

传播符号学研究专辑 ● ● ● ● ●

Semiosis, Communication and the Ecology of Signs

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Abstract: The paper discusses and illustrates one of Peirce's senses of the term "communication" in which the sign is defined as the medium for the communication of a form from the object to the interpretant. The forms in question are illustrated by Peirce's innovative theory of the hypoicons, which constitute three increasingly complex forms emanating from the object. These are defined to inhere in all signs, irrespective of the technology involved in their representation, but can only be fully understood within the later theory of semiotics propounded in 1908.

Keywords: sign, medium, form, communication, ecology

符号过程、传播与符号生态

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摘要: 本文主要探讨皮尔斯符号学中的“传播”这一概念。皮尔斯把符号定义为从对象到解释项之形式传播的媒介。为此，他在其独创的亚像似符理论中具体分析了“形式”这一概念，并仔细说明了发源于对象，且复杂程度逐渐递增的三种具体形式。这三种形式存在于所有的符号中，且不受符号再现过程中之技术因素的影响。但若要完全理解这些概念，则必须回到1908年皮尔斯晚期符号学理论中。

关键词：符号，媒介，形式，传播，生态

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I . Introduction

The Oxford English Dictionary offers, amongst several others, the following definitions of the term “communication”:

The imparting, conveying, or exchange of ideas, knowledge, information, etc. (whether by speech, writing, or signs). Hence (often pl.), the science or process of conveying information, esp. by means of electronic or mechanical techniques.

That which is communicated, or in which facts are communicated; a piece of information; a written paper containing observations.

The first definition establishes a relation between communication and the technology of the communicating medium. Although Peirce never refers in detail to this important aspect of communication, he nevertheless does use the term in at least three different senses. All, of course, related to the notion of “exchange”, although the third sense described below differs significantly from the other two. First, in the “academic” sense of the presentation of, for example, research results in a colloquium or symposium such as the one in Sichuan, and this corresponds to the second of the *OED* definitions given above. Second, in the sense of an individual speech act: “Or, in the third place, [every simple idea...] is the idea of a sign or communication conveyed by one person to another (or to himself at a later time) in regard to a certain object well known to both...” (CP 5.7). Finally, and this is the sense I wish to develop in this paper, he uses the term to describe the mediate determination of the interpretant by the object, in other words, the exchange of “information” in a special sense between the object and the interpretant. In this case, however, the process of exchange is one-way only—specifically from the object to the interpretant via the sign: the information flow is logically transitive but asymmetric. And it is this third, special, sense which enables us to understand the ecology of signs in the process of communication.

In what follows I first give the appropriate definition of the sign, relating it to the notion of a “medium”. I then discuss the sort of information that can be exchanged between object and interpretant—in an older sense of the term, how a sign can be “informed” by its object in the course of communication. Finally, I turn

to the way semiosis, the action of the sign in which this information is exchanged, operates as a mediating process; I offer an explanation of how ecology can be accounted for within the context of Peircean semiotics; and I discuss briefly its relation to the technologies of information exchange.

II . Semiosis and the Medium

1. The Sign in 1906

The definition in question appears in Peirce's 1906 transitional description of the sign and its correlates in a text destined for Lady Welby but apparently never sent (RL 463 , EP 2: 196 – 97, SS 195 – 201). This is probably the most detailed and coherent exposition of his mature theory of semiotics, and the relevant passage is sandwiched between a brief introduction to the Existential Graphs and a longer description of the Graphs illustrated by diagrams. Here the sign is defined in a radically different way and has important implications for a theory of the ecology of signs:

I use the word "*Sign*" in the widest sense for any medium for the communication or extension of a Form (or feature). Being medium, it is determined by something, called its Object, and determines something, called its Interpretant [...] 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 as a consequence of the communication. (SS 196)

In this definition of the sign Peirce is using the term "medium" both literally as a mediating element in the relation between object and interpretant, and metaphorically in the sense of "vehicle", as an artist might, for whom media or vehicles such as oil and water bear pigments to make paint, while in Peirce's case the sign is a medium "bearing" form to produce meaning, form being, of course, a quality and consequently the only category of being that can be simultaneously embodied in sign, object and interpretant. It follows from what Peirce defines as the categories of the forms of experience— "the logical categories of the monad, the dyad, and the polyad or higher set, [which] are categories of the forms of experience" (CP 1.452)—that there are three basic forms that can be

communicated in semiosis. These categories of the forms of experienter underwrite, amongst other aspects of the semiotics, the phenomenological categories, the theory of triadic relations, the later universes of experience and, in 1903, the hypoicons: indeed, they pervade Peirce's entire logical theory. Examples of the sorts of medium that can convey such forms extended by the object are to be found everywhere, from the painter's canvas, blackboards, sound spectrograms and computer screens to the sorts of neon billboards and giant electronic hoardings outside department stores advertising the wares within. All, to be functional, need to be perceivable media.

2. Forms

In order to illustrate the nature of the form extended or communicated by the object we can usefully return to the version of semiotics as presented in the 1903 Lowell lectures, with its triadic conception of semiosis involving a single (dynamic) object, the sign and a single (final) interpretant. In R478 (EP 2 : 267 – 88) Peirce introduces his icon-index-symbol division as the “first and most fundamental” of his divisions: “Representamens are divided by two trichotomies. The first and most fundamental is that any Representamen is either an *Icon*, an *Index*, or a *Symbol*.” (EP 2: 273). It should be noted that this “most fundamental” division was a trichotomy mentioned almost half a century earlier in “A New List of Categories” (CP 1.558), and it was probably the one which most clearly illustrated the categorial distinctions Peirce had introduced earlier in R478. Moreover, the description of the icon as a First in a triadic relation with Firstness as its representative quality suggests that Peirce was anticipating at this point the more detailed material in a later manuscript, R540 (EP 2: 289 – 99). Given the three possible degrees of complexity of the sign, or “representamen” as he also called it then, he was finally able to justify *logically* the three modes of representation by means of the categories: namely, in order of increasing complexity, by resemblance, by physical connection and, finally, by convention. The former Peirce had already defined as a relation of reason (CP 1.365; CP 4.3) and it partakes of the category of Firstness. Finally, by recursive application of the categories to the icon Peirce introduced the concept of the hypoicon:

An *Icon* is a Representamen whose Representative Quality is a Firstness of it as a First. That is, a quality that it has *qua* thing renders it fit to be a Representamen... But

□ 符号与传媒 (14)

a sign may be *iconic*, that is, may represent its object mainly by its similarity, no matter what its mode of being. If a substantive be wanted, an iconic Representamen may be termed a *hypoicon*. Any material image, as a painting, is largely conventional in its mode of representation; but in itself, without legend or label it may be called a *hypoicon*. (CP 2. 276; EP 2: 273 – 274)

The trichotomy resulting from this recursive process is none other than paragraph (CP 2. 277) describing image, diagram and metaphor in order of increasing complexity. Since R478 describes the categories in detail it comes as no surprise that these categories should be applied in the same manuscript to the sign-object relation and recursively to the icon, the most basic of the three subclasses thus derived. The relatively simple statement above means that examples of pictorial signs are, without a caption, hypoicons. However, by applying the familiar categorial analysis to the Firstness of the subclass of icons, Peirce distinguishes three distinct “forms” of resemblance in the following, far more exacting definition:

Hypoicons may be roughly divided according to the mode of Firstness of which they partake. Those which partake of simple qualities, or First Firstnesses, are images; those which represent the relations, mainly dyadic, or so regarded, of the parts of one thing by analogous relations in their own parts, are diagrams; those which represent the representative character of a representamen by representing a parallelism in something else, are metaphors. (CP 2. 277)

The definition sets out the three possible structural configurations that any icon may present. These are the three forms that the object can communicate to the interpretant by means of the sign, the latter defined in the 1906 definition as a “medium” (there may be four or five, or more, ways in which a sign can resemble its object, but for logical purposes three are all that are required). The three forms realizing the passage from the First to Third Firstness of the definition can be illustrated by the following simple examples.

3. Image



Fig. 1 Kazimir Malevich, *Suprematist Composition*, 1916 (Wikimedia Commons)

In this first case, an abstract painting, Malevich's *Suprematist Composition*, the medium is a piece of canvas on which the painter has arranged a series of lines and shapes representing some object not to be found in nature. The process of semiosis doesn't stop at this point as the sign communicates the qualities it displays to the interpretant, which is thereby mediately determined by the object. Figure 1, then, is a simple example of a medium and of the form it communicates to an interpretant. Note that what we are looking at in this—or any—painting is what in 1904 he identified as the immediate object (CP 8.333 – 335), in other words the dynamic object as the sign represents it. What the dynamic object actually is we can only know by collateral experience or observation, in the present case, by our knowledge of what Malevich thought artists should represent in their works. Since the qualities represented are phenomenologically less complex—Firstnesses—than the existential painting medium representing them—a Secondness, therefore—the representation of the object is in no way inhibited.

4. Diagram

Figure 2, a sound spectrogram of the utterance *I can see you*, displays the frequency structure of the sound waves emitted by the speaker as recorded on a different type of medium, namely the print-out from a spectrograph:

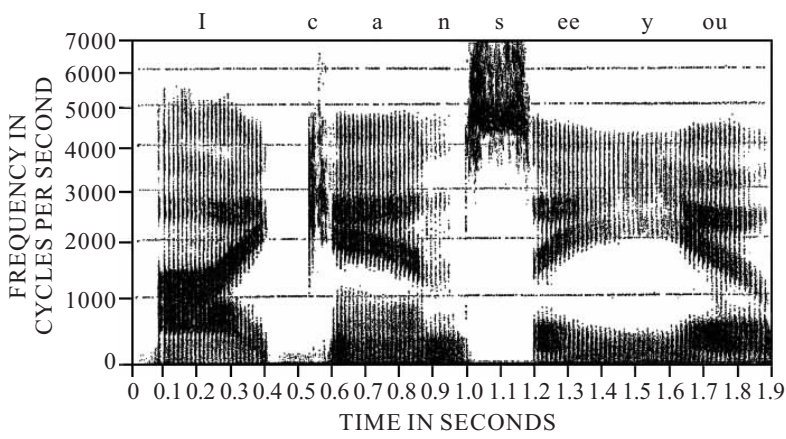


Fig. 2 A Sound Spectrogram of the Human Voice

Since, assuming the instrument to be functioning perfectly, the structure of the signal corresponds precisely to the frequencies of the sounds emitted, Figure 2 is an example of Peirce’s diagram: as a Second Firstness it represents the relations of the “parts” of the spoken frequency range by analogous relations in its own “parts” (heavy shading for voicing phenomena and aperiodic high frequency values for the noise of the sibilant, for example). In such cases, the diagrammatic complexity of the sinsign partakes of Second Firstness and consequently the representation of the structure of the object is in no way inhibited.

5. Metaphor



Fig. 3 A Metaphorical Advert

An initial striking aspect of the illustration on Figure 3 is the careful use of

colour (in the original advertisement, of course), i. e. image hypoiconicity which contrasts the bilious sensation caused by the yellow surrounding the grenade with the more restful blue in the bottom half. However, it is the metaphorical structure of the advertisement which strikes us most. Although the compound face of the chimaera takes up virtually the whole of the advertisement we see clearly that it is a case of metaphor in the Peircean sense, for it contains in roughly equal proportions elements from one domain, or area of experience, i. e. the grenade with the pin, and the dominant identifying element from a second domain, namely the area of experience being targeted, here the lower, “emblematic” part of the woman’s face.

We are intended to read the advertisement as an analogy between the explosion of the grenade and the onset of a migraine attack, for which, we are assured, the best remedy is the product, *Femigraine*, the name of which—a blend of “female” and “migraine”—echoes as a caption the *Migraine?* in the heading. Were the advertisement constructed on the lines of a simile, the woman’s head and the grenade would each be separately represented in their entirety. Were it an allegory only the grenade would figure in the image. However, here the most significant identifying elements of the two domains, namely the top of the grenade where the pin is located and the lower part of the face identifying the person as a woman, are merged in a striking pictorial blend. The sheer incongruity of the illustration is the hallmark of innovative use of metaphorical form in the Peircean sense.

III. The Ecology of Signs

The following discussion employs simple graphic representations of the process of (triadic) semiosis in which object, sign and interpretant are represented as three ellipses, which is not, it should be noted, an illustrative technique adopted by Peirce with regard to the hypoicons. As can be seen from the simple examples above, the form communicated by the object to the medium is only fully represented in the first two cases. This potentially inhibiting nature of the sign as medium can be explained in terms of the ecology of signs, and within Peircean semiotics can be seen as the relation or “ratio” between the complexity of the form to be communicated, the number of “universes of existence” or areas of experience comprising the object (cf. for example, EP 2: 492 – 497 and below), and the unavoidable Secondness of the sign as a perceivable medium. As the three examples

show, this inhibiting potential of the sign as medium is spectacularly realized by the hypoicons. Consider, first, the structure of the “generic” image as displayed on Figure 4.

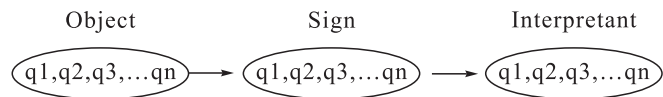


Fig. 4 A Representation of the Image Structure of the Sign as Medium

Properties of the object, the first ellipse on Figure 4, are represented as qualities q1, q2 and q3, etc. , and these—or some of them—appear in the sign representing, for example, the canvas in Figure 1. It is because, as qualities, they are less complex than the medium representing them that they are conveyed without inhibition from object to interpretant. As Peirce suggests in the general definition of the hypoicons given above, “[a]ny material image, as a painting’ illustrates the process: Leonardo’s *Mona Lisa* is a sinsign composed of such qualities as lines, forms and colours arranged in so distinctive a manner that it is interpretable as an enigmatically smiling female set against a distant natural background.”

In the case of the much simplified example of a diagram on Figure 5, a single dyadic relation in the object, whatever it may be—a human voice, for example, and its representation on a sound spectrogram—is represented as an analogous dyadic relation in the sign communicated complete to the interpretant.

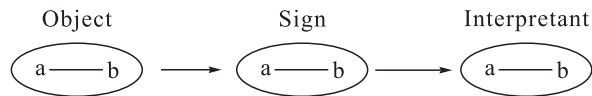


Fig. 5 A Representation of Diagrammatic Structure of the Sign as Medium

As was seen in the case of the image, which is composed of qualities, the form or structure communicated in this second case is compatible with both object and medium, is in no way inhibited in the process, and is typically signified pictorially as a photograph. Since, in the case of any diagram the form extended as a (mainly dyadic) relation by the object to the medium partakes by definition of Secondness, the form communicated through semiosis is in no way inhibited by a difference in category between sign and object.

The situation changes radically, however, in the case of metaphoric

hypoiconicity. The structure of the advertisement on Figure 3 is reproduced as a parallelism in the object ellipse on Figure 6. This involves a “reference domain” — the well-known, unproblematic explosive effects of a hand grenade—represented by the relation between the all-important pin *a* and the explosive lower part of the grenade (*b*) (absent from the advertisement and represented in brackets on Figure 6), and beneath it the problematic relation, the relation targeted by the advert, between the woman’s face *a'* and the upper part of the head where the migraine “explosion” takes place (*b'*) (also absent from the advertisement and thus represented in brackets on Figure 6). If the totality of the advertiser’s message has been correctly inferred the interpretant presents the original parallel structure extended by the object. Since the sign, however, is a medium characterized necessarily by Secondness it can only reproduce in the incongruous relation (*a'—a*) parts of the original parallelism: in terms of the 1903 conception of semiosis the sign in this third case constitutes a “phenomenological bottleneck” which sifts out part of the structure of the object.

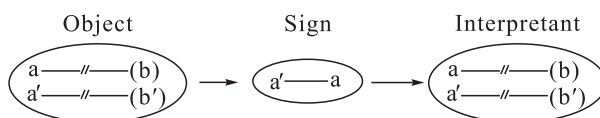


Fig. 6 A Representation of Metaphoric Structure of the Sign as Medium

What Figure 6 is intended to show is that while the medium—painting, printed page, blackboard or screen—partakes necessarily of Secondness according to Peirce’s phenomenological conception of sign-action of 1903 (were this not the case we should be unable to perceive it), the parallelism in the structure of the object constitutes a Third Firstness, and this particular realization of Thirdness is therefore more complex than the Secondness of the sign representing it since it involves the association of elements drawn from two different conceptual domains or universes of experience. Consequently, the representation of the full structure of the object is inhibited, with the result that metaphorically informed signs are both underspecified—not all the elements of the original parallelism can find their way into the sign—and characteristically incongruous, as such signs generally, if not always, represent elements drawn from distinct and not necessarily congruent domains or universes of experience.

In summary, then, to be perceivable and to produce an effect upon an interpreter the medium must be an existent entity, must partake of Secondness according to the categories of the 1903 system. Common examples of such media are usually, in the terminology of 1903, a sinsign or the replica of a legisigns: dicent symbols such as *I can see you* are, for example, only perceivable through the Secondness of their replicas. Concerning the form extended by the object to the medium Peirce thus identifies three cases, and these are a function of the number of domains or universes of experience participating in the object.

First, the form is composed of simple qualities or combinations thereof irrespective of the number of domains involved, and in this case the form is necessarily less complex than the medium—a painting such as Malevich's *Suprematist Composition*, for example—which communicates it to the interpretant. In the second case, the form extended is composed of Second Firstnesses, a step up from the first case. These are relations between elements in an object participating in a *single* universe of experience, and they determine analogous relations in a sign belonging to that same single universe: a geometrical figure, for example, or a spectrogram as on Figure 2. As such they belong to the same category as the medium—Secondness, necessarily—and this form, too, is communicated uninhibited from the object to the interpretant via the sign. The third type is more complex: the form extended by the object in this case is a relation (or relations) not between elements from a single domain or universe of experience characterizing the object as in the case of the diagram, but between elements belonging to *two or more* distinct domains or universes structuring the object. This means that the form of the object—represented as the *two-tiered* structure on Figure 6—is more complex than the Secondness of the medium, which is necessarily an entity from a single existential universe, with the result that the communication of the form in this third case *is* inhibited: the sign, as in Figures 3 and 6, can only represent parts of this complex parallel structure, and is thus underspecified with respect to the form extended by the object. It is also likely to be incongruous as the two domains and their elements are not necessarily of the same nature.

This discrepancy between different domains, or in more Peircean terms, universes of experience, and the signs representing them can only be fully understood by reference to the later theory of signs developed from 1906 onwards,

this theory finding its final expression in his correspondence with Lady Welby and William James. In the letter to Lady Welby dated 23 December 1908, for example, Peirce included in the ten divisions potentially yielding sixty-six classes of signs six divisions based upon the correlates themselves, a system generating twenty-eight classes of such signs. However, before defining the complex process in which the sign is engaged in 1908, Peirce first identifies three universes of experience characterized by their respective modalities of being, and containing, in order of increasing complexity, possible, existent and necessitant entities. This description of the universes is followed by an important statement which is apparently the only mention of a 28-class system although it figures necessarily in the construction of the sixty-six classes. It not only establishes the logical order of determination holding between the six correlates but, by means of the reference to the three modalities of being (Possible, Existent and Necessitant) of the universes to which each correlate can be referred in the classification process, defines the dependency relation reducing the 792 possible classes to twenty-eight:

It is evident that a Possible can determine nothing but a Possible; it is equally so that a Necessitant can be determined by nothing but a Necessitant. Hence, it follows from the Definition of a Sign that since the Dynamoid Object determines the Immediate Object,

which determines the Sign itself,

which determines the Destinate Interpretant,

which determines the Effective Interpretant,

which determines the Explicit Interpretant,

the six trichotomies, instead of determining 729 classes of signs, as they would if they were independent, only yield 28 classes, and if, as I strongly opine (not to say almost prove) there are four other trichotomies of signs of the same order of importance, instead of making 59049 classes, these will only come to 66. (SS 84)

What the passage also shows is Peirce discarding the phenomenological framework of the Lowell Lectures and adopting what we can consider to be an ontological one. Now the second of the three divisions of 1903 in which he defined the hypoicons was set within the earlier phenomenological framework since it used Peirce's three categories as the criteria in order to subdivide the Sign—Object relation and then, recursively, the icon itself. The later typology, on the other

hand, is set within an ontological framework and employs three universes to define the subdivisions of the six correlates of semiosis which, when properly combined, generate the twenty-eight very different classes.

Now in a draft to Lady Welby dated 25 December 1908 (CP 8.366), Peirce illustrated the range of dynamic objects of signs according to the universe to which they belong: signs of possible objects are termed “abstractives”; signs of existent objects (individuals and the facts concerning them) are concretives; while signs representing collections or classes are collectives, a brief inventory which gives us some idea of the sorts of entities these universe might be the receptacles of.^① In the first case the objects are qualitative entities represented by colours, mass, texture, etc.; in the second, there are existents such as individual entities and named individuals such as Napoleon and Charlemagne and the facts concerning them; finally, in the third we find general classes such as mankind, categories, habits and laws, etc. However, in another text of 1908, “The Neglected Argument for the Reality of God” (CP 6.452–493), he takes this inventory further, describing the three universes and, more importantly, the sorts of objects they comprise in greater detail. The least complex, the universe of possible objects, is composed of ideas; the second universe is composed of existent objects-occurrences and the facts concerning them; while the third and most complex universe comprises more general objects:

The third Universe comprises everything whose Being consists in active power to establish connections between different objects, especially between objects in different Universes. Such is everything which is essentially a Sign, —not the mere body of the sign, which is not essentially such, but, so to speak, the Sign’s Soul, which has its Being in its power of serving as intermediary between its Object and a Mind. Such, too, is a living consciousness, and such the life, the power of growth, of a plant. Such is a living institution, —a daily newspaper, a great fortune, a social “movement.” (CP 6.455)

What enables us to understand the two-tiered parallelism that Peirce mentions

^① Cf., from “Prolegomena to an Apology for Pragmaticism”: “Oh, I overhear what you are saying, O Reader: that a Universe and a Category are not at all the same thing; a Universe being a receptacle or class of Subjects, and a Category being a mode of Predication, or class of Predicates. I never said they were the same thing; but whether you describe the two correctly is a question for careful study.” (CP 4.545, 1906)

in his 1903 definition of metaphoric hypoiconicity is the idea that the universe of necessitant entities comprises, amongst other things, “everything whose Being consists in active power to establish connections between different objects, especially between objects in different Universes”. These are the domains mentioned above, whose partially realized “connections” between elements from two or more universes composing the sign’s necessitant dynamic object determine incomplete and striking associations owing to the constricting, inhibiting, existential, and therefore less complex, nature of the sign representing them. These universes are, of course, the forerunners of the base and target domains of cognitive linguistics and the various “spaces” of blend theory, but were conceived three-quarters of a century earlier. Peirce’s late theory of sign-action and his greater understanding of the complexity of some objects made possible by the switch from phenomenology to ontology enable us to explain why some signs are imperatively underspecified and incongruous.

IV. Conclusion

The examples and discussion above suggest two observations. First, communication and the measurement of its efficiency are inevitably associated with technological advances. In Peirce’s day some of the technological developments providing media were the photograph and the telegraph, together with Muybridge’s moving photography and Edison’s Kinetoscope which inspired him to contemplate the development of his Existential Graphs as “moving pictures of thought” (CP 4.8). For Marshal McLuhan, on the other hand, what is communicated in a message is less important than the particular medium through which it is communicated ([1967] 2008, 8), and for McLuhan the technology which functioned as the medium for the message even changed society—individual, family, work, leisure, etc. In McLuhan’s case the technology included the telephone, TV and radio, for example, and these, he thought, had a unifying influence, creating as a “global village” ([1967] 2008, 156 – 157). Nevertheless, the formal configurations structuring the messages borne both by these technological advances and their less sophisticated predecessors such as the clay tablet, the papyrus, the sheet of paper, or the painter’s canvas, are those which can be defined within Peirce’s conception of hypoiconicity, irrespective of the medium bearing them. The actual message may be less important than the medium conveying it, as McLuhan claimed, but what is

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signified by the message is a function of one or other, or even of combinations, of the inevitable hypoiconic structures informing it. Similarly, the media of today are supported most spectacularly by the internet: Facebook, LinkedIn, Skype, etc., offer not so much a global village as a global family. However, irrespective of the type of media, even in those of today, the “ratio” of form to medium remains the same as when Peirce first defined it at the beginning of the last century.

Second, within Peircean semiotics the ecology of signs—the ratio between the form to be communicated and the medium involved in its communication—is a function of the relation holding between the complexity of whatever object is involved in semiosis, the three logically possible forms that can be extended by this object, and the sign acting as their medium. Now these forms are realized, “signified”, differentially in semiosis according to language, genre and medium, etc. It follows from this that semiosis is the process at work in the third definition of communication discussed in the Introduction, the process at work in all communication: within a Peircean theoretical framework communication and semiosis are inseparable.

Notes:

Peirce’s manuscripts are referenced according to their number in the Robin catalogue, e. g. R478.

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