the linguist，on the one hand，was more concerned with how signs represent and express thought and meaning. Indeed，how they consider semiotics as a discipline is revealing for this reason. Peirce saw semiotics as somewhat equivalent to an expanded notion of logic and foundational for all efforts at scientific inquiry，the physical and social sciences，as well as the humanistic disciplines. Saussure，on the other hand，saw semiotics as a branch of social psychology，thus，one among other social sciences. Peirce clearly saw semiotics as a more foundational science than did Saussure.

Because of this division，many scholars more inclined toward the study of "the life of signs within society"，as Saussure（1959）described it，picked up the banner of Saussure's theory（p. 16）. Saussure's theory took off with its use by Claude Lévi-Strauss，Roland Barthes（1967），Jean Baudrillard（1981），and Jacques Derrida（1967），among others. Peirce's theory，on the other hand，gained ground through being advocated by Roman Jakobson（1977）in linguistics，Thomas Sebeok（1999）in biology，and several logicians and philosophers working in related fields.

Several scholars through the years have emphasized the differences between Peirce and Saussure，but some scholars such as Lu De-ping in China

and myself in America have tried to show some of the commonalities. One distinction that is often pointed out is the difference between Saussure's dyadic notion of the sign, that is, the paradigmatic relation between the *signans* and the *signatum*, and Peirce's triadic account of semiosis among sign, object, and interpretant. Many have argued reasonably for the superiority of Peirce's triadic conception, since it shows in a more sophisticated way how the object or referent of the sign is mediated by the sign, and how signs are, in turn, determined by their objects. The triadic character of semiosis attempts to capture the complex relation between sign and object as the meaning of signs unfold in the evolution of their use with a developing system of signs. In accordance with Peirce's（1931－1958）pragmatic maxim, the ultimate interpretant of a sign is the "proper significate effect" the sign has（para. 5. 473）. This means not only the effect it has on sign-interpreters, but on the system of signs of which it is a part.

However, Saussure had also developed a triadic conception of sign-relation through his notion of *value*. The idea that Saussure had a purely dyadic conception of the sign may be due to a confusion between what Saussure（1959）calls *signification* and his concept of *value*. In a use of the term somewhat opposite to that of Peirce, signification is the correlation between a specific *signans* and *signatum*. But, according to Saussure, signification can only be understood—and in fact has its possibility—in the value of sign. "Without value," Saussure（1959）writes, "signification would not exist." （p. 117）As Saussure（1959）says in his own words, the "ultimate law of language" is that nothing can reside in a single term. Since signs are correlated to what they designate, "a sign cannot designate without understanding its relation to the other signs with which it forms a system" （p. 63）. This is why Roland Barthes（1967）argued that Saussure increasingly concentrated on the notion of value, which eventually "becomes more important than that of signification" （p. 54）.

Saussure uses an economic model to explain his notion of value as it applies to language which, as Roy Harris（1987）emphasizes, has an advantage over the geometric model （value as the cut through two amorphous substances） in that it assumes a coordination between two already organized

systems. In the economic model，value is the means of coordination，rather than a principle of organization. According to this economic model，values are always composed of（1）a dissimilar thing that can be exchanged for the thing the value of which is to be determined；and（2）similar things that can be compared with the thing the value of which is to be determined.（Saussure，1959，p. 115）To determine what a five-franc piece is，for example，one must know that it can be exchanged for a fixed quantity，such as bread，and that it can be compared with a similar value of the same system（e. g. ，one-franc piece）.（Saussure，1959）By analogy，a word can be exchanged for something dissimilar，an idea；but it can also be compared with other words，its value relying on comparison with similar values，with other words that stand in opposition to it.（Saussure 1959）I venture to say that in this respect the ability of the word to be exchanged for something dissimilar is comparable to the notion of reference，while the comparison of a sign within a system of signs is equivalent to the notion of sense. Saussure（1959）emphasizes that both factors—the ability of the sign to be exchanged and compare—"are necessary for the existence of value"（p. 115）. The value of the sign，then，is not simply its relation with other signs in its system，but its relation with signs or objects outside its system as well. The value of the sign involves both its referential and connotational aspects，so that a signifier refers to a signified only through the mediation of the system of signifiers，while the system of signifiers coalesces into a meaningful difference by means of its anchorage in a referent or system or referents. Consequently，to the extent that value is the coordination of relations between *signata* and *signata*—and among *signantia*—and the interpretant is the coordination of sense and reference for Saussure（1959），"a linguistic system is a series of differences of sounds combined with a series of differences of ideas；but the pairing of a certain number of acoustical signs with as many cuts made from the mass of thought engenders a system of values；and this system serves as an effective link between the phonic and psychological elements within each sign"（p. 120）. Thus，"language is only a system of pure values"（Saussure，1959，p. 111）.

Further exploration of the similarities between Peirce's and Saussure's

theories of signs will，perhaps，in the future create a more unified and coherent theory of signs that can account for the more epistemological and expressive uses of sign systems.

The Interpretant

The notion of the interpretant is still considered by many scholars to be one of the important advances Peirce made in the study of signs. The great linguist Roman Jakobson（1977）wrote that "I would like to state that the set of interpretants is one of the most ingenious findings and effective devices received from Peirce by semiotics in general and the linguistic analysis of grammatical and lexical meanings in particular"（p. 1029）. The interpretant introduced a third dimension to semiosis that was not considered in the dyadic conceptions of the sign based on Frege's sense-reference distinction，or the traditional distinction of connotation and denotation. For Peirce，the interpretant，understood as the comprehensive "significate effect" of the sign，explains not only how signs refer or represent but how their interpretation affects both sign-agents and the system of signs of which it is a part.

Signs，of course，have an enormously important evolutionary advantage since they providean efficient and effective means to acquire information about the world pertinent to the purposes of the organism. It is hard to imagine how any organism could survive without the ability to get and read information from its environment about food sources or dangerous predators. An animal may hear a sound，a crack of a branch，or smell a smell in the air，that signals the likely presence of a predator and，consequently，flees the danger. Peirce recognized that signs not only represent or refer to some object，but they also have a directive or steering function that establishes patterns or habits that sign users can rely on to navigate life. These habits in human beings and other animals may be emotional，behavioral，or cognitive. The cracking branch may be a signal to the animal to be cautious or fearful，leading to a pattern of fleeing in the presence of such signals. Since all knowledge and information is through signs，the only way we can come to know something about the world around us is through its effects on those systems of

representation. For example，information about sound waves can be garnered from the observation of regular sinusoidal patterns on an oscilloscope. Increase loudness of the sound and the amplitude of the wave increases； increase the pitch and the frequency of the wave increases. Thus，we can glean information about the object of study（what Peirce calls the dynamic object）based on the sign effects. Assuming the patterns are consistently confirmed over time，the meaning of those signs is found precisely in those very observable habits or patterns. "To develop its［the sign's］meaning，" Peirce says，"we have，therefore，simply to determine what habits it produces，for what a thing means is simply what habits it involves. "（1931－1958，para. 5. 400）

In the context of human language and cognition，the interpretant is seen by Peirce，on one level，as the mechanism of systemic association that allows us to organize and categorize our thoughts and ideas and，at an even higher level，the ability to infer—making prediction and scientific knowledge possible. A proposition claiming the universality of human mortality has both sense and reference，denotation and connotation，but when combined with the proposition that someone is a human being，allows us to predict that anyone so designated will eventually die. Thus，as Peirce（1931－1958）explains，the interpretant accounts for the growth of sign systems：

> ［...］the dyadic relations of logical breadth and depth，often called denotation and connotation，have played a great part in logical discussion，but these take their origin in the triadic relation between sign，its object and its interpretant sign； and furthermore，the list appears as a dichotomy owing to the limitation of the field of thought，which forgets that concepts grow，and that there is this third respect in which they may differ，depending on the state of knowledge，or amount of information（para. 3. 608）.

How the growth and development of signs is to be understood is an interesting point of interpretation in Peirce. I think there are at least two versions of growth that Peirce develops，which at times seem to contradict one another. The first version supposes that，over time，meanings become more determinate and converge to a definite interpretation based on the habits which the sign engenders. The second appears contrary to this view，and

supposes that semiosis involves the translation of signs into other signs in a seemingly endless process. In *Peirce's Theory of Signs*, Thomas Short (2007) argues that the latter version is based on an earlier theory of signs which is corrected by Peirce near the end of his life. But I think the two versions may both have merit since they each address different types of objects.

In the first version, Peirce, ever the scientist, sees growth as convergence toward a determinate meaning of the sign, that is, essentially a consensus on the cumulative, but persistent habits or patterns that the referent of the sign has through the mediation of its representation in signs. As Peirce explains in the context of his famous pragmatic maxim, this would be the highest grade of clarity one could give to any conceptual sign. He uses lithium as an example：

> if you search among minerals that are vitreous, translucent, grey or white, very hard, brittle, and insoluble, for one which imparts a crimson tinge to an unluminous flame, this mineral being triturated with lime or witherite rats-bane, and then fused, can be partly dissolved in muriatic acid; and if this solution be evaporated, and the residue be extracted with sulphuric acid, and duly purified, it can be converted by ordinary methods into a chloride, which being obtained in the solid state, fused, and electrolyzed with half a dozen powerful cells, will yield a globule of a pinkish silvery metal that will float on gasolene; and the material of that is a specimen of lithium. （1931－1958，para. 2. 330）

As Peirce （1931－1958）explains further, "the peculiarity of this definition ... is that it tells you what the word lithium denotes by prescribing what you are todo in order to gain a perceptual acquaintance with the object of the word" （para. 2. 330）. As he says, "All pragmatists will further agree that their method of ascertaining the meanings of words and concepts is no other than that experimental method by which all the successful sciences ... have reached the degrees of certainty that are severally proper to them today; this experimental method being itself nothing but a particular application of an older logical rule, 'By their fruits ye shall know them. '" （Peirce 1931－1958，para. 5. 465）Thus, over time, the meaning of lithium tends to

converge to a clear set of practical and habitual effects that can be observed and represented，allowing more testable hypotheses to be developed concerning them. Peirce（1931－1958）writes clearly in a draft about the work of Lady Welby that his notion of the final interpretant should be understood as "that which would finally be decided to be the *true*（my italics） if consideration of the matter were carried so far that an ultimate opinion were reached"（para. 8. 184）.

Contrary to the notion of growth as convergence，Peirce also refers to the idea of sign-growth or interpretation as "the endless translation of sign into sign..."（1931－1958，para. 7. 357）. Meaning is articulated in terms of "the translation of a sign into another system of signs..."（1931－1958，para. 4. 127）. Although the notion of convergence works very nicely for the purposes of science，the idea of converging toward a determinate meaning does not seem to work so well for certain types of cultural artifacts or historical events. Consider any element of a story. The meaning of that particular event will begin to change as one discovers more and more of the story. Similarly， the meaning of any historical event，such as World War Ⅱ，will change over time as the consequences of that event unfold and as the cultures interpreting that event also change over time. It is hard to say that interpretations of World War Ⅱ will converge toward some "ultimate opinion"，unless we consider the opinion at the end of history to be the ultimate one. Although in some sense that is true，that what World War Ⅱ means is dependent on how that event plays out over time，such a view overlooks the significant change in meaning that an event has for a current generation of interpreters. Interpreting a Shakespeare play for a generation of interpreters steeped in feminism will be significantly different than one done by contemporaries of Shakespeare in Elizabethan England.

This well-known hermeneutic circle—whereby the meaning of the part is dependent on the whole and the whole on its parts—seems to be at the basis of many post-modern theories of meaning. Post-modernism also advocates a constructivist view of the object，meaning that the object of the sign is constructed by the sign system，rather than having an existence，force，or constitution independent of the sign system of which it is a part. As Derrida

(1967) famously notes in reference to Peirce：

> Peirce goes very far in the direction that I have called the de-construction of the transcendental signified which, at one time or another, would place a reassuring end to the reference from sign to sign. I have identified logocentrism and the metaphysics of presence as the exigent, powerful, systematic, and irrepressive desire for such a signified. Now Peirce considers the indefiniteness of reference as the criterion that allows us to recognize that we are indeed dealing with a system of signs. *What broaches the movement of signification is what makes its interruption impossible. The thing itself is a sign.* （p. 49）

Most Peirce scholars would say with confidence that this is a serious misinterpretation of Peirce who, above all, was a realist. As such he argued that objects had properties and a dynamism independent of their representation. What Peirce emphasizes is that since we can't know the object except through its sign representation, then the effect that object has on the sign system is the way in which we get to know something about the object. He does not say, therefore, that the object is nothing more than a sign. For this reason, the constructivist view of postmodernism has a particularly difficult time explaining how science is so successful at knowledge acquisition. Peirce would say that World War Ⅱ was something real that had dynamic effects on the world, although certainly the meaning of those effects can develop and change over time. In a letter to Lady Welby, he notes a similarity between what she called *signification* in her work, and what he saw as a focus on the relation between signs and their interpretants. Nonetheless, he emphasizes, a comprehensive semiotic would also want to include the relation between the sign and its object. （Peirce 1931−1958, para. 8. 378）Perhaps this is a way to characterize the postmodern effort from the scientific one. An interesting challenge for Peirce scholars, then, is to reconcile these two views of sign-growth and provide a coherent account of semiotic in light of our study of culture and the study of nature.

The Triadic Conception of the Sign

The notion of the interpretant goes hand-in-hand with the triadic conception of the sign. Whereas much of philosophical thinking on meaning

since Frege was framed by the dyadic sense-reference distinction，or what was traditionally called denotation and connotation，Peirce developed a triadic conception of the sign，whereby the relation among the three fundamental elements—sign-object-interpretant—were thought to be irreducibly integrated. Each element plays a certain functional role in semiosis—and although these can be analytically segregated，the sign works as a sign by integrating the functions into a working whole.

The three fundamental functions of the sign are：（1）to be a bearer of information；（2）to provide information about something else（its object or referent）；and（3）to convey that information to something else. The sign is the bearer of information，the object determines the information in the sign，and the interpretant is the means and manner by which that information is conveyed. A photograph in itself，for example，has certain imagistic qualities and properties which，when read through the interpretant，convey some information about the object of the sign which，through the medium of the sign，has determined to a large extent the information in the sign.

Analytically，we can pick each of these functions apart，as Peirce did. In order for a sign to function as such it must certainly be the bearer of information，that is，it must be capable of conveying something. The informational content of the sign may be carried in three different ways. Following Peirce，if the information in the sign shares the same quality as the information in its source，for example，the way in which a color photograph is red in the way in which the actual rose is，then the sign is qualisemiotic，the adjectival form of Peirce's notion of a qualisign.（1931－1958，para. 2. 244）If the information in the sign is carried by contiguity，for example，the way in which a horn blast over a loudspeaker may convey to listeners that an important message follows，then the sign is sinsemiotic.（1931－1958，para. 2. 245）If the information in the sign is carried by means of a pattern or regularity apprehendable or discoverable by the sign agency，for example，the way in which a message may be sent by Morse code，then sign is legisemiotic.（1931－1958，para. 2. 246）

In order for a sign to function as such，it must also refer，that is，it must be about something. Signs may do this in three general ways，according to

Peirce: A sign is iconic if it refers by being similar to its referent, in the way in which a map may refer to a terrain; a sign is indexical if, as we have seen, it refers by being contiguously or physically connected to the referent, for example, as the way in which a weathervane indicates the direction of the wind by physical contact with the wind; a sign is symbolic if it refers by means of some general regularity, such as the manner in which a collection of phonemes that constitute a word such as "dog" refers to the animal we know and love. (1931−1958, para. 2. 276, 2. 247−2. 248, 2. 297)

In order for a sign to have a "significate" effect, it must be capable of informing the agent. If the sign informs the sign agent by serving as information equivalent to other information already apprehended by the sign agent, or as a substitute for some other piece of information, then it is semic. (1931−1958, para. 4. 538; 8. 373) A very basic example would be a dictionary definition which, in fact, equates definiendum with definiens, or the translation of a term in one language into another. If the sign informs by connecting two or more disparate bits of existing information, then the sign is phemic. (1931−1958, para. 4. 538; 8. 373) A classic example is a basic proposition, such as "whales are mammals" which, in connecting a subject with a predicate, creates more information about each term than the terms convey alone. If a sign informs by connecting its information into higher ordered systems of information, then it is delomic, in the manner in which a signal in a cell is amplified, or the way in which a logical argument colligates propositions toward a conclusion. (1931−1958, para. 4. 538; 8. 373) The conclusion provides more information than found in the propositions separately considered.

What is important to consider in this analysis is that signs are not simply about representing or referring to an object, but have two other functions as well. Signs bear information about an object in a manner that is capable of informing agents, so as to have a significate effect. It is when information is circulated in this manner that meaning accrues for sign users. Of the three dimensions of Peirce's typology of signs, the notions of icon, index, and symbol have had the most resonance and impact, but focusing simply on that function neglects the importance of the other two functions, and the necessity

that all three be incorporated into an analysis of the sign.

Two Conceptions of Information in Peirce

The functioning of signs in terms of bearing，representing，and conveying information calls up the question about the nature of information. As Andre de Tienne（2005）has shown，Peirce has two concepts of information which he believes can be reconciled to a large degree. The early version clearly involves a semantic notion of information since it is thought of as the product or result of the breadth and depth of terms in a proposition，that is，the reference and sense（or content）of the sign. Information is modeled in the standard proposition，and occurs when a predicate is applied to a subject or referent. Thus，a young student studying biology may be surprised with the information that the predicate "mammals" applies also to the subject or referent，"whales"，and so is informed accordingly in this sense.（see Peirce 1931－1958，para. 3. 608；Liszka 1996，p. 28）

Peirce's later account，however，may be more consistent with Claude Shannon's（1948）and Thomas Stonier's（1997）non-semantic notion of information. Both of these thinkers consider information as a certain ordering of material elements—bits—which when properly arranged can become meaningful for a receiver to interpret as such. This is similar to Peirce's idea of how information is organized in a qualisign，sinsign，or legisign. Information in this sense is the basic characteristic of communication：Elements of the message are organized or encoded in such a way that a receiver can best read the message. In Peirce's account，information appears to be identified in some what medieval language as a form that is communicated or emanates from the dynamic object：

> That which is communicated from the Object through the Sign to the Interpretant is a Form；that is to say，it is nothing like an existent，but is a power，is the fact that something would happen under certain conditions. This form is really embodied in the object，meaning that the conditional relation which constitutes the form is true of the form as it is in the object. In the sign it is embodied only in a representative sense，meaning that whether by virtue of some real modification of the Sign，or otherwise，the Sign becomes endowed

with the power of communicating to an interpretant. (Peirce n. d., MS 793, pp. 2—4)

Elsewhere he says, "in every case an influence upon the Sign emanates from its Object, and [...] this emanating influence then proceeds from the sign [...] and produces an effect that may be called the Interpretant, or interpreting act, which consummates the agency of the Sign." (Peirce n. d., MS 634, p. 23) In his correspondence with Lady Welby, Peirce (1977) gives some more hints about the properties of forms:

> I use the word "Sign" in the widest sense for any medium for the communication or extension of a Form (or feature) [...]. In order that a Form may be extended or communicated, it is necessary that it should have been really embodied in a Subject independently of the communication; and it is necessary that there should be another subject in which the same form is embodied only in consequence of the communication. The Form, (and the Forms is the Object of the Sign), as it really determines the former Subject, is quite independent of the sign [...]. (p. 196)

De Tienne (2005) does an interesting job of trying to explicate this process of emanation through what he calls exformation, transformation, and information. However, this is another area of Peirce's semiotic that is ripe for exploration and elaboration.

The Classification and Typology of Signs

Based on his analysis of the three functions of sign to bear information (either as a qualisign, sinsign, or legisign); to convey information about an object (as icon, index, or symbol), and to convey that information to something else (either as seme, dicent, or symbol), Peirce also attempted to create a classification of signs based on a sign having a different configuration of each of these three aspects. For example, a rhematic iconic sinsign would be illustrated by any sort of diagram, according to Peirce. (1931—1958, para. 2. 256)

There has been much scholarly effort in trying to understand Peirce's classification of signs. My own view is that we ought to abandon this effort,

and for two reasons：First，Peirce's classification，particularly his later attempts，are extremely arcane and complicated；second，even if we could figure out the more complex classifications，it's not clear what practical purpose they would serve. The sign classification attempts to freeze a sign in time and space when，in fact，signs are evolving and growing，as Peirce argued. In reality，any sign seems to fit several of the classifications，and therefore to say that it is one kind or another seems artificial and stilted. As readers may know，Peirce developed two classifications of signs，one in 1903，based on what he called his three trichotomies，or the three functions of the sign aforementioned. This produced 10 classes of signs，based on the elimination of some combinations as determined by his phenomenological principles. Later in 1906，he produced another fragmentary classification，based on an expanded account of ten trichotomies of signs，leading to something like 66 classes of signs. The ten trichotomies are very sketchy and arcane，and no scholar，in my opinion，has yet been able to decipher the basis of the ten trichotomies.

What has been particularly useful and used widely by many scholars is Peirce's *typology* of signs as articulated in the original three trichotomies. As mentioned，the division of the signs into icon，index，and symbol，has been used expansively by others. This seems to be the most intuitive among the typologies and that is most likely why it is widely used，but understanding the other two trichotomies，as discussed，is important to understanding the complexity of a sign. I believe the best way to understand this is to connect it with the non-semantic concept of information introduced by Peirce.

I do think Peirce scholars will continue with attempts to decipher the sense of Peirce's classification of signs，since it presents a real challenge. But given the inconsistencies even in the earlier version，and the rather esoteric nature of the latter classification，I do think there are more valuable and fruitful notions to explore in Peirce's semiotics.

Peirce's Rhetoric

As is well known，Peirce thought that semiotic had three branches：A formal grammar，which analyzed the necessary conditions of what makes

something a sign，and how it functions；a critical logic，which analyzed the types of inferences by which we could infer accurate and truthful information from signs，and a formal or universal rhetoric，which analyzed the best methods of inquiry.

Peirce's rhetoric was the least developed of his three divisions of semiotics，even though he considered it to be the most important part of his semiotic. In my book，*A General Introduction to the Semeiotic of Charles S. Peirce*（1996），I attempted to build on some of the work of previous scholars on this subject，and show how this third branch of semiotic played an important role in the general theory. Since then，I，along with other scholars such as Mats Bergman（2009），have attempted to develop some of the main themes in his rhetoric.（Liszka 2000，2010）Specifically，I have argued that Peirce's rhetoric is a theory of inquiry，understood as a communal practice guided by a certain sort of methodology. Much of its concern is similar to traditional rhetoric in that it aims to persuade people to work cooperatively toward a common goal. As Kenneth Burke（1950）noted，"the classical principles of persuasion are put to the task *of inducing cooperation in beings that by nature respond to symbols.*"（pp，22，43）

Early on，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 1996：75—77）Since the validity of the three principal types of inference—abduction，deduction，and induction—rested on the validity of its leading principles（1931—1958，para. 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 methodeutic 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 sharpin the work of Rudolf Carnap（1967）and the positivists in the early part of the 20ᵗʰ century，who thought formal logic alone was the vehicle by which we could account for scientific knowledge，and had remaindered rhetoric to the warehouse of indifference. But as that strategy for a formal language of logic began to fail，philosophers of science，beginning with Karl Popper（1963）and continuing with Thomas Kuhn（1962）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 effective sufficient to be scientifically successful，in the broadest sense of the term. This，too，remains a fertile field of inquiry in Peirce's semiotics.

Conclusion

Over the 100 years since Peirce's death，his semiotic has gained more and more adherents，demonstrating the fruitfulness of his fundamental ideas. At the same time，given the incompleteness of his theory，particularly in the area of his rhetoric，there are many interesting challenges that Peirce scholars—or those interested in semiotic—can find for study and elaboration.

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