

Are There Grounds for Identifying “Ground” with “Interpretant” in Peirce’s Pragmatic Theory of Meaning?¹

I. Introduction

Umberto Eco attempts, in his interesting paper on “Peirce’s Analysis of Meaning” (1981)² to clarify Peirce’s concept of meaning by comparing his enterprise with modern linguists’ and philosophers’ theories of meaning for natural language. The attempt is to compare Peirce’s pragmatism with the theories of “compositional analysis” and “generative semantics” and to show how Peirce’s theory combines some of the essential features of both. It is correct that there is an affinity between the “logic of action” and the structure of *semiotic process*, but in this case we should understand *action* not as a kind of behavior separate from other kinds of human behavior but as identical to all forms of *human conduct*. This is the domain of semiotics because all human conduct is sign-behavior with signals and symbols.³ While dealing with natural language our enterprise is to suggest a theory of meaning for its symbols and when we deal with scientific language the meaning under investigation is of the *intellectual* concepts.⁴ This is, I believe, the reason why “pragmatism,” as a theory of meaning of intellectual concepts “fails to furnish any translation or meaning of a proper name or other designation of an individual object” (5.429; cf. 1.559 pp. 295-296a Eco: 1981: 182).

On other occasions I have suggested a way to reconstruct Peirce’s pragmatic theory of meaning (Neshier, 1982, 1983) but here I would like to discuss a very limited subject with which Eco deals in part of his paper explicating the nature and the function of *Ground* in the semiotic pro-

cess of symbols.

II. *Preliminary Difficulties with the Identification of "Ground" with "Interpretant"*

The explicit reason for Eco's identification of ground with interpretant is that Peirce describes them both as having the nature of quality, character, or idea, and as meanings of the sign (symbol) (182-184) cf. 2.228(c.1897); 1.339(c. 1895) (182) ; 1.551-559(c.1867(1893)); MS 357(1866); MS 359(1866); MS 732(n.d.). 2.418-419 (1867(1893)). Eco summarizes his analytical discussion of this identity as follows:

Therefore, being distinguished as formal objects of different semiotic approaches and in reference to different points of view, ground, meaning, and interpretant are in fact the same, inasmuch as it is impossible to define the ground if not as meaning and it is impossible to define any meaning if not as a series of interpretants.(185)

In the discussion which leads Eco to the above conclusion (184-185) he has recourse to Peirce's classification of semiotics to three branches dealing with the different aspects of the semiotic process.

It is interesting, therefore, to look at this identification of *ground* with *meaning* from the point of view of the division of "the science of semiotics" into three sciences (or branches) in the context of Peirce's discussion of the notion of "ground" (1.559, 1967 (1893)). Those three branches are:

1. *Formal (Speculative) Grammar*, "the formal conditions of the symbols having meaning, that is of the reference [indication] of symbols in general to their grounds or imputed characters": the relation between Sign and its Ground (their relation here is very similar to the relation of "term" and its "sense" in Frege's semantics).
2. *Logic (Critic Logic)*, "the formal conditions of the truth of symbols": the relation between sign and its object.

3. *Formal Rhetoric*, "the formal conditions of the force of symbols, or their power of appealing to a mind, that is, their reference in general to interpretants" (cf. 2.229): The relation between the sign and its interpretant.

We should take into consideration that we are dealing here with the *formal conditions* for *meaning*, *truth* and *interpretation* of semiotic process (cf. 2.229). Hence, in both contexts in which Peirce deals with the ground, in 1.559 and in 2.228-229, Peirce deals with the *formal conditions* of the sign (or the representamen) having *meaning* in the semiosis in which this sign is the first correlate of the triadic relation and not with the meaning itself. Therefore, we should understand the ground in this context as the formal condition for the meaning of the sign in the semiotic process. Let us look into the context in which Peirce discusses this problem and the relation between sign and its immediate object. Dealing with the relation of the sign with its object Peirce writes:

If a Sign is other than its Object, there must exist, either in thought or in expression, some explanation or argument or other context, showing how — upon what system or for what reason the Sign represents the Object or set of Objects that it does. (2.230)

This "system" or "reason" fits exactly the definition of the nature and the function of the ground as given in 2.228:

It stands [the sign or representamen] for that object, not in all respects, but in reference to a sort of idea, which I have sometimes [e.g., in 1.551] called the *ground* of the representamen. (c.1897)

Towards the end of this discussion Peirce concludes:

According to this every Sign has, actually or virtually, what we may call a *Precept* of explanation according to which it is to

be understood as a sort of emanation, so to speak, of its Object. (2.230)

It seems to me that this *precept* should be understood as habit, rule, law, leading-principle, which is a functor in the semiotic process, operating on the sign as the first correlate. The problem is whether we can identify this "*precept* of explanation" with "a sort of idea" which Peirce calls *ground*?

III. *The Problem of Meaning in Peirce's Pragmatism*

From Peirce's discussion of the notions *ground* and *meaning* (cf. the above references) it is very clear that they have a close affinity. In developing his pragmatic theory of meaning Peirce had quite a clear picture of the schema of the semiotic process as a sort of inference, and the problem for him was which component or components of this process would fulfill the function of meaning for the first correlate (the sign in its subject position) of the process. I have alluded to this situation in one of my papers in the following way:

I believe that Peirce's analysis of the formal structure of semiosis molded on logical inference . . . did not change substantially throughout his philosophical development. Taking the sign (symbol, intellectual concept) to take the subject position in a proposition or the premises position in an argument, the question for Peirce was to find out the component in the semiotic schema which can be the meaning, the interpretation of the sign in the process in which *the sign acts and makes its* influence. In the very general scheme, Lp(S, O, I) [Lp = leading principle, S = sign, O = immediate object, and I = interpretant], the candidate for the influence of the *sign* in the mind of the interpreter can be either the *immediate object* O (e.g., 2.293) or the *interpretant* I (e.g., 5.475). When the full-fledged theory is presented, the scheme for the semiotic process becomes more complicated. [Lp(S, O, E, D, L) when E, D, and L are emotional, dynamical and logical inter-

pretants respectively]. Then there are some more candidates for the meaning of signs and symbols: the *emotional interpretant* ("emotional meaning"), the *dynamical interpretant* ("existential meaning"), the *logical interpretant* ("logical meaning"), and the final logical interpretant (habit, "living definition") all of which are formed by this process (cf. MS., 318, 1907; 5.491, 5.494, 1905; 6.481, 1980). (Nesher, 1983: 5.2).

In his "last" formulation of the pragmatic maxim, Peirce suggested the *leading principle* for the meaning of the first correlate sign in the semiotic process (MS., 318 Draft (7); cf. Nesher, 1983). Therefore almost every component of the semiotic process can be considered for the *meaning* in Peirce's pragmatic theory of meaning. We should be careful in our interpretation and reconstruction of this theory. It is quite probable that we will not find a single component in the semiotic structure to be the meaning of the subject sign.

IV. *Identifying the Ground in the Semiotic Process*

The main point for the rejection of the identification of "ground" and "interpretant" seems to be that in the special places where Peirce proposes the concept of "ground" he puts it in a different category, and gives it a different function from that of the "interpretant", e.g., 2.228, c. 1897:

A sign, or *representamen*, is something which stands to somebody in some respect or capacity. It addresses somebody, that is, creates in the mind of that person an equivalent sign, or perhaps a more developed sign. That sign which it creates I call the *interpretant* of the sign. The sign stands for something, its *object*. It stands for that object, not in all respects, but in reference to a sort of idea, which I have sometimes called the ground of the representamen.

We should be careful to understand the expression "in reference to" in this context as "in regard to" or "in respect to" and in another context as coinciding with "indication," but not as a technical term in the Fregean tradition (cf. Eco, 1981: 185). The problem here is with the "system" (2.230) which determines in someone's mind the *relation of representation* between the *sign* and its *object*. According to Peirce the ground or "a sort of idea" should be understood as the basic component of this system.

In my 1982 paper I implicitly interpreted the *ground* as a *leading principle* which operates as a functor on the *sign* to determine its *immediate object* such that where G = ground, S = sign and O = object. The underlying structure is:

$$[1] \ G(S, O)$$

I understood this structure as a specific dyadic relation characterizing the nature of *sign* (signal) as distinguished from *symbol*. I took the structure in which symbol operates as a triadic one:

$$[2] \ Lp(S, O, I)$$

where Lp = leading principle and I = interpretant.

In my 1983 paper I criticized this view of the dyadic structure in which signals function [1], since from a pragmatic point of view every sign must be a component of a triadic relation. The remedy for my difficulty was to make a distinction between dyadic relation, dyadic degenerate triadic relation, genuine triadic relation with a degenerate sign, and genuine triadic relation with a genuine sign. The first one is a physical or dynamical relation and all the others are, to various degrees, mental or semiotic relations. In this case we must represent the signal relation also in a triadic structure such as,

$$[3] \ Lp(S_{sp}, O, I)$$

Hence, the relation of sign (signal/symbol), object, interpretant and ground must also be represented in a *triadic* structure. The only plausible solution for this is to represent them in our basic scheme and to put the ground in the position of the leading principle:

$$[4] \ G(S, O, I).$$

But in this case the ground which functions as a *rule* (functor) may be understood as different from the nature of the *idea* with which *ground*

is identified. However, in my 1983 discussion I left the problem of the ground open and only indirectly concluded anything about the identification of leading principle and ground. This brings to the fore the question of whether the ground should be identified with Peirce's *precept* of explanation" or with his "*idea*" (cf. above: p. 306).

I think Eco shows the character of the ground very powerfully in the following:

The immediate object is the way in which the dynamical object is focused, this "way" being nothing else but the ground or meaning. In fact, the immediate object is "the Object as the Sign itself represents it and whose Being is thus dependent upon the Representation of it in the Sign" (CP 4.536). The dynamical object motivates the sign, but the sign through the ground institutes the immediate object, which is "internal" (CP 8.534), an "*idea*" (CP 8.183), a "mental representation" (CP 5.473). (184). [Perhaps it should be "mental presentation."]

Therefore, it is a surprise to see Eco's conclusion that,

Therefore, being distinguished as formal objects of different semiotic approaches and in reference to different points of view, ground, meaning and interpretant are in fact the same, inasmuch as it is impossible to define the ground if not as meaning and it is impossible to define any meaning if not as a series of interpretants. (185)

Eco, in arguing for this conclusion, also identifies the ground with the immediate object (184) and it seems to me that the reason for the conflation of all these components of the semiotic process is that if ground = idea, and immediate object = idea, and meaning = idea, and interpretant = idea, then, they are all identical. I think this mistake comes from dealing with an aspect of the *nature* of ground (and some aspects of the other components) and not with its (their) *function* in the structure of the semiotic process.

V. *Ground, Sign, and Two Kind of Objects*

In one paper, "On the New List of Categories" (1867 (1893), Peirce deals, in more detail, with his concept of ground (1.545-559). An important paragraph reveals, in a nutshell, this concept:

Moreover, the conception of a pure abstraction is indispensable, because we cannot comprehend an agreement of two things, except as an agreement in some *respect*, and this respect is such a pure abstraction as blackness. Such a pure abstraction, reference to which constitutes a *quality* of general attribute, may be termed a *ground*. (1.551)

Peirce explains that "By contrast and agreement a thing is referred to a correlate," and the interpretation here is that the "thing" is the sign, the "correlate" is the immediate object and the "*quality*" (or "idea") that determines their agreement and contrast is the *ground* (cf. 1.566). (The image (quality, idea) which mediates by comparison between the images of the two letters p and b is the turn on an axis line and the transformation. The comparison between "murderer" and "murdered" is the image of "murder". These are Peirce's examples, 1.553). However, in order to understand the function of the ground in the semiotic process we should look for the general scheme of this process:

A Sign is a Cognizable that, on the one hand, is so determined (i.e., specialized, *bestimmt*,) by something *other than itself*, called its Object, while on the other hand, it so determines some actual or potential Mind, the determination whereof I term the Interpretant created by the Sign, that that Interpreting Mind is therein determined mediately by the Object. (8.177)

. . . to get more distinct notions of what the Object of a Sign in general is, and what the Interpretant in general is, it is needful to distinguish two senses of "Object" and three of "interpretant." (8.182) (Cf. MS 318 (1907))

As to the Object, that may mean the Object as cognized in the Sign and therefore an Idea, or it may be the Object as it is regardless of any particular aspect of it, the Object in such relations as unlimited and final study would show it to be. The former I call the *Immediate Object*, the latter the *Dynamical Object*. (8.183) But it is necessary to distinguish the *Immediate Object*, or the Object as the Sign represents it, from the *Dynamical Object*, or really efficient but not immediately present Object. (8.343, 1908)

Therefore, we have here two different processes: (1) the dynamic process in which the dynamical object determines the sign, and (b) the mental or semiotic process in which the sign represents the immediate object and determines the interpretant through it. The first process (a) is a dyadic one which we can represent in the scheme:

$$[5] \text{ Dynamical Process} = Lp^{dy} (O^{dy} \rightarrow SP^s)$$

in which Lp^{dy} is the dynamical leading principle, a physical law, which operates on O^{dy} the dynamical object to determine the proto-sign SP^s (cf. 4.536-541, 5.306). The second process (b) is a triadic one represented in the scheme:

$$[6] \text{ Mental Process} = LP^{mt} (S^{si/sy}, O_I, E^{si}, D^{si}, L^{sy}),$$

where LP^{mt} is the mental leading principle, $S^{si/sy}$ is the sign which is either signal or symbol, O_I is the immediate object, E^{si} emotional interpretant, D^{si} is dynamical interpretant, and L^{sy} is the logical interpretant. The process which develops the sign from the proto-sign is very complicated and belongs to the perceptual semiosis with which I deal in another place (Nesher, 1984; cf. Brown and Hornstein, 1981). However, our interest here is in the mental semiotic process with symbols [6], and with the function of the ground.

The essential function of the ground here is to *select* the specific aspect of the dynamical object presented by the percept signal (S^{s1}) in the perceptual process. The *percept* (S^{s1}) is interpreted in the perceptual semiosis by the emotional, dynamical and logical interpretants. The *logical interpretant* in perceptual semiosis is the *perceptual judgement* which is a symbolic proposition. In this proposition the subject symbol (S^{sy}) is determined by the *ground* (G) to present the specific

Immediate Object (O_I). In this process the sign determines, through this immediate object (and the emotional and the dynamical interpretants), its logical interpretant which is the predicative component of the perceptual judgement. The perceptual semiosis is a process of selection, abstraction and symbolic generalization of the initial percept, a process which terminated in the perceptual judgement. The latter can be represented in the following formal structure:

$$[7] \text{ Perceptual Judgement} = G(S^{sy}, O_I, L^{sy})$$

(e.g., "This stove is black," (1.551), where S^{sy} = "This stove," O_I = the image of the *blackness* embodied in this stove, and L^{sy} = "(is) black").

The above formulation of the perceptual judgement follows our analysis of the nature and function of the ground, but the result of it is the replacement of the leading principle (Lp) in our basic formulation of semiotic structure [2] by the ground (G). Whether this can be justified I will examine later on in this analysis. This process of *selection* is called by some cognitive psychologists *filtering*, and by others, *attention* (cf. Neisser, 1976: Ch. 5; Compare: 1.547-549; 2.428). The functor of this process is called by Neisser *schemata*:

A schema [schemata] is that portion of the entire perceptual cycle which is internal to the perceiver, modifiable by experience, and somehow specific to what is being perceived. (1976: 54)

Perceptual schemata are plans for finding out about the objects and events, for obtaining more information in the format . . . But the schema determines what is perceived even where no overt movements occur (listening is a good example), because information can be picked up only if there is a developing format ready to accept it. Information that does not fit such a format goes unused. Perception is inherently selective. (1976: 55)⁵

Neisser deals here with the function of the schemata in the perceptual process (cycle), but this function works on all levels of cognition. (cf. Bohm 1977; Neshier, 1984). I believe that Peirce's *ground* is very similar in nature and function to Neisser's *schemata* or to be more precise

to a part of it: the *format*. The difference between perception and other levels of cognitive processes in this context is whether the real (dynamic-al) object is present or is only mentioned by the interpreter (cf. 5.239).

VI. *The Location of the Ground in the Logico-Cognitive Order of the Semiotic Process*

If my analysis is correct then Eco's interpretation of Peirce's discussion in 1.551ff. is mistaken.

According to Eco's interpretation when we apply it upon Peirce's example, "The stove is black," "The stove" is the sign representing the object *stove* from the aspect of *blackness* (namely, the image of the stove with this property, cf. 2.295), and "(is) black" is the ground. In this case Eco's interpretation, represented according to my basic structural scheme, will be:

$$[8] \text{ Semiotic Process} = \text{Lp}(S, O_I, G)$$

But [8] is an improper characterization of semiosis. We know that the third correlate in the triadic relation of the semiotic structure is the Interpretant. Therefore, according to Eco the ground must be identical with the interpretant. I have already mentioned that in the essential places, where Peirce discusses the concept of *ground*, he presents the triadic structural relation in which sign is the first correlate, immediate object the second correlate, and the interpretant the third correlate (compare also: 2.235, 2.242, 2.273 and many other places). The ground should probably have another place and function in the triadic semiosis, and there is another component that is not mentioned: the leading principle. I have already suggested that the ground is a sort of selective functor and I would like to show this and its location in the semiotic process on the basis of its definition.

A Sign, or *representamen*, is something [S] which stands for somebody [I] for something [O] in some respect or capacity [G] . . . It [the Sign] stands for that object, not in all respects, but in reference to a sort of idea, which I have sometimes called the *ground*. (2.228, 1897; cf. 1.554)

The semiotic process is a process in time and its formal representation has a logical hierarchy in which the ground has a specific place (cf. 1.566). In another place Peirce suggests that,

Of course, nothing is a sign unless it is interpreted as a sign; but the character which causes it to be interpreted as referring to its object may be one which might belong to it irrespective of its object and though that object had never existed, or it may be in a relation to its object which it would have just the same whether it were interpreted as a sign or not. (2.307, 1902; cf. 1.558, 3.361-362)

This "character," which belongs to the potential sign, fits exactly in its nature and function with the ground that Peirce discusses in other contexts.

The relevant point for us in the above passage is that it shows that the ground is the character of the potential sign before it has caused the sign to present the immediate object and before the sign was interpreted, and the semiotic process was completed, by the interpretant. This logical order of the cognitive process shows us that the ground precedes the interpretant in this process and therefore, they cannot be identical with each other. In another place Peirce makes the logical hierarchy of the components of the semiotic process and the function of the ground in it:

Reference to a ground cannot be prescinded from being, but being can be prescinded from it (1.551). [*Being*, in short: "The unity to which the understanding reduces impressions. . ." (1.548)]. Reference to a correlate cannot be prescinded from reference to a ground; but reference to a ground may be prescinded from reference to a correlate (1.552). [The correlate in this context is the immediate object of the sign]. Reference to an interpretant cannot be prescinded from reference to a correlate; but the latter can be prescinded from the former (1.553).

Peirce discusses the concepts of "precision" and "abstraction" extensively in 1.549 and n1, 2.428, 1893 and 5.449, 1905. The following is one of his explications of the concept "precision":

. . . precise abstraction or precision, where the subject pre-scinded is supposed (in some hypothetical state of things) without any supposition, whether affirmative or negative, in respect to the character abstracted. (from 1.549 n1, 1902).

Peirce defines the logical structure of the precision process:

Precision is not a reciprocal process. It is frequently the case, that, while A cannot be pre-scinded from B, B can be pre-scinded from A. (1.549)

This logical structure is important because the precision process and its logical order is an essential cognitive constituent of the whole semiotic process.

It is quite difficult to analyze, in detail, the entire paper "On the New List of Categories" (1867, 1.545-559) first of all because of the complexity of its logical structure and secondly, due to a later logical criticism that Peirce made from the point of view of his mature semiotics (cf. 1.560-567). However, I would like to present in the following way a rough and approximate sketch about the place and the function of the ground in semiotic process which results from my analysis: Let us take the "being" as identical with the "relate," namely, the sign or the representamen, prior of its interpretation (cf. 1.540), then the logical hierarchy of the mental process of representation and interpretation gives us the relation of presupposition or precondition, which is the inverse relation of the precision process.

1. Sign ("being", "thing", 1.553; "the concreteness" 1.556, cf. 1.540).
2. Sign \rightarrow Ground ("The *ground* is the self abstracted from the concreteness which implies the possibility of another" 1.556).

3. (Sign + Ground) \rightarrow Object ("for what reason the Sign represents the Object" 2.230; cf. 1.365).
4. Sign + Ground + Object \rightarrow Interpretant. (Cf 1.555-556).

This is an early version of Peirce's discussion on the concept of ground, with all of its metaphors, but this discussion is clear about the developmental process and about the relations between its components and their distinction. I think that from this hierarchical procedure of the process of representation and interpretation it becomes clear that sign, ground, immediate object and interpretant are different components with rather different functions (cf. MS 284, 1905).

VII. *The Ground, the Leading Principle and their Function in the Semiotic Process*

I have already suggested that the ground must operate as a functor on the sign to select the specific aspect according to which the immediate object of the sign will be determined. In this case the ground is very similar in function to the leading principle which is totally overlooked by Peirce in the context of the discussion on the ground. However, if the ground is identical with the leading principle it would also have to work throughout the entire semiotic process to determine the interpretant of this process. But Peirce stresses the comparison function of the ground, namely, a sort of dyadic relation:

Since identity belongs exclusively to that which is *hic et nunc*, so likewise must otherness. It is, therefore, in a sense a *dynamical relation* [my italics], though only a relation of reason. It exists only so far as the objects concerned are or are liable to be forcibly brought together before the attention. . . . a dynamological relation, existing only so far as the characters are, or are liable to be, brought into comparison by something beside those characters in themselves. (1.566, c. 1898. On "relation of reason," cf. 1.372)

It is clear from the above discussion that the relation of the comparison is a sort of "dynamic relation" ("of reason") between two components and mediated "by something beside those characters" and therefore this relation should have the form: $G(S, O)$. It is clear also, that this mediator cannot be the interpretant because the interpretant (I), according to its definition, has the same relation to the object (O) as the sign (S), but this cannot hold in the comparison relation in which the relation of similarity (or dissimilarity) holds between S and O. In another place (2.239) Peirce discusses a division of *triadic relations*:

. . . according as the *dyadic relations* [my italics] they constitute between either the First and the Second Correlates, or the First and the Third, or the Second and the Third are of the nature of possibilities, fact, or laws. . . .

The *comparison relation* is of the nature of possibilities (cf. 1.556) and it is, indeed, between the first (sign) and the second (object) correlates (cf. 1.365).

However, in the preceding paragraph (2.234, c. 1903) Peirce suggests three different kinds of triadic relations and the first one "Triadic relations of Comparison are those which are of the nature of the logical possibilities." In 2.240 Peirce again talks about dyadic relations which are embedded in triadic relations. It is interesting to see that already in 1867 (1.553) Peirce discusses *the structure of comparison semiosis* as a triadic relation in the context of the analysis of the concept of ground:

By a further accumulation of instances, it would be found that every comparison requires, beside the related thing, the ground, and the correlate, also a *mediating representation which represents the relate to be a representation of the same correlate which this mediating representation itself represents*. Such mediating representation may be termed an *interpretant*, because it fulfills the office of an interpreter, who says that the foreigner says the same thing which he himself says. (1.553, 1867)

This somehow seems to contradict my previous claim about the structure of the comparison relations and their components. But what we have here are two different semiotic processes of comparison:

- (a) Genuine Triadic Relation (cf. 1.478ff.) *with* Dyadic Triad of comparison (2.239), the scheme of which is:

[9] $Lp(G(S, O) \rightarrow I) \ \& \ (I = (S = O))^G$: I the interpreter makes note that S is identical with O in respect to G (cf. 3.361-362).

- (b) Genuine Triadic Relation *of* comparison, the scheme of which is:

[10] $Lp(S, O, I) \ \& \ I = (S = I)^O$: I the interpreter says that he, I, is identical with S in respect to O. (cf. above, 1.553).

The difference between these two semiotic processes which involve a comparison concerns the intention of the process (cf. 1.475) and the level of consciousness of the comparison process: Immediate or rational consciousness of its essential components (Cf. Nesher, 1982; 1983). The scheme [9] represents an indirect process of comparison which is embedded in another semiotic process with a direct intentional purpose, and the scheme [10] represents a direct intended purpose of comparison. Therefore, if we assume that the presentation of the immediate object by the sign is a process of comparison in respect to a specific ground and that this is a necessary element of every semiotic process, then we must conclude that in every genuine triadic semiotic process there is a dyadic degenerate triadic sub-process of comparison. The relation between the sign (S) and the object (O) (cf. 1.477; 6.331), determined by the ground (G). This sub-process should have its expression in the interpretant I of the main semiotic process in which it is embedded, but the latter must not be a comparison process (cf. 1.474).

VIII. *The Ground as a Sub-Component of the Leading Principle*

The functor ground (G) cannot operate *essentially* on more than two components (and not less) and it produces a relation of comparison between the sign (S) and the object (O) such that

[11] $G(S \rightarrow O)$

as in the first version of my analysis (Nesher, 1982; cf. 2.239). Therefore, in order to complete the semiotic process and to develop its interpretant (I), we need another functor. Let us take the leading principle (Lp) for this purpose. We will have three components, S, O, and I and two functors G and Lp for the two functions when one is embedded in the other such that

[12] $Lp(G(S \rightarrow O) \rightarrow I)$.

The problem here is that given the scope of G in the brackets immediately following it, then we have a genuine dyadic process which does not have any expressed interpretation in I and, therefore, it cannot be a cognitive mental process. Nevertheless, can we suggest that Lp and G are the same functor for a genuine triadic process which embeds a dyadic degenerate triadic process in it? The difficulty is that the Leading principle Lp is of the nature of a habit, law, namely a normative rule in the form of $(A \rightarrow C)$, while the ground G is an *idea*, *image*, namely, *descriptive* and not a normative one. However, there may be a solution – instead of having embedding functions we may have embedding functors such that G will be embedded in Lp as its member. And indeed, taking Peirce's 5.189 (1905) formulation of logical inference and assuming A as a theory or idea ("case"), C as a particular proposition ("result") and $(A \rightarrow C)$ as a general proposition ("rule") (cf. Nesher 1983: 4.4), then I would suggest that if we look inside the *rule* of the inference $(A \rightarrow C)$, the leading principle, we will find the *idea* A as its member, and by substitution of $G \equiv A$: $Lp = (G \rightarrow C)$. It is hard to formulate the specific mechanism of the work of the idea A ($\equiv G$) throughout the semiotic process in which it functions. According to the idea A the semiotic process develops in such a way that A projects its *iconic* (descriptive) *form* from one aspect of the sign S to the immediate object O_I and thus the sign is focussed on A as the intended character of the real (Dynamical) object O_R represented by O_I . This iconic form must somehow appear again in the descriptive form of the interpretant I, which also presnets the immediate object from this A aspect but in a different and more developed way. Hence, instead of the two semiotic functions, one embedded in the other, [12]: $Lp(G(S \rightarrow O_I) \rightarrow I)$, we have one semiotic function with the subcomponents of dyadic degenerate triadic relation embedded in it and a complex functor

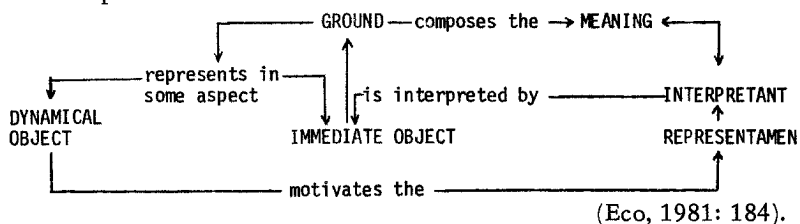
with the ground embedded in it as a specific element of comparison:

$$[13] \text{ Lp} = (G \rightarrow C) (S, O_I, I^{e/d/1}).$$

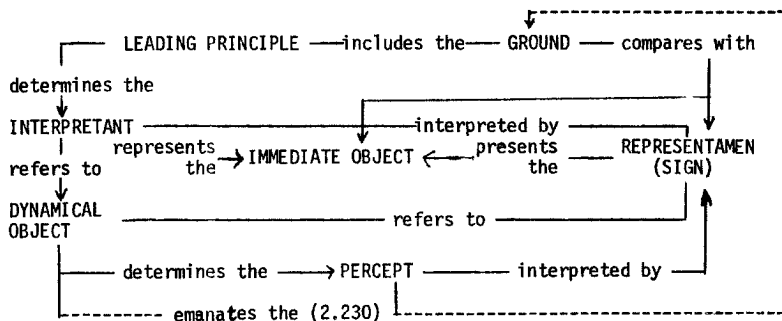
My theory of the nature and the function of the ground in the semiotic process also solves the predicament between the normative nature of the "precept of explanation" (2.230) and the descriptive nature of the "sort of idea" which Peirce calls ground. The normative nature is associated with leading principle as a rule of inference (or quasi-inference) while the descriptive nature belongs to the ground, embedded in the normative leading principle. They work together in the development of the semiotic process.⁶ This is, in a nutshell, also a way out of the predicament of *ought* and *is*.

IX. The Schematic Structure of the Semiotic Process

This is, of course, a very schematic way to present the concept of ground but the schematic result of this analysis for the structure of semiotic process will be different from that of Eco:



According to my analysis, the alternative scheme for some essential relations in the semiotic process is this:



Comparing these two schemes [14] and [15] one can find a missing component in the "alternative scheme": the MEANING of the REPRESENTAMEN, with which Eco deals in his paper. Hence, where is this meaning? I tried to answer this question in some other places (e.g., (Nesher, 1982, 1983) claiming that there is no single component of the semiotic process which is this meaning. In Peirce's pragmatic theory of meaning there are many components of the semiotic process that are considered as aspects of the meaning of the sign/representamen of this process. Therefore the answer to the question "Where is the meaning?" is that it is in the entire structure of the semiotic process.

X. Conclusion

I believe that the theoretical reconstruction of the nature and the function of the concept of ground as an essential component of the cognitive semiotic processes of perception and symbolic representation is crucial for understanding these processes. I think that Peirce gave us a basic theoretical framework in "the philosophy of representation" (1.539) for the understanding of human conduct as a cognitive semiotic process. The philosophical development of this pragmatic theory should shed light on the research of other sciences dealing with this subject.

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NOTES

1, In MS 359, 1866 (Robin, 1967) one may find that the ground corresponds in its function to the Holy Spirit. Thus I dedicate this paper to the Intellectual Holy Spirit whose spiritual touch has aided me in my work on this paper concerning the function of ground.

2. It has been a real pleasure to receive the *Proceedings of the C S Peirce Bicentennial International Congress* (Amsterdam, 1976) edited by K. L. Ketner, J. M. Ransdell, C. Eisele, M. H. Fisch, and C. S. Hardwick, Texas Tech University Press, 1981. In this volume I found, among many interesting papers,

Eco's paper on "Peirce's Analysis of Meaning" that I am dealing with here.

3. While discussing the representational character of diagrams, Peirce gives an example.

Thus, we may show the relation between the different kinds of signs by a brace, thus:

Signs	{	Icons Indices Symbols
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(2.282, c. 1902, cf. 8.119).

I already suggested (Nesher, 1983: n 8) coining another technical term to distinguish between symbolic and non-symbolic signs, calling the latter class "Signals" (cf. 4.531 n1, 1903; 5.119 c. 1902: [on symbols] "totally different order of signs"). I see this distinction as crucial for a precise discussion of Peirce's philosophy of language and semiotics in general (cf. 1.559, 2.292-300).

4. The distinction between symbols and intellectual concepts I discuss elsewhere (Nesher, 1983: & n6). Roughly, the intellectual concepts are a sub-set of the symbols which coincide with the symbols of science and are defined as genuine symbols in intellectual semioses (cf. 2.300; 2.302; MS 318, 1907).

5. Neisser uses the term "format" as in computer-programming language.

Formats specify that information must be of a certain sort if it is to be interpreted coherently. Other information will be ignored or will lead to meaningless results (1976: 55).

Neisser has realized (1979) that there must be a theory for the perception of new and unexpected information (percepts) and this kind of perception he calls "pre-attentive." Peirce discusses extensively the nature of the percept which "forces itself" on us. It is true that of this preattentive perception we are hardly aware in our mature everyday life but it is always working in us. However, with children and adults who are exposed to a new environment (e.g., space pilots) it is a major kind of perception and its theory is important. In such a theory we should find a solution for the perceptual sources of the ground, the process of its "emanation" (cf. 2.230).

6. The similarity between the "leading principle" and "ground" in Peirce's pragmatism (according to my interpretation) and the "schemata" and "format" in Neisser's cognitive theory of perception concerns their nature and function in cognitive processes ("semiosis"/"cycle"). It is interesting, therefore, to look briefly at Neisser's discussion of his concepts:

The function of schemata may be clarified by some analogies. In one sense, when it is viewed as an information-accepting system, a schema is like a *format* in a computer-programming language. Formats specify

that information must be of a certain sort if it is to be interpreted coherently . . . schemata can operate at various levels of generality. (55)

In Peirce's pragmatism the leading principle is *habit*, which is conscious on various levels (immediate to intellectual and operates in process of various levels of generality (instinctive practice to logical deduction). (Cf. Piaget's "action schemata" (1967 (1971) and Neisser indebtedness to him (1976: 65):

A schemata is not merely like a format; it also functions as *plan*, of the sort described by Miller, Galanter, and Pribram in their seminal book. Perceptual schemata are plans for finding out about objects and events, for obtaining more information to fill in the format. . . . But the schema determines what is perceived. . . information can be picked up only if there is a developing format ready to accept it. . . Perception is inherently selective. (55)

The format, or if you want the ground, shows why in Sperling's experiment (cf. Neisser, 1976: 46-48) only some characteristics of the *percept* (Neisser: "icon") become actively available for the perceiver's interpretation. The percept here is the sign of the real object but we identify them as it is in the case of our identification of the token of a diagram with the diagram itself. According to Peirce what the ground selects of the percept is presented by the sign in the immediate object and interpreted by the interpretants (cf. Peirce, 2,306, 7,648; Nesher, 1984).

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