

67-9367

RANSDELL, Joseph Morton, 1931-
CHARLES PEIRCE: THE IDEA OF REPRESENTATION.

Columbia University, Ph.D., 1966
Philosophy

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1967

CHARLES PEIRCE: THE IDEA OF REPRESENTATION

By

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Submitted in partial fulfillment of the requirements
for the degree of Doctor of Philosophy,
in the Faculty of Philosophy,
Columbia University

1966

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ABSTRACT

CHARLES PEIRCE: THE IDEA OF REPRESENTATION

JOSEPH MORTON RANSELL

This study is concerned with a central conception in the philosophy of Charles Peirce, the conception of a sign. It is suggested that a sign is best understood simply as a term of the triadic relation of representation, and the emphasis in the study falls upon the explication of that relation in its generic character, as Peirce understood it. The study is primarily interpretive rather than evaluative, and two complementary approaches are utilized conjointly throughout. First, some significant connections between Peirce's conception and a number of more familiar and traditional philosophical conceptions are suggested. For this purpose, the leading assumption is that the concept of a sign is a generalization of the traditional concept of appearance (provided this latter term is understood primarily in the sense of a manifestation of reality rather than in the sense of an illusion or deception). Second, the conception of representation is approached in a structural or formal way, with the intent of showing the relation between this generic conception and the formal categorial analysis which Peirce initiated in 1867. For this purpose, the leading assumption is that the representation relation is thought of by Peirce as being identical with the fundamental inference relation, and that the categorial

analysis is in turn an analysis of this latter relation.

The study is divided into eight chapters. The first five chapters are directed primarily toward explicating the formal or structural features of the generic relation. The last three chapters consider, respectively, iconic, symbolic, and indexical representations, and are primarily concerned with connections with traditional philosophical issues. Chapter I is introductory. Chapter II is concerned with establishing an initial orientation towards Peirce's logical point of view, for which purpose the distinction between "first intentions" and "second intentions" is utilized. Chapter III is concerned with the sense in which the logical or semiotical point of view is concerned with the reasoning process. Chapter IV is an analysis of the major line of argument in Peirce's 1867 essay on the categories. Chapter V is a continuation of the analysis of Chapter IV, and it concludes with an attempt to clarify the meaning of some of Peirce's definitions of "sign" in the light of foregoing considerations. In Chapter VI the iconic sign is discussed in connection with Peirce's problem of reconciling the doctrines of representative perception and immediate perception. In Chapter VII the symbolic sign is discussed in connection with the traditional problem of accounting for the generality of ideas or words. In Chapter VIII the indexical sign is discussed in connection with the import of the Kantian dictum that "existence is not a real predicate."

NOTE ON CITATIONS

In accordance with standard practice, all references to, and quotations from, The Collected Papers of Charles Sanders Peirce, Vols. I-VI, ed. Charles Hartshorne and Paul Weiss, Vols. VII-VIII, ed. Arthur Burks (Cambridge: Harvard University Press, 1931-35 and 1958), are cited as follows: the number to the left of the decimal point designates the volume number; the number to the right of the decimal point designates the paragraph number.

Since there is also frequent reference to Charles S. Peirce's Letters to Lady Welby, ed. Irwin C. Lieb (New Haven: Whitlock's, Inc., 1953), I have used a suitable convention here as well: the letters "LW" refer to this volume and the number immediately following refers to the page number.

Citations to these volumes are usually embodied parenthetically in appropriate places in the text itself, except where they are relegated to footnotes for some special reason. All other citations in this study are made in the usual way. It should also be noted that I have not corrected irregularities of spelling, punctuation or grammar, in quotations from Peirce, except where explicitly indicated by brackets.

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CHAPTER IV

THE GENERIC RELATION

1. The Categories

The purpose of the 1867 essay "On a New List of Categories" (1.545-59) is, in Peirce's own terms, that of "searching out whatever universal elementary conceptions there may be intermediate between the manifold of substance and the unity of being." (1.550) From the point of view which we are taking, it may also be said to be an analysis of the generic relation of representation. Other ways of conceiving it would be as, for example, an analysis of: interpretation; objectification; predication; inference; objective awareness; objective consciousness; cognitive awareness; thinking that something is something; applying a concept to a case; "the reducing of the manifold to unity"; the assimilation of information; learning. There are no doubt still other ways of characterizing it as well; but this should give some indication of what is at issue in the "New List," and of the various sorts of approaches that might be taken in trying to understand it.

The strategy of Peirce's analysis is to see what is presupposed in the act of predication by determining an order of (second intentional) conceptions which are

involved in "passing from being to substance." (1.550)
 These conceptions are, of course, the categories. The first question is, though: What is this conception of "being"? Peirce says that the conception of being is that which is implied in the copula of a proposition. (1.548)
 Or, as he says in an early draft of this essay, "it is the final stroke which binds the elements of the judgment into unity."¹ Further, the conception of being is said to have no content. (1.548)² In other words, "being" is a purely formal concept, having no material content in itself: it is simply the form of predication in general, or the very notion of predication itself. The term "being" is, therefore, quite vacuous or meaningless construed materially or first-intentionally: nothing is said of a given object merely by saying simply that it is or has being.³ But, of course, the point is that it is not to be

¹Murray Murphey, in his The Development of Peirce's Philosophy (referred to in Chapter I, footnote 6 of this study), includes as an appendix four preliminary drafts of the "New List" (see Murphey, pp. 411-22). The quotation above is from Draft 1, p. 411.

²In De Interpretatione, Aristotle says: "For even the infinitives 'to be,' 'not to be,' and the participle 'being' are indicative only of fact, if and when something further is added. They indicate nothing themselves but imply a copulation or synthesis, which we can hardly conceive of apart from the things thus combined." On Interpretation, trans. Harold P. Cook (Cambridge: Harvard University Press, The Loeb Classical Library, 1938), p. 121 (16b22ff). See also Peirce, 2.343.

³Peirce distinguishes between being, reality, and existence. The relation of being and reality is discussed briefly at the end of this chapter. The conception of existence will not be discussed here since to do so would

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taken first-intentionally; for the conception of being is simply the conception of cognition as such, the conception of conception itself. In other words, being is the generic object of second intention. Clearly, then, the conception of being is identical with the generic representation relation. This is why the analysis of the categories of being is the same as the analysis of the make-up of the generic semiotic relation. Since, as I pointed out in Chapter III, Peirce identifies the semiotic or representation relation with the generic principle of inference (which can variously be construed as the nota notae, the dictum de omni, etc.), the analysis is also of the generic character of inference.

Peirce draws much of his terminology and general logical outlook from Kant, and I should like at this point to introduce some quotations from the latter on the general nature of inference. In his essay entitled "The Mistaken Subtlety of the Four Syllogistic Figures," which Peirce studied with great care,⁴ Kant characterized inference as follows:

Judgment is the comparing of something as a mark with a thing. The thing itself is the subject, the mark

involve going into the problem of logical quantification. As I explain later in this chapter, I have so far been unable to pursue this important problem. The reader might consult 1.515 for an especially interesting passage on the relation between being, reality, and existence, however.

⁴Peirce wrote a paper entitled "Memoranda Concerning the Aristotelian Syllogism" in 1866 (2.792-807) which was intended as a correction of Kant's thesis in the essay quoted above. This is discussed briefly in Chapter V of this study.

is the predicate. The comparison is expressed by the connective sign "is" or "are," which when used alone indicates that the predicate is a mark of the subject, but when combined with the sign of negation states that the predicate is a mark opposed to the subject. . . .

A mark of the mark of a thing is called a mediate mark of the thing. Thus, e.g., "necessary" is an immediate mark of God, but "unchangeable" is a mark of the necessary and therefore a mediate mark of God. It is easily seen that the immediate mark plays the role of an intermediate mark (*nota intermedia*) between the remote mark and the thing itself, since it is only through it that the remote mark is compared with the thing itself. . . .

I now set forth my real definition of an inference. Every judgment by a mediate mark is an inference; or, in other words, it is the comparison of a mark with a thing by means of an intermediate mark. . . .

From what has been said we see that the first and universal rule of all affirmative inference is: A mark of the mark is a mark of the thing itself (*nota notae est etiam nota rei ipsius*); . . .⁵

In these terms, Peirce's position might be summed up in a sentence by saying that, logically regarded, every judgment is judgment by a mediate mark, i.e. every judgment is (implicitly) an inference. Let us note the three elements basic in Kant's account. They are: (1) the thing itself, (2) the immediate or intermediate mark, and (3) the mediate or remote mark. Now, if we correlate these three elements with the terms of the triadic sign-relation, element (1) is clearly to be correlated with the object-

⁵This essay is translated in Kant's Introduction to Logic, trans. T. K. Abbot (New York: Philosophical Library, 1963). The passages quoted are on pages 79-81. I have altered Abbot's translation in the interest of greater literalness. See Kant's Gesammelte Schriften (Berlin: Georg Reimer, Prussian Academy edition, 1912), Vol. II, pp. 47-49.

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 term in the latter. But which of the other two would be correlative with the sign-term and which with the interpretant-term?

Consider the following characterizations of the interpretant which Peirce gives in the "New List":

[It is] a mediating representation which represents the relate as standing for a correlate with which the mediating representation is itself in relation.

[It is] a mediating representation which represents the relate to be a representation of the same correlate which this mediating representation itself represents. [*italics omitted*]

. . . it fulfills the office of an interpreter, who says that a foreigner says the same thing which he himself says. (1.553)

The notion of an office or role ^{function} is important in understanding the notion of the interpretant. Consider -- though only as an analogy -- what it means to be an interpreter, in the ordinary sense. In an interpreting situation we have one man, A, who speaks, and a second man, B, who speaks after A, repeating what A has said. What makes B the interpreter? It is not what he says, so far as he says what the other says, but rather his contextual role or position. Now in any such situation an ambiguity is possible, such that someone could mistakenly suppose the interpreter is speaking in his own person. In order to avoid this the interpreter could either identify himself as the interpreter simply by saying that he is such, or he could eliminate the ambiguity by explicitly prefacing all his statements by "He says ____". But whether or not he actually says "He says ____" (or something contextually

equivalent), it is implicitly understood that he is saying this -- for otherwise he would not be functioning as interpreter. Hence, in effect, the interpreter, as such, always represents himself to be such. That this is so is clear from the fact that if someone did fail to grasp his role (mistakenly supposing that he was speaking in his own person), and if the interpreter did nothing to rectify the misunderstanding, then he would be said to have misrepresented himself. To apply this analogy to the characterizations of "interpretant" above, the point would be that the interpretant "says" what it "says," i.e. functions as it does, in virtue of its contextual position in the inference. It is only if this is borne in mind that it is possible to make sense of the fact that the interpretant is also a sign and to distinguish its interpretant role from its sign role. It is of the first importance, then, to locate it in its logical role.⁶

Assuming that we are correct in making a correlation between Kant's account (as quoted above) and Peirce's analysis, the question is whether the interpretant is to be identified with the intermediate (immediate) mark or with the remote (mediate) mark. If we consider Kant's statement that "the immediate mark plays the role of an intermediate mark between the remote mark and the thing

⁶I must stress the fact that the comparison of "interpretant" with "interpretation," in the ordinary sense, is intended only as an analogy to bring out the important notion of role.

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 itself, since it is only through it that the remote mark is compared with the thing itself," it seems clear that the interpretant is to be correlated with the immediate or go-between or intermediate mark. This then leaves the sign-term of the triadic relation to be correlated with the remote or mediate mark. Now consider the nota notae: A mark of a mark is a mark of the thing itself. And let us rephrase this as follows: A mark of the thing itself is a mark of a mark of the thing. The rephrasing is justified by the fact that, on Peirce's view, every judgment is an inference, i.e. is a "judgment by a mediate mark."⁷ Then, consistent with the correlation made above, this can be rephrased as: A sign of the object is a sign of an interpretant of the object.

Let me introduce one more consideration before going on to the actual analysis of the "New List." According to Peirce:

. . . the general formula of all argument must be:

M is P
 S is M
 ∴ S is P

which is to be understood in this sense -- that the terms of every syllogistic argument fulfill functions of subject and predicate as here indicated, but not that the argument can be grammatically expressed in this way. (2.474)

For convenience, I will refer to this hereafter as the "Peircean Barbara." Since Peirce's rationale for this

⁷The rephrased version could be regarded as an alternative statement of the dictum that every cognition is determined by a previous cognition of the same object.

will be discussed in the next chapter (though later discussion in the present chapter will clarify the matter to some extent), let us simply assume his point for our present purposes. Now to play the role of the minor term (S) is to play the object role; to play the role of the major term (P) is to play the sign role; and to play the role of the middle term (M) is to play the interpretant role. Since the nota notae is the general inference principle governing this form,⁸ if we operate with our rephrased versions above we can understand the nota notae to say, in effect: "The assertion that a given mark or sign, P, is a mark or sign of the object, S, i.e.

S is P,

means that there is an interpretant mark or sign, M, of the object, i.e.

S is M,

such that the mark or sign, P, is a mark of that interpretant mark, i.e.

M is P."

Thus the import of the nota notae, from this point of view, is that it educes, as it were, a complete argument in a step-wise fashion, beginning with the laying down of the conclusion, followed by a laying down of the minor premiss, followed by a laying down of the major. Or, to put it

⁸It would perhaps be more correct to say that the nota notae and this form are the same, provided the rules governing the latter are understood.

another way, the nota notae is the articulated form of a cognitive claim as such.

I introduce these considerations prior to my discussion of the actual analysis in the "New List" in order to provide an intimation of the form which that analysis takes. Specifically, the foregoing should indicate that the logical point of view is essentially the justificatory point of view. Thus, for example, it makes no difference in what temporal order the elements of an argument occurred in the psychological thought-process, assuming that they can be said to have occurred at all. What is important is that they be arranged in a form suitable for logical evaluation. The nota notae and/or Peircean Barbara are supposed to provide the generic form for this. Hence, Peirce's analysis -- since it is essentially the analysis of the notion of a cognitive claim as such -- can be understood to be an analysis of this form. If the reader finds occasional use of terms like "mind," "thought," "consciousness," etc., troublesomely "psychologicistic," he should remember that the analysis has as its subjectmatter the import of this generic form and that the offending terms are eliminable. Also, the foregoing may serve the purpose of making clear the very restricted or formal way in which the notion of the "interpretant" is to be regarded for our purposes, and may thus forestall the natural tendency to understand it in the looser, ordinary sense of "interpretation." I am not denying its connection with the latter,

but I do not think we can hope to get far in understanding this connection, as Peirce conceived it, unless we understand the technical term in its basic formal sense first. Let us now turn to the analysis of the "New List."

Peirce begins the categorial analysis proper by saying:

The conception of being arises upon the formation of a proposition. A proposition always has, besides a term to express the substance, another to express the quality of that substance; and the function of the conception of being is to unite the quality to the substance. Quality, therefore, in its very widest sense, is the first conception in order in passing from being to substance. (1.551)

Or, as he puts it in an earlier version, "whatever is, is by being somehow."⁹ The earlier versions, as well as the published version, leave no doubt but that the first category is Peirce's version of the traditional concept of essence or form: the notion of a "whatness." Now since the sign is the first correlate of the triadic sign relation, the question arises as to whether quality, as the first category, is not simply to be identified with the notion of a sign. When we note that Peirce goes on to say that "a proposition asserts the applicability of a mediate conception to a more immediate one" (1.551, italics mine), the obvious parallel to the Kantian account suggests that this must be so. Yet, on the other hand, the notion of representation as such is not itself introduced until we get to the third category. The solution lies in distin-

⁹Murphey, pp. 411, 413.

guishing between the first term of the relation and that which plays the role of first term of that relation. Anything whatsoever can be a sign, i.e. can function in that role; but in order to do so it must have some character in virtue of which it can so function. This character is what constitutes the ground or reason of its being capable of being a sign, though it is not actually a sign until it is interpreted as such. The notion of quality is, according to Peirce, the notion of reference to a ground (1.551), i.e. the notion of having sign-potentiality. Hence, the first category, quality, can be identified with the notion of a sign in the sense of possession of sign-potentiality, but it is not equivalent to the notion of an actual sign. And I take it that this would be Peirce's version of the traditional notion of form, quiddity, or essence.

Now the sign-relation presupposes something which can play the role of a sign, and it therefore presupposes that there is such a thing as sign-potentiality (form, essence, quality). As ground of the sign-relation, the latter must be something about the thing functioning as a sign in virtue of which the thing is significant of its object. According to Peirce, this leads to a division of three kinds of signs, on the basis of a distinction between three kinds of sign-potentiality or quality: "internal" quality, "relative" quality, and "imputed" quality. (1.558) That is, it leads to a division of signs into those "whose relation to their objects is a mere community in some

quality, . . .", those "whose relation to their objects consists in a correspondence in fact, . . .", and those "the ground of whose relation to their objects is an imputed character, . . .". (1.558) The first type Peirce here calls "likenesses," but his later and more familiar term is "icon." His point is that the ground of the icon's sign-relation to its object is that it is like it. The second type is what Peirce here and later refers to as an "index." His point on this is that the ground of the index's sign-relation to its object is some existential relation in which they stand to each other.¹⁰ The third type is what Peirce here and later refers to as a "symbol." And his point here is that the ground of a symbol's sign-relation to its object consists solely in the fact that it is imputed to be a sign of it, i.e. is in fact habitually interpreted to be such.¹¹ These matters will be discussed further later in this study.

Now let us go on to the second category. All that Peirce has to say on this is that:

Empirical psychology has established the fact that we can know a quality only by means of its contrast

¹⁰Spatio-temporal and causal relations are existential relations, but likeness (resemblance) is not an existential relation, on Peirce's view. He refers to the latter as a "relation of reason." (1.365)

¹¹The thing functioning as a symbolic sign could be like its object and could be in this or that existential relation to it. But insofar as it is functioning as a symbol these facts are irrelevant. The same entity could, therefore, be functioning in all three ways, i.e. its significance could be grounded in any or all of the three ways.

with or similarity to another. By contrast and agreement a thing is referred to a correlate, if this term may be used in a wider sense than usual. The occasion of the introduction of the conception of reference to a ground is the reference to a correlate, and this is, therefore, the next conception in order. (1.552)

Peirce's reference to "empirical psychology" in this logical context looks rather suspicious, but I do not think we should worry about a malicious "psychologism" here. For one thing, in an earlier version of this essay Peirce refers instead to what "all students of philosophy" supposedly know about these matters. And for another, and more importantly, the discussion in the foregoing chapter of this study should indicate that there is nothing in principle which forbids Peirce from making use of conclusions of empirical psychology in logic, provided that these propositions can be understood to be of an essentially logical character to begin with, i.e. provided they can also be grounded logically. Consider the analogous case in connection with physical science. There can surely be little question but that relativity theory and certain aspects of quantum mechanics have direct import for philosophical theories of space, time, and causation. The fact that these considerations actually arose in the context of empirical physics does not in itself militate against their philosophical character, and Peirce would almost certainly have regarded at least part of the issues there as being primarily philosophical in character to begin with.¹²

¹²Peirce once remarked: "Now it is a circumstance most significant for the logic of science, that this

This does not mean that they are not also physical considerations, and it does not mean that the fact that they arose in the physical context was merely accidental. It is plausible -- and quite consistent with Peirce's view -- to suppose that the articulation of such matters will usually, if not always, be efficiently caused by the difficulties which are encountered in developing theories in the special sciences. Percy Bridgman, with reference to the radical changes in the physical point of view brought about by relativity theory, remarked that:

Reflection on the situation after the event shows that it should not have needed the new experimental facts which led to relativity to convince us of the inadequacy of our previous concepts, but that a sufficiently shrewd analysis should have prepared us for at least the possibility of what Einstein did.¹³

When we note the similarity between Bridgman's "operationism" and Peirce's pragmatism we might well be inclined to say that such a "sufficiently shrewd analysis" perhaps had been made. But the fact is that the import of such an analysis can only be seen in the most shadowy way in the absence of its exemplification in, or application to, concrete subjectmatter. To the extent that relativity theory

science of dynamics, upon which all the physical sciences repose, when defined in the strict way in which its founders understood it, and not as embracing the law of the conservation of energy, neither is nor ever was one of the special sciences that aim at the discovery of novel phenomena, but merely consists in the analysis of truths which universal experience has compelled every man of us to acknowledge."
(8.198)

¹³P. W. Bridgman, The Logic of Modern Physics (New York: The Macmillan Company, 1961), p. 1.

is a matter of purely logical considerations there is not, I suppose, any logical reason why Thales couldn't have arrived at it, had his thoughts only tended toward such matters. He seems to have been intelligent enough. But the absurdity of such a thing merely points up the fact that intelligence and logical acumen, in the absence of concrete problematic material, are not normally enough. The case is surely similar with the psychological sciences. It may well be that some matters of the most profound logical import will only become clearly articulated as they appear in their exemplification in concrete psychological subjectmatter. If such principles have been antecedently arrived at in a highly abstract form by the logicians, then their more concrete exemplification in the context of psychological inquiry will surely count as strong verification of the correctness of the former. My suggestion is that Peirce may have been thinking in some such fashion when he cited the findings of "empirical psychology," intending by this to draw attention to the fact that certain principles, primarily logical in character, had in fact been verified through exemplification in the domain of empirical scientific inquiry.¹⁴

In any case, Peirce's point is, I believe, primarily logical in character. And the point is the same as that which he raises again in "Some Consequences of

¹⁴Note his use of psychological examples in "Questions Concerning Certain Faculties Claimed for Man." (5.216-224)

Four Incapacities":

The . . . question is whether we have any general conceptions except in judgments. In perception, where we know a thing as existing, it is plain that there is a judgment that the thing exists, since a mere general concept of a thing is in no case a cognition of it as existing. It has usually been said, however, that we can call up any concept without making any judgment; but it seems that in this case we only arbitrarily suppose ourselves to have an experience. In order to conceive the number 7, I suppose, that is, I arbitrarily make the hypothesis or judgment, that there are certain points before my eyes, and I judge that these are seven. This seems to be the most simple and rational view of the matter, and I may add that it is the one which has been adopted by the best logicians. (5.307)

It will be recalled that, according to the main line of the logical tradition prior to Kant, there are supposed to be three distinct cognitive acts: the act of apprehension, the act of judgment, and the act of inference. These are, of course, correlative with the notions of a concept, a proposition, and an argument. Kant, however, made a decided step in breaking down this distinction (as traditionally understood) in his treatment of conception in the Critique of Pure Reason. Thus, for example, Kant says:

Now we can reduce all acts of the understanding to judgments, and the understanding may therefore be represented as a faculty of judgment. For, as stated above, the understanding is a faculty of concepts. But concepts, as predicates of possible judgments, relate to some representation of a not yet determined object. Thus the concept of body means something, for instance, metal, which can be known by means of that concept. It is therefore a concept solely in virtue of its comprehending other representations, by means of which it can relate to objects. It is therefore the predicate of a possible judgment, for instance, "every metal is a body."¹⁵

¹⁵A69-B94.

Peirce's way of construing this is, in effect, to say that a mere conception is simply a judgment having the modality of possibility; that is, its object is only supposed as a possible one. The point is, however, that something -- be it an actuality or a mere possibility -- is always supposed ("supposed for," to use the scholastic phrase) in the act of conception. In Peirce's own terms, there is always a "reference to a correlate." And this is the second category, which he also calls "relation."

The term "relation" is here used in a more restricted sense than he uses it in his later writings. In fact, he indicates in later comments on the "New List" that what he meant by "relation" was "dual relation"; for the third category, representation, is a relation also, viz. that of an essentially triadic or "plural" relation. (1.564f) However, what is important here is the fact that the second category is the notion of reference to a co-relate, an other or second. And the question which immediately arises is: Another what? The answer is, I take it, that the correlate is simply another form (quality, essence, "firstness"): "Empirical psychology has established the fact that we can know a quality only by means of its contrast with or similarity to another." (1.552) There is an important philosophical crossroad here, as well as a crossroad in the interpretation of Peirce. For it could be objected that by "another" or "correlate" Peirce means, or should have meant, a bare other -- a mere that, as it

were -- rather than another form. This would be what is currently sometimes called the notion of the "bare particular" (which notion leads, I suppose, to an "ontology of the bare x").¹⁶ Or, to put it in traditional terms, it would be the Lockean je ne sais quoi or Kantian Ding an sich. Now as to what Peirce should have meant in order to be right, I have no comment; but I should think there could be little question as to what he did mean once the nature of the alternatives are set forth.

The second category is, then, the notion of otherness or dual relation as such, and it presupposes entities between which the relation holds. This is why Peirce says that "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) In other words, quality can be prescinded from otherness (since the mere notion of a quality does not involve the notion of anything else), but otherness cannot be prescinded from quality (since it is qualities which are mutually other). But what does all of this have to do with the notion of an object, in the logical sense? I take it that the answer is this. The notion of otherness is not itself the notion of an object, but the notion of an object presupposes the notion of otherness (reference to a correlate),

¹⁶I do not know to whom the term "bare particular" is originally due. The phrase "ontology of the bare x" I draw from an article by Thomas P. McTighe, "Scotus, Plato, and the Ontology of the Bare X," The Monist, 49 (1965), pp. 588-616.

just as the notion of a sign presupposes the notion of quality (reference to a ground). The bare dual relation of otherness as obtaining between one quality and another is certainly not to be identified with the notion of one being the object of another, but Peirce's point is that objectivity presupposes that such a relation obtains. It is, in other words, a relation which the representation relation presupposes, but it is not a part of that relation.

A further word about Peirce's analytic strategy in the "New List" might be appropriate at this point. The idea is to make explicit all that is implicit in the conception of being as such. Since this conception is identified with that of logical copulation, the analysis is actually of the conception of predication as such, which turns out to be identical with the notion of inference, of representation, and so on (as discussed earlier in this chapter). Now the third category, to which we shall turn in a moment, turns out to be the notion of representation. Therefore, the analytic movement can be understood to be a process of showing that the notion of being, fully understood, is the notion of representation. In other words, the third category is simply the fully articulated form of the conception of being. One result of the analysis is to show that the first category is such as to be logically conceivable in abstraction from the second and the third, in the sense that the bare notion of quality or form does not itself

involve the notion of otherness and/or representation. Similarly, the second category is shown to be such as to be logically conceivable in abstraction from the third category, in the sense that the bare notion of otherness or dual relation does not itself presuppose the notion of representation (though it does presuppose the notion of the first category). And, finally, the third category will be shown not to be conceivable in abstraction from the other categories, in that the notion of representation does presuppose the notions of quality and otherness. Now the analytic movement from the first to the second category is not supposed to be warranted by the notion of quality as such, i.e. there is no deduction of the notion of otherness from the notion of quality. Similarly, there is no deduction of the notion of representation from the notion of otherness. What warrants the analytic movement is the fact that we are analyzing the import of the third category, representation, from the very beginning -- though under the guise, as it were, of the concept of being. Let us move on, now, to the introduction of the consideration which yields the third category as such.

Peirce begins by saying that "the occasion of reference to a correlate is obviously by comparison." (1.553) And he then goes on to give some examples of comparison, designed to show that such an act always involves a third reference in addition to the reference to a ground and the reference to a correlate, viz. a reference to what he calls

an interpretant. Two things have to be borne in mind at this point. On the one hand, what we are explicating is the act of predication or judgment, which involves both the notion of a predicate term and the notion of a subject term of which the former is predicated. And, as far as the terms themselves go, they have already been introduced to us in the course of the analysis, viz. as the quality and the other (quality). But, on the other hand, the bare relation of otherness between two qualities is not in itself the relation of predication. For predication is not a mere positing of two qualities, but rather involves a special ordering relation. Suppose, for example, that the judgment is "The stove is black." The ground, reference to which constitutes the first category, would be blackness.¹⁷ The correlate, reference to which constitutes the second category, would be -- not the stove -- but rather stove-ness. Yet the predication is not supposed to be "Stove-ness is blackness," but rather "The stove is black" (or "The stove has blackness," which Peirce regards as an equivalent formulation, cf. 1.551). Hence, again, it is clear that some ordering relation remains to be introduced. And this is Peirce's point exactly: there is no predicational ordering unless some third factor is introduced. In other words, the groundwork has been laid for the claim that all judgment essentially involves the introduction of a third term, which is tantamount to the claim that all

¹⁷The form or quality, not the word "blackness."

judgment is really inference.

In order to understand Peirce's argument at this point the meager paragraph which Peirce devotes to the introduction of the third category in the "New List" is not sufficient. But we may take the following statements from other of his important essays of 1867 and 1868 as affording the clue to his intent:

At no instant in my state of mind is there cognition or representation, but in the relation of my states of mind at different instants there is. (5.289)

The conclusion may be regarded as a proposition substituted in place of either premiss, the substitution being justified by the fact stated in the other premiss. (5.279)

Every substitution of one proposition for another must consist in the substitution of term for term. Such substitution can be justified only so far as the first term represents what is represented by the second. (2.474)

There is no thought in an instant; all that is ever immediately present (in this sense of "present") is pure feeling, form, essence, quality, "firstness." This means that all logical relation must be a matter of priority and posteriority. But we have to distinguish between temporal and logical priority-posteriority. There is no doubt an important relation -- both for Peirce and in fact -- between temporal and logical order, but it must be borne in mind that we are concerned here exclusively with the latter (except where explicit note is made to the contrary). The point to this is, then, that we are to understand the predicational ordering introduced by the third category in terms of the notion of a logical order of priority and

posteriority. For logical purposes, the mind is to be regarded as a succession of purely formal elements, the nature of this succession constituting the nature of mind as such. In other words, mind is not a thing but a certain ordered process -- a logically ordered procession -- of pure form, feeling, quality, essence, "firstness." If we turn, then, to the second and third of the quotes above, we understand why Peirce there speaks of the inferential process in terms of substitution. In the logical procession one form (logically) takes the place of, substitutes for, some other as the sole positive content of mind at a given (logical) instant. More prosaically, inference is the justified substitution of one term in the place of another.

Now, prior to the introduction of the third category we have only the notion of pure quality or form, and the notion of a relation of otherness between two forms. If a serious etymological pun may be permitted: we have the positive and the op-positive. But the purpose of predication is to affirm the one term of the other.¹⁸ Hence, the antithetical or oppositional relation between the two terms must somehow be aufgehoben in the act of predication. This is why the introduction of a third term or "interpretant" is required. From what has been said above, it can be seen that this should be equivalent to the introduction of the notion of substitution. If I may extend my pun, though still with serious intent: we

¹⁸Peirce has a device for treating negative predications as positive, see 2.478.

will then have not only the positive and the op-positive, but the sup-positive as well. However, the substitution process has to be a justified one, i.e. the succession or ordering of the terms must be a logical ordering. Therefore, the introduced third term must in some way provide the warrant for the order in question. The question is: How can the introduction of yet one more formal element -- for this is all any term can possibly be -- constitute the ordering factor required?

Consider again the quotation from Peirce above, where he says that the substitution of term for term "can be justified only so far as the first term represents what is represented by the second" (2.474), and his characterization of the interpretant as a "mediating representation which represents the relate to be a representation of the same correlate which this mediating representation itself represents." (1.553, italics omitted) Now a useful synonym for "represents" would be, at this point, "stands in place of." (cf. 1.564) Or, still better, let us phrase it as "stands in the (logical) place of." And this, in addition to what has been said earlier, permits some helpful rephrasings. Thus, we may say that the substitution of one form for another can be justified only so far as the first stands in the same logical place that the second stands in. And we may say that the interpretant is a mediating form which stands in the place of a correlate (or subject) form, and does so in such a way that the relate

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(or predicate) form stands in that very same place. The interpretant form is, in other words, a form having a mediating function in that, on the one hand, it stands in the place of the subject or correlate form, and, on the other hand, there is another form (a relate or predicate form) which stands in its place. To put it another way: there is only one logical place, and this place is defined or constituted by the subject form; but within that logical place the interpretant form takes its place, and within that latter the predicate form takes its place. (The Euler diagram for the Barbara syllogism, consisting of three concentric circles, provides an exact spatial representation for this, provided that it is constructed intensionally rather than extensionally. That is, the circles must be construed as representing attributes or forms, rather than as representing classes of individuals.) In "The Fixation of Belief" Peirce remarks that:

A moment's thought will show that a variety of facts are already assumed when the logical question is first asked. It is implied, for instance, that there are such states of mind as doubt and belief -- that a passage from one to the other is possible, the object of thought remaining the same, and that this transition is subject to some rules by which all minds are alike bound. (5.369)

Leaving to one side here the notion of doubt and belief, Peirce is saying, in effect, that the logical movement of thought presupposes (a) a constancy in the object of thought, which is what I expressed above by saying that there is only one logical place and that this place is constituted by the subject form, and (b) that the movement to the predicate

requires some rules or ordering principles, which I expressed above as a generic principle in saying that the predicate form must fall not only within the subject form but within a form within the subject form.

It can now be seen why it is only with the reference to the third or interpretant form, the mediating form, that the notion of representation enters and why this is supposed to be the same as the notion of inference. The first category only posits a form. The second category only posits another form. But in order for this otherness or non-identity to be aufgehoben in predicational affirmation some third form must be introduced which so relates to the first two as, on the one hand, to preserve the presupposed non-identity of predicate and subject term, but, on the other hand, to constitute a partial identity after all. (The predicate form is exhibited as part but not the whole of the subject form.) This is, after all, only the familiar notion of containment, implicitness, or involvement. This is the notion which only the reference to the interpretant introduces, and it means that all predication requires such a middle or mediating term and is thus always inferential in character.

Let us take up again the "The stove is black" example. And let us suppose that this does not represent a perceptual judgment (which is an unconscious inference, on Peirce's view), but rather a judgment which is consciously based on a mediating notion. Suppose, for

example, that the stove is known or assumed to be made by the Ajax Company, whose stoves are always black. That is to say, let us suppose that the assertion "The stove is black" is not a mere irresponsible mouthing of words but purports to make a cognitive claim, and that appeal is made to the fact that it is an Ajax stove as justification for that claim. Now the problem that we encountered, with only the first two categories to work with, was that the word "black" introduces the notion of blackness and the word "stove" introduces the notion of stoveness, but the predication is not supposed to be "The stoveness is blackness" but rather "The stove is black" or "The stove has blackness." The reference to the third or interpretant term now introduces the further notion which we shall call "Ajaxness" (i.e. the character of being made by the Ajax Company). Since this is supposed to be a genuinely third term (and not just another other, so to speak) the notion of Ajaxness must be introduced as containing blackness and being contained by the stoveness in question.

Now, I say "the stoveness in question," for we are dealing with a definite description, "the stove," and not simply with a statement about stoves in general.¹⁹ Peirce's logical approach is, I believe, generally congenial to the use of the well-known technique for eliminating singular

¹⁹ I ignored this when I introduced the example earlier. The discussion which follows should make it clear that to remark upon this there would only have complicated the issue without affecting the point in question.

terms in logical representation which W. V. O. Quine explains in his Methods of Logic;²⁰ and, in fact, I would say that Peirce's approach necessarily requires some such technique. For, to use Quine's phrase, "the primacy of the predicate," i.e. of the term or form, is of the very essence of Peirce's point of view. Since we cannot here go into the details of that, let us simply assume that the words "the stove" here introduce some form complex enough to be contextually sufficient for representing the stove in question. And, for convenience, let us call that form "this-stoveness." (In other words, when the judger makes the judgment in question he "has in mind" as subject some complex idea which includes the notion of stoveness, but which also includes a number of other characters, such as e.g. location, ownership, etc.; and this complex idea or form we call, solely for convenience, the form "this-stoveness.") And let us be clear on the fact that, as a form, there is nothing individual about this-stoveness. Assuming all of this, the judgment "The stove is black," construed as evidentially based on the mediating notion Ajaxness, is, then, to be construed as the introduction into the universe of discourse of the complex form this-stoveness as containing the form Ajaxness, which in turn contains the form blackness. This is, so to speak, the formal import of the judgment-inference "The stove, since it is an Ajax, is

²⁰Willard Van Orman Quine, Methods of Logic (New York: Henry Holt & Company, 1955), pp. 215-19.

black."

Now let us note a very interesting fact. The judgment-inference actually only introduces one complex term or form. For, Ajaxness is here represented to be a part of the form this-stoveness, and blackness a part of Ajaxness. (This indicates one reason why Peirce insists not only on regarding terms as implicit propositions and propositions as implicit arguments, but also turns this around and says that "every proposition and every argument can be regarded as a term.")²¹ But if this is so, i.e. if the whole inference can be regarded as the positing of a (complex) firstness or form, then it is implied that there must be another op-positing or positing of a second form. For the analysis of experience shows that there is no positivity without otherness. And then this in turn implies that there must be a further sup-positing or introduction of a further interpretant form. But this, of course, results in yet another single, complex argument-term which . . . , etc., ad infinitum. The nature of the infinite regress -- or rather progression -- which this implies has already been discussed in Chapter III of this study, and I need only remind the reader that it is a potential, not an actual progression.

But let us go back to the fact that, since the argument is itself a complex single term, there must be a

²¹The quotation is from 2.407n1. See also 2.341, 2.344-56, and 3.175.

further op-positing. We here hit upon the nerve of Peirce's doctrine of logical individuality. As I noted earlier, there can be no question but that Peirce's theory involves the rejection of the individual as a bare or formless Ding an sich. But, on the other hand, no amount of formal complexity can yield individuality. Thus, in the example above, what we wanted to talk about was the stove. But all that could be introduced into the logical universe of discourse was a this-stoveness, i.e. some complex and non-individual form taken as representing what we intend. Yet we intend an individual. Now this intent is the op-positing which is (logically) generated with the completion of every judgment-inference. The notion of individuality is the notion of the ineluctably other which each successive judgment tries to -- and step by step does -- comprehend through a form. And this other is . . . another form. For there is no Ding an sich.

The ineliminable reference to the other is indicated by the fact that we cannot rephrase our judgment-inference

(a) "The stove, since it is an Ajax, is black"

by saying

(b) "This-stoveness contains Ajaxness, which contains blackness,"

but must rather say

(c) "That which contains this-stoveness contains Ajaxness, which contains blackness."

Nevertheless, the validity of (a) depends solely upon (b),

for all that (c) adds is the fact that this-stoveness is further contained, which is irrelevant for purposes of evaluating (a) as such. I take it that this is exactly the same issue which was discussed in Chapter III, viz. that there is no intuition. The logical argument supposes a premiss which is itself a conclusion, yet this does not imply that the premiss must actually be evaluated as a conclusion. In other words, while (b) is what is put forth as the logical argument, it is nevertheless true that it is (c) rather than (b) which actually translates (a); for (a) expresses more than the logical argument, in that it also expresses the assumption that the premisses of the logical argument are further contained (i.e. are not intuitive).

This brings us to the problem of quantification, a matter upon which I have only a few words to say. I used an example involving singular reference (the definite description "the stove") in order to point up the fact that while, on the one hand, it is always only a form which is introduced as subject term, yet, on the other hand, the introduced form is always supposed to be only representative of something further or other which the logical argument can never wholly comprehend. But precisely the same thing would have to apply to universally and particularly quantified assertions as well. That is, neither "All stoves are black" nor "Some stoves are black" can be construed as asserting that stoveness is blackness, but mean rather that (all or

some of) that which contains stoveness contains blackness. It seems clear, therefore, that the problem of quantification will center on the problem of the selection of terms as representative of the intended "that which." Since I have so far been unable to pursue this problem I can only point out the fact that Peirce apparently supposed that some uniform account of this could be given. For he not only held in his earlier writings, but continued to hold at least as late as 1893,²² that all arguments could in principle be reduced to what I called in Chapter III the Peircean Barbara form, i.e. the form:

$$\begin{array}{l} M \text{ is } P \\ S \text{ is } M \\ \therefore S \text{ is } P \end{array}$$

This form has no quantifiers, which is consistent with the fact that the logical argument, as such, is simply a matter of concentric formal containment. If this problem were worked out it would almost certainly have to go along the lines suggested by the fact that there are techniques for converting universal into particular propositions, and vice versa, and techniques (such as Quine's technique referred to earlier) for converting propositions containing singularly referring expressions into quantified propositions. The heart of the problem would then lie in connecting this with the ineliminable "that which" which every logical argument presupposes.

This completes my discussion of the categorial

²²This is discussed in Chapter V.

analysis in the "New List," with the exception of a comment on the fact that Peirce characterizes the act of predication as a "passage from being to substance." The concept of substance is, I take it, the concept of instantiated being. That is, it is identical with the matter which we have been discussing in the last few paragraphs, viz. the fact that there is an ineradicable "that which" or reference to another which our judgments successively, but only partially, comprehend. The substance is, in other words, that which always stands outside of, and is in that sense independent of, any given representation. (The sense in which it is "substratum" is obvious.) However, since each reference to it is a reference to another form, it is essentially cognizable. In fact, it might be said to be the notion of the cognizable or intelligible as such. The relation of being to substance is therefore this. Being is the representation of substance; it is the cognizable as cognized. Being is appearance; substance is the reality which appears. Substance -- reality -- essentially manifests itself, and the idea of manifestation is the idea of a sign.

A final point. I remarked in Chapter III that the second intentional or logical point of view is essentially involved with the first intentional point of view. This follows from the fact that all judgment is (implicitly) inference, and inference involves a mediating or interpretant term. An interpretant term is "a mediating representation which represents the relate to be a representation

of the same correlate which this mediating representation itself represents." (1.553, italics omitted) Since the interpretant represents a relation which obtains between sign term (relate) and object term (correlate) it has, by definition, a second-intentional function. This is to say that the logical point of view is constitutive of objective consciousness. "God has not been so sparing to men as to make them barely two-legged creatures, and left it to Aristotle to make them rational."

CHAPTER V

THE GENERIC RELATION

2. The Role of the InterpretantA. Ampliative Inference

Peirce contended that all inference -- deductive, inductive, and hypothetical -- is, in a sense, assimilable to the generic form discussed in Chapter IV. It is certain that he retained this view as late as 1893, when he brought together the relevant logical papers of the 1860's and 1870's in his Search for a Method;¹ and as late as 1897 he says explicitly that the principle of the syllogism in Barbara (i.e. what I have called the "Peircean Barbara") enters into every syllogism, and that "the chief end of formal logic is the representation of the syllogism." (3.525) In remarking this it is pertinent to note that, in his 1883 paper "The Logic of Relatives" (3.328-58) and his 1885 paper "On the Algebra of Logic" (3.359-403), Peirce had already created a logical symbolism which the Kneales characterize as "adequate for the whole of logic and identical in syntax with the systems now in use."² And, moreover, he

¹See Chapter I, footnote 7.

²William and Martha Kneale, The Development of Logic (Oxford: Oxford University Press, 1962), p. 431. It is not clear what they mean by "the whole of logic," however.

was already at work in 1897 on a graphical system which was not only notationally adequate for what is now commonly expressed by the propositional calculus and the first-order polyadic predicate calculus, but which was also fitted out with transformation rules under which, as has recently been shown, the system is both consistent and complete, provided a certain emendation is made.³ Hence, however questionable his contention may seem prima facie, it would surely be a mistake to look for any naive error on Peirce's part here. In any case, the discussion in Chapter IV should have indicated that what Peirce has in mind in respect to the generic form is not a system of formal notation, but the fundamental principles which would underlie the construction of any system which would be of logical and not

³For further information on this see: Don Davis Roberts, "The Existential Graphs of Charles S. Peirce," Ph. D. dissertation, University of Illinois, 1963. There is, of course, material on this in the Collected Papers (4.347-584), but prior to Roberts' study no one had been able to make much of it. (Roberts utilized much unpublished material in the Harvard Libraries in developing his account.) What Roberts shows is, among other things, that the Alpha part (corresponding to the propositional calculus) is complete and consistent, and that the Beta part (corresponding to the n-adic predicate calculus of first order) is complete and consistent if and only if an emendation is made which allows for the possibility of moving from quantified to instantiated statements. It is interesting that the necessity for emendation should lie precisely here, for the discussion in the preceding chapter should have indicated that the locus of Peirce's logical problems would probably lie precisely in giving an adequate account of reference. See chapters 7 and 8 of Roberts' dissertation for the proofs of completeness and consistency (and for the precise sense of these terms), and see also an article by him entitled "The Existential Graphs and Natural Deduction," Studies in the Philosophy of Charles Sanders Peirce: Second Series, ed. E. C. Moore and R. S. Robin (Amherst: The University of Massachusetts Press, 1964), pp. 109-21.

merely formal interest.

An additional insight into his reason for claiming omniscience for the generic form is given by his claim, in "Some Consequences of Four Incapacities," that in consequence of denying introspection:

We can admit no statement concerning what passes within us except as a hypothesis necessary to explain what takes place in what we commonly call the external world. Moreover when we have upon such grounds assumed one faculty or mode of action of the mind, we cannot, of course, adopt any other hypothesis for the purpose of explaining any fact which can be explained by our first supposition, but must carry the latter as far as it will go. In other words, we must, as far as we can do so without additional hypotheses, reduce all kinds of mental action to one general type. (5.266)

The appeal here is to the principle of parsimony ("Occam's Razor"), and I think it is clear from the course of discussion in the companion paper⁴ that what require to be explained are the phenomena which give rise to the appearance-reality distinction, i.e. those which force upon us an awareness that we might be wrong. As I pointed out in Chapter III, the reason for introducing the notion of "mind" to begin with is to account for the fact of error and ignorance. Since this is the generic phenomenon which gives rise to the notion of mind, there ought to be a correspondingly generic notion of mind -- which notion is, indeed, precisely what we have just discussed in Chapter IV. However, the connection of the notion of mind with the possibility of error will be further discussed in the next section of this

⁴"Questions Concerning Certain Faculties Claimed for Man" (5.213-63).

chapter, and I will say no more about it at present, except to note that this has already been reflected in the categorial analysis by the fact that a judgment is there treated as a claim and, hence, something essentially capable of being ill-founded.

Now Kant argued, in his essay "The Mistaken Subtlety of the Four Syllogistic Figures," that all the figures of the syllogism are reducible to the first figure. Peirce, in his 1866 paper "Memoranda Concerning the Aristotelian Syllogism" (2.792-807), concurs in this, but he purports to show that, nevertheless:

It appears that no syllogism of the second or third figure can be reduced to the first, without taking for granted an inference which can only be expressed syllogistically in that figure from which it has been reduced. These inferences are not strictly syllogistic, because one of the propositions taken as a premiss in the syllogistic expression is a logical fact. But the fact that each can only be expressed in the second or third figure of syllogism, as the case may be, shows that those figures alone involve the respective principles of those inferences. Hence, it is proved that every figure involves the principle of the first figure, but the second and third figures contain other principles, besides. (2.807)

In another paper, written in 1867 (but with corrections and additions of 1893), Peirce argues that:

Since, in the general form, S may be any subject and P any predicate, it is possible to modify Barbara by making the major premiss and conclusion negative, or by making the minor premiss and conclusion particular, or in both these ways at once. Thus we obtain all the modes of the first figure. (2.479)

In the same paper he says:

Hence the general formula of all argument must be:

M is P,
S is M,
∴ S is P;

which is to be understood in this sense -- that the terms of every syllogistic argument fulfill functions of subject and predicate as here indicated, but not that the argument can be grammatically expressed in this way. (2.474)

And it is also in this paper that he argues that hypothesis corresponds to the second figure and induction to the third. (2.474)

In summary, Peirce claims that: (a) all argument can be reduced to syllogistic form; (b) all syllogism can be reduced to the first figure; (c) all moods of the first figure can be reduced to (the Peircean) Barbara; (d) the second and third figures in some sense contain, respectively, the principles of hypothesis and induction; (e) the reduction of the second and third figures to the first nevertheless presupposes the independence of their respective principles; (f) hence, even though hypothetic and inductive inference are somehow expressible in Barbara they nevertheless presuppose independent principles; and (g) the possibility of reduction does not concern what is grammatically felicitous, but is a matter of the representation of logical function. So many important logical questions are involved here that only an extended critical study could do justice to the matter, and I cannot attempt anything of the sort here. What I shall do is take these claims for granted, for purposes of interpretation, and address myself only to the question of how hypothetic and inductive inference are supposed to be assimilable to the generic form. Moreover, I must here explicitly restrict myself to Peirce's earlier

doctrine of ampliative inference. As is well-known, he wrote extensively on these topics throughout his entire career, and I am not prepared to make any judgment on the relation between his earlier and later work here. Hence, I will concern myself only with as much of his theory as seems clearly to be connected with the doctrine of the "New List."

The clue to Peirce's conception here lies in his characterization of a probable syllogism as one "whose validity depends partly upon the non-existence of some other knowledge, . . .". (5.270) He expands upon this point as follows:

The absence of knowledge[,] which is essential to the validity of any probable argument[,] relates to some question which is determined by the argument itself. This question, like every other, is whether certain objects have certain characters. Hence, the absence of knowledge is either whether besides the objects which, according to the premisses, possess certain characters, any other objects possess them; or, whether besides the characters which, according to the premisses, belong to certain objects, any other characters not necessarily involved in these belong to the same objects. In the former case, the reasoning proceeds as though all the objects which have certain characters were known, and this is induction; in the latter case, the inference proceeds as though all the characters requisite to the determination of a certain object or class were known, and this is hypothesis. (5.272)

Let us call an induction by complete enumeration a "formal induction"; and let us call the analogous sort of hypothesis a "formal hypothesis."⁵ Since formal inductions and formal hypotheses are deductively valid, what Peirce is

⁵See the 1867 paper "Upon the Natural Classification of Arguments" (2.461-516, esp. 2.508ff).

saying, in effect, is that a valid ampliative inference (inductive or hypothetic) is one in which one proceeds as if the inference were not ampliative but formal. We might say that induction and hypothesis are thereby reduced to a quasi-deductive form. Let us consider the case of induction first.

In his 1878 essay "Deduction, Induction, and Hypothesis" (2.619-44), Peirce claims that:

It is capable of strict proof (with which, however, I will not trouble the reader) that all arguments whatever can be put into [the form of Barbara]; but only under the condition that the is shall mean "is for the purposes of the argument" or "is represented by." Thus an induction will appear in this form something like this:

These beans are two-thirds white,
 But, the beans in this bag are (represented
 by) these beans;
 ∴ The beans in the bag are two-thirds white.

But because all inference may be reduced in some way to Barbara, it does not follow that this is the most appropriate form in which to represent every kind of inference. On the contrary, to show the distinctive characters of different sorts of inference, they must clearly be exhibited in different forms peculiar to each. Barbara particularly typifies deductive reasoning; and so long as the is is taken literally, no inductive reasoning can be put in this form. (2.619f)

What we have here is a quasi-deduction, which is valid as an induction if and only if (a) it is valid as a deduction (which it is), and (b) it is legitimate to regard the sample as representative of the collection sampled. Since the sample is the middle or mediating term here, we could also say that the validity depends upon the extent to which we have introduced a reliable interpretant. The

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peculiar problem of induction is, therefore, the problem of the "fair" sample or genuinely representative interpretant. The limiting case would, of course, be the one wherein the sample exhausted the collection, i.e. the case where the induction ceased to be ampliative and the deduction thereby lost its "quasi" character. In all other cases the problem devolves into that of developing reliable methods of sampling.

It might be objected that, since the problem of the fair sample is obviously the problem of induction to begin with, nothing has been gained by Peirce's manoeuver. But the answer to this would surely be that, supposing the manoeuver to be correct as far as it goes, the nature of the induction problem is thereby made clearer, and that, moreover, at least a hint is given of the direction in which the solution would lie. For what Peirce has done is to assimilate the notion of a sample to the notion of representation, with all of the rich epistemological connotations of the latter. This by itself is, I would suggest, no small contribution to the matter. Of course, Peirce also did a great deal more than this on the induction problem, but we cannot go further into that here. Also, it should not be forgotten that he has shown how even an inductive inference is assimilable to the generic form, and this in a way which is by no means forced or prima facie implausible. For the quasi-deductive model is easily recognizable as the form by which men naturally acquire the larger part of

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their general beliefs. A common prejudice is, after all, only an inductive quasi-deduction with no attention paid to the need for control over the "quasi": a few members of a class are known and, without further ado, they are taken as representative vis-a-vis this or that character.

Now let us consider the case of hypothetic inference. An appropriate example to use here would be a somewhat oversimplified version of Kepler's solution of what Thomas Kuhn calls "the problem of the planets."⁶ The subject here (i.e. the object-term of the inference) would be the movement of (part of what is now called) the solar system. The hypothetic conclusion would be that the solar system conforms to Kepler's laws. The evidence on which this is based would be the astronomical data tabulated by Tycho Brahe. The gist of the inference would thus be, roughly, that the solar system, since it has the character which Brahe's data ascribe to it, is therefore in conformity with Kepler's laws. Expressed as a quasi-deduction the middle term or interpretant would be Brahe's data regarded as one very complex logical term. Now whereas the problem of induction hinged on the question whether the interpretant (the drawn sample of beans) was genuinely representative of the object (the beans in the bag), the problem here lies rather in the question whether the

⁶Thomas S. Kuhn, The Copernican Revolution (New York: Vintage Books, 1959), p. 219. This was Peirce's favorite example of a hypothetic inference; see 1.72-74 and 2.96-97 for his analysis of Kepler's inference.

relation between interpretant and predicate is such as to warrant the quasi-deduction. For the relation of Brahe's data to the solar system is not here in question, i.e. it is assumed that they are sufficiently reliable to form a basis for the hypothetic inference. What relation would have to obtain, then, between Brahe's data and Kepler's laws to warrant this inferential move?

The answer to this is parallel to the case of induction. Suppose, contrary to fact, that Kepler's laws were nothing more than a summary formula of Brahe's data. In this case the inferential move would be completely unexceptionable, since it would only replace a complex description with a simpler one. This would be the limiting case in which a hypothetic inference lost its quasi-deductive character and become a straightforward deduction, i.e. became a merely formal hypothesis. But Kepler's laws -- and theoretical hypotheses generally -- are not in fact exhausted in their meaning by the data upon which they are based. That is, the total implication of a theoretical hypothesis is normally much more extensive than the data it is introduced to explain. Hence, hypothetic inferences are normally quasi-deductive and not mere formal hypotheses. But the validity of a hypothetic inference as an inference is a function of the extent to which it is legitimate to suppose that it has no implications not contained in its evidential base. Or, to put it another way, the validity of the hypothesis is measured by the extent to which it

actually implies the data upon which it is based.

This seems to lead to an undesirable consequence. For it would usually be supposed that an explaining hypothesis would be of decreasing value precisely to the extent that it implied no more than the data upon which it was based. What use (other than notational economy) would there be in introducing a hypothesis if it only presented in another form what was already taken for granted about the subjectmatter? Surely it would be precisely the richness rather than the poverty of its implications beyond presently accepted data which would be a measure of the validity of its introduction qua hypothesis. The answer to this would perhaps run as follows. It is not true that richness of implication in itself provides a reason for introducing an hypothesis. Nothing can justify an hypothesis, as an inference, but the fact that it implies acceptable data. Now the justification for accepting a hypothesis at any given time depends upon two factors: (1) the fact that it does imply the accepted data, and (2) the assumption that it implies nothing but acceptable data. To say that an ampliative hypothetical inference is a quasi or "as if" deduction is a way of expressing the second factor: the inference is justified to the extent that that assumption is justified. But what would justify that assumption? Nothing but the discovery of further acceptable data which the hypothesis does in fact imply. Thus Kepler's hypothesis was justified by the fact that it implied Brahe's data, and by the fact that the further

assumption upon which it was based, viz. that it implied further acceptable data, has so far been proven correct.

Now, although the role of the interpretant or middle term is not precisely the same in the two types of ampliative inference, there is nevertheless a common function here. For in both cases what is at stake in validating the inference is the problem of getting an adequate representation of the object as inferential base. Once a completely adequate interpretant representation has been achieved the validity or invalidity of the inference is known absolutely. For if the sample is exhaustive of the collection, or if the known data are exhaustive of the subjectmatter, then the inference is either deductively valid or else it is simply invalid. The fact that data and sample are rarely exhaustive is the reason why these modes of inference are only quasi-deductive. As such they are, however, assimilable to the generic form.

We can now see why Peirce says that the validity of ampliative inference "depends partly upon the non-existence of some other knowledge." (5.270) Anything is what it is capable of being known as. Now the interpretant or mediating term is represented to be the object insofar as it is known in the relevant respect. Therefore, if we knew some relevant fact about the object which was not included in the interpretant conception we would, in effect, be misrepresenting the object. Such logical worth as an inference of this sort has is, therefore, essentially

dependent upon the non-existence of any further relevant knowledge. For the ampliative inference claims not only that the object, so conceived, has this or that character, but'claims also that the object may legitimately be so conceived. That is, the implicit claim expressed by the interpretant in an ampliative inference is: "This is the object, so far as we know it." Therefore, if there were other relevant knowledge not included in this conception the claim would be false and the inference unsound.

Finally, I would like to point out that the same term (i.e. form, quality, essence, idea, firstness) may have quite different logical roles in different contexts. That is, that which plays the role of interpretant term in one context may play the role of object term or predicate term in another. Consider Brahe's data. In the context of the hypothetic inference to Kepler's laws these data functioned as interpretant. But when these data were originally gathered the procedure no doubt involved a certain amount of inductive sampling from observation protocols, with the data there functioning as predicate of an inductive conclusion based upon the protocols as interpretant. Now suppose an inquiry were made into the reliability of Brahe's data, insofar as this could be conjectured from the reliability of Brahe himself. (It is not unusual to take the known professional character of a man as evidence for the reliability of what he says.) Brahe's data would here have the function of object term; the character of being a

product of Brahe's labors would function as interpretant term; and the hypothetic inference might be that, given what we know about Brahe's professional products, it is likely that the data are indeed reliable. Or consider Kepler's hypothesis. In the context of the inference to it as hypothesis, it was not functioning as interpretant. But once it was accepted it then began to play an interpretant role in ordinary deductive inference. In fact, this is precisely the role it plays when it is put to the predictive test: the solar system is conceived in accordance with the Keplerian conception, deductions are made from this conception, and it is ascertained whether or not the deduced phenomena in fact obtain. But then, in another context, it could also function as an object term. For example, it is functioning in that way in this very paper: I take it as an object, interpret it under the aspect of being a hypothesis, and characterize it accordingly, as above.

B. The interpretant and the "I think"

The following passage is from Peirce's deduction of the categories in the "New List":

Reference to an interpretant is rendered possible and justified by that which renders possible and justifies comparison. But that is clearly the diversity of impressions. If we had but one impression, it would not require to be reduced to unity, and would therefore not need to be thought of as referred to an interpretant, and the conception of reference to an interpretant would not arise. But since there is a manifold of impressions, we have a feeling of complication or confusion, which

leads us to differentiate this impression from that, and then, having been differentiated, they require to be brought to unity. Now they are not brought to unity until we conceive them together as being ours, that is, until we refer them to a conception as their interpretant. (1.554)

Students of John Dewey's philosophy may recognize here a Kantian ancestor of the "problematic situation," as it makes its appearance in Peirce's formal categorial analysis.⁷ However, the notion of substance as a confused "manifold of impressions" has already been discussed, as far as it will be discussed here, in the previous chapter: substance is that which, when analyzed in judgment, loses some part of its "confusedness"; it is essentially a manifold because it is essentially capable of being so analyzed; and the term "impression" is no doubt used here in the Humean sense of that which forces itself upon us. To go into this further would lead directly into the doubt-belief theory of inquiry, on the one hand, and the problems of reference and quantification, on the other. The point to which I wish to address myself is rather Peirce's identification

⁷See John Herman Randall, Jr.'s analysis of the concept of substance in Chapter 6 of Nature and Historical Experience (New York: Columbia University Press, paperback edition, 1962), pp. 143-194. See especially p. 148 where he says: "Substance, starting with its root-meaning of 'subject-matter,' thus becomes for me, in the language of the philosophies of experience, the encountered 'context' or 'situation' within which reflective experience distinguishes Structure. It is what Aristotle calls 'the confused mess' (*τὰ συγκεχυμένα*) which is clearly 'first for us, within which we distinguish principles, causes and elements.' Dewey's term for *ὄντιον* or Substance in this sense is clearly 'the situation,' conceived as a 'universe of action,' and I have found it extremely suggestive to follow up this equating of Aristotle's term with Dewey's."

of the notion of the interpretant and the notion of the subjective, as indicated in the last sentence of the quotation. There is, I believe, a clear parallel here with the Kantian contention that:

It must be possible for the "I think" to accompany all my representations; for otherwise something would be represented in me which could not be thought at all, and that is equivalent to saying that the representation would be impossible, or at least would be nothing to me. That representation which can be given prior to all thought is entitled intuition. All the manifold of intuition has, therefore, a necessary relation to the "I think" in the same subject in which this manifold is found. But this representation is an act of spontaneity, that is, it cannot be regarded as belonging to sensibility. I call it pure apperception, to distinguish it from empirical apperception, or, again, original apperception, because it is that self-consciousness which, while generating the representation "I think" (a representation which must be capable of accompanying all other representations, and which in all consciousness is one and the same), cannot itself be accompanied by any further representation. The unity of this apperception I likewise entitle the transcendental unity of self-consciousness, in order to indicate the possibility of a priori knowledge arising from it.⁸

Allowance being made for the different analytic strategies of Peirce and Kant, the two passages are sufficiently similar to indicate the kinship between the notion of the interpretant and the Kantian "I think."

Now Kant distinguishes between a transcendental (pure) apperception and an empirical apperception. Is there a correlative distinction in Peirce? I believe that there is, viz. the distinction between interpretation and the interpretant. As I pointed out earlier in this study (Chapter II), the generic relation can alternatively be

⁸Critique of Pure Reason, B131f.

regarded as signification (representation), objectification, or interpretation, depending upon which of the three terms of the triadic relation one chooses to stress. Interpretation is thus the generic relation itself, and I suggest that it corresponds to Kant's transcendental apperception: it is the transcendental "I think" which accompanies every cognition. The interpretant, on the other hand, is the quality or form which, in some given context, is functioning as third term of the generic relation. Considered in this relation, it might be said to be interpretation rendered materially specific; it is, in other words, an interpretation. I suggest that the interpretant corresponds to Kant's empirical apperception: it is the empirical "I think" which accompanies every cognition.

It will be recalled that, in Chapter III, the distinction between logica docens and logica utens was discussed. The former, as theoretical logic, is concerned with logical or formal leading principles of inference. If it is true that the generic semiotic relation is identical with the generic principle of inference, then logica docens ought to be simply the development of the implications of this relation. On the other hand, a logica utens consists of those material leading principles which one accepts and utilizes in inference. This strongly suggests that the notion of a material leading principle and the notion of an interpretant -- a materially specific interpretation -- are identical. In order to see how this could

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be so, consider Kant's definition of a syllogism (Vernunftschlüsse) as "das Erkenntniss der Nothwendigkeit eines Satzes durch die Subsumtion seiner Bedingung unter eine gegebene allgemeine Regel."⁹ Peirce himself adopts this way of regarding the syllogism, for certain purposes, and calls the major premiss the rule, the minor premiss the case, and the conclusion the result. (2.479) The rule would, of course, be the material leading principle of the argument. (Or, to be precise, the proposition which would be the major premiss is here treated as a material leading principle instead.) Now the material leading principle says, in effect: "P represents whatever it is that M represents," where P is the major or predicate term and M is the middle or interpretant term of the argument. Compare this with Peirce's definition of the interpretant as "a mediating representation which represents the relate to be a representation of the same correlate which this mediating representation itself represents." (1.553) Clearly, the interpretant and the material leading principle have the same logical function.

There is a prima facie difficulty here, however, in that the material leading principle mentions the middle term whereas the interpretant is the middle term. But let us recall that an interpretant is such in virtue of the role it plays. Just as an interpreter, in the ordinary

⁹Gesammelte Schriften, Vol. 9, p. 120 (section 57 of the Logik).

sense, implicitly represents himself to be such when he interprets, so also the interpretant -- in virtue of its contextual position in the argument -- represents itself to be such when it interprets. Or perhaps the point could be put more felicitously by saying that what is exhibited when the argument is put in the Barbara form is said when it is put in the rule-case-result or material principle form. Since the same argument is representable in either form, the interpretant and the material leading principle are in that sense equivalent. This enables us to see, in an exact way, how a concept can be a rule (viz. a rule of inference), and marks a further point of similarity between Peirce's and Kant's transcendental analysis.¹⁰

Now the last logical step in predication, the reference to the interpretant, yields the empirical object as such (i.e. is finally constitutive of objectification). I take it that this is parallel to the point which Kant makes in the first edition transcendental deduction when he identifies the pure concept of the object as such with the unity of consciousness.¹¹ Roughly speaking, there is

¹⁰ Robert Paul Wolff has made effective use of the notion of a concept as a rule in his analysis of Kant's transcendental analytic. The distinction Wolff makes between first and second order rules, and the correlation of this with the distinction between empirical and pure concepts, would clearly correlate again with the distinction between logical and material leading principles in Peirce. Kant's Theory of Mental Activity (Cambridge: Harvard University Press, 1963), p. 124

¹¹ Critique of Pure Reason, A109f.

no reference to an object unless there is reference to a conceiving subject: objectivity in some sense presupposes subjectivity. This is what Peirce says in the quotation from the "New List" (1.554) at the beginning of this section. The necessity for the reference to the interpretant has already been discussed, of course, but it may not be clear why the interpretant should be identified with the notion of the subjective. Although I cannot give an adequate account of this, a few remarks indicating the direction of Peirce's thought here may be helpful.

The basic idea is, I believe, that which I touched upon in passing in Chapter III, viz. that it is through the experience of error and ignorance that we come to recognize the distinction between what we think to be the case and what really is the case. (5.233ff) If I err in judging an object then there must be something wrong in my conception of the object to which that error can be traced; for otherwise the error is simply incomprehensible. But the chief reason for introducing the notion of mind to begin with was to make error intelligible. Therefore, the generic conception of mind ought to be such as to make error an intelligible phenomenon. If, in any given case, error is to be made comprehensible by locating it in a faulty conception of the object, then there must be both a reference to the object and a reference to our conception of the object. For suppose there were only one reference (besides the predicate reference); that is, suppose that the reference to

the object and the reference to our conception of the object were identical. In this case, if our conception of the object were faulty, then either it would not be a conception of that object, or else that object would be nothing other than our conception of it. But neither alternative is acceptable: the first contradicts the antecedent explicitly, and the second implies a contradiction, since if concept and object are identical the one cannot fail to be true of the other (i.e. cannot be faulty). There must, therefore, be two references: one to the object and one to the concept of it. In Peirce's terms these references are, of course, the reference to the correlate and the reference to the interpretant.

To illustrate: suppose that I judge Smith to be a scoundrel, and suppose that I so judge him because I believe that he beats his wife. If I am wrong about Smith and he is not actually a scoundrel, it must either be because he is not in fact a wife-beater or else because being a wife-beater does not involve being a scoundrel. In either case, something is wrong with my conception of Smith. In the first case the conception of a wife-beater simply does not apply to Smith; in the second case this conception may apply to Smith, but I have a wrong conception of a wife-beater and my conception does not apply to Smith. In neither case, therefore, does the conception which I applied to Smith truly apply. But if this is so then what I mean by "Smith" must include some

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character beyond what I mean by "wife-beater"; for otherwise my judgment would not be about Smith at all -- which, by hypothesis, it is. There must, therefore, be two independent references made: one to Smith as object or correlate, and one to a wife-beater as interpretant.

Now the reference to Smith will be a reference to a form or essence, just as the reference to a wife-beater is. (This point was discussed in Chapter IV.) Hence, the difference between the objective reference and the interpretant reference is strictly contextual, i.e. the form which is taken as the objective referent could, in some other context, be taken as the interpretive referent, and vice versa. But this does not compromise the fact that, in the given judgmental context, the one is in fact taken as definitive of the object in question, whereas the other is in fact taken as definitive only of our conception of the object for that judgment. The essence of the distinction lies, therefore, in the difference between what, in a given context, we take as fixed and beyond question (as objective) and what we are willing to re-examine and consider as possibly erroneous (as subjective). The interpretant is, thus, the "I think" rendered materially specific: it is that which I think or conceive or suppose the object to be, in the sense just explained.

The transcendental "I think," on the other hand, is the generic act of mind discussed in Chapter IV. But unlike the empirical "I think" or interpretant, the transcendental "I think" cannot be wrong -- for it is the

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very form of validity itself. This produces something of a paradox. We began by hypothesizing mind as something which would account for the phenomenon of error. This meant that mind must be regarded as having the form of a claim, i.e. as being something essentially capable of being ill-founded or mistaken. The analysis of the notion of a cognitive claim in general took the form of an analysis of predication in general, and the latter then turned out to be essentially an inference. The generic conception of mind arrived at was thus the generic form of inference. But this form defines validity in a generic way. Thus, in order to account for error we develop an account of mind under which the latter is essentially valid. Peirce himself was perfectly aware of the prima facie difficulty here, needless to say; for, after contending that we must "reduce all mental action to the formula of valid reasoning" (5.267), he then goes on to argue that, even though there are fallacies, "in every fallacy . . . possible to the mind of man, the procedure of the mind conforms to the formula of valid inference." (5.282) It is clearly of the utmost importance that he be able to make good this claim, but I have not so far been able to follow his argument there well enough to warrant discussing it here. It should be noted, however, that he certainly held to this claim as late as 1903 (cf. 5.192), and this in itself gives a strong indication that the theory of mind which we have been discussing here underwent no radical changes in his later work.

It should also be noted that this is essentially the same problem which Kant raises in his Logic, when he says:

It is easy to see how truth is possible, since in it the understanding acts according to its own essential laws.

But how error is possible in the formal sense of the word, that is, how a form of thought inconsistent with the understanding is possible; this is hard to comprehend; as indeed in general we cannot comprehend how any faculty can deviate from its own essential laws.¹²

Kant's solution there (if it is a solution) is to say that "the origin of all error must be sought solely in the unobserved influence of the sensibility on the understanding, or, to speak more exactly, on the judgment."¹³ I find no real clarification in Kant's further remarks on this, however. And, in any case, Kant's distinction between sensibility and understanding cannot be carried over into the context of Peirce's thought without serious modification. It seems best, therefore, simply to note the problem, mark its importance, and say no more here.

C. The definition of a sign

Scattered throughout the Collected Papers and the letters to Lady Welby can be found a number of passages in which Peirce gives a brief definition, semi-definition, or characterization of a sign as such. No two of these formulations are exactly alike, and none of them are really intelligible apart from considerations of the sort which

¹²Abbot's translation, p. 44, italics omitted.

¹³Ibid., italics omitted.

have been discussed in this and the previous chapter. Nor are these considerations enough, for several of these passages raise problems of interpretation which I have so far been unable wholly to resolve.¹⁴ However, most of them have proven to be quite intelligible in terms of the generic relation as I have interpreted it here, and I should like to discuss some of these in the next few pages. It might be helpful to indicate in advance some points which should be borne in mind in understanding these definitions. The points are more or less implicit in what has already been said, though this may not be immediately apparent. (1) A sign acts as a proxy or vicar for the object, i.e. the operation of a sign is actually the operation of the object through or by means of the sign. Of course, this point can and ~~should~~ be turned around: *not by Peirce* the logical action of an object is always the action of a sign. But I think it helps to catch the special flavor of Peirce's thought to think of this in both ways. (2) The mode of logical -- not physical -- action of an object, and hence the mode of action of a sign, is by final

¹⁴In particular, I have found paragraph 1.339 especially difficult. The paragraph is too long to quote here, but in case the reader wishes to refer to it, I might remark that the chief difficulties I find there are in (a) the reference to three sorts of infinite regressions, (b) the distinction between meaning and interpretant, and (c) the question of how the word "object" is being used. Before referring to this passage, however, the rest of the present section should be read in order to see the line of approach I am taking.

causation. (3) Final causation is logical causation.¹⁵ Logical causation is expressed by the word "determines," but the latter is to be understood in that special sense in which a predicate is said to determine the subject of which it is predicated.¹⁶ (4) The logical order is not to be confused with the temporal order -- an easy confusion when a word as philosophically loaded as "determines" is involved. (5) A distinction has to be noted between two senses of the word "object." We have already noted this distinction, though not in so many words. The following passages from Peirce will indicate what is meant:

. . . we have to distinguish the Immediate Object, which is the Object as the Sign itself represents it, and whose Being is thus dependent upon the Representation of it in the Sign, from the Dynamical Object,

¹⁵See 1.250 where final causation is identified with logical causation. Peirce has many discussions of final causation, but three passages which are especially pertinent to the logical operation of the object are: 2.713, 6.67, 6.101.

¹⁶Peirce explains this sense of "determines" in a reply to W. T. Harris on another topic: "I suspect that there must be some misunderstanding between us of the meaning of the various terms cognate with 'determined.' Perhaps, therefore, I shall do well to state more fully than I did before, the manner in which I understand Hegel (in common with all other logicians) to use them. . . . In general, they mean 'fixed to be this (or thus), in contradistinction to being this, that, or the other (or in some way or other).' When it is a concept or term, such as is expressed by a concrete noun or adjective which is said to be more determinate than another, the sense sometimes is that the logical extension of the former concept or term is a part and only a part of that of the latter; but more usually the sense is that the logical comprehension of the latter is a part and only a part of that of the former." (6.625) The assumption that, for Peirce, logical causation is always expressed by this sense of the word "determines" is my own hypothesis here.

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 which is the Reality which by some means contrives to determine the Sign to its Representation. (4.536)

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)

"Dynamical object" is clearly Peirce's later word for "substance," the reality which manifests itself through representation. The immediate object, on the other hand, is the substance or reality as it is represented to be in a given cognition.

With these points in mind, let us examine some of Peirce's characterizations of a sign, beginning with the following very late formulation (c. 1909):

. . . a sign endeavours to represent, in part at least, an Object, which is therefore in a sense the cause, or determinant, of the sign even if the sign represents its object falsely. But to say that it represents its Object implies that it affects a mind, and so affects it as, in some respect, to determine in that mind something that is mediately due to the Object. That determination of which the immediate cause, or determinant, is the Sign, and of which the mediate cause is the Object may be termed the Interpretant. . . . (6.347)

I think it is clear that the word "object" is used here in the sense of "dynamical object" or substance. Let us pass over for the moment the question of the sense in which the object is cause or determinant of the sign and note instead that the representation of the object by the sign implies a determination of the interpretant, which is here equated with "affecting a mind." Now I should like to urge strongly that the notion of the determination of the

interpretant is to be taken as an explication of the notion of affecting a mind, and not vice versa. To suppose the contrary -- i.e. to import some independent notion of "mind" or "affects" with which one may happen to feel more at home -- would be to subvert Peirce's analysis. Peirce's theory of sign-interpretation may or may not be adequate, but it is his attempt to explicate the concept of mind and the intent has to be respected if it is to be understood. As to the sense in which the sign determines the interpretant, it determines it as predicate of a subject. That it does so can be seen in the major premiss of the Barbara form for the judgment-inference, where the major term (predicate or sign term) is predicated of the middle term (interpretant term). The idea here is that, in a judgment, I conceive or interpret the object in a certain way, and the effect of the judgment is to determine whatever conception I utilize there. Thus Smith, the supposed wife-beater, is as such determined to be a scoundrel; the stove, supposedly an Ajax, is as such determined to be black. Note that we do not accurately describe the judgmental claim by saying that it is determined that Smith is a scoundrel, or that it is determined that the stove is black, for that would imply that the judgment is correct. But Smith, insofar as he is a wife-beater, is a scoundrel (or so the claim goes), and the stove, insofar as it is an Ajax, is black (or so the claim goes).

Let us consider another definition, similar to the

one above:

I define a Sign as anything which on the one hand is so determined by an Object and on the other hand so determines an idea in a person's mind, that this latter determination, which I term the Interpretant of the sign, is thereby mediately determined by that Object. (8.343, cf. 4.531, 8.177, LW 29)

This only brings out the more clearly the point which we passed over above, viz. that the object (substance) determines the sign. Now I think it should be assumed that "determines" is used unequivocally here, i.e. that the sense in which the object determines the sign is the same sense in which the sign determines the interpretant. This implies that the sign is determined by another sign, i.e. that the sign is itself an interpretant vis-a-vis some other sign. I take it that this is Peirce's way of saying that every sign is potentially an interpretant sign. The sign or predicate term of the judgment is, after all, simply a further conception of the object, which is assimilated into our logically antecedent conception of the object through the judgment. It thereby becomes a part of our interpretive base for any further transactions with the object. The same will hold true for any further sign or manifestation of the object, and so on (potentially) ad infinitum. The fact that every sign is in this sense an interpretant also indicates why Peirce says in the quote from 6.347 that it can represent its object falsely.

The following is perhaps not intended strictly as a definition, but it brings out a further point:

. . . representation necessarily involves a genuine

triad. For it involves a sign, or representamen, of some kind, outward or inward, mediating between an object and an interpreting thought (1.480, cf. 8.332)

This emphasizes the mediating function of a sign as between the object (substance) and the interpretant. Note that this is not the same sort of mediating function which the interpretant has. The latter mediates in the sense of being a logical middle term between the subject and predicate term of the judgment. The sign, however, might be said to have an ontologically mediating function as vicar for the object to the mind. This way of putting the matter may sound suspect, but it is not inappropriate to Peirce's point of view. (It will be recalled that the analysis of representation is also an analysis of the concept of being.) In any case, the logical "cash-value" of this has already been indicated above in discussing the sense in which the object determines the sign.¹⁷ All that needs to be stressed here is that the sign is always only a sign, in the sense that it is never fully adequate to the object, i.e. the sign is always (potentially) an interpretant vis-a-vis some further sign of the object.

Let us consider another definition:

A Sign is anything which is related to a Second thing, its Object, in respect to a Quality, in such a way as to bring a Third thing, its Interpretant, into relation to the same Object, and that in such a way as to bring a Fourth into relation to that Object in the same form, ad infinitum. If the series is broken off, the Sign,

¹⁷The point is that the dynamical object or substance is not a Ding an sich mysteriously operating behind the scenes. The notion of the object is the notion of the potential, such as was discussed above.

in so far, falls short of the perfect significant character. It is not necessary that the Interpretant should actually exist. A being in futuro will suffice. (2.92, cf. 8.332)

One of the points of special interest here is the statement that the interpretant is brought into the same relation to the object which the sign has to the object. This is displayed in the expansion of the judgment "S is P" into the inference "S is M; M is P; hence S is P." In the minor premiss the interpretant or middle is predicated of the subject just as the sign term is predicated of the subject in the unanalyzed judgment. But "S is M" is itself a judgment, potentially expandable into "S is M'; M' is M; hence S is M", and so on ad infinitum. The point that the interpretant does not have to be actual is the point discussed in Chapter III, viz. that there is no general logical obligation to evaluate, and hence to expand into explicit inferences, all or any of our judgments.

Another interesting point in this definition is the statement that the sign falls short of its perfect (i.e. complete) significant character if the interpretation is broken off at some point. Consider, for example, the complex sign constituted by Brahe's data on the relative positions of the planets in the solar system. Kepler's theory, as interpretant of that data, is only a small part of the interpretation that now gives significance to it (and to similar data that have been gathered since). If all astronomical speculation had ceased with Kepler, then that complex sign (or any part of it) would have

"fallen short of the perfect significant character."

That is, what those data meant would only have been partially realized. In general, what a sign means is "the conception which it conveys." (5.255, cf. 5.310) That is, the meaning is the interpretant conception.¹⁸ Signs get their meaning through interpretation. Data get their meaning through being explained by a theory, even if the theory be only a common sense notion or a superstition.

The following definition is similar to the one above, but a variation in phrasing raises a problem of interpretation not so far discussed:

A Sign, or Representamen, is a First which stands in such a genuine triadic relation to a Second, called its Object, as to be capable of determining a Third, called its Interpretant, to assume the same triadic relation to its Object in which it stands itself to the same Object. (2.274, cf. 1.540f, 2.242, 2.303)

The problem here concerns the fact that the sign is said

¹⁸This is giving short shrift -- too short -- to the question of what Peirce means by "meaning." I discuss this a little further in Chapter VII, though not extensively. I might say, though, that a satisfactory account of what Peirce means by "meaning" will not be gotten by discovering an absolutely definitive textual reference, but by understanding the structure of Peirce's sign theory generally. Once that is understood there will really be nothing more to be understood about what Peirce means by "meaning." However, one point should be noted which I am not commenting upon in the text above because it leads into areas beyond the scope of this study, viz. that the meaning of a sign is the true interpretation of it. It is clear that this would have to be so, for otherwise one could not account for mis-interpretations. Moreover, the fact that Peirce says that it is the ultimate logical interpretant which is the meaning of a sign (5.494), indicates that he was perfectly aware of this. For the ultimate logical interpretant is surely none other than that (ideal) ultimate or final opinion which is supposedly definitive of the truth.

to determine the interpretant to the triadic relation. The sense in which it brings it into that relation has been discussed; the problem lies in whether the word "determines" is being used here in some other or looser sense than that which I have suggested. There is no need to suppose that it is. For the notion of determination is the notion of predication, and the analysis of predication reveals that when a predicate, P, is predicated of a subject, S, this is always via an interpretant or mediating predicate, M, which is predicated of that subject, S. That is to say, P is not predicated of M absolutely, but only insofar as M is in turn predicated of S. In terms of determination: P determines M insofar as M determines S, i.e. P determines M's determination of S. This is putting the matter rather formalistically. However, I think it is important to see how these definitions can be read in this way; for otherwise Peirce's use of such notoriously obscure words as "determines" is drained of all precision, and I think we should assume that Peirce himself had precise ideas in mind here. It may be helpful, though, to indicate how some meat might be put on these bare logical bones. Let us consider again our standard example. Brahe's data are supposed to be true of (are predicated of) the solar system. Prior to Kepler they are considered to be true of it under one aspect or conception, after Kepler under another. But they are always predicated of it under some conception. Now, according to Peirce's analysis, the

P = predicate

S = subject

M = mediating

M to P

S to M

S to P

(P, M, S)

P = predicate

M = mediating

S = subject

M = mediating

M = mediating

M = mediating

actual structure of the predication is that the data are predicated of the interpretant conception or theory, and the theory is in turn predicated of the object.¹⁹ But suppose that the theory should turn out to be untenable. The data would not thereby be rendered untenable, for they were predicated of the theory only insofar as the theory was predicated of the object (the solar system). And, on the other hand, the theory is not predicated of the solar system except insofar as some data are predicated of it as predicate of the solar system. In general, the interpretant depends upon the sign as much as the sign depends upon the interpretant: without theory the data have no meaning; without data the theory has no basis for reference. The sign determines the interpretant, but it determines it as a determination of the object; the interpretant as such is determined to the object only insofar as it is itself determined by a sign. This I take to be the sense in which the sign determines the interpretant to the same relation which it itself has to the object.

These comments will indicate the line of approach which one would take in interpreting Peirce's sign definitions, provided any merit is seen in the interpretation of the generic sign relation which I have offered here. No more than an indication is intended. One profitable way of

¹⁹That is, the object term. The object term is, of course, simply another form which, if brought into question, would turn out to be a predicate of a further form, and so on ad infinitum.

developing this line of approach would be to bring to bear some of the sophisticated analytic terms and distinctions which have been developed in recent years in philosophy of science, making use of authentic scientific examples rather than crude over-simplifications such as those above. And it is not impossible that, if Peirce's approach were taken seriously and not patronized as a remarkable but primitive anticipation of this and that current doctrine, the philosophy of science could thereby acquire something to its profit as well.