67-9367

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

Columbia University, Ph.D., 1966
Philosophy

University Microfilms, Inc., Ann Arbor, Michigan

CHARLES PEIRCE: THE IDEA OF REPRESENTATION

By

Joseph Morton Ransdell

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

1966

ABSTRACT

CHARLES PEIRCE: THE IDEA OF REPRESENTATION

JOSEPH MORTON RANSDELL

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.

TABLE OF CONTENTS

CHAPTER I

INTRODUCTION

In a letter to Lady Welby, written late in his philosophical career, Charles Peirce remarked:

> . . . from the day when at the age of 12 or 13 I took up in my older brother's room a copy of Whately's "Logic," and asked him what Logic was, and getting some simple answer, flung myself on the floor and buried myself in it, it has never been in my power to study anything, -- mathematics, ethics, metaphysics, gravitation, thermodynamics, optics, chemistry, comparative anatomy, astronomy, psychology, phonetics, economic, the history of science, whist, men and women, wine, metrology, except as a study of semeiotic. . . . (LW 32)

Making due allowance for the characteristic hyperbole, most students of the Collected Papers would agree, I am sure, that Peirce is to be taken seriously on this. One of the earliest, and perhaps singly the most important of Peirce's published essays, the 1867 paper on the categories,[1] is essentially an analysis of the basic semiotic relation (i.e. the sign relation or relation of representation); and in the speculations of his later years the conception of a sign had so far developed as to suggest to him that the classificatory part of his semiotic would logically

---

[1] "On a New List of Categories" (1.545-59). This judgment of its importance may seem a bit strong, but I think it will ultimately be borne out by Peirce scholarship. I shall discuss certain aspects of this essay in Chapter IV of this study.

require a division of signs into no less than sixty-six different types.[2] And then, of course, no proposition recurs more often throughout his writings, from first to last, than his well-known dictum that "all thought is in signs."[3]

The purpose of this study is to discuss the basic idea of Peirce's semiotic or theory of signs, namely, the concept of representation, or the concept of a sign, as such.[4] I say "as such" in order to indicate that I shall be concerned with the concept primarily in its generic character, and shall not attempt even a limited presentation of the complex taxonomical system to which I referred above. Therefore, if by "Peirce's theory of signs" is meant that system of classification (and this does in fact seem often to be what is meant by the phrase), then this

---

[2]See the letter (December 23, 1908) from which the above quote is taken (esp. LW 31). See also appendix B of the Letters (LW 51-55), where the editor has attempted to schematize these divisions. For a slightly different account see Paul Weiss and Arthur Burks, "Peirce's Sixty-Six Signs," The Journal of Philosophy, XLII (1945), pp. 383-88.

[3]For references on this see Chapter II, footnote I, this study. I attempt in Chapter II to forestall a possible misinterpretation of this dictum.

[4]The term "representation" is sometimes used by Peirce as synonymous with "sign," and it is sometimes used to designate the triadic relation of which the sign is the first correlate. (The term "representamen" is also sometimes used as a technical substitute for the term "sign.") See 1.540-41 for an interesting and clear statement on the relation between these terms. For convenience, I use the words "sign" and "representation" synonymously here in the Introduction, though I distinguish them in Chapter II of this study.

essay is not about Peirce's theory of signs, except in a very limited way. For my own part, I think it a mistake to regard Peirce's semiotic primarily from the point of view of the sign-classification: first, because it tends to isolate the import of the sign concept from the rest of his thought, to the detriment of our understanding in both respects; and, second, because it tends to give rise to the bootless notion that the chief way to understand what Peirce means by "sign" is to concentrate on the different kinds of signs which he distinguishes. But, however this may be, I shall here be directing myself primarily to the question "What is a sign, as such, as Peirce conceived it?", rather than to the question of what sorts of signs he found it necessary to distinguish.

Now the answer which I give to this might be summarized in its most general form by saying that the idea of a sign is the idea of manifestation, that is, the idea of appearance.[5] The world appears or manifests itself to us through signs: for Peirce, it is a mere tautology to say this. For that is what is meant by a sign, viz. that through which the world manifests itself. The various kinds of signs are, then, the various ways in which this

---

[5] "But the idea of manifestation is the idea of a sign." (1.346) I should remark, though, that this approach to understanding the nature of a sign, as Peirce conceived it, occurred to me prior to finding any explicit textual verification; and I would prefer to put the burden of proof upon the plausibility of my interpretation as a whole rather than upon any such isolated passage.

can occur. As mentioned, I do not attempt here to catalogue these modes of appearance, since it seems to me far more important to concentrate on the basic idea of manifestation or appearance itself. However, I do make one important exception to this in that I devote a chapter apiece to the well-known -- though not very well understood -- division of signs into "icons," "indices," and "symbols," since I do not believe that the generic concept is in fact comprehensible apart from this particular trichotomy, and also because the latter throws a very special light on Peirce's philosophy generally. The content of this study may be regarded simply as an elaboration or explanation of the thesis indicated at the beginning of this paragraph.

The study makes no claim to adequacy: such explanation as I can give of my central thesis is at best only a partial one. Circumstances permitting, I hope to be able to enlarge and improve upon it, and perhaps substantiate it better, in the future. I do, of course, believe it to be correct as far as it goes. It does not go far enough, but I would be satisfied if it were thought at least to be a definite step in the right direction. In general, I have not attempted to present a "safe" interpretation of Peirce, and I have not hesitated to impute ideas and intent to him in a number of places where I would find it impossible to point out explicit textual verification. I think it will be clear enough to the reader when this occurs. It should also be mentioned

that I have assumed throughout that, in respect to the particular subjectmatter in question, Peirce's ideas underwent no radical change during the course of his philosophical career.[6] (This is not, of course, to deny a real development in his thought.) Consequently, while I have taken his earlier writings as basic for my purpose -- especially the papers of 1867 and 1868[7] -- I have not hesitated to draw

---

[6]Murray Murphey, in his recent and influential study The Development of Peirce's Philosophy (Cambridge: Harvard University Press, 1961), argues for a succession of radical changes -- revolutions, really -- in the fundamental ideas of Peirce's philosophy. The title of his book is thus something of a misnomer. Professor Murphey's study is excellent in many ways, and it is certainly one of the best we have -- especially with regard to his careful analyses of many special problems of interpretation. But I should also add that I do not regard his central thesis as established or even made likely. It would not be feasible to enter here into a detailed critique of this thesis, and nothing less would do justice to his study or would be of any real use for present purposes. But in case any objections from this source should be urged against my own interpretation, I would suggest that the objector regard the present study as concerned primarily with what Professor Murphey refers to as Peirce's "second phase" or "second system," i.e. Peirce's philosophy from 1866 to 1869 or 1870 (See Murphey, p. 3). As I remark above, though, I have not hesitated to utilize material from Peirce's later writings whenever I thought it helpful or necessary. For my own part, I do not think Peirce's "final" system differs essentially from his earlier work in its foundational ideas. (Peirce's "first system," by the way, is something Professor Murphey has reconstructed from manuscript material written prior to any of his published work, viz. from 1857 -- when Peirce was eighteen -- until 1865 or 1866.)

[7]This includes the following papers: "On the Natural Classification of Arguments," (2.461-516); "On a New List of Categories," (1.545-59); "Upon Logical Comprehension and Extension," (2.391-426); "Questions Concerning Certain Faculties Claimed for Man," (5.213-63); "Some Consequences of Four Incapacities," (5.264-317); and "Grounds of Validity of the Laws of Logic: Further Consequences of Four Incapacities," (5.318-57). It may be noted that, with minor corrections of 1893 (such as are either indicated or

upon later material for reference and verification. I have included, as an appendix, a brief discussion of the three branches of semiotic (or "logic," if this term is taken in a broad sense), for the benefit of a reader not well-acquainted with the general structure of Peirce's philosophy. But, for the most part, I have presupposed a reader with some prior knowledge of Peirce. There seems no good reason to reproduce material here which has already been covered many times in the secondary literature.

---

made by the editors of the Collected Papers), these papers were to form the first six chapters in Peirce's projected but unpublished book Search for a Method. (See the General Bibliography of Peirce's works in Vol. 8 of the Collected Papers, p. 280.)

CHAPTER II

THE LOGICAL POINT OF VIEW

Peirce's dictum that "all thought is in signs"[1] is a proposition especially prone to misinterpretation within the current philosophical climate, and it may therefore be desirable to begin with some remarks designed to forestall this possibility. Since it is widely held at present that the immediate subjectmatter of philosophy is language or language-use, and the proper method that of linguistic analysis, it would be natural to see in Peirce's dictum a precursory attempt to take that "linguistic turn" which is often said to have produced something of a "revolution" in contemporary philosophy. But, for good or ill, this is not its meaning. For one thing, linguistic signs are but one type of sign, on Peirce's view;[2] and, though they may be in certain respects the

---

[1]This proposition is established as a hypothesis in his Questions Concerning Certain Faculties Claimed for Man" (5.250-53), and is argued from in "Some Consequences of Four Incapacities." (5.283ff) Both papers are from 1868. The dictum is already more or less explicit in the 1867 paper "On a New List of Categories." (1.545-59) It appears in one and another form many times in the Collected Papers, e.g. 1.191, 1.538, 2.302, 4.6, 4.551, 5.253, 5.314, 5.421, 5.447, 5.470, 5.534, 5.594, 6.481, 8.191.

[2]Linguistic signs are of the type which Peirce calls "symbols," possibly following Aristotle's discussion in De Interpretatione, 16a20ff, where the notion of establishment by convention is stressed. The other two

most important type of sign, it is of the essence of Peirce's theory that the functioning of other sorts of signs must be taken into account for philosophical purposes. More to the immediate point, however, are some fundamental considerations bearing both on assumed subject-matter and analytic perspective which I should like briefly to remark upon.

First as to subjectmatter. In his recent study of Wittgenstein's Tractatus Logico-Philosophicus, Max Black makes a comment which, I believe, may fairly be taken as representative or indicative of a view underlying much current philosophical practice. Professor Black says:

> It was one of Wittgenstein's distinctive innovations to consider thoughts only as embodied in what he calls the 'significant proposition' and so to transform the question of the relation of thought to reality. . . into the more promising question of the relation of language to reality. No move in the Tractatus has proved more influential; here if anywhere we can see the beginning of the 'linguistic turn' in modern philosophy.[3]

And, in the prior paragraph, Professor Black speaks of the "important shift of interest from thought to language" which this represents. It will be noted that there is some inclarity here. On the one hand, Professor Black could be supposing that thought is quite literally one

---

major types of signs are "indices" and "icons," neither of which are conventionally established. Chapters VI, VII, and VIII of this study deal with these major types of signs and their relations.

[3]Black, Max, A Companion to Wittgenstein's Tractatus (Cornell University Press, 1964), p. 7.

sort of thing and language another, and that there is or could be such a thing as unembodied or non-linguistic thought; but that, as it happens, some or all of thought is, some or all of the time, embodied in some or all of language. (There are obviously a large number of sub-alternatives here.) Or, on the other hand, he could be supposing that thought and language are extensionally the same, though regarded from different points of view and/or described under different terminologies, and hence intensionally distinct.[4] I do not know which of these alternatives Professor Black (or whomever else the philosophical shoe might fit) would opt for here. But, however this may be, it seems clear that he at least supposes that there is some real and obvious difference between considering the relation of thought to reality and considering the relation of language to reality, that the "linguistic turn" thus involves a definite shift in philosophical subject-matter, and that consideration of the language-reality relation is more profitable than consideration of the thought-reality relation. The following comments may help to clarify Peirce's position in this respect.

Passages can be found in Peirce's writings which might seem, prima facie, to give support to the idea that he held a view similar to that expressed by

---

[4]That is, in terms of the sense-reference distinction, the referent of "thought" and "language" might be supposed to be the same, though the sense of these terms (and their cognates) would be supposed to be different.

Professor Black. Thus, for example, he remarks in one place that he could never admit "that logic is primarily conversant with unexpressed thought and only secondarily with language." (2.461n) And, in another place, he says that "it is wrong to say that a good language is important to good thought, merely; for it is of the essence of it." (2.220) But these remarks -- and, I would suggest, any similar ones which might be found -- are made in contexts in which it is clear that Peirce is not concerned with "thought" in its most general sense, i.e. as is intended in the dictum that "all thought is in signs," but rather with the special case of symbols.[5] Thus, in the first example, the remark is apropos of the representation of arguments, for the purposes of critical logic,[6] and such representation is necessarily symbolic or of the nature of language. (See 1.559) And, in the second example, the context is that of a discussion of scientific terminology. The point is that in neither case is Peirce to be construed either as equating thought in general with language, or with suggesting that philosophy is concerned with thought only insofar as it receives "embodiment" in language.

There is, however, a more basic issue than this involved here. Peirce's point of view differs significantly

---

[5]See footnote 2, this chapter. Symbolic signs are discussed in Chapter VII.

[6]That is, logic in the narrow or more traditional sense of the term. Critical logic is concerned primarily with the classification of arguments. See the appendix to this study.

from the notion, which I take to be implicit in Professor Black's statement, that language constitutes a special existential domain for philosophical analysis. There can be little doubt that one of the reasons for the enthusiasm with which the "linguistic turn" has been taken is that it seems to furnish philosophy with its own special subject-matter, thereby assuaging the fear felt by some that it may really have no proper subjectmatter at all and is thus a pseudo-science. Whatever the rights or wrongs of this may be, it is quite alien to Peirce's interest in language. For language in no sense constitutes the special subject-matter of philosophy, on his view: in fact, philosophy is precisely that science which has no special subjectmatter, on his view. On the contrary, it is the business of philosophy "to unravel the tangled skein [of] all that in any sense appears and wind it into distinct forms. . ."; that is, "to make the ultimate analysis of all experiences [is] the first task to which philosophy has to apply itself."[7]

---

[7]This is, strictly speaking, the definition of phenomenology. But, according to Peirce (in his later writings), phenomenology is the basic or first part of philosophy. Hence, this also defines the subjectmatter of philosophy in general. The order of the philosophical sciences, as Peirce conceived it, goes as follows. Phenomenology is the basic part, followed by the three normative sciences of esthetics, ethics, and semiotic (i.e. logic in the broad sense). The "phenomenon," i.e. experience in general, is found to have three basic elements, which are Peirce's categories of "firstness," "secondness," and "thirdness." (If the reader does not already have some sense for what Peirce means by these terms I can only refer him to the many discussions in Volume I of the Collected Papers.) The business of phenomenology is to discriminate or establish the general distinction between these three

(1.280, italics mine) Thus philosophy is characterized as "coenoscopic"[8] in order to indicate that it looks to the

---

elements. The three normative sciences, then, each devote themselves to studying the nature of one of these three elements. Thus esthetics is concerned with the element of firstness in the phenomenon, i.e. with phenomena in their qualitative aspect; ethics is concerned with the element of secondness in the phenomenon, i.e. with phenomena as involving action and reaction; and semiotic is concerned with the element of thirdness in the phenomenon, i.e. with phenomena as involving representation (the sign-relation). Now the categories have this peculiarity, that while firstness can be prescinded from secondness, the converse does not hold; and while secondness can be prescinded from thirdness, the converse again does not hold. Consequently, ethics presupposes and in some sense is based upon the results of esthetics; and semiotic presupposes and in some sense is based upon ethics (and hence upon esthetics as well). Therefore, the subjectmatter of semiotic or logic is, as it turns out, the same as that of phenomenology and, hence, of philosophy in general. This is why it will be found that Peirce gives substantially the same definitions of the subjectmatter of philosophy in general, of phenomenology, and of semiotic. For philosophy see, for example, 1.126, 1.184, 1.241, 1.246, 1.273, 3.428, 5.120, 7.526, 7.538. For phenomenology see, for example, 1.186, 1.280, 1.284-287, 2.197, 5.121. For logic or semiotic see, for example, 2.65, 2.75, 2.84, 2.214, 2.432, 7.524, 7.526. The remaining philosophical science is metaphysics (with its sub-divisions), with which we are not concerned here. However, it should be pointed out that it presupposes semiotic and is in some sense based upon it (and hence upon all the rest of philosophy). Since I have not been able to arrive at any satisfactory general understanding of what Peirce means by "metaphysics," I will say no more about it. His major discussion of the classification and ordering of the sciences is to be found in Volume I, Book II, of the Collected Papers (1.176-283). It can be seen that, in accordance with Peirce's scheme, the various parts of philosophy are much more intimately related than many philosophers conceive them to be.

[8]Peirce contrasts the "coenoscopic" nature of philosophy with the "idioscopic" nature of the special sciences. The editors of the Collected Papers (1.241n) cite the following passages from Jeremy Bentham: "Coenoscopic. . . from two Greek words, one of which signifies common -- things belonging to others in common; the other looking to." "Idioscopic. . . from two Greek words, the first of which signifies peculiar." The Works of Jeremy Bentham (Edinburgh, 1843), viii, p. 83, footnote.

common elements of experience, contenting itself "with observations such as come within the range of every man's normal experience, and for the most part in every waking hour of his life." (1.241) And so: "If philosophy glances now and then at the results of special sciences, it is only as a sort of condiment to excite its own proper observations." (1.241) Over and again, Peirce's definitions or characterizations of philosophy make essentially the same points: that it is an experiential or positive science, that it differs from the special sciences in that it utilizes no special observational techniques, and that its data are what lie open to any man at any time. Such a characterization may seem puzzling, and I shall try to clarify its import later in this chapter; but, for the moment, the point which I wish to make is simply that there is no limited existential or experiential domain with which philosophy, as such, is peculiarly concerned, on Peirce's view.

On the other hand, although language is not <u>the</u> special (i.e. peculiar) domain for philosophical analysis, it is nevertheless true that philosophy does have a special interest in language: both in the sense that the philosopher's interest is of a different sort than, say, that of the linguist, the psychologist, or the sociologist, and in the sense that language does constitute an especially <u>important</u> domain for philosophical inquiry. For the subjectmatter of semiotic is experience in its significative

or representative aspect;[9] and the special case of language signs, i.e. of representation through symbols, is therefore of major -- though not exclusive -- importance. I indicated in Chapter I that the generic idea of a sign is that of manifestation, i.e. that through or by which the world (i.e. any object) becomes manifest to us. Now this can occur in various ways, e.g. through immediate perception of the object, or indirectly through evidence, clues, symptoms, etc. But it can also become manifest to us symbolically, i.e. through language, as indeed the larger part of any literate person's knowledge has in fact come to him. Hence, there is no question but that language has a very special importance for the philosopher. But I take it that there is a great deal of difference between this conception of the relevance of language to philosophy and that which is assumed by the proponents of the "linguistic turn."

Now as to analytic perspective. A highly influential analogy in much recent philosophy of language, cutting across otherwise deeply hostile points of view, is that in accordance with which language is regarded as a tool.[10]

---

[9]That is, experience in its "thirdness." See footnote 7, this chapter.

[10]I refer to this as an analogy, but it is rarely clear in practice whether it is thought of as an analogy or as the literal truth. Thus I also refer to it as the tool or use conception. Justus Buchler's critique of the tool analogy should be read in this connection. Buchler says, for example: "To call language an 'instrument' of communication may be colloquially defensible, and perhaps practically tenable in a broad philological account. But

Everything will depend, of course, upon how the notion of a tool or instrument is to be understood. If it merely carries the very highly general sense of a means, then signs (including language signs) are no doubt in that sense tools or instruments, on Peirce's view. But then I take it that this highly general sense is not normally what is intended when the tool-analogy is invoked. Consider, for example, Ludwig Wittgenstein's statement that, for a large class of cases, "the meaning of a word is its use in language,"[11] and his comparison of words with the tools in a tool box.[12] Taken as suggesting or defining

---

it is as misleading as to call an institution an instrument of culture or the church an instrument of religion. An institution is culture in one of its forms, the church is religion in one of its forms, and language is communication in one of its forms." Nature and Judgment (New York: Columbia University Press, 1955), pp. 43f. Professor Buchler has referred to his own general theory as a "metaphysics of utterance" (in the Preface to Toward a General Theory of Judgment, New York: Columbia University Press, 1951). In what is perhaps a like spirit, Peirce might be thought of as developing a "logic of ontological expression."

[11]Ludwig Wittgenstein, Philosophical Investigations, trans. G. E. M. Anscombe (Oxford: Basil Blackwell, 1958), Part I, Section 43. The translation reads in such a way as definitely to deny that all words are to be regarded in this way, but the German is not so clear-cut: "Man kann für eine grosse Klasse von Fällen der Benützung des Wortes "Bedeutung" -- wenn auch nicht für alle Fälle seiner Benützung -- dieses Wort so erklären: Die Bedeutung eines Wortes ist sein Gebrauch in der Sprache." Perhaps the translator feared that an essence might be insinuating itself here.

[12]Ibid., Part I, Section 11. See also Sections 11, 23, 360, and especially 569, where he says: "Language is an instrument. Its concepts are instruments." Wittgenstein uses other analogies or comparisons in the Investigations. For example, there is the formalist notion of language as

a viewpoint for analytic purposes, the emphasis is here definitely put upon a language-user and the use which he makes of it. Or, from an otherwise opposed camp, consider Rudolf Carnap's informal characterization of language as "a system of sounds, or rather of the habits of producing them by the speaking organs, for the purpose of communicating with other persons, i.e. of influencing their actions, decisions, thought, etc."[13] Or, in a slightly different version, he says:

> A language as, e.g., English, is a system of activities or, rather, of habits, i.e., dispositions to certain activities, serving mainly for the purposes of communication and of co-ordination of activities among the members of a group. The elements of the language are signs, e.g. sounds or written marks, produced by members of the group in order to be perceived by other members and to influence their behavior.[14]

It is not clear precisely what language is supposed to be a system of, since sounds or written marks, activities, and habits or dispositions would appear to be rather different sorts of things, but it is clear enough that

---

a game, which is too well-known and ubiquitous in the Investigations to require special reference here. There is the notion of language as a Lebensform, for which see e.g. Part I, Sections 19, 23, 199, 241 and p. 174 in Part II. And there is also language as a skill (Technik or Praxis), as in Part I, Sections 199 and 202.

[13]Rudolf Carnap, Introduction to Semantics and Formalization of Logic (Cambridge, Mass: Harvard University Press, 1959), p. 3.

[14]Rudolf Carnap, "Foundations of Logic and Mathematics," in the International Encyclopedia of Unified Science (Chicago: University of Chicago Press, 1939), p. 145.

Professor Carnap here thinks of language as a tool to be used primarily for influencing the behavior of others, which use he equates with communication.[15]

The tool-analogy no doubt has its merits for this and that purpose, and it is likely that passages can be found in Peirce's writings in which he utilizes it, but taken as constitutive of a basic point of view for analytical purposes it is not to be identified with that of Peirce. I think it especially important to stress this, first, because of the current prevalence of one or another version of the "use" theory of meaning, and, second, because Peirce's pragmatism might naturally be thought to involve an "instrumentalist" theory in this sense.[16] But Peirce's approach to philosophy in general, and semiotic in particular, is antipathetic to this in the most funda-

---

[15]In another place he says: "Every situation in which a language is employed involves three principal factors: (1) the speaker, an organism in a determinate condition within a determinate environment; (2) the linguistic expressions used, these being sounds or shapes (e.g. written characters) produced by the speaker . . .; and (3) the objects, properties, states of affairs, or the like, which the speaker intends to designate by the expressions he produces -- and which we term the designata of the expressions. . . ." Introduction to Symbolic Logic and its Applications (New York: Dover Publications, 1958), p. 78. Here the use of language is that of "designating," with no mention made of "influencing the behavior of others." See also Introduction to Semantics, p. 9.

[16]Perhaps I should state explicitly that I do not mean to set Peirce off against Dewey here, for I do not believe that Dewey had an instrumentalist view of language in the present sense either. It seems to me that Dewey and Bentley's Knowing and the Known makes this clear. John Dewey and Arthur F. Bentley, Knowing and the Known (Boston: The Beacon Press, 1949).

mental way, I believe. For example, one of the best known things about Peirce is his insistence upon what he called his "scholastic realism."[17] And it is also well-known that he tended, especially in his later writings, to see almost all basic philosophical disagreements as instances of the realist-nominalist antithesis. The reader who interprets this issue in terms of the "problem of universals," at least as the latter is usually conceived today,[18] cannot but be puzzled by the extraordinary form it often seems to take in Peirce's discussions of it; but if I may be allowed to make a suggestion going beyond what can be justified in this study, then I would say that the best sense for what Peirce understood by this can probably be gotten by recognizing that, for him, this is essentially the same

---

[17]The indispensable book for understanding what, in the broad sense, Peirce meant by "realism" is Francis Ellingwood Abbot's Scientific Theism (Boston: Little Brown, and Company, 1886). See also Daniel D. O'Connor's "Peirce's Dept. to F. E. Abbot," Journal of the History of Ideas, 25 (1964), pp. 543ff, and Section 36 of Justus Buchler's Charles Peirce's Empiricism (London: Kegan Paul, Trench, Trubner & Co., Ltd., 1939), pp. 123ff. A recent full length study of the technical aspect of Peirce's realism, with special reference to Duns Scotus, is John F. Boler's Charles Peirce and Scholastic Realism (Seattle, University of Washington Press, 1963).

[18]According to D. F. Pears, for example, the problem of universals is: "Why are we able to name things as we do?" That is, it is an attempt to give a theory of naming, which attempt is, on his view, bound to come to nothing. Pears notes, though he does not fully subscribe to, the common notion that the problem of universals is really just a pseudo-problem, based on a confusion between proper names and general terms. D. F. Pears, "Universals," in Logic and Language, Second Series (Oxford: Basil Blackwell, 1959), pp. 51ff.

issue as the classic dispute between nature and convention which divided the philosophers of ancient Greece -- the issue which might fairly be said to have produced philosophy in the full sense.[19] If this is correct then the "problem of universals," narrowly conceived, is but a relatively minor manifestation of this protean issue, and it is not surprising that Peirce should have found it present in so many philosophical forms. Now, I should like to suggest that an outstanding contemporary form of

---

[19]The reference is, of course, to the Socratic-Platonic reaction to the conventionalism represented by the Sophists in the Platonic Dialogues. In the most general sense pertinent to the present context, I understand by "conventionalism" the notion that the normative principles or rules governing a given area of human thought or action are ultimately arbitrary. By "arbitrary" I mean "not justified by a normative rule." Suppose, for example, the accepted manners and morals of a community to be codified; then to the extent that the elements of this code are not themselves justified by any further set of normative rules -- e.g. a set of universal moral rules -- it is conventional or arbitrary. This need not be an all or none affair: one part of a given code might be conventional while another part might not be. Also, the justifying normative rules need not be of the same general type as the justified ones: e.g. it might be claimed that moral rules (universal or special) fall under logical rules, or even under esthetic rules.

Thrasymachus' intended position in the Republic is, as I understand it, a form of conventionalism; for he was attempting to account for the origin of the rules of political right while denying that they have any justification. The claim that moral principles are based on the will of God is, in effect, a form of conventionalism; for it is tantamount to the claim that there is no justification for them in terms of further rules. Social contract theories of political right may or may not be conventional, depending upon whether or not the clauses of the "contract" are thought to be themselves justifiable (e.g. by "natural law"). The claim that the rules constitutive of a language (artificial or "natural") are not themselves further justifiable would be a form of conventionalism. (One would want to distinguish here between language as such and a particular language, of course.)

what Peirce would understand to be a nominalistic position is precisely that view which Professor Carnap holds as to the nature of language. This will not be apparent merely from the above quotes. But it is, I believe, one of the merits of Carnap's work that he has seen and made wonderfully explicit what is implicit in the tool or use conception, and has given clear expression to it in his famous "Principle of Tolerance."

The original statement of the Principle is as follows:

> In logic, there are no morals. Everyone is at liberty to build up his own logic, i.e. his own form of language, as he wishes. All that is required of him is that, if he wishes to discuss it, he must state his methods clearly, and give syntactical rules instead of philosophical arguments.[20]

The import of this is perhaps brought out most clearly in his classic article "Empiricism, Semantics, and Ontology,"[21] in which he argues that what have traditionally passed as ontological questions are, in reality, questions about the logical structure of a language and/or the advisability of adopting it, and that the reasons for adoption are extra-philosophical.[22] The acceptance of a given linguistic

---

[20]Rudolf Carnap, The Logical Syntax of Language (Paterson: Littlefield, Adams, & Co., 1959), p. 52.

[21]Reprinted in: Rudolf Carnap, Meaning and Necessity (Chicago: University of Chicago Press, Phoenix Books, 1956), pp. 205ff.

[22]That is, the reasons are practical rather than theoretical. Precisely what this means I do not know. But Carnap makes it clear that the question whether or not to "accept" a given language-form is "not of a cognitive nature." ("Empiricism, Semantics, and Ontology,"

framework cannot be decided in terms of truth or falsity but rather "can only be judged as being more or less expedient, fruitful, conducive to the aim for which the language is intended."[23] Professor Carnap conceives himself thereby to have transcended such issues as that of realism vs. nominalism altogether, through his willingness to "tolerate" any sort of linguistic framework whatever (realist, nominalist, or what have you), provided only that it is made clear precisely what that framework is and what

---

p. 208) In his intellectual autobiography in the Schilpp volume Carnap says: "But then I pointed out that for these [ontological] questions no interpretation as theoretical questions has been given by the philosophers. I proposed to the philosophers who discuss such questions that they interpret them as practical questions, i.e., as questions about the decision whether or not to accept a language containing expressions for the particular kind of entities. Various reasons may influence the decision about the acceptance or non-acceptance of the framework for such expressions. My main point is the rejection of the customary view that the introduction of a linguistic framework is legitimate only if the affirmative answer to the external question of existence (e.g., "there are natural numbers") can be shown to be true. In my view, the introduction of the framework is legitimate in any case. Whether or not this introduction is advisable for certain purposes is a practical question of language engineering, to be decided on the basis of convenience, fruitfulness, simplicity, and the like." The Philosophy of Rudolf Carnap, ed. P. A. Schilpp (La Salle: Open Court Publishing Co., 1963), p. 66. What is the difference between "legitimacy" and "advisability"? How can something be "legitimate in any case"? (One would suppose this violates the very notion of legitimacy.) It might be said that Carnap espouses a theoretical conventionalism but not a practical conventionalism, since he grants that the acceptance of linguistic frameworks is in some way based on practical considerations. But do these practical considerations involve practical rules? I find no indication of this in Carnap and it seems reasonable to conclude that his is an absolute conventionalism.

[23] Meaning and Necessity, p. 214.

job it is supposed to do. "Everyone is at liberty to build up his own logic, i.e. his own form of language, as he desires," i.e. every man his own metaphysics, if he so desires.

Now I think it is fair to say that Peirce would have seen, in this belief of Carnap's that the realism-nominalism issue (or any other metaphysical issue) can be transcended by pure convention, simply an instance of nominalism in its purest form. And if it is correct to say that the Principle of Tolerance is, indeed, an extraordinarily explicit statement of the import of the tool or use conception of language, then it can be seen how profoundly antipathetic Peirce would be to this general approach, and how important it is not to read Peirce from that point of view ourselves if we wish to understand him.[24] I submit these considerations in the spirit of suggestion rather than proof, however. Nothing in what follows depends upon their correctness, though I shall have more to say on the question of conventionalism in the next chapter. I should like now to try to characterize Peirce's approach in a more positive way.

Semiotic, or logic in the broad sense, is the science of signs, i.e. of the relation of signification or representation. I indicated in the introductory

---

[24]It might be objected that Carnap and Peirce do not mean the same thing by "nominalism." This may be true but it makes no difference to the point at issue, which is that Carnap's conventionalism is what Peirce would identify as nominalism.

chapter that I understand this to be the relation of being taken as a manifestation or appearance of something. Now Peirce gives a large number of somewhat varying characterizations or definitions of this relation, and I shall discuss several of them in the course of this study. But none of them could be said to bear their meaning very clearly on their face, and I quote one of them at this point primarily for reference purposes and to indicate the appropriate terminology:

> . . . as to my terminology, I confine the word representation to the operation of a sign or its relation to the object for the interpreter of the representation. The concrete subject that represents I call a sign or a representamen. I use these two words, sign and representamen, differently. By a sign I mean anything which conveys any definite notion of an object in any way, as such conveyers of thought are familiarly known to us. Now I start with this familiar idea and make the best analysis I can of what is essential to a sign, and I define a representamen as being whatever that analysis applies to. If therefore I have committed an error in my analysis, part of what I say about signs will be false. For in that case a sign may not be a representamen. The analysis is certainly true of the representamen, since that is all that word means. . . . (1.540)
>
> My definition of a representamen is as follows: A REPRESENTAMEN is a subject of a triadic relation TO a second, called its OBJECT, FOR a third, called its INTERPRETANT, this triadic relation being such that the REPRESENTAMEN determines its interpretant to stand in the same triadic relation to the same object for some interpretant. (1.541, capitals in the original, italics omitted)

The distinction between "sign" and "representamen" is merely that between the common term and the technical term which will replace or "explicate"[25] it for theoretical

---

[25]See Rudolf Carnap, Logical Foundations of Probability (Chicago: University of Chicago Press, 1950), p. 3, for the use of the term "explication." See also

purposes. Since Peirce does not himself adhere rigorously to this, and since his usage of "sign" might fairly be said to be a technical one in any case, I shall myself usually use "sign" throughout. More important than this is the distinction between "sign" and "representation." I have so far been treating these terms as synonymous, but in a careful usage the latter should be reserved for the generic triadic relation itself, and the former for the first term or correlate of that relation. The second and third correlates of that relation are, respectively, the "object" and the "interpretant." Now it is tempting to suppose that "object" and "interpretant" are here used, with the help of "determines," to define the word "sign." But I would suggest that there is no profit in supposing this. Peirce intends, of course, that his notion of "object" should bear some similarity to what is ordinarily meant by "object" (whatever that may be), and that his term "interpretant" should bear some similarity to what is ordinarily meant by "interpretation." But his theory is intended to be as much a theoretical clarification of these terms as it is of the term "sign," and there is actually no more reason to take any one of the three as definiendum than there is to take any other.[26] Moreover,

---

8.332 in the Collected Papers, where Peirce says: "If the question were simply what we do mean by a sign, it might soon be resolved. But that is not the point. We are in the situation of a zoologist who wants to know what ought to be the meaning of "fish" in order to make fishes one of the great classes of vertebrates." And see also 1.443.

[26]The fact that it would be fruitless to do so

it should be apparent that the meaning of the word "determines" is not one whit clearer *prima facie* than any of the others, and can scarcely be relied upon as a defining term without some investigation of what it may actually mean for Peirce.

The point here is not to suggest that it is impossible to understand Peirce, but to urge rather that it is the generic relation itself which is to be understood, and that it is therefore best to begin by thinking of the sign simply *as* first correlate of that relation, the object as second correlate, and the interpretant as third correlate. And, indeed, Peirce himself defines the terms precisely in this highly abstract way in one place:

> A *Representamen* is the First Correlate of a triadic relation, the Second Correlate being termed its *Object*, and the possible Third Correlate being termed its *Interpretant*, by which triadic relation the possible Interpretant is determined to be the First Correlate of the same triadic relation to the same Object, and for some possible Interpretant. (2.242)

---

becomes apparent when it turns out that the interpretant is *also* a sign, as can be inferred from the above quoted definition (or see 2.228 for an explicit statement of this), and that even the object is also a sign (see 1.339). However, in 8.332 (from a 1904 letter to Lady Welby) Peirce says that: "Taking sign in its broadest sense, its interpretant is not necessarily a sign. Any concept is a sign, of course. Ockham, Hobbes, and Leibniz have sufficiently said that. But we may take a sign in so broad a sense that the interpretant of it is not a thought, but an action or experience, or we may even so enlarge the meaning of sign that its interpretant is a mere quality of feeling." I ignore this extended sense of "interpretant" here. To take account of it would involve going into the ramified system adumbrated in the *Letters to Lady Welby*, and I wish to restrict myself to the earlier and perhaps narrower sense here.

Now, I would like to suggest that it would be further conducive to understanding Peirce, once this step is taken, to recognize that we are free to reverse ourselves, as it were, and to think of the generic relation in three different ways, depending upon which of the three correlates is emphasized: thus if the first correlate is emphasized the relation may be thought of as that of signification or representation; if the third correlate is emphasized then it may be thought of as interpretation; and, finally, if the second correlate is emphasized it may be thought of as objectification. Though Peirce himself usually stresses the first correlate and names the relation accordingly, I believe that it is quite as legitimate to think of it in any of these ways -- and, indeed, it is perhaps essential to do so in order to get a sense for what he is talking about.

In particular, the notion of objectification may be helpful in a preliminary orientation, because it suggests that the semiotic or logical point of view, for Peirce, is akin to the Kantian "transcendental" point of view. Kant says: "I entitle transcendental all knowledge which is occupied not so much with objects as with the mode of our knowledge of objects in so far as this mode of knowledge is to be possible a priori."[27] The

---

[27] Immanuel Kant, Critique of Pure Reason, trans. Norman Kemp Smith (London: Macmillan & Co. Ltd., 1961) A12-B25. Peirce's Speculative Grammar is supposed to be roughly equivalent to Kant's "Transzendentale Elementarlehre" (i.e. Part I of the Critique), and his Speculative Rhetoric is supposed to be roughly equivalent to Kant's

a priori aspect of Peirce's thought will be discussed shortly and qualified in a certain way, and there is no warrant for a blanket identification of Peirce's and Kant's approaches. But there is certainly this similarity, that they both are concerned with what is logically involved in something becoming an object for us, i.e. becoming an object of our cognitive awareness. And in both cases this clearly involves a point of view quite distinct from that employed by any _special_ science which demarcates a _special_ existential domain as its subject-matter.

Now Peirce's "coenoscopic" characterization of philosophy, referred to earlier in this chapter, which says that it "contents itself with observations such as come within the range of every man's normal experience, and for the most part in every waking hour of his life," (1.241) can be quite misleading if it is thought to mean that philosophy differs from the special sciences _only_ in the ubiquity of its subjectmatter. This requires to be supplemented by a consideration of the fact that, for Peirce, logic is a _second intentional_ enterprise.[28] I

"Transzendentale Methodenlehre" (i.e. Part II of the _Critique_). See the appendix to this study.

[28] In 3.490 Peirce says: "By _logical_ reflexion, I mean the observation of thoughts in their expressions [i.e. of thought in signs]. Aquinas remarked that this sort of reflexion is requisite to furnish us with those ideas which, from lack of contrast, ordinary external experience fails to bring into prominence. He called such ideas _second intentions_." This indicates that the categories are second intentions since it is characteristic of

use this term as Peirce himself seems to have understood it, with Thomas Aquinas as his source. According to Peirce:

> First intentions are those concepts which are derived by comparing percepts, such as ordinary concepts of classes, relations, etc. Second intentions are those which are formed by observing and comparing first intentions. Thus the concept "class" is formed by observing class-concepts and other objects. The special concept, ens, or what is, in the sense of including figments as well as realities, can only have originated in that way. . . . Aquinas defined logic as the science of second intentions applied to first. (2.548)

In his 1867 essay on the categories, Peirce explicitly concurs with Aquinas' definition of logic and says further:

> Now, second intentions are the objects of the understanding considered as representations, and the first intentions to which they apply are the objects of those representations. The objects of the understanding, considered as representations, are symbols, that is, signs which are at least potentially general. But the rules of logic hold good of any symbols, of those which are written or spoken as well as those which are thought. They have no immediate application to likenesses [i.e. icons] or indices, because no arguments can be constructed of these alone, but do apply to all symbols. . . . We come, therefore, to this, that logic treats of the reference of symbols in general to their objects. In this view it is one of a trivium of conceivable sciences. The first would treat of the formal conditions of symbols having meaning, that is, of the reference of symbols in general to their grounds or imputed characters, and this might be called formal grammar; the second, logic, would treat of the formal conditions of the truth of symbols; and the third would treat of the formal conditions of the force of symbols, or their power of appealing to a mind, that is, of their reference in general to interpretants, and this might be called formal rhetoric. (1.559)

Several points of clarification are required here. First, in 1.559, Peirce is using the term "logic" in its narrower sense to refer only to the second member of the semiotic

---

them that, being exemplified in every experience, they lack the contrast which he mentions.

trivium, whereas in his later writings he commonly used it to refer to the whole trivium and thus as synonymous with "semiotic."[29] I shall use the term in the broader sense myself, unless otherwise noted. Second, in 1.559, he treats even the trivium as though it applied -- at least immediately -- only to symbols, and not also to icons and indices. However, he makes it clear in a letter of 1908 to Lady Welby that it was only later that he realized that logic in the narrower sense ought to be investigated in conjunction with a full-scale study of signs of all types and in all their essential relations, i.e. as a part of semiotic in the full sense of the term. (LW29) In other words, even though in the 1867 paper he had worked out his general characterization of the sign relation, and had even made his major division of signs into icons, indices, and symbols, he had not yet conceived the theory of signs in its full generality nor seen the desirability of integrating logic in the traditional or narrower sense into this broader enterprise. This makes no difference to the characterization of logic as second-intentional, however.[30]

---

[29] See the appendix to this study.

[30] Because the triadic sign-relation is indecomposable, i.e. not reducible to any combination of dyadic relations (e.g. see 3.144), the consideration of the relation of sign to object implicitly involves a consideration of the whole triadic relation. Logic in the narrow sense is defined as being concerned with the relation of signs to their objects (1.559), and hence if it is second-intentional then logic in the broader sense would be so as well. The use of the traditional term "second intention"

Third, the term "object of the understanding," as used in 1.559, may be misleading at first reading. Peirce does not here mean "the object understood" but simply "a thought." This is clear both from what is required to make sense of the passage, and also from the quotation from Herbart which Peirce gives and comments on in a footnote to 1.559. This quotation reads: "Unsre sämmtlichen Gedanken lassen sich von zwei Seiten betrachten; theils als Thätigkeiten unseres Geistes, theils in Hinsicht dessen, was durch sie gedacht wird. In letzerer Beziehung heissen sie Begriffe. . . ." (1.559n1) In other words, the phrase "object of the understanding" is equivalent to Herbart's "Gedanke," and Peirce is simply saying that second intentions are thoughts regarded in their representative capacity, and that their objects, i.e. that which they represent, are first intentions.

But, fourth, there is an apparent contradiction in the two accounts quoted concerning what would count as a first and as a second intention. In the passage from 2.548, Peirce clearly treats "second intention" as meaning "second intentional concept." Thus the concept "class" is given as an instance of a second intention, whereas something like, say, the concept "stone" would be an instance of a first intention. But then in 1.559 it seems equally clear

---

does become somewhat questionable, however, once this broader view is taken. This may be why Peirce made relatively little use of it in his later writings. I introduce it here because it seems to me to provide a helpful orientation to Peirce's logical point of view.

that by "second intention" he does not mean the second intentional concept but rather that of which it is the concept. Thus a class itself would be the second intention rather than the concept "class." Since it is clear from 2.548 that Peirce equates classes and class-concepts, this would imply, in the context of 1.559, that a class-concept like "stone" would be a second-intention. So interpreted, an apparent contradiction between the two accounts is generated. However, I believe the contradiction is only apparent. The source of the difficulty lies in the fact which Herbart points out in the quotation above, viz. that a representational thought can be considered from two sides: (1) in its objective reference, or (2) as an "action of our mind" which has an objective reference. In other words, the term "intention" has the same essential ambiguity as have many such "mentalistic" terms as e.g. "purpose," "end," "ideal," "memory," etc.[31] I doubt that this ambiguity can be eliminated from all contexts by any single device, but it can at least be controlled by distinguishing between the intention qua concept and the intentional object.[32] Thus a first intentional object would be,

---

[31]For example, is the memory the remembering of the event or is it the event remembered? Is the end which a person pursues (i.e. his "end-in-view," to use Dewey's term) an actual state of affairs or is it his idea of a state of affairs? The ambiguity of such terms is surely not "merely verbal," but rather is connected in an intimate way with philosophical problems of modality.

[32]The traditional way of making this distinction is to talk of the formal as opposed to the objective being of a concept. The translators of The Material Logic of

say, a stone; a first intentional concept would be "stone"; "stone" would also be a second intentional object; but "class" would be a second intentional concept. It can be seen that the contradiction between 2.548 and 1.559 is eliminated if we suppose Peirce to be speaking of first and second intentional concepts in the former passage, and first and second intentional objects in the latter. Since this dual use of "intention" is common I think it reasonable to assume that this is the case here.

The medieval distinction between first and second intention is not currently a familiar one (i.e. outside of neo-scholastic philosophy), and Peirce's account in 2.548 does not give a very clear idea of what it involves. The following characterization, from John of St. Thomas, is as clear a brief statement as any I have seen:

> Some categorematical terms are of first intention, others of second intention. A term of first intention is one that signifies something according to what it has in reality or in its own proper status, i.e. independently of the status it has in the intellect and as having been conceived -- such as white, man as they are in reality. A term of second intention is one that signifies something according to

---

John of St. Thomas (see note 33 of this chapter) give this brief account of the distinction: "A formal concept is the psychological reality designated by the word "concept"; it is an accident, a quality or disposition by reason of which the intellect is able to know a certain object. An objective concept is the object of a concept; it is an aspect of the thing known: it is that aspect of the thing known which is delivered to the intellect by a certain (formal) concept," p. 588. Two well-known uses of this distinction are by Descartes, in his argument for the existence of God in the Third Meditation, and by Spinoza, in his On the Improvement of the Understanding. The "formal concept" is what I am calling the "intention qua concept," and the "objective concept" is what I am calling the "intentional object."

> what it has from being a concept of the mind and in its intellectualized status, e.g. species, genus and other like things that the logician deals with. And terms are called "of first and second intention" because what fits a thing because of itself is, in a sense, primary to it and its proper status; but what fits a thing because of its being understood is, in a sense, secondary and a secondary status coming to the first. And therefore it is called "of second intention" as a kind of second status.[33]

It will be noted that, in this account, the first and the second intention would both seem to apply to the same object, though in different respects. This is consistent with what was said in the foregoing paragraph, and it may help to clarify what was involved there. The object of a second intentional concept is a first intention in its intentional character, i.e. in its reference to its object. Or, to put it another way, the object of a second intentional concept is the intentional relation between first intentional concept and its object. Hence, the second intentional concept can be thought of in alternative ways: (1) as referring to the relation between first

---

[33]John of St. Thomas, Outlines of Formal Logic, trans. Francis C. Wade (Milwaukee: Marquette University Press, 1955), p. 36. John of St. Thomas (whose real name was Jean Poinsot) was a 17th Century scholastic, whose Ars Logica is purportedly a reliable presentation of the logic implicit or explicit in the writings of Thomas Aquinas. His writings are widely referred to in neo-scholastic literature, presumably because it presents Thomistic logic in an especially clear and methodical way. The Outlines is from the first part of the Ars Logica. There is also a translation of parts of the second part of the Ars Logica under the title of The Material Logic of John of St. Thomas, trans. Y. R. Simon, J. J. Glanville, and G. D. Hollenhorst, with a preface by Jacques Maritain (Chicago: University of Chicago Press, 1955). Reference to the latter was made in note 32 of this chapter.

34

intentional concept and object, (2) as referring to the concept as term of that relation, or (3) as referring to to the object as term of that relation. John of St. Thomas, in the above quotation, utilizes the last of these alternatives, but it is by no means necessary to do so. Thus, in the following passage from Thomas Aquinas, for example, the emphasis is put on the second (or perhaps the first) alternative:[34]

> What is first known (prima intellecta) are things outside the soul, the things which first draw the intellect to knowledge. But the intentions which follow on our mode of knowing are said to be secondly known (secunda intellecta); for the intellect comes to know them by reflecting on itself, by knowing that it knows and the mode of knowing.

The relation between first intentional object, first intentional concept, and second intentional concept is not, therefore, to be thought of on the order of a simple vertical linearity, in analogy with, say, a three-storied house. The scholastics did not, so far as I know, recognize any higher orders of intentionality;[35] but even if

---

[34]Aquinas, Thomas, Quaestiones Disputatae: De potentia Dei, q. 7, a. 9, c. The translation of this passage is from Aquinas on Being and Essence, a translation and interpretation by Joseph Bobik (Notre Dame: University of Notre Dame Press, 1965), p. 17. This passage also indicates the close relation between the "reflective" or second-intentional point of view and Kant's "critical" or transcendental point of view. (It might also be noted that Thomas uses "intention" here in the sense of "that which is intended" rather than "the intending," i.e. as what I have called the "intentional object" rather than the "intentional concept." That is, he uses it as Peirce does in 1.559.)

[35]John of St. Thomas says that no higher orders of intentionality are recognized. See his discussion of this in The Material Logic, pp. 73f. However, there is

they had this would not have resulted in a removal of reference to the first intentional object. That is, consistent with the rationale of this scheme, a third intention would have to be a concept whose object was a relation, one term of which would be the first intentional object; and similarly for a possible fourth, fifth, or still higher order of intention. Each higher order of intention would be of correspondingly more complex relational structure, but would always be about first intentional objects nonetheless.

The reason for bringing these matters to the fore is to clarify the import of Peirce's "coenoscopic" characterization of the subjectmatter of philosophy in general, and of semiotic in particular. The ubiquitous subjectmatter of semiotic to which Peirce is referring in his characterization is, I would suggest, simply the generic representation relation, which is a feature of every experience involving a cognitive structure, i.e. of objective

---

one passage in Peirce (written in 1906) in which third intentions are mentioned. It runs as follows: "That wonderful operation of hypostatic abstraction by which we seem to create entia rationis that are, nevertheless, sometimes real, furnishes us the means of turning predicates from being signs that we think or think through, into being subjects thought of. We thus think of the thought-sign itself, making it the object of another thought-sign. Thereupon, we can repeat the operation of hypostatic abstraction, and from these second intentions derive third intentions. Does this series proceed endlessly? I think not. What then are the characters of its different members? My thoughts on this subject are not yet harvested." (4.549) Since there is no other mention of this in the Collected Papers, since Peirce says that his thoughts were "not yet harvested" on this, and since I do not myself understand just what this would involve, I will not pursue it here.

experience in general.[36] As I shall try to explain in Chapters III through V, the generic representation relation is identical with the generic logical relation, regardless of whether "logical" is taken in the broad or narrow sense of the term. It is thus by definition second intentional. And, as I shall explain toward the end of Chapter IV, it is an essential part of Peirce's theory that all cognitive or objective experience involves second-intentionality. Thus the generic representation is present in all such experience. This does not mean that the concept "representation" (or "sign" or "object" or "interpretant") is a part of the subjectmatter of every experience; it means rather that every experience contains a sign, an object, and an interpretant, i.e. contains the representation relation. That is, what we experience is not a second intentional concept but a second intentional object. But if what was said in the preceding paragraph is correct, concerning the three alternative ways of regarding the reference of second intentions, then the second intentional object is the same as the first intentional object of that experience. Hence, the claim that every experience involves second intentions does not mean that there are

---

[36] Since the categories are supposed to be universally present in the phenomenon (1.186), the representation relation (which is the category of thirdness) is in fact a feature of every experience. This implies that every experience has a cognitive structure or objective dimension. Perhaps a word of caution should be introduced here, however. "Objective" does not mean "veridical," i.e. the object can be fictional. Also, "cognition" is always used here in the sense in which "false cognition" is a legitimate locution.

objects in addition to the first intentional objects, but only that the first intentional objects are regarded in a second intentional aspect as well. The field of second intentional objects is therefore co-extensive with the field of all possible first intentional objects: for, on the one hand, there is no objective experience without the second intentional point of view; and, on the other hand, there is no second intentionality without the first intentionality which serves as its foundation. The latter follows from the definition of second intentionality; the former follows from considerations which are discussed later (in Chapter IV). I suggest this to be the most profitable way to understand Peirce's "coenoscopic" definition of philosophy and logic.

I should like now to return to the question of whether semiotic is an a priori enterprise, on Peirce's view. In likening it earlier to Kant's notion of transcendental inquiry this seemed to be implied. However, this has to be qualified sharply -- and, in fact, I would suggest that this term is too misleading to be of any real use here. If "a priori" means "known prior to and independently of all experience," then it follows from the above considerations that semiotic is not an a priori enterprise: our access to the second intentional is the same as our access to the first intentional, viz. through concrete objective experience. On Peirce's view, the logician has no favored position over the natural scientist

in this respect, save in the fact that the objects of the former are ubiquitous in experience, whereas the objects of the latter usually have to be elicited through special investigative techniques.[37] But, on the other hand, Peirce does say that semiotic aims at finding out what must be and not merely what is; and if necessity is to be taken as a mark of the a priori, as it usually is, then it would seem that semiotic is in some sense an a priori enterprise after all. Let me present a very important passage from Peirce which bears on this problem:

> Logic, in its general sense, is, as I believe I have shown, only another name for semiotic (σημειωτική), the quasi-necessary, or formal, doctrine of signs. By describing the doctrine as "quasi-necessary," or formal, I mean that we observe the characters of such signs as we know, and from such an observation, by a process which I will not object to naming Abstraction, we are led to statements, eminently fallible, and therefore in one sense by no means necessary, as to what must be the characters of all signs used by a "scientific" intelligence, that is to say, by an intelligence capable of learning by experience. . . . Now the whole process of development among the community of students of those [logical] formulations by abstractive observation and reasoning of the truths which must hold good of all signs used by a scientific intelligence is an observational science, like any other positive science, notwithstanding its contrast to all the special sciences which arises from its aiming to find out what must be and not merely what is in the actual world. (2.227)

---

[37] Again, it has to be remembered that the second intentional object (the first intentional concept) can be fictive. That is, the logician is not concerned with whether or not the first intentions are veridical. Hence, imaginary cases can be as useful in developing a logical point as a real case would be. This does, of course, constitute an advantage of sorts which the logician has over the natural scientist; for the latter is concerned primarily (though not exclusively) with the character of the real world. This is one reason why logic is an "armchair" enterprise, whereas natural science is not.

Now the process of being led to "eminently fallible" statements, through observation and abstraction, is simply the process of hypothesis formation and need not especially concern us here. The characterization of semiotic as an "observational" or "positive" science is, of course, consistent with what I said above about the logician having no favored position over the natural scientist in respect to subjectmatter. The question is, how can it be that the logician is, by these means, to arrive at conclusions about what must be? I take it that the answer is simply that the logician is concerned, as Leibniz said, with all possible worlds. Or, as I put it in the paragraph previous to this one, the field of second intentional objects is co-extensive with the field of all possible first intentional objects. Logic is concerned with first intentional objects qua objects, in abstraction from whatever first intentional characters they may have. It presupposes that they have a first intentional character, for it is based upon the first intentional relation; but it is not based upon their having this or that first intentional character. Thus, unlike the special sciences, it is not concerned with those characters exemplified in the actual world but with those characters which would be exemplified in any world, viz. those characters which appertain to anything qua object. This I take to be the import of the "must be," and of the sense in which semiotic is "quasi-necessary" or "formal." Now the reader may have noted

that whereas Peirce speaks in the quote of the necessary characters of signs, I have been speaking of the necessary characters of objects. But I pointed out earlier that what is really in question in semiotic is the representation relation as such, and that it is a matter of emphasis whether one speaks in terms of objectification, representation, or interpretation. I have concentrated on the objectification aspect because this lends itself well to the use of the jargon of "intentionality," and I think this throws a helpful -- if only a partial -- light on Peirce's point of view. But an object is simply the second correlate of the indecomposably triadic relation of representation, and it is always the latter which is really being discussed. Therefore, semiotic can equally be said to be the science of the necessary characters of objects qua objects, or of signs qua signs, or of interpretants qua interpretants.

The sense in which Peirce's theory is -- and is not -- an a priori doctrine has been indicated, and I should think the conclusion would be that this is not really an apt term as applied to Peirce. It is true that a doctrine true about any possible world is a priori true of the actual one, but this is rarely all that is meant when there is talk of the a priori. The usual implication is that the doctrine itself is arrived at through special a priori means, and this Peirce unquestionably denies.

CHAPTER III

LOGIC AND REASONING

The purpose of this chapter is to discuss certain aspects of the relation between logic[1] and the reasoning process, as Peirce conceived it. The first question this raises concerns the relation between logic and psychology. Now, no one has insisted more emphatically than Peirce on the necessity of de-psychologizing logic. For example, in his projected Minute Logic (of 1902), after remarking that "considerable controversy has taken place as to whether scientific results of psychology ought or ought not to be admitted among the premisses from which logical principles are to be deduced," he goes on to say that "nobody will do injustice to the present treatise by describing its position as extremely unfavorable to the use of psychology in logic." (2.39) And, in another place, he says: "My principles absolutely debar me from making the least use of psychology in logic." (5.157) Yet it is far from clear that Peirce does, in practice, separate the two enterprises as sharply as such remarks would seem to require. This perhaps show most markedly in his doubt-belief theory

---

[1]The term "logic" is used here and throughout this chapter somewhat ambiguously as regards the broader and narrower senses, but with the emphasis more on the former.

of inquiry,[2] but in fact there are passages in many different contexts in the Collected Papers which may make one suspect that, as Justus Buchler put it, "in spite of himself he sometimes was tinged with a strain of psychologism in matters logical."[3] The doubt-belief theory of inquiry, as such, falls outside the scope of this study, and I shall not consider the special problems which it raises;[4] but there are some important points concerning the relation between psychology and logic which do require to be discussed here.

One important difference between the logical and the psychological points of view is brought out by Peirce's contention that, psychologically considered, thought is a continuous process, whereas, logically considered, it is broken up into discrete units of premisses and conclusions. This is in fact what underlies the resolution of the apparent paradox generated by his dictum that every cognition is determined by a previous cognition of the same object, i.e. that there is no "intuition."[5] On the one hand, the

---

[2]That is, the theory of inquiry sketched out in Peirce's classic article "The Fixation of Belief." (5.358-87, esp. 5.365-76)

[3]Charles Peirce's Empiricism, p. 109.

[4]It should be noted, though, that Peirce himself did not regard the concepts of "doubt" and "belief" as psychologistic. See 2.210 for an explicit statement on this.

[5]Peirce defines "intuition" as follows: "Throughout this paper, the term intuition will be taken as signifying a cognition not determined by a previous cognition of the same object, and therefore so determined by something

dictum would seem to imply that an infinite series of cognitions precedes any given cognition; but, on the other hand, there must surely have been some time prior to the whole series and therefore there must have been a first cognition which was a premiss not itself a conclusion. (5.263) The solution is that, as a continuous psychological process, there is no limit to the number of discriminations that can be made within thought for logical purposes. The paradox is generated only by supposing that the discrete units composing an argument represent discrete mental actions, which is precisely what Peirce denies. (5.181)

I find two discussions in Peirce especially interesting in this connection. The first is in his 1868 essay on the grounds of validity of the laws of logic.[6] A hypothetical objector has there urged that a syllogism, being a purely mechanical matter, cannot truly represent the

---

out of the consciousness. Let me request the reader to note this. Intuition here will be nearly the same as "premiss not itself a conclusion"; the only difference being that premisses and conclusions are judgments, whereas an intuition may, as far as its definition states, be any kind of cognition whatever. But just as a conclusion (good or bad) is determined in the mind of the reasoner by its premiss, so cognitions not judgments may be determined by previous cognitions; and a cognition not so determined, and therefore determined directly by the transcendental object, is to be termed an intuition." (5.213) This is the first paragraph of "Questions Concerning Certain Faculties Claimed for Man."

[6]"Grounds of Validity of the Laws of Logic: Further Consequences of Four Incapacities" (5.318-57). The passage discussed above is from 5.329.

continuous course of mental action: "A syllogism is a dead formula, while thinking is a living process." In reply to this, Peirce readily grants that "no number of syllogisms can constitute the sum total of any mental action," but then points out that it does not follow that it does not represent the mental action at all; for it "is not intended to represent the mind, as to its life or deadness, but only as to the relation of its different judgments concerning the same thing." The point is clarified by a comparison of the relation of argument to thought with the relation of a surveyor's map to the land he is surveying: the map is not the land, but that does not prevent it from truly representing the land as far as it goes. The map "cannot, indeed, represent every blade of grass; but it does not represent that there is not a blade of grass where there is." Echoing the scholastic slogan "abstrahentium non est mendacium," he remarks that "to abstract from a circumstance is not to deny it." In any case, he concludes:

> The relation between syllogism and thought does not spring from considerations of formal logic, but from those of psychology. All that the formal logician has to say is, that if facts capable of expression in such and such forms of words are true, another fact whose expression is related in a certain way to the expression of these others is also true. (5.329)

The point is perhaps made in a better way in a later discussion (in the Minute Logic), where he says that it is only the "self-defence" of the process that is broken up into discrete arguments. (2.27) The paragraph from which

this comes is too long to quote in full here, but the following is an extract from it:

> There is no necessity for supposing that the process of thought, as it takes place in the mind, is always cut up into distinct arguments. A man goes through a process of thought. Who shall say what the nature of that process was? He cannot; for during the process he was occupied with the object about which he was thinking, not with himself or his motions. . . . Practically, when a man endeavors to state what the process of his thought had been, after the process has come to an end, he first asks himself to what conclusion he has come. That result he formulates in an assertion, which, we will assume, has some sort of likeness -- I am inclined to think only a conventionalized one -- with the attitude of his thought at the cessation of the motion. That having been ascertained, he next asks himself how he is justified in being so confident of it; and he proceeds to cast about for a sentence expressed in words which shall strike him as resembling some previous attitude of his thought, and which at the same time shall be logically related to the sentence representing his conclusion, in such a way that if the premiss-proposition be true, the conclusion-proposition necessarily or naturally would be true. . . . But the self-observer has absolutely no warrant whatever for assuming that that premiss represented an attitude in which thought remained stock-still, even for an instant. . . . The logical argument only represents the last part of thought, for the reason that it supposes a premiss which represents some attitude of thought which can only have resulted from thinking. (2.27)

I do not think any detailed comment is required on this, but the last sentence in the quotation should be especially noted, for it is a way of saying that the logical argument always supposes a premiss which is itself a conclusion. But why should this be so? Assuming that we have some proposition set up as conclusion, and some other(s) set up as premiss(es) for that conclusion, are we not exclusively concerned with the latter qua premiss(es)? Is not the question whether the premiss is itself capable

of being a conclusion logically irrelevant in any given case? The answer is that it is not irrelevant, because: (a) in logical evaluation we are concerned with determining whether the truth of the premisses would provide any sort of warrant for the truth of the conclusion; (b) we therefore presuppose that the truth-value of the premisses is in principle ascertainable;[7] (c) the truth-value of no non-trivial proposition can be ascertained by mere inspection of the proposition itself; (d) there is no intuition (in the sense indicated above) by which we can ascertain its truth-value; and, therefore, (e) the premisses must be at least capable of being made the conclusion of some further premisses.

The idea is not that, in evaluating any given argument, we are logically obligated to embark upon an endless series of regressive evaluations, but rather that we are logically committed to the assumption that the premisses are capable of being so evaluated -- this being implicit (given Peirce's other assumptions) in the characterization of logical validity in terms of preservation of truth-value. We are not obligated actually to make any such evaluation in any given case, and a fortiori not in all. I suggest that this is also the way in which we are

---

[7] In assuming that the premisses have a truth-value we are assuming that they have a certain character; but all real characters are ascertainable characters, for Peirce denies the reality of the incognizable. (5.254-58) Hence, in assuming that they have a truth-value we are assuming that it is ascertainable. Of course, this doesn't mean ascertainable then and there or at any given time.

to understand the dictum that every cognition is determined by a previous cognition of the same object. This is a logical maxim, and the logical point of view requires that we regard every proposition as a potential conclusion (i.e. as "determined by a previous cognition").

An objection which might be raised at this point would run as follows. Since logical evaluation is a determination of the logical dependency of the truth-value of one proposition on some logically prior one(s), and since it is claimed that this logical priority has no limit (there being no logically first premisses), it would seem to follow that the truth-value of no given proposition could ever be determined, as this would involve an infinitely regressive evaluation. This would then seem to imply that, on Peirce's own principles, no proposition (with the possible exception of a tautology) has any truth-value at all; for, in accordance with the principle of the unreality of the incognizable,[8] an unknowable truth-value would be no truth-value at all. I do not know that Peirce ever explicitly considers such an objection, but I would suggest that we can see here one reason -- and perhaps the chief reason -- why he defines truth in terms of fixed belief.[9] Peirce's theory of truth is, again, an aspect of his thought which I have found it necessary to

---

[8]See footnote 7, this chapter.

[9]Again, see "The Fixation of Belief," esp. 5.375

exclude from the scope of this study. But a part of its import appears in the point made above, that there is no logical obligation to make an infinitely regressive series of logical evaluations. To hold some proposition as a premiss is, from the logical point of view, to treat it precisely as if there were no question about it, i.e. as if one's belief in it were "fixed"; and a proposition always so treated would in fact represent a fixed belief and would ipso facto be true. Since there is no general logical obligation to call all (or any) of our beliefs into question, [10] i.e. no obligation to treat every premiss as if it were itself a conclusion, it follows that there may be any number of true propositions.[11] On the other hand, once a genuine question is raised about a proposition there is no rational recourse[12] save to treat it (or perhaps its contradictory) as a possible conclusion and seek appropriate premisses.

It would seem, then, that one important difference between the psychological and the logical point of view

---

[10]Clearly, on Peirce's view, it would be intellectual suicide to do so. This is why the rejection of Cartesian doubt (5.265) and the closely related doctrine of common-sensism (5.439ff, 5.504ff) are so important in Peirce's philosophy.

[11]In fact, Peirce remarks that "upon innumerable questions we have already reached the final opinion." (8.43)

[12]It will be recalled that the method of reason (scientific method) is only one of four methods of fixing belief which Peirce discusses in "The Fixation of Belief." Logic is the theory of that method.

consists in the fact that, whereas the former regards thought as a continuous process, the latter must regard it rather as if composed of (potentially infinite) series of discrete units. Does this imply that, for Peirce, terms like "mind" and "thought" mean something different when used in pychological contexts than when used in logical contexts? I am unable to give any straightforward answer to this. It is not necessary to do so here, in any case, since we are concerned with "mind" and "thought" in their logical sense regardless of what sense they may have in psychology. But it is important to note that the continuous character of the mental process is of essential import from the strictly logical point of view, i.e. is directly implied by the latter. For only if thought is continuous can the dictum that every cognition is determined by a previous cognition of the same object be made consistent with the fact that there must have been a time prior to any thought about the object. Thus it would seem that Peirce's logical theory has at least one psychological implication. And this is disturbing, at least prima facie, for it would seem to involve an illicit traffic between the second and first intentional levels, i.e. it would mean that what is supposedly a formal consideration has definite material consequences.

The resolution of this difficulty is to be found, I believe, in the fact that, although Peirce denied the dependency of logic on psychology, he did not think that

psychology is altogether independent of logic. It will be recalled that, according to Peirce's classification of the sciences, the special sciences follow philosophy in the schematic order and (in accordance with the principles of that order) thereby presuppose philosophy.[13] The following statement by Peirce, which follows upon a discussion of some of the ways in which, on his view, the physical and biological sciences involve philosophical issues, is directly to our point:

> The dependence of the psychical sciences upon philosophy is no less manifest [than that of the physical and biological sciences]. A few years ago, indeed, regenerate psychology, in the flush of her first success, not very wisely proposed to do without metaphysics; but I think that today [i.e. in 1902] psychologists generally perceive the impossibility of such a thing. It is true that the psychical sciences are not quite so dependent upon metaphysics as are the physical sciences; but, by way of compensation, they must lean more upon logic. The mind works by final causation, and final causation is logical causation. (1.250)

Whatever the psychologists of 1902 may have felt, it may well be doubted that those of 1966 "perceive the impossibility" of psychology without philosophy. However, I do not think that we should take the question to be closed on that account, and simply write Peirce's notion off without further ado. One has only to inspect some of the efforts which have been made in psychology to arrive at

---

[13] See 1.180-202 and 1.238-82. Briefly, the order runs as follows, each successive science presupposing the preceding one(s): mathematics, phenomenology, esthetics, ethics, logic, metaphysics, and the special sciences. Each in turn may have many subdivisions. See also footnote 7, chapter II, of the present study. And see also the appendix to this study.

an account of distinctively human thought-processes, symbolic thought, etc., to see that Peirce might after all be right.[14] There are certainly a great many matters of psychological interest which would seem to have little or no relation to logic, but so far as the characterization of the conceptualization process itself goes, it is surely far from clear at present that this can be made out independently of logical considerations, if not metaphysical ones. But, however that may be, Peirce goes on to say that:

> Moreover, everything in the psychical sciences is inferential. Not the smallest fact about the mind can be directly perceived as psychical. An emotion is directly felt as a bodily state, or else it is only known inferentially. That a thing is agreeable appears to direct observation as a character of an object, and it is only by inference that it is referred to the mind. If this statement be disputed (and some will dispute it), all the more need is there for the intervention of logic. Very difficult problems of inference are continually emerging in the psychical sciences. (1.250)

Now, part of what Peirce is saying here is simply that psychology makes inferences, and since logic is the critique of inference psychology therefore presupposes logic as organon. This, however, is not to our point. What is to our point is the claim that everything in psychology is

---

[14]See, for example: J. S. Bruner, J. J. Goodnow, and G. A. Austin, A Study of Thinking (New York: Science Editions, Inc., 1962); Heinz Werner and Bernard Kaplan, Symbol Formation (New York: John Wiley & Sons, Inc., 1963); George A. Kelly, The Psychology of Personal Constructs (New York: W. W. Norton & Co., Inc., 1955); George Humphrey, Thinking: An Introduction to its Experimental Psychology (New York: Science Editions, Inc., 1963); and Donald W. Taylor, "Thinking," in Theories in Contemporary Psychology, ed. Melvin H. Marx (New York: The Macmillan Company, 1964), pp. 475-93.

inferential because no fact about mind can be directly perceived as psychical. This harks back to his argument against introspection in "Questions Concerning Certain Faculties claimed for Man." (5.244-49) Now his argument there -- and in fact his general stand against introspection -- can easily be misconstrued as an argument for behaviorism. However, while Peirce's position is no doubt congenial with at least some form of the behavioral approach, his point there is not that mind is behavior but that mind is in a certain sense objective, viz. in the sense that it is originally found, so to speak, as the characters of objects.[15] The characterization of certain characters as "mental" is a hypothetical inference required in order to account for the fact of error, ignorance, and social disagreement. (5.233-35) The point here is that, through our experience of error and ignorance, we come to realize that there is a possible difference between what we think to be the case and what really is the case: a distinction is thus instituted between what appears to be and what really is. But appearance and reality -- what is thought to be and what is -- do not constitute an exclusive disjunction: what we think to be the case often is the case. The relation is rather that of part-whole:

---

[15]That is, Peirce has a basically Aristotelian conception of mind. This point will be elaborated to some extent in Chapters VI and VII of this study. The sense in which mind is both subjective and objective will be somewhat clearer after the notions of sign and interpretant are discussed in Chapters IV and V of this study.

the discovery of the possibility of error and ignorance is precisely the discovery that the whole of experience is mind-conditioned or self-conditioned or ideal, a part of which is also real, veridical, or objectively valid. This is putting it genetically, but the point is a logical one, viz. that all objective experience must be regarded as containing an ideal or "subjective" element if we are to account for error and ignorance, and that subjective aspect of the objective is what we mean by "mind." That's why Peirce says that "not the smallest fact about the mind can be directly perceived as psychical": the concept of mind is an explanatory hypothesis introduced to explain the fact of fallibility.

This is also at least a part of the point behind his argument that all thought is in signs, in Question 5 of "Questions Concerning Certain Faculties Claimed for Man." (5.250-53) His rather terse argument there is as follows:

> If we seek the light of external facts, the only cases of thought which we can find are of thought in signs. Plainly, no other thought can be evidenced by external facts. But we have seen that only by external facts can thought be known at all. The only thought, then, which can possibly be cognized is thought in signs. But thought which cannot be cognized does not exist. All thought, therefore, must necessarily be in signs. (5.251)

It would be natural to interpret this to mean that, since the only thought we observe is that of people talking or otherwise using signs, that is therefore the only way in which we can conceive thought. This would then be a sort

of argument for behaviorism, with sign-use construed as thought-behavior, and vice versa. Whatever independent merit there may be in this notion, I submit that this is not the real gist of Peirce's point here. What he means is rather that the very notion of thought is the notion that things are manifest by signs or appearances, a notion consequent upon the awareness of the possibility of error. To be sure, the manifestation of thought through language-signs is a very important case, but to interpret this as primarily an argument for behaviorism disrupts the continuity of the general line of argument in the article in question. For what Peirce is doing in general in this article represents a very instructive and significant use of the pragmatic method, notwithstanding the fact that he had not at that time actually formulated the method as a doctrine: he is simply asking what the point is to the notion of mind to begin with. What are the phenomena which the notion of thought is introduced to explain and which thus provide the justification for its introduction? The question of what "faculties" we have is to be answered only by seeing why the hypothesis of mind is required. Thus, if all the relevant phenomena can be explained in terms of a single, generic notion of mind as a process of sign-interpretation, then there is no need and indeed no warrant for positing the various forms of intuition against which he argues in this article. Now the notion of the mind as a process of sign-interpretation is the notion of

the world as a process of appearances of objects. It is simply experience regarded from the logical point of view: the object appears through signs, which is to say, a sign is an appearance of an object. The notion of a sign does add something to the notion of appearance, viz. it puts it explicitly into the context of logical discussion -- a context which will be elaborated upon in what follows. But it should be noted that the question whether we can think without signs is simply the question of intuition over again; for to think an object without a sign would be to apprehend the Ding an sich -- and there is no Ding an sich.

Let us turn now to a discussion of Peirce's doctrine of leading principles. Since this particular topic is already a familiar one to Peirce students, having been discussed in several previous studies,[16] I shall cover only the most pertinent points here and express them somewhat more freely than would otherwise be permissible. The notion of a leading principle has to be understood in connection with the notion of an argument.[17] An argument is essentially a claim of a certain sort, viz. that the

---

[16]See, for example, Buchler, Charles Peirce's Empiricism, secs. 45-46; T. A. Goudge, The Thought of C. S. Peirce (Toronto: University of Toronto Press, 1950), pp. 130ff; and Manley Thompson, The Pragmatic Philosophy of C. S. Peirce (Chicago: The University of Chicago Press, Phoenix Books, 1963) pp. 5ff.

[17]See, in particular, 2.461-74 for the background on which the account above is based.

asserted truth of a given conjunctive set of explicitly formulated propositions (the premisses) would suffice to determine the truth of a further explicitly formulated proposition (the conclusion), either necessarily or with probability (depending upon the type of argument which it is). The validity of this claim depends upon the truth of whatever proposition would justify this claim. The justifying proposition is, of course, the leading principle of the argument. Thus, Peirce says, "a valid argument is one whose leading principle is true." (2.463) The argument thus includes both the leading principle and the premisses qua premisses for a given conclusion. The leading principle is in a conditional or if-then form, whereas the argument form is constituted by the conjunction of premisses to conclusion via a "hence" (or a cognate term), and the latter is not, therefore, conditional. One important point implied by this is that the premisses must be understood as being definitely asserted (though the universe of discourse of which they are asserted may of course be hypothetical, fictitious, imaginary, or whatever). Thus, while the import of the "hence" is that there is a justificatory and true leading principle, the "hence" also presupposes the actual assertion of the premiss and conclusion propositions. It is not necessary, on the other hand, for the premisses to be true for the argument to be valid; for while the argument includes the premisses, its claim to validity concerns the conditional, i.e. is a claim that

there is a true conditional proposition of the requisite sort.

The implied conditional proposition, or leading principle, is, as Peirce says, "whatever is considered requisite besides the premisses to determine the necessary or probably truth of the conclusion." (2.465) Further, he says:

> No fact, not superfluous, can be omitted from the premisses without being thereby added to the leading principle, and nothing can be eliminated from the leading principle except by being expressed in the premisses. Matter may thus be transferred from the premisses to the leading principle, and vice versa. (2.465)

Now, there must be both premisses and a leading principle. For suppose everything were put into the premisses. In that case the "hence" would mean nothing, i.e. would make no claim not already made by the mere conjoint assertion of the propositions constituting (what would otherwise be) the premisses and conclusion; but mere conjoint assertion does not in itself constitute an argument. On the other hand, the "hence" must conjoin something in order to make any claim about the justification for that conjunction. This leads to the distinction between, and the criterion for distinguishing between, material and logical leading principles. Any leading principle such as is ineliminable as a leading principle (by transferrence to the premisses) is a logical leading principle. That is to say, logical leading principles are those which, even if they should be formulated explicitly as premisses, would nevertheless have to remain as leading principles. (2.466) All other

leading principles are material.

Let us see if we can get clearer on the point to this. An argument is a claim about matters of fact (real or supposed), not merely about words or symbols. It takes certain things to be matters of fact, viz. those things which are asserted to be facts by the premisses, and claims that, given these facts, and because of these facts, that which is asserted by the conclusion to be a fact <u>is</u> a fact (necessarily or probably). Now Peirce remarked that "every <u>logical principle</u> considered as an assertion will be found to be quite empty. The only thing it really enunciates is a rule of inference; considered as expressing truth, it is nothing." (2.467) Said another way:

> Logical principles of inference are merely rules for the illative transformation of the symbols of the particular system employed. If the system is essentially changed, they will be quite different. (2.599)

And, again:

> A logical principle is said to be an <u>empty</u> or merely formal proposition, because it can add nothing to the premisses of the argument it governs, although it is relevant; so that it implies no fact except such as is presupposed in all discourse. . . . (3.168)

It might be thought that this means that the argument can not be about matters of fact, in contradiction to what I have just suggested above; for once all material content has been transferred to the premisses the claim implicit in the "hence" is in fact reduced to the purely formal claim embodied in the logical leading principle, which as he says, concerns "the illative transformation of the symbols of the particular system employed." Further, it

might be supposed that Peirce is here espousing a kind of logical conventionalism through the relativization of logical principles to particular symbol systems. I suggest that neither of these would be correct, however.

In a letter to Lady Welby, Peirce explains how a proposition may be analyzed for logical purposes, and this account gives an indication of what is at stake in our present discussion, though the particular proposition which he analyzes happens not to be of the special sort with which we are here concerned:

> When we have analyzed a proposition so as to throw into the subject everything that can be removed from the predicate, all that it remains for the predicate to represent is the form of connection between the different subjects as expressed in the propositional form. What I mean by "everything that can be removed from the predicate" is best explained by giving an example of something not so removable. But first take something removable. "Cain kills Abel." Here the predicate appears as "____ kills ____." But we can remove killing from the predicate and make the latter "____ stands in the relation ____ to ____." Suppose we attempt to remove more from the predicate and put the last into the form "____ exercises the function of relate of the relation ____ to ____" and then putting 'the function of relate to the relation' into another subject leaves as predicate "____ exercises ____ in respect to ____ to ____." But this "exercises" express "exercises the function." Nay more, it expresses "exercises the function of relate," so that we find that though we may put this into a separate subject, it continues in the predicate just the same. (LW 25)

The analytic transition here is from:

(1) Cain kills Abel.

to

(2) (Cain) kills (Abel)

to

(3) (Cain) stands in the relation (killer of) to (Abel).

to

(4) (Cain) exercises the function of relate of the relation (killer of) to (Abel).

The fifth transition need not be set down because, as Peirce says, the transition to the fourth was not in fact necessary; for (4) says nothing different than (3) says: To stand in a certain relation is not different from exercising the function of being a relate of that relation, and vice versa. When we come to the purely formal we come to the end of the analytic road, as it were. But now, let us note that though the predicate of (3) is purely formal -- and a fortiori the predicate of (4) and any further analytic restatements -- it does not follow that (3) is purely formal; for (3) is simply (1) expressed in a different way, and (1) manifestly is not purely formal. The point is that every proposition contains, or can be regarded as containing for logical purposes, a material and a formal element; and what we have here is simply an analytic technique for isolating the formal element. Now an argument may be regarded as a complex proposition, and the same analytic technique is applicable to it. When applied it results in the discrimination of a logical leading principle from the material elements which it contains, viz. the premisses. But just as (1) does not cease to be concerned with matters of fact simply because it can

be analyzed into (3), so similarly an argument does not cease to be concerned with matters of fact simply because it can be analyzed into a logical leading principle and the material premisses which it concerns. The argument may be said to have a subject, its premisses and conclusion; and to have a predicate, its leading principle; and the latter can be expressed purely formally -- can be converted into a logical leading principle -- by transferrance of all material content to the premisses.[18]

Now when Peirce relativizes logical principles to particular symbol systems this is not to be construed as meaning that every such system has "its own logic." There is no Carnapian "principle of tolerance" in Peirce's approach to logic, i.e. no notion that one can freely take on and off various logical (and/or metaphysical) hats simply by freely assuming first one and then the other symbolic system. For it is assumed that these are all languages within which the same thing can receive varying symbolic expressions. A given argument can be expressed in any genuine language, provided it contains suitable conventional signs, but it is the same argument because it is concerned with the same matters of fact. Naturally, the conventions for expression are going to

---

[18]Augustus De Morgan remarks that "a syllogism is a proposition; for it affirms that a certain proposition is the necessary consequence of certain others. An affirmation is not the less an affirmation because it affirms about other affirmations." On the Syllogism, and other Logical Writings, ed. Peter Heath (New Haven: Yale University Press, 1166), p. 318n.

vary from language to language, symbol system to symbol system, and this is why "if the system is essentially changed, [logical principles] will be quite different." (2:599) However, the varying expressions of these principles all alike express the same facts, viz. those such as are presupposed in all discourse.[19]

What are these facts? Regarded in the most formal way they are, I believe, what Peirce tried to epitomize in his many statements of the fundamental and generic triadic representation relation. Since the representation relation and its connection with inference will be discussed in some detail in the next chapter, let me simply state at present what I believe that connection is supposed

---

[19]"A logical principle is said to be an empty or merely formal proposition, because it can add nothing to the premisses of the argument it governs, although it is relevant; so that it implies no fact except such as is presupposed in all discourse, as we have seen in section 1 that certain facts are implied." (3.168) This was quoted earlier in the text above, but with the final clause of the last sentence elided. If we turn to section 1 of that article we find Peirce giving a physiological version (in terms of nervous action, etc.) of the doubt-belief theory of inquiry. Since there will be no direct consideration here of the doubt-belief theory, as such, I treat the presupposed facts to which Peirce alludes only in their most formal way. My assumption is that the doubt-belief theory is translatable into formal talk in terms of the generic sign-relation. I hope to be able to show how this is to be done at some later time, but it was not feasible to go into it here. I might point out, however, that in 5.435 Peirce virtually identifies the pragmatic maxim with the dictum de omni. If the former can be taken as a kind of epitome of the doubt-belief theory, and if the latter is identified with the generic sign relation (which is what I assume in what follows above), then my interpretive strategy here must be correct, at least in a general way. I have no doubt that it is. But the relation between the doubt-belief theory and the semiotic theory is terra incognita as far as Peirce scholarship goes at this time, and I have to bridge this gap here by a rather large assumption.

to be. It is, namely, identity: Peirce intends to identify representation and inference. A strong hint that this is so can be gotten by noting a certain prima facie formal similarity between the traditional nota notae inference principle and some of his characterizations of the sign relation, such as the following one:

> [A sign is] anything which, being determined by an object, determines an interpretation to determination, through it, by the same object. (4.531)

Nota notae est nota rei ipsius: the mark of the mark is a mark of the thing itself; the sign of the sign is the sign of the object itself; the predicate of the predicate is a predicate of the subject. Peirce indicates in several places that he regards the nota notae as the generic inference principle.[20] Further, he identifies this with the dictum de omni (4.77), and with what De Morgan called the principle of the transitiveness of the copula. (2.591-92) The latter is in turn identified with the illative relation (3.175), and this, again, is explicitly said to be the "primary and paramount semiotic relation." (2.444n1) I suggest, therefore, that all of Peirce's statements of the representation relation may thus be taken as so many variant expressions of what he understands to be expressed by the nota notae, the dictum de omni, the notion of the transitivity of the copula, or the principle of illation.[21, 22]

---

[20] See esp. 5.320 and 3.183, but see also 2.590-92, 3.166, 4.76, and 4.561n1.

[21] Some other passages relevant here are: 2.604 2.365, 2.369, 2.710, 4.79, 5.320, and esp. 6.320

The formal predicate of every argument -- the generic logical leading principle -- is thus the fundamental semiotic or representation relation. This relation will be discussed directly in the next chapter.

Let us now consider the distinction between what Peirce, following the medieval tradition, called "logica utens" and "logica docens." According to Peirce, reasoning is essentially a self-controlled, self-conscious, or reflexive active.

> Now a person cannot perform the least reasoning without some general ideal of good reasoning; for reasoning involves deliberate approval of one's reasoning; and approval cannot be deliberate unless it is based upon the comparison of the thing approved with some idea of how such a thing ought to appear. Every reasoner, then, has some general idea of what good reasoning is. This constitutes a theory of logic: the scholastics called it the reasoner's logica utens. (2.186)

Logica docens, on the other hand, is a theoretical logic, i.e. the theoretical development of what is only implicitly

---

In the latter he states that the dictum de omni is "essentially the pattern of reasoning itself."

[22] I think it is important to look at this from the right direction, so to speak. Rather than starting with an assumption about what the nota notae or dictum de omni mean and then understanding Peirce from that, we should rather assume that Peirce was as competent as anyone to understand what these dicta mean and that they are to be understood from an understanding of Peirce. That is, this is the point of view we should take as interpreters of Peirce. In any case, the identification should be taken as suggestive rather than as definitive at this point. It would probably be more correct to say that the basic semiotic relation is a generalization from the nota notae and cognate principles. But then everything hinges on what these principles mean to begin with, and this is surely a moot point. In any case, the next two chapters will be concerned with discussing, in part, what these principles mean for Peirce.

involved in one's logica utens.[23] There is a close connection between one's logica utens and the material leading principles which one accepts, and between logica docens and logical leading principles of inference. Peirce's point is that to reason at all is to recognize a conclusion as a conclusion from some premisses, and hence to recognize that there is some more general principle which warrants the acceptance of the one on the basis of the acceptance of the other. Thus, if I reason from the fact that Socrates is a man to the fact that he is mortal, then it is a reasoning insofar and only insofar as I recognize that this transition is warranted by some more general principle, such as e.g. that all men are mortal. The proposition "All men are mortal", accepted as a basis for such thought-transitions is a material leading principle and is ipso facto a part of my logica utens. A logica docens develops, however, only insofar as one tries to get clearer on precisely what is involved in taking such material propositions as leading principles. Thus I accept, say, Socrates' mortality as a fact on the basis of the fact that he is human. But what is it to accept one fact on the

---

[23] "In all reasoning . . . there is a more or less conscious reference to a general method, implying some commencement of such a classification of arguments as the logician attempts. Such a classification of arguments, antecedent to any systematic study of the subject, is called the reasoner's logica utens, in contradistinction to the result of the scientific study, which is called logica docens." (2.204) For an interesting discussion of this distinction, within the scholastic framework, see The Material Logic of John of St. Thomas, pp. 47-59.

basis of another? It is to assume that there is some further fact relating those two facts in some way which I also accept as a fact, e.g. it may be the fact that whatever is human is mortal. This further fact need not be that particular fact just named; it could be any fact which I conceive (rightly or wrongly) to in some way constitute a basis for acceptance. But the very notion of "basis for acceptance" implies that there is some further fact of this sort. I thus have a logica utens precisely insofar as I have any awareness that I accept some facts as providing a warrant in this way. But now I may go further and ask what justifies my -- or anybody else's -- logica utens; which is to say, I may ask why the acceptance of a general fact such as that all men are mortal should warrant the acceptance of some particular person's mortality on the basis of the acceptance of their humanity. This is the theoretical step which constitutes the begining of the development of a logica docens, and what it seeks to formulate are the logical leading principles implicit in the material principles.

The development of a logica docens thus presupposes the acceptance of some logica utens, though not any particular one. Perhaps an analogy could be made here with, for example, the relation between microscopic physics and the domain of macroscopic objects. Clearly, the physicist cannot deny the existence of the macroscopic domain from which he necessarily sets out and which in some sense constitutes his ultimate subjectmatter, regardless of what the

character of the microscopic structures which he discovers may turn out to be. Thus, for example, he cannot deny the existence of the macroscopic objects which function as his instruments (e.g. his microscope) in favor of the microscopic entities which these very macroscopic objects reveal to him. On the other hand, it does not follow (as some might have it) that all the physicist is concerned with is macroscopic objects as macroscopic; nor does it follow that his theoretical inquiries cannot alter in important ways his conception of macroscopic objects. The case is similar with the theoretical logician. The subjectmatter with which he begins is necessarily some logica utens or other, and the results of his inquiry cannot possibly bring into question the assumptions implicit in any logica utens as such, since that is precisely what he is inquiring into. It can, however, eventuate in a reformed conception of what any given logica utens is. More generally, the logician doesn't invent his subjectmatter; he articulates it -- as does any scientist.[24]

A final matter which I wish to consider briefly in this chapter is the fact that Peirce holds that, although all thought is inferential, not all inference is reasoning. Reasoning is self-critical inference; it is the self-defense of inference, as it were; but not all inference involves

---

[24]Or, in John Locke's famous phrase: "But God has not been so sparing to men to make them barely two-legged creatures, and left it to Aristotle to make them rational, . . ." An Essay Concerning Human Understanding, ed. A. C. Fraser (New York: Dover Publications, Inc., 1959), Vol. II, p. 391.

this. Another way of putting this is to say that reasoning is conscious inference and that there is also such thing as unconscious inference.[25] Now, from the logical point of view, the notion of unconscious inference (i.e. inference which is not reasoning) is, I believe, not distinct from the notion discussed earlier in this chapter that, while all thought need not actually be evaluated in terms of evidence for its claim, there is nevertheless no thought which in principle could not be. This is, as it were, the pragmatic import (in the logical sphere) of the notion of unconscious inference. There is, however, another point which I think should be borne in mind in this connection, though I do not recall Peirce himself ever discussing it. This is the fact that we are not necessarily aware, at any given time, of all of our reasonings. That is, while our logical theorizing begins with the acceptance of an existent logica utens, we are not necessarily able to produce and formulate the complete contents of it. For what is that content except all of those general beliefs which we hold which we are willing to utilize as material leading principles in the acceptance of further beliefs?

---

[25] "Reasoning, properly speaking, cannot be unconsciously performed. A mental operation may be precisely like reasoning in every other respect except that it is performed unconsciously. But that one circumstance will deprive it of the title of reasoning. For reasoning is deliberate, voluntary, critical, controlled, all of which it can only be if it is done consciously." (2.182) The rest of this paragraph and several following ones are especially worth consulting here. See also 2.773, 4.476, 5.108, 5.181ff, 5.194, 5.440, and 7.444-50.

69

In order to be a part of our logica utens a given belief must be recognized as such and accepted as a possible justifying principle; but it is one thing to recognize and utilize a given belief in this way at one time, and it is quite another thing to be able, at some given time, to be aware of all of the beliefs which we would, at some time, so recognize and so utilize. In brief, our logica utens cannot be supposed to be identical with what we suppose it to be at a given time. This is simply another way of saying that we really have no certain way of knowing at any given time how much of our experience does involve reasoning. Hence, I think we should distinguish between unconscious inference and unconscious reasoning. By the former would be meant judgments which, while not in fact reasonings, must nevertheless be regarded -- if they are to be logically regarded at all -- as potential conclusions. By the latter would be meant reasonings which we are not, upon some given occasion (e.g. upon some later reflection), aware of as having been reasonings. The reason for suggesting this distinction is that it might prove useful in dealing with such matters as, for example, the inferential character of perceptual judgments. The distinction is not essential for our purposes here, however.

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

---

[1]Murray 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.

[2]In 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.

[3]Peirce 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

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.

[4] Peirce 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.

73

> 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-

---

[5]This 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.

74

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 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

---

[6] I 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.

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

---

[7]The 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

---

[8]It 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 "psychologistic," 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 <u>being</u> 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 <u>somehow</u>."[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 <u>mediate</u> 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-

---

[9]Murphey, 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

---

[10]Spatio-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)

[11]The 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]

---

[12]Peirce 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)

[13]P. 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 <u>is</u>, I believe, primarily logical in character. And the point is the same as that which he raises again in "Some Consequences of

---

[14]Note 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]

---

[15] A69-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 ("supposited 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, "first-ness"): "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),

---

[16] I 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 stoveness. Yet the predication is not supposed to be "Stoveness 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

---

[17]The 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

---

[18]Peirce 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

(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 <u>other</u>, so to speak) the notion of Ajaxness must be introduced <u>as</u> 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

---

[20]Willard 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

---

[21]The 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:

M is P
S is M
∴ S is P

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

---

[22]This 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 an other 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 Interpretant

A. 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

---

[1] See Chapter I, footnote 7.

[2] William 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

---

[3]For 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 omnicompetence 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 paper[4] 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

---

[5]See 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

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

112

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

---

[6]Thomas 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.

113

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 <u>validity</u> of a hypothetic inference <u>as</u> 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

114

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 hypothetic 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

15

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

116

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

18

> 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

---

[7]See 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 συγκεκυμένα) which is clearly 'first for us, within which we distinguish principles, causes and elements.' Dewey's term for οὐσία 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."

19

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

---

[8] Critique 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

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

---

[9] Gesammelte 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 <u>my</u> 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

25

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

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

---

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

[13]Ibid., 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: 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

---

[14] In 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,

---

[15]See 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.

[16]Peirce 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.

30

> 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 leat, 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,

---

[17] The 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

---

[18]This 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 <u>determine</u> the interpretant to the triadic relation. The sense in which it <u>brings it into</u> 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 <u>is</u> 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 <u>some</u> conception. Now, according to Peirce's analysis, the

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

---

[19]That 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.

CHAPTER VI

THE ICONIC SIGN

In this and the following two chapters I shall discuss Peirce's major trichotomy of signs into icons, indices, and symbols. This particular division of signs has a special relevance to the central point of view taken in this study, viz. that the idea of a sign is the idea of manifestation, inasmuch as these three kinds of signs are the three most general modes of manifestation. My object will not be to try to give a definitive account of this distinction, but rather to try to elicit some of the philosophical motivations underlying it. Needless to say, Peirce did not arrive at this distinction -- or any other -- simply by considering all manner of signs and noting that they happen to fall into three such classes. Points of fundamental logical (i.e. epistemological) importance lie behind it, and require to be brought out before any real sense can be made of it. There has so far been little attempt on the part of Peirce scholars to elicit any philosophical sense from it, the usual interpretive strategy being to collate a number of prima facie incompatible statements and conclude that, as usual, Peirce was hopelessly confused.[1] This fact may justify the somewhat speculative

---

[1]A happy exception to this is John Joseph Fitzgerald's

approach which I take to the topic here. I have not attempted a close integration of the material in this part of the study with the discussion in the first part. My interpretation of the generic relation and my interpretation of the icon-index-symbol distinction were developed somewhat independently, and the links between the two are not yet sufficiently clear to me to warrant attempting to bring them tightly together here. I suppose them to be compatible, of course; otherwise there would be no question of including them as parts of the same work. I should also add that I presuppose, as in the first part, a certain minimal acquaintance with Peirce in order to avoid repeating points long since grown trite in the secondary literature.

Within the scholastic logical tradition, from which Peirce derived so many of the elements of his thought, a distinction is sometimes made between two sorts of signs: instrumental signs and formal signs.[2] The latter sort,

---

discussion of the trichotomy in his dissertation "Peirce's Theory of Signs as the Foundation for his Pragmatism," Tulane University, 1962. Fitzgerald does not approach the problem of interpretation as I do here, but he does approach it on the assumption that Peirce may have had a modicum of self-critical ability, after all. Fitzgerald's discussion renders all previous one obsolete, in my judgment. (It may be heresy to suggest it, but perhaps if more students of Peirce could be persuaded that a critical study doesn't have to be a refutation more headway might be made in understanding Peirce.)

[2]This distinction is apparently due, under these labels, to John of St. Thomas (to whom reference was made in Chapter II, footnote 33). The distinction is made in his Outlines of Formal Logic, pp. 31-32, and is discussed in Question 22, articles 1-4, of Part II of the Ars Logica.

the formal sign, exhibits what I believe to be a significant analogy, at least in regard to underlying philosophical motives, with Peirce's notion of the iconic sign. Perhaps by considering these philosophical motives, with awareness of the historical origin of the notion itself, we can get an insight into the real philosophical import of the notion of the iconic sign. I should stress, though, that what is said here of the formal sign is not to be taken as ipso facto true of Peirce's notion. The comparison is primarily for purposes of suggestion. Now, the motivation for the notion of the formal sign is to be found in the standing problem for representative theories of knowledge generally (of which a semiotic theory like Peirce's may be considered a peculiar species,) viz. solipsism or scepticism arising out of the fact that the posited representation ("idea," "sign") tends -- to put the matter somewhat crudely -- to get in the way of knowing that thing which it is supposed to be the very means to knowing. (A

This part of the Ars Logica has been partially translated in The Material Logic of John of St. Thomas, but Question 22 is not included in this. However, there is some discussion of the nature of signs in the part of Question 21 which was translated (see pp. 388-404 of The Material Logic). For an interesting contemporary discussion of this issue see Jacques Maritain's "Sign and Symbol," in his Redeeming the Time (London: The Centenary Press, 1943), and see also his The Degrees of Knowledge (New York: Charles Scribner's Sons, 1959), esp. pp. 119ff and pp. 387-417. Maritain argues, with the help of a battery of quotations from Thomas Aquinas, that the distinction in question is definitely in the writings of the latter, though it was apparently John of St. Thomas who articulated it in a systematic way. In any case, it is closely connected with the notion of the "mental sign," as will be discussed shortly above, and the latter is unquestionably present in the writings of the medieval logicians.

mention of the name "John Locke" should be sufficient to indicate what is meant here.) Let us see how this problem develops.

The fact of possible deception and error, especially in the case of perception, seems to require the abandonment of "naive realism" in regard to the direct object of cognition: what appears to be the object cannot in general be identified with the object itself since these appearance sometimes fail to be veridical. Hence, the appearance is called an "idea" ("representation," "sign") and it is supposed that our knowledge of an object is always by means of or via an appearance or idea of it. A three-element distinction is thereby set up consisting of knowing mind, (putatively) known object, and intervening or intermediating idea through or by means of which the knowing mind is connected with the known object. The problem then arises as to how the knowing mind manages to get "past" the intervening idea, or can know that there is anything "past" it. The intervening idea may then come to assume the status which the object itself had on the level of "naive realism," and the supposition that there is some further object beyond the idea becomes quite gratuitous. The transcendant object becomes a je ne sais quoi or Ding an sich playing no real cognitive role. Note, however, the assumption -- or rather one of the assumptions -- that produces this, viz. that the idea or representation must be itself an object of knowledge cognized independently of and prior to the

cognition of the object. Given the other assumptions -- that all cognition is through ideas or representations and that the object is always other than the idea of it -- this assumption invariably yields the familiar sceptical or solipsistic result.

In the light of this, consider the following characterization of the distinction between the formal and the instrumental sign:

> An instrumental sign cannot signify, i.e. lead to the knowledge of something distinct from itself without first being, in its own right, an object of knowledge. A formal, or intentional, sign is one that leads to the signified without first playing the role of known object.[3]

The notion of the formal sign is obviously introduced precisely to replace the trouble-making assumption noted above and to make it possible both to retain a general representative approach to cognition and to make it possible to assume direct accessibility of the object in spite of that. Of course, one may well wonder whether the notion of a formal sign as "one that leads to the signified without first playing the role of known object" makes any sense to begin with. Prima facie it seems not only to be ad hoc -- which it is -- but also contradictory of the very notion of a sign. For surely (one might say) the signifying or representative capacity of a sign or idea would be a function of some character which it has, and therefore it must surely be known first as having that character in order to

---

[3]This is from an editor's footnote in The Material Logic of John of St. Thomas, pp. 612f.

be taken in that character as significant or representative of something else. That is, it would seem that a sign must, by the very notion of a sign, be instrumental in the sense that this is defined in the above quote.

But there is more to the notion of the formal sign than this. For the formal sign is also what the scholastics sometimes called the "mental sign" (or "concept"), a notion which can be traced back to the following important passage in Aristotle's De Interpretatione (generally taken as canonical in scholastic semiotic):

> Words spoken are symbols or signs of affections or impressions of the soul; written words are the signs of words spoken. As writing, so also is speech not the same for all races of men. But the mental affections themselves, of which these words are primarily signs, are the same for the whole of mankind, as are also the objects of which those affections are representations or likenesses, images, copies.[4]

It may seem rather a naive doctrine to say that written signs are signs of spoken signs, and spoken signs are signs of mental signs. In respect to written signs being signs of spoken signs this is possibly so, though it is not so much a matter of naivete as it is of logical irrelevancy. In Aristotle's time the written word usually was translated directly into the spoken word by being read aloud, and this is presumably the fact which this notion obliquely records. But this historical linguistic fact would seem

---

[4]Trans. H. P. Cooke, p. 115 (16a3-7). See also William of Ockham, Philosophical Writings, trans. Philotheus Boehner (Indianapolis: The Bobbs-Merril Co., Inc., The Library of Liberal Arts, 1964), pp. 51-53, where this passage is taken as canonical, with a reference to Boetheus' commentary on De Interpretatione.

to have no essential bearing on logical considerations. However, this particular notion does not, so far as I know, have any real logical importance in the later tradition, anyway, and it may be ignored here. But the notion that the spoken (or written) word is a sign of the mental sign, rather than directly of the object itself, is not at all naive if one recalls what the nature of mind is, on Aristotle's view. According to the doctrine of De Anima, mind is that which is capable of becoming all things: mind as actualized in cognition is identical with its object. The identity here is a formal one, however: that with which the mind or soul becomes identical in cognition is the form of the object.[5] Now, complications would arise here for any adequate historical account of what this involves (e.g. because of the necessity of distinguishing between sense and intellect), but I think it is fairly clear what the general connection of this notion of mind is with the doctrine of mental signs as in the above quote, viz, the notion of the spoken sign as signifying directly the "impression of the soul" is to be construed as the signification of the very form of the object itself.[6] This is what would seem to be implied by the conjunction of the doctrine of De Anima with that of

---

[5]See Aristotle, De Anima, Book III, Chapters 4-8.

[6]This is, of course, where the "problem of universals" arises, the various solutions to this being in part a matter of how the formal identity between mind and object is treated at this juncture.

De Interpretatione. And, if this is correct, then of course it is not accidental that these mental signs or affections are, as Aristotle says, "representations or likenesses, images, copies," of natural objects, since they are indeed formally identical with them. However, it is also essential to bear in mind that the mental sign is nevertheless not existentially identical with its objects, for the objects as existents are singular composites of form and matter.

It can be seen, then, that the motivation (as discussed above) for recognizing the existence of non-instrumental signs, when conjoined with the notion of a sign which can be identified with the very form of the object itself without being materially identical with it, is capable of yielding a doctrine of formal signs which is, at any rate, not obviously self-contradictory and which could have considerable potential for development, provided an Aristotelian view of mind is consistently retained. With the later development of the doctrine of the formal sign we are not concerned, but I believe that we get here a very suggestive glimpse of the philosophical motives for Peirce's notion of the icon or iconic sign -- though, to repeat, the formal or mental sign and the iconic sign are not simply to be identified. However, the notion of the iconic sign involves a generalization in Peirce which does not, so far as I know, have any historical precedent, and which alters its import radically. For the iconic sign is simply anything whatsoever which is like anything else

and which functions as a sign on that basis. Thus Peirce says:

> Anything whatever, be it quality, existent individual, or law, is an Icon of anything, in so far as it is like that thing and used as a sign of it. (2.247)

In general, an icon is defined as a sign which is related to its object in virtue of a similarity, likeness, resemblance, or analogy with it.[7] And, in fact, Peirce's original term for this sort of sign was "likeness" (1.558); though of course "icon" is derived from a Greek word for "likeness," in any case.

Now Peirce makes a distinction which I think clarifies the import of this notion greatly, viz. the distinction between a sign which is an icon and a sign which is iconic. Thus he says that "a sign by Firstness [i.e. an icon] is an image of its object and, more strictly speaking, can only be an idea." Omitting the reason he gives here, which would take us afield, he then goes on to say:

> But most strictly speaking, even an idea, except in the sense of a possibility, or Firstness, cannot be an Icon. A possibility alone is an Icon purely by virtue of its quality; and its object can only be a Firstness. But a sign may be iconic, that is, may represent its object mainly by its similarity, no matter what its mode of being. If a substantive be wanted, an iconic representamen may be termed a hypoicon. Any material image, as a painting, is largely conventional in its mode of representation; but in itself, without legend or label it may be called a hypoicon. (2.276)

And in another place, Peirce says:

> An icon is a representamen of what it represents and

---

[7] See 1.369, 1.558, 2.276, 2.255, 3.362, 3.641, 4.368, 4.531, 5.74, 6.471, 8.119.

> for the mind that interprets it as such, by virtue of its being an immediate image, that is to say by virtue of characters which belong to it in itself as a sensible object, and which it would possess just the same were there no object in nature that it resembled, and though it were never interpreted as a sign. It is of the nature of an appearance, and as such, strictly speaking, exists only in consciousness, although for convenience in ordinary parlance and when extreme precision is not called for, we extend the term icon to the outward objects which excite in consciousness the image itself. (4.447)

Dispensing with the term "hypoicon" in favor of "iconic sign," I suggest that the import of this distinction is as follows. Strictly speaking, an icon is any pure qualitative form (firstness) insofar as it figures in cognition as form of a cognized object. Since the object of a pure icon "can only be a Firstness," it would seem to follow that there is in fact no distinction between a pure icon and its proper object except insofar as the latter may contain formally more than the former; for insofar as the icon is iconic with that object it in no way differs from it in that respect in which it is iconic with it: sign and object here become merged, just as in the case of mind and object (in its formal aspect) in the Aristotelian epistemology. However, any given entity functioning as a sign may do so in virtue of its formal character and may be called an iconic sign for that reason. But in every case of an iconic sign relation there will be a point of formal identity -- i.e. there will be a pure icon in common to the terms of the sign relation -- which constitutes the similarity or "iconicity" which grounds that relation.

A further distinction which may and I think should be made here is that between a potential sign and an actual sign. "Potential" can profitably be thought of here in terms of the older meaning of "virtue," i.e. that expressed by the Greek word "arete." An actual sign is one which is actually functioning as a sign; but a potential sign is one which has whatever character or "virtue" it is which enables it to perform that function, regardless of whether it does or ever will actually perform it.[8] This distinction is implicit in many places in the Collected Papers and is substantially explicit in the following passage:

> . . . while no Representamen actually functions as such until it actually determines an Interpretant, yet it becomes a Representamen as soon as it is fully capable of doing this; and its Representative Quality is not necessarily dependent upon its ever actually determining an Interpretant, nor even upon its actually having an Object. (2.275)

Applying this especially to the case of the iconic sign, it will be noted that this implies that everything whatsoever, insofar as it is like anything else, is a potential iconic sign. And this means that everything is a potential iconic sign, since everything is always at least like itself. This is, I think perfectly consistent with Peirce's intent and is not to be taken as a reductio ad absurdum of it. On the other hand, everything is not an actual

---

[8] Fitzgerald (see footnote 1, this chapter) notes this distinction, using the terms "potential" and "actual" for this purpose (see p. 52 of his study). I was inclined to use the word "virtual" instead of "potential," but Peirce's discussion of the term "virtual" (6.372) made this seem inadvisable.

iconic sign since, in order to be such, it must be so interpreted.

In the light of the foregoing, I would suggest that so long as one has mainly in mind, as instances of icons or iconic signs, such things as maps, portraits, diagrams, and the like, one may be missing what is the most important point to the notion of the icon or iconic sign, viz. that it enables Peirce to combine a doctrine of representative cognition with a doctrine of immediate perception of the cognized object. Perception can be regarded as representative because of the fact that the object appears under a form which (qua form) cannot be materially identical with the object perceived, and which may in fact be representative of any number of different individual objects; but it can be regarded as immediate because -- if the perception is veridical -- the form under which the object appears is its very own form, i.e. is precisely the form which it does in fact embody.[9] Thus the immediate sensory perception of an object would be a special case of an entity, A, being an iconic sign of an entity, B, viz. that case where A and B are in point of fact not only formally but materially identical,

---

[9]In the "New List" Peirce says that, in the case of the icon ("likeness"), "the relate and correlate are not distinguished." (1.558) That is, the term identifying the subject of predication (i.e. the object term) and the predicated term would here be formally, though not functionally, identical. This is the point that would have to be followed up in integrating the discussion in this chapter with the account of the generic sign relation.

i.e. the case where the perceived object, B, is an iconic sign, A, of itself. The notion of the iconic sign thus serves the same epistemological function as the scholastic formal sign, but it does not require the dubious assumption that it somehow functions as a sign without being known. Maritain remarks that the formal sign is "known not by 'appearing' as an object but by 'disappearing' before the object."[10] No such miraculous property need be ascribed to the iconic sign since it is capable of appearing as the object.

On the other hand, the logical character of such things as maps, diagrams, portraits, etc., can be thought of in a new light from this point of view. Peirce remarks of a pure icon that it

> . . . does not draw any distinction between itself and its object. It represents whatever it may represent, and whatever it is like, it in so far is. (5.74, italics mine)

And, in another place, he says:

> Icons are so completely substituted for their objects as hardly to be distinguished from them. Such are the diagrams of geometry. A diagram, indeed, so far as it has a general signification, is not a pure icon; but in the middle part of our reasonings we forget that abstractness in great measure, and the diagram is for us the very thing. So in contemplating a painting, there is a moment when we lose the consciousness that it is not the thing, the distinction of the real and the copy disappears, and it is for the moment a pure dream -- not any particular existence, and yet not general. At that moment we are contemplating an icon. (3.362)

I would understand the import of this to be that the

---

[10] Redeeming the Time, p. 196.

distinction between a schematic or iconic representation of an object and actual and immediate sensory perception of it is not a distinction which can be made from a purely formal point of view. That is to say, if I am studying a schematic or iconic representation of an object then, to the extent that I abstract from all characters of that sign in which it differs from the object itself, I am perceiving the very object itself (in its formal aspect) quite as immediately and directly as I would be if I were in direct sensory contact with it and abstracted in that perception from every feature of it in which it differed from the iconic sign in question. This is a tautology, but it is an interesting and enlightening one, since it leads us to recall that perception is always schematic in character, in any case. We never perceive, at any given time, more than an extremely limited selection of the formal aspects of the object perceived: the individual object is always something the formal aspects of which are far greater than is manifest in any given perception or even in any finite number of perceptions. Hence, the difference between an actual perception of the object itself and the perception of it <u>via</u> an iconic representation is at best merely one of degree of completeness of formal representation, so long as we keep to the purely formal point of view.[11]

---

[11]Consider the case of television (or the movies) where the iconic sign on the screen is at least theoretically capable of being fully as rich and complete in formal content as would be the perception of the same event by the unaided eye. Indeed, there is no logical reason for not

Or, to put it another way, the difference between an iconic sign which is other than the object of which it is a sign and an iconic sign which is not other, i.e. which is that very object itself, is not a distinction which can even be drawn in any general way insofar as one regards the sign strictly in its iconic character.

Let us go a step further and consider the difference between actual perception and imagination. Much the same points would hold here as above. There is no way, on the purely formal level, in which one can make the distinction between the imagined event and the directly experienced one (though it may in fact be the case that the imagination of the event is normally -- though not necessarily -- somewhat thinner in formal content than any corresponding perception of the same event would be). This is of paramount importance for Peirce in connection with his doctrine of diagrammatic or schematic reasoning such as is typified par excellence by mathematical reasoning, but which he extends to cover cases of reasoning

---

treating the complex system composed of the nervous system, optical apparatus, and the television apparatus as one single physical system, and saying that we perceive the object via the television quite as directly as we would if it were via only the optical and nervous apparatus. What warrant is there, from a logical point of view, for distinguishing between one physical means and the other? One can even imagine future technological developments which would be such that the eyeballs were replaced by small television receivers so connected with the optical nerves as to produce precisely the visual effects that one would otherwise get by means of the eyeballs. Why not say, in such a case, that the person directly perceives the objects which are transmitted televisually?

not usually thought of as mathematical. For example, in the following quotation Peirce is explaining why he says that semiotic is the "quasi-necessary or formal" doctrine of signs, but the example he uses is drawn from the sphere of moral deliberation:

> By describing the doctrine as "quasi-necessary," or formal, I mean that we observe the characters of such signs as we know, and from such an observation, by a process which I will not object to naming Abstraction, we are led to statements, eminently fallible, and therefore in one sense by no means necessary, as to what must be the characters of all signs used by a "scientific" intelligence, that is to say, by an intelligence capable of learning by experience. As to that process of abstraction, it is itself a sort of observation. The faculty which I call abstractive observation is one which ordinary people perfectly recognise, but for which the theories of philosophers sometimes hardly leave room. It is a familiar experience to every human being to wish for something quite beyond his present means, and to follow that wish by the question, "Should I wish for that thing just the same, if I had ample means to gratify it?" To answer that question, he searches his heart, and in doing so makes what I term an abstractive observation. He makes in his imagination a sort of skeleton diagram, or outline sketch, of himself, considers what modifications the hypothetical state of things would require to be made in that picture, and then examines it, that is, observes what he has imagined, to see whether the same ardent desire is there to be discerned. By such a process, which is at bottom very much like mathematical reasoning, we can reach conclusions as to what would be true of signs in all cases, so long as the intelligence using them was scientific. (2.227)

I quote that particular passage, and at some length, in order to indicate how broadly Peirce construes the nature and function of imaginative or diagrammatic reasoning. What is of special importance here for our present purpose is that it is precisely the fact that the "skeleton diagram or outline sketch" (the iconic sign) is formally identical

with the actual state of affairs which it represents which gives validity to the use of the imagination in all scientific theorizing, in practical deliberation, and, of course, in mathematical reasoning. To be sure, it is also essential that the imagined schema can in fact be correctly identified as in iconic relation to some given state of affairs. But the point is that, to the extent that it can be so identified, precisely to that extent the results of the observation of the icon which it embodies necessarily holds of that given state of affairs, and the direct perception of that actual state of affairs would not as such further in the least the conclusions drawn from observation of the icon.[12] Thus, to use Peirce's example, if I go out and actually acquire the means to gratify the wish in question I am not therefore in any better position to determine whether the desire is still present, provided my imagination of having the means was sufficiently like the state of affairs in which I actually have the means. Of course, in practical matters the imagination may often or usually be inadequate; but in respect to scientific and mathematical reasoning it will often in fact be more effective precisely through the elimination of the irrelevant.

In general, the point here is that, insofar as one is concerned with those characteristics of a thing

---

[12]It would verify the conclusions, of course, but that is not the point here.

which are independent of time and place and thus capable of being manifest or apparent in many different material embodiments (which is what is meant here by "formal" characteristics), the distinction between sign and object falls away except insofar as the sign does in fact fail to stand in a relation of formal identity to the object in some way relevant to the concern in question: insofar as the iconic sign is iconic with the object it is the object. The case of immediate perception of the object by way of direct sensory contact is thus, in fact, simply a special case of immediate perception, requiring a special account of what is meant by "sensory contact," but not requiring any special account of the "immediacy." For one perception of the object through an iconic representation of it is as immediate as any other insofar as it is a matter of perception of formal character. This implies a radical shift in the center of gravity of the problem of perception from "How do we get direct access to the object?" to "How do we distinguish direct sensory access from other modes of access (e.g. through imagination, memory, copies, pictures, maps, diagrams, etc.)?" In any case, this is what appears to me to be the central epistemological significance of the notion of the iconic sign: its function is to present the very object itself in its formal respects, and its enabling virtue consists in its formal or iconic identity with it.

CHAPTER VII

THE SYMBOLIC SIGN

The symbolic sign is, as Peirce says, the only general sign,[1] and I should like to discuss this type of sign primarily in terms of the traditional problem of accounting for generality. As with the discussion of the iconic sign, the intent here is not to give a comprehensive account of Peirce's notion of a symbol, but rather to probe for a connection with familiar philosophical issues.

Peirce makes an important distinction between objective and subjective generality. Objective generality is referential generality, i.e. the capacity of a thing to represent a plurality of objects. Subjective generality might conveniently be called entitative generality in order to indicate that it qualifies the mode of being of a thing. A thing is entitatively general if its mode of being is not that of an individual. (5.429, cf. 1.420) The latter may in turn be divided into what I shall call qualitative and nomic generality. Qualitative generality is "of that negative sort which belongs to the merely

---

[1] That the symbol is general: 1.369, 1.558, 2.292, 2.341, 3.360, 4.56, 4.395, 4.447f, 4.544, LW 24. That it is the only general sign: 3.363, cf. 1.372

potential, as such, and this is peculiar to the category of quality." Nomic generality is "of that positive kind which belongs to conditional necessity, and this is peculiar to the category of law." (1.427) I know of no further way to characterize these two types of entitative generality, other than to note that they correspond to Peirce's "firstness" and "thirdness," but the distinction might be illustrated as follows. On the one hand, it makes no sense to ask "Where and when is redness?", and redness (the form, quality, firstness) is general for precisely that reason. On the other hand, it does make sense to ask where and when something is red; but to such a question two answers might be forthcoming. One might say "This, here and now, is red," and that which is denoted would be individual and thus non-general. Or one might say "Something (i.e. anything) is red whenever and wherever such-and-such conditions obtain," and this answer would make no reference to any individual thing, but would denote rather a regularity or class of cases of which it would be true to say of any given one "This, here and now, is red," that class being defined by the specified conditions. In this case, what is denoted would be nomically general. We have, then, the following modes of generality:

(1) objective or referential

(2) subjective or entitative

(a) qualitative

(b) nomic

The symbolic sign is both referentially and entitatively general, and its entitative generality is of the nomic sort.

With these distinctions in mind, I should like to begin with a discussion of the problem of referential generality in the historical context of a certain familiar, post-medieval sequence of development of this problem.[2] The sequence in question begins with John Locke's attempt to explain the generality of words by saying that words become general when, by a "voluntary imposition," they are made to stand for, mark, or signify a general idea.[3] The generality of ideas is, in turn, accounted for by the notion of abstraction; that is, an idea -- always entitatively particular or individual -- becomes referentially general when it is shorn of or abstracted from "the circumstances of time and place, and any other ideas that may determine [it] to this or that particular existence."[4] Locke conceives of this abstracting process as a "leaving out" of individual peculiarities, so that what remains of the idea is that which is common to many particular ones.[5] The generality of the abstract idea is then apparently

---

[2]The relation between Peirce's theory of generality and medieval discussions of this topic has been covered, with special reference to John Duns Scotus, in John Boler's Charles Peirce and Scholastic Realism (referred to in Chapter II, footnote 17, of this study).

[3]An Essay Concerning Human Understanding, Fraser's edition, Vol. II, p. 8.

[4]Ibid., Vol. II, pp. 16f.

[5]Ibid., Vol. II, p. 18.

supposed to be a function of the fact that a number of more particular or less abstract ideas conform to it or agree with it in the abstracted feature which constitutes it, and also in virtue of the fact that it is given a name. Of course, there are a great many difficulties in Locke's account, and it is perhaps impossible to state it in an altogether coherent way once the distinction between entitative and referential generality is made; but the historically most important difficulty is that which is revealed in his famous admission that it does indeed "require some pains and skill to form [for example] the general idea of a triangle, . . . for it must be neither oblique nor rectangle, neither equilateral, equicrural, nor scalenon; but all or none of these at once."[6]

As will be recalled, this difficulty was emphatically granted by George Berkeley, who reported that he in fact found the performance impossible and opined that everyone else would find it equally so as well.[7] But then how can an idea attain generality if not through abstraction, and how can a word acquire generality if not through reference to an abstract idea? Berkeley is not altogether clear on this. The official formula is that words and ideas both acquire their generality by

---

[6] Ibid., Vol. II, p. 274.

[7] George Berkeley, A Treatise Concerning the Principles of Human Knowledge, Introduction, Sec. 10. See also Alciphron, or The Minute Philosopher, Dialogue VII, Sec. 6 of the first and second editions.

being made signs.[8] However, this in itself is no more than the point with which Locke began. The question is, how do they acquire their significative or representative character? In the case of words, the answer is that ". . . a word becomes general by being made the sign, not of an abstract general idea, but of several particular ideas, any one of which it indifferently suggests to the mind."[9] It would thus seem to be the suggestive power of the word which grounds its referential generality. Now while some of Berkeley's remarks indicate that he supposes that words and ideas are representative in the same way, it seems clear from his illustrations that some other factor is actually assumed to be operative in the functioning of the latter. Thus, in the case of the triangle:

> . . . though the idea I have in view whilst I make the demonstration be, for instance, that of an isosceles rectangular triangle whose sides are of a determinate length, I may nevertheless be certain it extends to all other rectilinear triangles, of what sort or bigness soever. And that because neither the right angle nor the equality nor determinate length of the sides are at all concerned in the demonstration. It is true the diagram I have in view includes all these particulars, but then there is not the least mention made of them in the proof of the proposition.[10]

Regarded in one way, it looks suspiciously as if Berkeley has simply reintroduced the abstract general idea, his protestations to the contrary notwithstanding:

---

[8]Principles, Introduction, Sec. 12. See also Alciphron, Dialogue VII, Sec. 7 of the first and second editions.

[9]Principles, Introduction, Sec. 11.

[10]Ibid., Introduction, Sec. 16.

> And here it must be acknowledged that a man may consider a figure merely as triangular, without attending to the particular qualities of the angles, or relations of the sides. So far he may abstract; but this will never prove that he can frame an abstract, general, inconsistent idea of a triangle. In like manner we may consider Peter so far forth as man, or so far forth as animal, without framing the forementioned abstract idea, either of man or of animal, inasmuch as all that is perceived is not considered.[11]

It is not difficult to imagine what Locke would have retorted to this. But there is another way of looking at the matter which contains the germ of a quite different doctrine. For when Berkeley says that "there is not the least mention made of [the irrelevant characters] in the proof of the proposition," he is implicitly shifting the generality function back to the word again. I find no indication that Berkeley himself followed this up, but if we turn to David Hume we get an idea of where this might lead.

In his chapter on abstract ideas in the Treatise, Hume states that he regards as "one of the greatest and most valuable discoveries that has been made of late years in the republic of letters" the view that:

> . . . all general ideas are nothing but particular ones, annexed to a certain term, which gives them a more extensive signification, and makes them recall upon occasion other individuals, which are similar to them.[12]

This "great discovery" he attributes to Berkeley. I believe that Hume is in fact reading something into Berkeley here, though the above remarks will indicate that this way

---

[11] Ibid.

[12] David Hume, A Treatise of Human Nature, ed. L. A. Selby-Bigge (Oxford, 1955), p. 17.

of shifting the generality of ideas back to the suggestive power of words could be said to be implicit in Berkeley's account. But, however this may be, Hume's account of the matter is as follows.[13] After seeing a resemblance among several objects (i.e. ideas)[14] we apply the same name to all of them. In doing this we acquire a "custom" or habit, which is an association between word and particular[15] ideas named by it. The name or general term is said by Hume to "express" the "compass of that collection" of ideas, which is to say that the meaning of the term is the class of all ideas (objects) which we in fact call by that name.[16] Then, upon hearing the name, or perhaps just in thinking it, the habit is activated in such a way as to produce in the imagination an idea which is part of the extension of the word. Now it is not made clear why one idea should be produced rather than another at any given time, but in order to understand why Hume gives the sort of account he does it is necessary to

---

[13] In what follows I condense the account which is to be found on pages 20-22 of the Treatise.

[14] "Object" and "idea" have to be used interchangeably in characterizing Hume's position.

[15] "Particular" and "individual" apparently are not distinguished in Hume's account.

[16] The "in fact" is important here, for it is clear that Hume does not want to posit any specifiable mutual resemblance among the members of that class, for that would send him right back to Locke's abstract idea. However, it would seem that Hume supposes an unspecified mutual resemblance. So far as I can determine, this matter was never clarified.

understand the special problem which is in the back of his mind. The problem seems to be this: How is it that we can have before our minds one idea, determinate in its characteristics, and can pronounce upon its character in such a way as to be entitled to suppose that our pronouncement holds true of all others of its sort? Thus, for example, in determining the properties of a triangle we consider some particular and determinate specimen, yet we suppose that what we discover about it applies truly to all triangles, even though there will be a great variety of differences among the various specimens falling within the "compass" or extension of the word "triangle." Hume's account is thus developed as a solution to this problem: once we pronounce generally upon the particular idea, the use of the general word activates the habit in such a way that, if there is any idea within its extension to which what we say does not truly apply, then that idea comes before our attention and we see that what we said of the first does not in fact apply to the present one; hence, that what we said is not true of triangles in general. The habit is not absolutely dependable of course. And this is how we account for the possibility of error in our general deliverances: we determine something about a particular idea, suppose it to be general, and the habit may fail to raise up the exceptional case to apprise us of our error.

Much more would have to be said if a criticism of

Hume's theory were in order here, but our purpose is not to evaluate the virtues and faults of Hume's account but rather to get clear on the different elements discriminated in his analysis. These are: (1) the various particular and differing but yet somehow resembling ideas; (2) the word, which has these differing but resembling ideas as its extension or compass; and (3) the habit of producing these ideas singly (and perhaps successively) whenever the word is heard or thought. Now I think it is clear that, whatever Hume's official pronouncements may be, the ideas are not general either in existence or function (i.e. neither entitatively or referentially general). It is rather the word which would properly be called (referentially) general, and it is such in virtue of the habit, i.e. the referential generality of the word consists in the fact that there is a habit of producing the ideas upon hearing the word. It should be noted further that there are, implicitly, two distinct senses of "meaning" which might be applicable here. On the one hand, the habit itself would be the meaning of the word or term. But, on the other hand, the particular ideas, taken distributively, could also each be regarded as a partial meaning of the word. The second could never be reducible to the first because the habit can never be equivalent to any finite or definite sum of individual ideas, for, as Hume himself says, "We seldom or never can exhaust these individuals."[17] (This is no doubt quite

---

[17]Hume says: ". . . 'tis certain that we form

inconsistent with the notion that we first collect the ideas and then apply a name, as Hume supposes at one point, for any such collection would be finite. But the inconsistency is not important for our purposes.) Note, then, that there is a definite implication that the referential generality of the word depends upon the entitative nomic generality of the habit; for the inexhaustibility of the individual ideas producible by the habit implies that the habit itself is not capable of being reduced to any finite determinate set of its own actualizations (i.e. productions of ideas). In brief, the habit must be an entitative general of the nomic sort, and this generality underlies the referential generality of the word.

Now in Kant's mooted and puzzling chapter on the schematism in the Critique of Pure Reason,[18] an analysis is put forth which bears a striking formal similarity to that of Hume, and which was written as if with Hume's chapter on abstract ideas in mind. I am referring here not to the doctrine of the transcendental schematism, but rather to paragraphs 6 and 7 of that chapter, where Kant discusses briefly the schemata for pure sensible concepts (e.g. that of a triangle in general) and empirical

---

the idea of individuals, whenever we use any general term; that we seldom or never can exhaust these individuals; and that those, which remain, are only represented by means of that habit, by which we recall them, whenever any present occasion requires it," p. 22.

[18] A137-47, B176-87.

sensible concepts (e.g. that of a dog in general). For our purposes we may conflate these two sorts of sensible concepts since we are concerned with points that apply to both. Kant there distinguishes between the image, the schema, the concept, and the schematism. The schematism is, I believe, simply the general schematic faculty, i.e. a schema is to the schematism as e.g. a concept is to the understanding. Therefore, we are concerned essentially with three factors: (1) the concept, which has a status in Kant's account similar to the status of the word in Hume's account, (2) the schema for that concept, which has a status similar to the habit in Hume's account; and (3) the image(s), which has a status similar to Hume's particular ideas. When I say "similar" I do not mean in all respects; I mean rather that Kant seems to be making the same three-way distinction for much the same reason that Hume did. I think this is clear from the following passage, which indicates that Kant is concerned with the Lockean problem in just the way we have been discussing it:

> Indeed it is schemata, not images of objects, which underlie our pure sensible concepts. No image could ever be adequate to the concept of a triangle in general. It would never attain that universality of the concept which renders it valid of all triangles, whether right-angled, obtuse-angled, or acute-angled; it would always be limited to a part only of this sphere. The schema of the triangle can exist nowhere but in thought. It is a rule of synthesis of the imagination, in respect to pure figures in space. Still less is an object of experience or its image ever adequate to the empirical concept; for this latter always stands in immediate relation to the schema of imagination, as a rule for the determination

> of our intuition, in accordance with some specific universal concept. The concept 'dog' signifies a rule according to which my imagination can delineate the figure of a four-footed animal in a general manner, without limitation to any single determinate figure such as experience, or any possible image that I can represent in concreto, actually presents.[19]

It is not altogether clear whether Kant is saying that the rule or schema enables us to delineate ("verzeichnen") an indeterminate figure ("Gestalt"), or whether he means rather that we are not determined to any particular determinate figure. This creates something of a problem; for, on the one hand, the notion of an indeterminate figure sounds suspiciously like Locke's abstract idea, but, on the other hand, if it is a matter of an indeterminate range of determinate figures then the question arises as to the identity of that range, i.e. the identity of the schema or rule. Now it has been noted by several commentators -- including Peirce (5.531) -- that the distinction between concept and schema does not seem to be well made, and that it would in fact seem that they might as well be identified; for the schema, being a rule, seems to be precisely what Kant means by a concept, anyway. Note, however, that if concept and schema are conflated then there is no way of identifying the schema -- unless some further factor is introduced, such as Hume's word. In other words, if the range of determinate images is identified as a range by citing the single schema to which they conform, then the schema cannot in its turn be

---

[19]A141, B180.

identified by citing the range. Moreover, it cannot be identified by enumerating or listing out a sequence of determinate figures, for the whole point to the notion of the schema is to account for this sequence as manifestations of a single type. This is perhaps why Kant did not identify concept and schema, even though their logical character would seem to be much the same.[20]

One further point which should be made here is that when Kant talks about the production of an image of, say, a dog, in accordance with a rule or schema, this is not supposed to be merely a product of the imagination as opposed to an actual perception of a dog. That is, the production of the image in accordance with the rule is supposed to apply equally to cases of imagination in the ordinary sense and cases of sensible perception of dogs. It is an essential part of Kant's position that it is not the character of the image or presentation itself which bespeaks the fact that its object is real or fictitious, as the case may be. In both cases, the elements here are the same: (1) the image (whether of an actual or imagined object), (2) the rule or schema in accordance with which it is "constructed" or produced,

---

[20]Thus it would seem that he should have introduced the notion of the word as third element in some way, as Hume did. But I suspect that he didn't do so because he thought this would relativize his account to particular languages and thus rob it of its universality. Also, Kant may have thought of language as merely recording some more fundamental process (judgment), rather than as entering into it in some essential way.

and (3) the concept.

Now what Kant's account adds to the general problem, so far as we are concerned with it, is this: (1) The notion of habit is now thought of in terms of rule, procedure, or method; (2) there is suggested a possible identification of concept, on the one hand, and habit, rule, method, or procedure, on the other; (3) it is seen that the notion of the word may be indispensable if the foregoing identification is to be made; and (4) the whole problem is put into the general context of Kant's theory of mind and experience.

Let us note at this point that the problem of generality, as we have been considering it, is not the problem of how denotative reference is made to an existent individual. The problem is rather the Lockean -- or, better, the post-Lockean -- problem of how there can be a sameness of type or similarity among the cases falling under a general term when no common feature can be abstracted in a Lockean way. Thus, for example, even a simple concept or word like "blue" comprehends a great variety -- indeed a potentially infinite variety -- of shades and hues, and there is little plausibility in the supposition that this comprehension is due to a blueness which is common to them all in the sense that it can be discriminated or separated out from the variations in shade and hue.[21] The generality in question is not

---

[21]Peirce remarks: "The quality of redness and

therefore a matter of the concept ranging over a variety of individuals having the character of being blue, but rather of its ranging over a variety of at least potentially continuous character variations within the type it represents.[22]

Let us now go back to the problem of resemblance. Hume assumed -- though no doubt illicitly within the context of his own theory -- that there was a similarity or resemblance between the ideas falling within the compass or extension of a word, and he assumed that this resemblance was prior to the application of the general word to them. Peirce was keenly aware of the difficulty in such an assumption and he took the bold -- and what at first glance appears to be the extremely nominalistic -- step of saying that two ideas are similar because they are associated, rather than being associated because they are similar. The association constitutes the resemblance. (7.498)[23] The following passage is important enough in this connection to require quotation despite its length:

Suggestion by resemblance is easily enough understood,

---

the quality of blueness differ without differing in any essential character which one has but the other lacks." (4.344)

[22]This has to be borne in mind in order to understand why Peirce lays so much stress on the importance of continuity, speaks of ideas "spreading," and relates continuity so intimately with generality.

[23]See also 1.313, 1.365, 1.383, 6.106, 8.87.

> as soon as the conception is once grasped that the similarity of two ideas consists in the fact that the mind naturally joins them in thought in a certain way. For instance, yesterday I saw a blue color; and here is a blue color. I recall that sensation of yesterday, and I observe that of today. I find myself disposed to say the two are closely allied; in that disposition their similarity consists. For they are two different ideas. One was in my mind yesterday, and consequently that identical idea is not present now. However, I accept the impression it has left on my memory as probably about right. I look again at the color before me. The idea of yesterday and that of today are two ideas; they have nothing in common, unless it be that the mind naturally throws them together. Some beginner may object that they have both a blueness in them; but I reply that blueness is nothing but the idea of these sensations and of others I have had, thrown together and indistinctly thought at once. Blueness is the idea of the class. It is absurd to say that different things which cannot be compared are alike, except in the sense that they act alike. Now, two ideas are compared only in the idea of the class, lot, or set to which they belong; and they act alike only in so far as they have one and the same relation to that connecting idea. Resemblance, then, is a mode of association by the inward nature of ideas and of mind. (7.392)

And just as Hume speaks of the habit as "a kind of magical faculty in the soul,"[24] and Kant says that "this schematism of our understanding, in its application to appearances and their mere form, is an art concealed in the depths of the human soul, whose real modes of activity nature is hardly likely ever to allow us to discover, and to have open to our gaze,"[25] so also, in a similar vein, Peirce says that "resemblance consists in an association due to the occult substratum of thought." (7.394)

When Peirce speaks of the "occult" he is not, of

---

[24] Treatise, p. 24.

[25] A141, B181.

course, invoking a mystery or an unknowable:

> An 'occult property' is a property which is only brought to light by experiment. "Occult Science" means, therefore, precisely experimental science. The reason these properties were called occult was that they could not be deduced after the manner of Aristotle from the prime qualities hot and cold, moist and dry. (7.392n7)

In general it will be found that he always uses this term in connection with the notions of power, habit, disposition, etc., to indicate that (a) there <u>is</u> a power or habit, and that (b) we could always inquire further as to the explanation of <u>why</u> it is that there is the power or habit in question. Thus, for example, the <u>virtus dormitiva</u> of opium is a real power or habit of opium -- it really is true that opium <u>puts</u> us to sleep -- but what it is about opium that causes this, what laws lie behind <u>that</u> law, is at present hidden from us or "occult" (i.e. was so at Moliere's time). In other words, Peirce was trying to make this maligned term respectable again.[26] What is important about this appeal to the "occult" disposition, however, is that what at first looks to be a radically nominalistic move on Peirce's part turns out to be an important step towards logical realism. For if to regard things as similar is simply to classify them (i.e. if the classification is logically prior to the similarity), and if a class is itself constituted by a disposition or habit of association, then the notion of a class as such is not

---

[26] See 2.333 where Peirce comments on his own penchant for adopting terms usually used in a deprecatory way.

reducible to the notion of the sum of its members and is logically ineliminable -- which is an essential condition for Peirce's logical realism. The fact that the disposition is "occult" means nothing from the logical point of view except that, whatever its explanation might be, it is a fact that there is a disposition to be explained. The explanation itself would presumably be of primarily psychological interest.

In a chapter planned for his Grand Logic on the nature of association, Peirce gives the following more or less psychological account of generalization:

> We have seen that Bain . . . holds that generalization is the direct effect of "an effort at similarity." Why not say, at once, it is the first half of a suggestion by similarity? I am trying to recall the precise hue of a certain emerald that my mother used to wear. A sequence of shades runs through my mind. Perhaps they run into a continuum; but that makes no difference. They are a multitude of colors suggested by that one color. Conceived under what Kant imperfectly describes as a rule or schema, they constitute a general conception of a green something like that emerald. The old-fashioned nominalists would say nothing was in my mind but a word, or other symbol. For my part, I am not quite prepared to say what precisely is in my consciousness; but of this I am sure, that every memory of a sensation is more or less vague, that is, general. Every memory! Why, the sensation itself, when present for a few moments, is so; as every person who has made careful photometric measures is aware. . . . How is it possible to reconcile our notions of the origin of errors of observation with the doctrine that the sensation is absolutely free from all vagueness, all generality? . . . The vague memory of a sensation is just an aggregate, whether continuous or not makes no difference, of ideas, which are called up together by a suggesting idea. (7.408)

In considering this let us prescind both from the special case of memory and from any problem raised by Peirce's

identification here of generality and vagueness. Now we have here (a) the sequence of shades, (b) the shades in the sequence, (c) the rule or schema, and (d) the conception. The question concerns how these are related. My suggestion is this, that Peirce means that we do not merely perceive first this shade and then that in the sequence, but that there is a sense in which we actually perceive the range or sequence itself; that is, we do not have one determinate image followed and replaced by a second determinate image, followed and replaced by a third, and so on, but rather have present to us at once -- i.e. in the specious present -- a range of imagery somehow thought in a unity. This unity is not a numerical unity of the images (for they are a plurality) or in the images (for there is no common feature), but is rather an awareness of these images as being produced for some unitary purpose or intention. Our awareness of the unity is therefore something over and above our awareness of the images taken singly, and is an awareness of a unity imposed upon the images. Now in a brief exposition of Duns Scotus' views, in his review of Fraser's edition of the works of Berkeley, Peirce says that, according to Scotus:

> There are two ways in which a thing may be in the mind, -- habitualiter and actualiter. A notion is in the mind actualiter when it is actually conceived; it is in the mind habitualiter when it can directly produce a conception. It is by virtue of a mental association (we moderns should say), that things are in the mind habitualiter. (8.18)

The distinction between being "in the mind" habitualiter

and actualiter is what is important here. In this particular case Peirce would seem to be identifying the concept proper with the concept as actual; but it is more consistent with most of his statements either to identify the concept with the habitual mode or to speak of it in both ways. I suggest that the usage in the following quote be taken as canonical for our purposes:

> [In certain cases] an idea which may be roughly compared to a composite photograph surges up into vividness, and this composite idea may be called a general idea. It is not properly a conception; because a conception is not an idea at all, but a habit. But the repeated occurrence of a general idea and the experience of its utility, results in the formation or strengthening of that habit which is the conception; or if the conception is already a habit thoroughly compacted, the general idea is the mark of the habit. (7.498)

Let us therefore make the following identifications. The habit in accordance with which, say, the sequence of shades is produced is the concept proper. Kant's rule or schema may be identified with the concept in this sense. The perceived unity of the sequence will then be the general idea.[27]

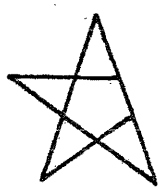
Now let us get clearer on the general idea -- which,

---

[27] In "The Law of Mind" (1892) Peirce says: "A finite interval of time generally contains an innumerable series of feelings; and when these become welded together in association, the result is a general idea. For we have just seen how by continuous spreading an idea becomes generalized." (6.137) Later in the same article, after characterizing general ideas as "continua of feeling," he says that "these general ideas are not mere words, nor do they consist in this, that certain concrete facts will every time happen under certain descriptions of conditions; but they are just as much, or rather far more, living realities than the feelings themselves out of which they are concreted." (6.151f)

177

remember, is directly perceived as the unity of some range or spread of imagery. Peirce speaks in the last quote above of the general idea as a "composite photograph," and he uses this metaphor many times in this connection.[28] The notion is perhaps infelicitous and unduly metaphorical, but what he intends to convey, no doubt, is that our general idea of, say, a dog would not be a Lockean abstract idea but rather a resultant fusion of imagery resulting from the repeated experiences of many different and more determinate sensory experiences of particular dogs. However, I think a much better way of seeing what is at stake here would be to consider what Peirce has to say about the nature of sets in perception. Thus he draws a picture as follows:



And then he says:

> What does this figure show? The answer will be a broken star. That answer shows how the mind naturally looks at those lines from the point of view of a set, or regular figure, to which they do not even conform. As experience clusters certain ideas into sets, so does the mind too, by its occult nature, cluster certain ideas into sets. These sets have various form of connection. The simplest are sets of things all on one footing and agreeing in each belonging to the set. Such a set is called a class. The clustering of ideas into classes is the simplest form which the

---

[28] 2.317, 2.354, 2.435, 2.438, 3.621, 4.157, 4.447, 5.542, 6.232f, 7.498. See also 2.146 for an especially interesting passage which bears on this.

> association of ideas by the occult nature of ideas, or of the mind, can take. (7.392)

I think it can be seen that what Peirce is trying to express here is what is now familiar under the notion of the perceptual Gestalt. In the above diagram the image is, in one sense, simply an arrangement of five lines; but we actually <u>see</u> not just five lines but a broken star, i.e. we see it <u>as</u> a broken star. Everyone is familiar with the drawings of various types which psychologists use to illustrate the operation of Gestalten in perception, and this point need not be labored. But I take it that the essential thing here is that the perceptual Gestalt is perceived quite as <u>immediately</u> as is the actual image itself, though there is neverthless a difference between the perceived Gestalt and that which is perceived under the aspect of that Gestalt. There are, of course, a variety of types of Gestalten; and I take it that Peirce wants to say that, even in the case of a simple class like that of the blues, there is a perception of a qualitative range under a single form or Gestalt which cannot be identified with any of the range of shades or hues, or with the sum of them, but which is nevertheless quite immediately and directly perceived. Now this Gestalt-perception is presumably a feature of every perception. Thus, for example, I perceive the top of my typewriter as blue, though in point of fact there is a great range of discriminable shades and hues which I can make out in it if I attend to what I perceive with great care. Moreover, there is no

definite limit to the discriminations which might be made within those discriminations; so that it seems reasonable to suppose that the "matter" for the form or Gestalt at one level is itself a Gestalt vis-a-vis the matter at some further level, and so on indefinitely -- though there is no doubt a de facto limit to the discrimination process. To take another case: I perceive this rectangular, brown, horizontal thing before me as a desk-top. But the rectangularity, the brownness, the horizontalness, etc., are themselves potential Gestalten vis-a-vis further discrimination, and so on. So that, for any given perception, there will be what might be called a primary form-matter distinction; but through a succession of more analytic perceptions of the same thing the form-matter distinction becomes a relative one.[29]

---

[29]The emphasis which Peirce puts on imagery in some of his writings seems in direct conflict with his famous argument against imagery in perception in "Some Consequences of Four Incapacities." (5.299-306) But he makes it clear in that argument that by an image he means something "absolutely determinate in all respects," something of which "every possible character, or the negative thereof, must be true. . . ." (5.299) And his point there, as I understand it, is to make the distinction between the object which we perceive (or imagine) and our idea of it. For example, I perceive my typewriter at this moment. Now that typewriter, as an existent individual, is "absolutely determinate in all respects"; but the qualitative or formal content of my perception (my "idea" of the typewriter) is not determinate. In other words, whereas the typewriter is a logical individual, my idea is not a logical individual but is rather entitatively general. I think it will be found that, in contexts where Peirce does stress the role of imagery, he has in mind the element of "firstness" (form, quality) in cognition and is not contradicting this other point.

Let me suggest without further ado that what we are here calling the general idea -- the Gestalt, form, or immediately perceived unity -- is the icon. Now the icon is an entitative general of the qualitative sort. And it will be seen why the word "entitative" is preferable to the word "subjective" here; for as the very form of the object there is nothing subjective about the icon except in the sense that it is the form or aspect ("species") under which the object is known. The question then arises as to whether the icon or general idea is not also referentially general. The answer to this is, I believe, that it is not referentially general, on Peirce's view.[30] A given iconic sign -- as distinct from an icon -- might well be referentially general in its function; but it would be so not in virtue of its being iconic but in virtue of the fact that it happened also to be symbolic. For Peirce says that the symbol is the only general sign (3.363), and I take it that he means by this that it is the only referentially general sign.

We have yet to identify the symbol, however. Is it to be identified with the concept or with the word? In order to answer this we have to raise the problem of Peirce's use of the term "meaning." Now I believe that anyone who attempts to track down Peirce's use of this

---

[30]Some relevant passages here would be: 1.304, 1.372, 1.425, and 1.447.

term, as well as similar such terms as "signification" and "reference," will agree that the safest thing to say is that Peirce tends to use any one of these terms, in one context and the next, as roughly equivalent to "semiotic function." Since there are, of course, different semiotic functions -- in fact, the distinction between icon, symbol, and index is precisely a distinction of this sort -- these terms themselves take on different specific meaning as they are used in one context and the next. This is why it is so essential in understanding Peirce that we try to get some grasp of the functions themselves, as Peirce understood them; for it simply is not possible to grasp his thought at all by clamping down, bulldog-style, on this and that terminology.[31] Nevertheless, for present purposes it is desirable to stick to a fixed terminology, so far as that is possible, and I shall try to do so in what follows.

I suggest that we speak in general of the semiotic properties of signs, and reserve the other terms for specific semiotic properties. Now, even though there are

---

[31]Some of Peirce's most flagrant sins against his own "ethics of terminology" are committed in his many discussions of symbols, concepts, words, meaning, and signification. But the sins are surely venial. It should be remembered, first, that the bulk of the Collected Papers is material originally unpublished, and, second, that even in respect to the material that was published, Peirce had no followers whose terminological habituations had to be respected. It is understandable that, over a forty year period, he should have experimented with different modes of expression in hope of arriving at formulations which would be both theoretically adequate and rhetorically effective.

places in which Peirce speaks as though symbols have only two semiotic properties, which he labels variously as "breadth" and "depth," "signification" and "denotation," and "signification" and "application," his real doctrine is that there are not two but three fundamental semiotic properties which are possessed by symbolic signs.[32] For these three I propose to use the terms "meaning," "signification," and "application." And I would identify these as follows: (1) the meaning of a symbol is a concept; (2) the signification of a symbol is a general idea or icon; and (3) the application of a symbol is the object(s) of which it is predicated. We cannot discuss application at present since that brings in the function of the indexical sign, which is to be discussed shortly; but the import of (1) and (2) should be somewhat clear from the foregoing discussion of the nature of the concept, general idea, and icon. Now I believe that the reason why Peirce sometimes speaks only of two rather than three properties of symbols is to be found in the fact that the concept and the general idea have a very special relation to one another consisting in the fact that the latter is the actualization of the

---

[32] In "Upon Logical Comprehension and Extension" (2.391-426), he urges that a third "quantity," in addition to the traditional notions of comprehension (intension, depth) and extension (denotation, breadth), is required in logic. This third semiotic property is there called "information," and it is identified with reference to an interpretant. (2.418) I shall not attempt here to follow out the issue along the lines this suggests, however. See also paragraph 8.119 on this.

former. The general idea (icon, Gestalt) is, so to speak, the concretion of the concept. Thus Peirce says that:

> . . . general ideas are not mere words, nor do they consist in this, that certain concrete facts will every time happen under certain descriptions of conditions; but they are just as much, or rather far more, living realities than the feelings themselves out of which they are concreted. And to say that mental phenomena are governed by law does not mean merely that they are describable by a general formula; but that there is a living idea, a conscious continuum of feeling, which pervades them, and to which they are docile. (6.152, italics mine)

The term "general idea" is used in this passage precisely as we are using it here, and a distinction is clearly made between it and the nomic generality which would be characteristic of the concept. But, since the actualized meaning (i.e. actualized habit) is the signification, it is understandable why Peirce should sometimes have talked only in terms of signification and application. Nevertheless, the term "meaning" itself shall be reserved here for the unactualized habit or concept proper, and "signification" for the actualized habit or general idea.

The next problem is to get clear on the status of the word in respect to the concept. The passage which seems to me to give the clearest indication of Peirce's intent here is the following:

> All words, sentences, books, and other conventional signs are Symbols. We speak of writing or pronouncing the word "man"; but it is only a replica, or embodiment of the word, that is pronounced or written. The word itself has no existence although it has a real being, consisting in the fact that existents will conform to it. It is a general mode of succession of three sounds or representamens of sounds, which becomes a sign only in the fact that a habit, or acquired law, will cause replicas of it to be interpreted as meaning a man or

> men. The word and its meaning are both general rules; but the word alone of the two prescribes the qualities of its replicas in themselves. Otherwise the "word" and its "meaning" do not differ unless some special sense be attached to "meaning." (2.292)

In the sentence in which Peirce speaks of "sounds or representamens of sounds" we can detect an echo of Aristotle's doctrine that written signs are signs of spoken ones, but I do not believe that this notion plays any real part in Peirce's theory and it will be ignored here. Now when Peirce says that the being of the word consists in the fact that existents will conform to it he is presumably referring at least in part to the replicas; yet it is obviously not his meaning that symbols are simply regularities governing the production of sounds (or written marks). The existents in question are not, I believe, the replicas but rather individual occurrences of <u>interpretation</u> of the replicas. That is, the existent in question is the actualization <u>of</u> the concept <u>by</u> the replicas, which actualization takes the form of the manifestation of a general idea. Now this is <u>not</u> to be construed in this way: that upon hearing the word "man" an image of a man "pops into my head." The point here is rather that, upon hearing the word "man," something like what the psychologists call an <u>anticipatory set</u> occurs, such that if my attention is directed to some object I am <u>set</u> to see it <u>as</u> a man and will in fact see it as a man if it provides suitable sensory material for that set or Gestalt.[33] In the absence of the occurrence of the

---

[33]Note the interesting relation between the psychological notion of a set as an anticipation and the logical

word -- whether spoken to me or spoken to myself -- I might very well see the same object but not see it as a man. Now suppose the word "man" occurs in a story, a piece of fiction. No doubt different people read fiction in different ways: some probably with a great deal of concurrent concrete imagery and others with relatively little. But if I actually understand the word "man" in that narrative then minimally there must be something like an anticipatory set which takes place, which set will in some cases perhaps be completely actualized in a concrete imagined man, but which will perhaps in other cases only be manifest as a slight and inhibited tendency in that direction.[34] In the first case one furnishes, as it were, one's own image-materials; in the second case there is perhaps only a rudimentary tendency to do so. Moreover, I take it to be a matter generally recognized and amply verified that the line between perception and imagination cannot be sharply drawn, i.e. that even in actual perception we usually add substantive imaginative elements to that which is actually perceived. (For example, there is the well-known drawing of the people on the subway-train, which racially prejudiced people will often perceive in such a way as to see a razor in the negro's hand, though there is in fact no razor in his hand at all.) In brief, then, I understand Peirce

---

notion of a set as a class.

[34]The following passages contain characteristic discussions of this by Peirce: 2.317, 2.341, 2.354, 2.360, 2.369.

to be saying that the symbol is a regularity of interpretation of replicas of the word, somewhat along the foregoing lines, and not a regularity of occurrences of the replicas.

Problems still remain, however, for Peirce says that the word and its meaning are both general rules, which implies that there are actually two rules here. And, moreover, he speaks of the word as prescribing the qualities of its replicas. I would suggest that the regularity or rule which is the word, i.e. which governs the replicas of the word, is the purely intra-linguistic regularity of the sort which logical formalists have in mind in the notion of "logical syntax" (i.e. rules concerning permissable combinations and permutations of word-replicas). Whereas, on the other hand, the rule or regularity which is the meaning is not a linguistic regularity but is rather a regularity of the sort here called a concept (the Humean habit or Kantian schema). This raises the problem of how the two sorts of rules are related. Now it is not difficult to see how they become conjoined in the case of a given word. The occurrence of a word-replica either does or does not in fact have the power to actualize a meaning (produce a general idea) for any given individual. If it does then that is the conjunction of word and meaning, and there is nothing more in it than that. For example, in learning a foreign language from a textbook the language is first learned in a syntactic way by coming into syntactic connection with words already known: one reads the word

187

"homme," syntactically translates it into "man," and understands what is meant. Eventually, perhaps, "homme" will in fact become capable of actualizing the meaning directly instead of waiting upon syntactic translation. There would seem to be no special problem here. But this still leaves the problem of a general account of the relation of syntactic and meaning rules. There is, of course, a standard logical model available at present which could be introduced here.[35] But I believe that it would be premature to adopt this until the generic relation discussed in the first part of this study has been further investigated, and the considerations discussed in this chapter integrated with it. It seems best, therefore, simply to leave this question open here.

In any case, I would suggest that the term "symbol" is generally intended by Peirce to apply to the meaning or concept itself as de facto associated with one or more words qua syntactic rules governing word replicas. Thus e.g. the symbol "man" is not the word "man" but is rather the concept of a man in its de facto association with the word "man," "homme," "hombre," and so on. Or, in brief, it is the concept of a man in its associations with whatever words it is in fact associated with. The word, on the other hand, is probably best understood as any given

---

[35] A recent and clear account of the standard way of relating syntax and meaning is R. M. Martin's "On Carnap's Conception of Semantics," in The Philosophy of Rudolf Carnap. (See Chapter II, footnote 22, of this study.)

syntactic rule governing isomorphic entities, called "replicas," which are de facto associated with a concept in such a way that a replica is capable of actualizing that concept. Thus e.g. the word "man" is the syntactic rule governing anything isomorphic with that three-lettered form in its (i.e. the rule's) connection with the concept of a man. Or, in brief, it is a linguistic entity in connection with its meaning. This frees the notion of the symbol from relativization to given languages, though it relativizes the notion of the word to a given language. I believe that this is, on the whole, consistent with Peirce's intent, but it must be stressed that I am by no means reporting a standard usage on Peirce's part. (So far as I can determine, there is no standard usage on Peirce's part here.)

The foregoing considerations give no more than a hint of the philosophical issues involved in the notion of the symbolic sign. However, they may indicate the way in which even the symbolic sign serves as a means to the manifestation of objects, viz. through their essential connection with iconic signs. As actualization of the concept which constitutes the meaning of a symbol, the iconic sign appears here as the "general idea" which the symbol conveys. All learning through symbols clearly presupposes an antecedent understanding of the meaning of the individual symbols involved, but the conjunction of many symbols in connected discourse results in the formation

of new complexes of general ideas. Thus, for example, a description of a foreign country means nothing to me except insofar as the individual symbols utilized in the description are already meaningful (i.e. associated with familiar ideas), but the result of the description may be an altogether new complex of ideas (or complex idea) which -- to the extent that it is a true and faithful description -- constitutes an appearance to me of that very country itself. Although the medium of manifestation was here another person producing symbols, that which was made manifest was the object itself via the symbol and symbol producer.

CHAPTER VIII

THE INDEXICAL SIGN

Consonant with Kant's dictum that existence is not a predicate,[1] Peirce states that "the real world cannot be distinguished from a fictitious world by any description." For such a purpose nothing but a "dynamic" or indexical sign will do. (2.337, cf. 3.363) It is from the point of view of the issues this raises that I should like to discuss this type of sign. The discussion will not encompass the full range of generality which the notion of the indexical sign bears in Peirce's writings, but it will, I believe, touch upon matters central to his conception.

It will be useful to begin by making a distinction between an index and an indexical sign, paralleling the distinction made in Chapter VI between an icon and an iconic sign.[2] Peirce remarks, in his definition of the index for Baldwin's Dictionary, that "it would be difficult if not impossible, to instance an absolutely pure index, or to find any sign absolutely devoid of the indexical quality." (2.306) It is the indexical quality or indexical function which will be to the fore here, and

---

[1] Critique of Pure Reason, A598, B626.

[2] A justification for making this distinction can be found in 2.283f.

the term "indexical sign" will be used to denote anything whatsoever insofar as it is functioning indexically. And, paralleling another distinction made in Chapter VI, a distinction should also be made here between an actual and a potential indexical sign. Peirce himself implicitly does this by characterizing the index in one or both of two different ways. On the one hand, he says explicitly that it is the real connection in which the indexical sign stands to its object which gives it its sign value (2.286), and over and again the real or actual connection of sign and object is cited as the distinctive character of this sort of sign.[3] The meaning of this will be discussed later, but the important point at the moment is that this constitutes the peculiar virtue of the indexical sign, i.e. constitutes its capability of functioning indexically. On the other hand, the characteristic function of the indexical sign, which Peirce repeatedly cites, is that of drawing the attention to the intended object of the assertion.[4] Signs of this type are said to be required in order to establish an understanding of what is being referred to (3.372), to show us what is being talked about (3.419, 4.56), or to "connect one's apprehension" with the object meant (2.287). The relation between virtue and function will also have to be clarified later, but let us begin by

---

[3] 2.284, 2.286, 3.361, 4.531, 4.544, 5.75, 6.471, 8.119, 8.335.

[4] 1.369, 2.259, 2.285f, 2.305f, 2.336f, 2.357, 3.361, 3.419, 3.434, 8.41, 8.350.

concentrating primarily on the latter -- and, in particular, on the question of why an entity having such a function is logically required.

Kant's dictum marks one main philosophical crossroad and leads directly to a second. The crossroad it marks is sufficiently indicated by Kant himself in his explanation of the dictum, viz. whether or not it is possible to ascertain, by the mere consideration of the content of any idea of an object, whether that supposed object does or does not exist. The test case is, of course, the ontological argument for God's existence, and the denial of the possibility in that case will apply a fortiori to all other possible cases. A principle of the most profound philosophical importance is thus proposed. The crossroad to which it leads is also discussed by Kant, though in another section of the Critique, viz. in his discussion of the question whether a purely formal criterion of truth is sufficient. This Kant explicitly denies, for he says that:

> . . . as regards knowledge in respect of its mere form (leaving aside all content), it is evident that logic, in so far as it expounds the universal and necessary rules of the understanding, must in these rules furnish criteria of truth. Whatever contradicts these rules is false. For the understanding would thereby be made to contradict its own general rules of thought, and so to contradict itself. These criteria, however, concern only the form of truth, that is, of thought in general; and in so far they are quite correct, but are not by themselves sufficient. For although our knowledge may be in complete accordance with logical demands, that is, may not contradict itself, it is still possible that it may be in contradiction with its object. The purely logical criterion of truth, namely the agreement of knowledge with the general and formal laws of the

> understanding and reason, is a conditio sine qua non, and is therefore the negative condition of all truth. But further than this logic cannot go. It has no touchstone for the discovery of such error as concerns not the form but the content.[5]

It is for this reason that there can be no general (allgemeines) and sufficient criterion of truth, for such a criterion would have to be "such as would be valid in each and every instance of knowledge, however their objects may vary." But it is obvious that:

> . . . such a criterion [being general] cannot take account of the [varying] content of knowledge (relation to its [specific] object). But since truth concerns just this very content, it is quite impossible, and indeed absurd, to ask for a general test of the truth of such content. A sufficient and at the same time general criterion of truth cannot possibly be given. Since we have already entitled the content of knowledge its matter, we must be prepared to recognise that of the truth of knowledge, so far as its matter is concerned, no general criterion can be demanded. Such a criterion would by its very nature be self-contradictory.[6]

In brief, Kant rejects what is usually called a "coherence" theory of truth, i.e. a theory in accordance with which not the content of individual assertions but rather the nature of their intra-systematic formal relations constitutes a sufficient criterion of their cognitive worth. But since he also regards the so-called "correspondence" theory of truth, according to which truth consists in "the agreement of knowledge with its object," as a mere nominal definition (Namenerklärung);[7] and since mere analysis of the content

---

[5] A59-60, B83-84. See also the parallel discussion in Section VII of the introductory part of Kant's Logic.

[6] A58-59, B83, bracketing by the translator.

[7] A58, B82.

of a given assertion cannot possibly reveal whether the object posited in fact exists as asserted (which is essentially the same as to say that there can be no universal material criterion); it seems that all roads are thereby closed to a universal and sufficient criterion.

I think we encounter here a basic element in the rationale underlying Peirce's characterization of truth in terms of fixed belief, which agrees with Kant to the extent of denying that either the formal relations or material content of an assertion provides a sufficient criterion of its cognitive adequacy. Further inquiry into Peirce's truth-theory proper will not be undertaken here, but the related issue of whether a formalistic ("coherence") theory of truth is adequate is directly to our point. For it is in connection with the denial of this that the function and at least a part of the epistemological significance of the indexical sign can be seen.

Stated broadly and without attempt at precision, the idea of a formalistic theory of truth, as it will be understood here, is as follows. Since, on the one hand, there is no literal sense in the notion of comparing a judgment with a "corresponding" non-judgmental fact, and since, on the other hand, no non-trivial ("synthetic") judgment is self-evident or incorrigible, the only way in which the truth-value of such a judgment can be ascertained is by determining whether or not it has a place in the <u>system</u> of judgments assumed to comprise our knowledge at

a given time. Since this system is in a continual process of developmental change, there can be no certainty that any given judgment will be able permanently to retain a place in it; hence, even its capacity for inclusion at a given time is no guarantee of its ultimate cognitive worth. However, since the development of the system comes about precisely through the inclusion of new judgmental elements, the proposed inclusion of a given judgment amounts to a claim that it is true, which claim is immediately justified by the extent to which the judgment can be shown to have present intra-systematic connections, but which is ultimately justified only by its inclusion in the final and ideally complete system. (There is no need for our purposes to go into the problem of what constitutes an intra-systematic relation, or into the question of the relation of the immediate to the ultimate justification.) Now I would suppose that anyone who held to such a view would in some way make a distinction between judgments (or propositions) which do and judgments (or propositions) which do not have some prima facie claim to inclusion. For example, I can formulate the proposition -- or at least construct the sentence -- "Caesar's pet dog was shaggy," but I cannot seriously put this forth for inclusion in the system. It may well be true, for all I know; but since I simply made it up on the spur of the moment it surely lacks any prima facie claim. Presumably, no one who holds to such a view would envisage the growth of knowledge as a matter

of making up propositions ad libitum and seeing how they can be fitted together, and some distinction effective in this respect would surely be made or assumed here. Further, I would suppose that no one who holds to such a view assumes that we are or could be in a position to start totally "from scratch" -- i.e. that we are or could be in a position in which we had no given or assumed system as our working basis for evaluating the proposed inclusion of a given judgment or proposition. But, regardless of how such problems are treated, no theory would qualify as a formalistic theory of truth, in the sense I intend here, if it invoked any principle other than systematic intra-connection as its criterion for the truth of a given judgment.

Now a philosopher who adopts such a theory will be constrained to deny that the singular judgment is a genuine logical form of judgment. That is to say, he will not deny that what seem prima facie to be singular judgments are indeed made, but he will deny that they are to be regarded, for logical purposes, as truly having singular reference. The reason why the singular judgment must be denied logical status is that it would otherwise be implied that there is at least one judgment -- and perhaps any number -- having a truth value independently of intra-systematic status. For while the truth-value of any given singular judgment might be established inferentially (and hence intra-systematically) as consequent of

some (putative) truths antecedently incorporated into the system, at least one of the latter truths would itself have to be a singular judgment instantiating the others with the individual denoted in the conclusion. But then precisely the same considerations would apply to that singularly instantiating premiss, and so on. The infinite regression which this would imply would be of the vicious sort since it must be actual; for no given judgment has any status in the system except in virtue of actually being implied by others. But the alternative would be that there is at least one singular judgment whose truth-value is not based upon its intra-systematic status -- and this, of course, denies the general formalist principle. Hence, the singular judgment as such must be denied to have any logical status to begin with.

Merely to cite the undesirable consequences for this theory of the admission to logical status of this sort of judgment does not, of course, constitute an argument for the denial of such status, except on the independent assumption that the theory is correct. But there is a standard mode of argumentation at hand to buttress this, which consists in considering all types of singularly referring expressions and arguing that none of them are in fact logically capable of discriminating the individual which they purport to discriminate. The prototype for such arguments is to be found in Hegel's analysis of "sense-certainty" in the Phenomenology of Mind,[8] the

---

[8]Pp. 149-60 of the translation by J. B. Baillee

general strategy being to take all linguistic devices apparently used to designate unique individuals and show that they must logically fail to do so. Thus "this" and "that," "now" and "then," can be argued to be among the most universal rather than the most singular of expressions inasmuch as anything whatsoever can count as a this or a that, or can be here or there or now or then; proper names can be argued to be connotative and hence general in their application; definite descriptions can be argued to be logically indefinite; and so on. And this sort of argumentation is intended to apply equally to cases of sensory perception, where -- one might naively suppose -- there is no question but that an individual is (or at least can be) definitely identified as such. The following passage from Josiah Royce illustrates this:

> You have an idea of your friend. You go to meet him; and lo, the idea is verified. Yes; but what is verified? I answer, this, that you have met a certain type of empirical object. "But my friend is unique. There is no other who has his voice, manner, behavior." "Yes; but how should your personal experience verify that? Have you seen all beings in heaven and earth?" Perhaps you reply, "Yes; but human experience in general shows that every man is an individual, unique, and without any absolute likeness." If such is your reply, you are appealing to general inductive methods. I admit their significance. But I deny that they rest solely upon external experience, as such, for their warrant. They presuppose a metaphysic. They do not prove one. Besides, you are now talking of general principles, and not of any one verified individual.[9]

(London: George Allen & Unwin Ltd, 1961), second edition.

[9] The World and the Individual (New York: Dover Publications, Inc., 1959), First Series, p. 294.

The issue thus shapes up into the alternative of monism vs. pluralism: Is the truth of a given judgment a function solely of its inclusion within the ideal ultimate and complete system of judgments, or is the truth of any system a function of the truth of its constituent judgmental elements? And the resolution of this issue depends in large measure, if not wholly, on the resolution of the problem of singular reference.

In spite of the well-known and self-acknowledged affinity of Peirce's thought with the idealist tradition generally, it is on this issue that a definitive difference is established between his view and that of the "absolute" or formalistic idealist. For while Peirce agrees that no description, i.e. set of characters, can have the logical function of isolating the individual case, he disagrees with the formalist's assumption that <u>therefore</u> the individual cannot be discriminated through the judgment. What the formalist overlooks, on Peirce's view, is the function of the <u>indexical</u> sign, which, as he says, designates the subject of a proposition without implying any characters at all. (8.41)[10] But Peirce's strategy is not to defend the logical status of the <u>singular</u> judgment as the unique mode of reference to the individual, but rather to take the much more radical position that <u>all</u> judgments involve an indexical sign and thus make reference to the individual: "One such index at least must enter into every proposition,

---

[10]See also 1.369, 3.361, 3.434, 4.56, 4.531.

its function being to designate the subject of discourse." (8.41) His way of handling this is, of course, to treat quantifiers as a type of index. The reduction of all propositions to quantified propositions, in accordance with techniques such as were referred to in Chapter IV,[11] would thus have the effect of shifting all problems of reference to the problem of the nature of quantification. As I noted in the latter part of that chapter, we cannot go into the problem in that form here -- which is one reason why no definitive account of the index can be attempted here. However, I think some points of philosophical interest can be made nonetheless.

Now it is a well-known characteristic of later pragmatism, especially that of John Dewey, to insist upon the logical importance of context. Dewey's own term for this is, of course, "the problematic situation," but it would be a mistake to suppose that the insistence upon the importance of the context or situation of inquiry is a theoretical idiosyncrasy of Dewey's. The notion is quite as central in Peirce's thought as it is in Dewey's, for it is basically the notion of that which is assumed, "given," or taken for granted in every inquiry. That there must be something taken for granted in every inquiry is precisely the point underlying Peirce's rejection of the notion of Cartesian doubt, for example. Cartesian doubt is a doubt which pretends to take nothing for

---

[11] See Chapter IV, footnote 20, of this study.

granted and supposes that an inquiry could actually be made under such conditions. The reason why Peirce cannot concede this supposition has been indicated in Chapter III of this study, though perhaps not in so many words; namely, because every inquiry takes the logical form of an inference (whether deductive, inductive, or hypothetical), and every argument requires premisses "laid down" or assumed to be true for that argument. I take it that for both Dewey and Peirce the context for any inquiry consists in the set of all propositions thus "laid down."

This implies that, although the real or actual world cannot be distinguished from a fictitious world by any description (i.e. by any inherent marks), it is in fact distinguished as such by its function in inquiry. That is, to accept something as real or actual is to accept it as the contextual basis, in the above sense, for a given inquiry. Now it might be objected that this surely cannot be what constitutes the real or actual, for what is accepted as the basis for inquiry at one time might very well be denied that status at another, and this would imply that the same state-of-affairs could be real and unreal. But such an objection would rest on a misunderstanding of the point here. It is not the logician's job to specify what worlds are real and what worlds unreal, nor even to specify the characteristic marks of a real world (for there are no such marks, on Peirce's view), but rather to give an account of what it means to accept some world as real.

Peirce's answer is that, in the context of inquiry, the acceptance of a world (i.e. state-of-affairs) as real is the acceptance of some set of propositions as investigatory premisses. It is a logical truth that mutually inconsistent sets of premisses cannot be simultaneously affirmed, and it is thus a logical truth that no specified world can be both real and unreal; but it is not the logician's concern to determine what will or will not be affirmed or denied, except insofar as such affirmations or denials fail to conform to logical principles.

Now this in turn suggests a close connection between, on the one hand, the real or actual relation characteristic of the indexical sign-object relation, and, on the other hand, the sign-object relation exemplified in those premissed or "laid down" propositions which are definitive of the context of inquiry. When we note further that an indexical sign is said by Peirce to be related to its object regardless of whether or not it is interpreted as such (2.92, 2.304, 4.447), this suggestion is reinforced; for the premissed propositions in a given inquiry are not in that inquiry regarded as actual inferences depending upon a mediating or interpretant middle term. The sign-object or predicate-subject relations of the premissed propositions are there regarded merely as obtaining as a matter of fact; and paralleling this, the indexical sign is said by Peirce to have the virtue of being connected with its object as a matter of fact. (4.447) And, still further,

the context of an inquiry (in the sense discussed above) is actually just the object as it is assumed to be in that inquiry. That is, the premisses of an inquiry (inference) define what we suppose ourselves to know of the object, the conclusion being what we further suppose about it on that basis. This seems clearly to connect with Peirce's characterizations of the indexical sign as that which brings our thought to a particular experience or shows us what is being talked about (4.56, 3.419), that which establishes an understanding of what is being referred to (3.372), that which connects our apprehension with the object meant (2.287), and so on.

On the basis of this I would like to suggest that the indexically functioning signs in any inquiry consist in everything which is taken to constitute a relevant matter of fact for that inquiry. That is, the context of an inquiry and the indexically functioning signs of that inquiry are identical. From the logical point of view, everything has a sign-status of some sort; and what I am suggesting is, that whatever it is which is taken as definitive or constitutive of the object (subjectmatter) for a given inquiry is thereby an indexical sign. Let me illustrate this thesis by analyzing a few of Peirce's examples of indices:

> I see a man with a rolling gait. This is a probable indication that he is a sailor. (2.285)

The inference here would be that the man is a sailor; the index of this inference -- the inferential ground or

premiss "laid down" -- would be the fact that the man has a rolling gait. It might be objected that it is not the fact that the man has a rolling gait, but rather the rolling gait of the man which constitutes the index. I would grant the validity of the objection, provided a real and relevant difference could be made out between the two. Note, however, that it is not being a man with a rolling gait which constitutes the index, for that is a mere formal character having in itself no reference to any individual. It is rather being the man with a rolling gait which constitutes the index, and it is not clear to me that this can be distinguished from the fact that the man has a rolling gait. The following case would be analyzed in a similar way:

A sundial or a clock indicates the time of day. (2.285)

The inference here would be that it is a certain time of day; the index of this inference -- the matter of fact which would ground the conclusion that it is a certain time of day -- would be the fact that the shadow on the sundial or the hand on the clock points at such and such a marking. The indexical character of barometers, weathercocks, plumb bobs, old-fashioned hygrometers, spirit levels, thunderclaps and the like would obviously be analyzed in a similar way.

But what about the case of the pointing finger, as when a man thus indicates that he is talking about a certain object? This is a far more complex case than appears at

first glance. When a man points at something and says something of the form "That's an F" (or he could just point and say "F," as a child does), the information which is primarily conveyed is not normally that the thing is an F, but rather that the speaker supposes the thing to be an F -- or perhaps only that the speaker said that the thing is an F (for he might be a liar). The conclusion that he believes what he said would be based on the fact that he said it (plus the assumption that he was sincere); and the conclusion that the thing really is an F is (or might be) based on the fact that he believed it (provided the speaker were regarded as authoritative on the matter). But then, upon closer analysis, we can see that even the information that he said that the thing was an F is itself a conclusion from such facts as that his finger was pointing in a certain direction, that such and such a thing was in line with the pointing finger, that he used such and such words, and so on. Thus, a hand with an extended index finger it not in itself an index. The index is the fact that a finger was so extended at a certain time, that at that time a certain object was more or less in line with the direction of the finger, that suitable noises were made, and so forth. Assumed facts of this sort may warrant the (possibly mistaken) conclusion that such and such a thing was said, which conclusion may in turn constitute an index of the fact that such and such a thing was believed by that person,

which conclusion (also possibly mistaken) may in turn constitute an index of the fact that what was said is true (which conclusion may also be false), and so on. The following illustration by Peirce is relevant here:

> Two men are standing on the seashore looking out to sea. One of them says to the other, "That vessel there carries no freight at all, but only passengers." Now, if the other, himself, sees no vessel, the first information he derives from the remark has for its Object the part of the sea that he does see, and informs him that a person with sharper eyes than his, or more trained in looking for such things, can see a vessel there; and then, that vessel having been thus introduced to his acquaintance, he is prepared to receive the information about it that it carries passengers exclusively. (2.232)

Note how highly mediated is the conclusion that a certain vessel carries passengers exclusively. Before this can be concluded the auditor must first have arrived at the conclusion that there is a vessel out there at a certain approximate place. But this is based upon such assumptions as that the speaker is speaking sincerely, that the speaker is in fact capable of descrying such a vessel, that a certain part of the sea is in line with the vision of the speaker, that the line of vision of the speaker is such-and-such (which may in turn be a conclusion from the way his eyeballs are facing), and so on.[12]

The following sort of a case involves some different considerations, though the strategy of analysis here is not essentially different:

---

[12]The words "this" and "that," in their demonstrative use, would be analyzed in more or less the same way as the pointing finger. They involve a dependence upon conventions, of course, but then so does the pointing finger.

> A yard-stick might seem at first sight, to be an icon of a yard; and so it would be, if it were merely intended to show a yard as near as it can be seen and estimated to be a yard. But the very purpose of a yard-stick is to show a yard nearer than it can be estimated by its appearance. This it does in consequence of an accurate mechanical comparision made with the bar in London called the yard. Thus it is a real connection which gives the yard-stick its value as a representamen; and thus it is an index, not a mere icon. (2.286)

A given stick, called a "yard-stick," is an index because it is supposed that, as a matter of fact, that stick is the same length (or a reasonably close approximation to the same length) as a certain stick in London, which supposed fact can then be utilized as a premiss in concluding to the length of any object measured against that stick. What about that stick in London? Is it an index? This is a complex issue, but it would seem at first glance that we would have to say that it is not an index in so far as it is functioning as a standard. For in order for the standard yard to be an index of the yard-length of a thing the standard would have to be the same length as itself. No doubt it is precisely as long as itself, but this would not appear to be true as a matter of fact but merely by definition or convention. However, this may not be correct. For the statement that the standard stick is as long as itself might be true as a matter of fact if there are two different times involved. That is, it surely makes sense to ask whether the standard stick has shrunk or expanded, and this would be to ask if it is as long as it itself was at some other time. Now it has been claimed by some that

it really makes no sense to ask whether the standard yard is a yard.[13] But if by the standard yard is meant that individual stick in London, then I should think this must be false, since this would imply that the stick has no length at all. For if it has any length at all then it can be measured in some terms -- say in terms of meters -- and that measurement can be transformed into terms of yardage. But, then, it would seem that the London stick is an index of yardage after all, provided there is an operative assumption that it is the same length as itself at some other time. But is the latter really a matter of fact assumption or is it actually of the nature of a convention?

Leaving this question unanswered, let us consider another point of interest which can be brought out nicely in connection with this particular kind of case. Suppose that I pick up a stick on the street which happens, in point of fact, to be exactly the same length as the London stick. If so, then that stick could be said to be a potential yard-stick, since it has that real connection with the London stick which constitutes the peculiar virtue definitive of a yard-stick. It is, in other words, a potential index of yard-length. Actually, however, any stick -- or any object with a rigid length -- has a real connection, in this sense, with the London stick (i.e. has

---

[13]For example, Wittgenstein says: "There is one thing of which one can say neither that it is one metre long, nor that it is not one metre long, and that is the standard metre in Paris," Philosophical Investigations, Part I, sec. 50.

some matter of fact length-relation to the London stick), and hence is a potential index of yardage. Hence, the case of a stick fit to be a yard-stick proper, i.e. a stick exactly as long as the London stick, is really only of special importance from the practical point of view, but has no special interest from the strictly logical point of view. However, there is in fact a class of sticks, called "yard-sticks," which are singled out as actual indices of yardage. The sticks sold in stores which are labelled "yard-stick" by the manufacturer are members of this class, but so also is the stick I pick up from the street if I decide to use it for calculating yardage. Now, what if some member of this class is not in fact the same length as the London stick, but I use it as a yard-stick in the belief that it is? Is that stick then an actual index of yardage? (The problem this raises is, in more general terms, that of the relation between indexical virtue and indexical function -- or, otherwise said, the relation between the potential and the actual index.) The answer would be, I believe, that it is a potential index of yardage in virtue of its real connection with the London stick, and that it is an actual index of yardage in virtue of the fact that it is used as such, but that it is not an index of the yardage that I suppose it to be. That it is an actual index of yardage is clear from this, that whatever measurements I obtain with it are capable of being transformed into correct yardage measurements

provided its real connection with the London stick is determined. Hence, the use of the stick really did give me information which, in conjunction with further information (viz. the co-efficient of error), would yield correct information about the yardage length of whatever I measured. Perhaps this point could be generalized as follows. Anything used as an index ipso facto becomes an actual index of whatever it is potentially capable of being an index of. What a thing is actually an index of is not necessarily what it is supposed to be an index of, however. To take a case of a quite different sort (in order to get a sense for the general import of this), suppose that a man assumes falsely that everyone is out to "get him." There is no actual index here because there is no real connection to serve as potential base. However, this belief may be a conclusion from certain other assumptions which are actual indices because they instance real connections. Thus the man may have noticed that e.g. people often stop talking when he comes up. Now they may really do this, so that this really is an index of something; but what it is actually an index of is, perhaps, only that people can't abide the man's bellicose attitude and would prefer not to include him in their conversation. Thus there would be two ways in which error could arise in connection with indices: (a) in the case where an actual index is misconstrued, and (b) in the case where, there being no potential index, there is no actual index

at all.

There are other and more difficult types of indices which will not be discussed here since I have not so far been able to develop an adequate analysis of them. Chief among these are, first, the use of indices in geometrical diagrams, algebraic formulas, legal formulas and the like, where the function is roughly analogous to that of the relative pronoun in language; and, second, the case of quantifiers such as "all," "some," "none," "most," and so on. These cases present very special difficulties because of the close inter-relation of indexical with conventional and iconic elements. Needless to say, I suppose the general line of analysis I have illustrated above to be applicable in these cases as well, but I do not believe it can be carried through successfully until the nature of the symbol and the icon are investigated further than I have been able to investigate them here.

To return, then, to the issue of the formalistic criterion of truth: Peirce's rejection of this consists in claiming that every judgment, logically analyzed, has a reference to the individual. And I suggested that this takes the form of saying that there is always some body of assumptions constituting the context or subjectmatter of that judgment, which body of assumptions or premisses is ipso facto identical with the indices for that judgment, thereby constituting the singular reference of the judgment. I say "thereby" because it is true by definition

that indices make singular reference. However, this merely locates the problem of singularity or individuality within Peirce's theory and in no way explains what individuality is. This will have to remain an unsolved problem here. There is one objection which may have occurred to the reader which should be met before bringing this account to an end, however. In the second paragraph above I suggested that one way in which an error can occur in connection with the index is to suppose something to be an index which is a pure fiction, i.e. which is not even an actual though misconstrued index (e.g. the paranoid's belief that everyone is out to get him). And this seems to contradict the statement that the body of assumptions in an inquiry is identical with the indices of that inquiry. Though I do not wish to claim that it exactly represents Peirce's actual line of thought, I would suggest that the contradiction could be resolved along the following lines. Either a judgment is immediately based on at least one index or else it is based on a judgment which is immediately based on at least one index; recursively, therefore, there will always be an index grounding a judgment. Thus, for example, the paranoid may believe that he should kill as many people as possible on the grounds that everybody is out to get him, which may in turn be grounded in the belief that he has seen people plotting against him, which may in turn be based on the belief that people break off their conversation whenever he approaches. Now the

latter belief is true and therefore really is an index, though a misconstrued one. Since the sequence of fallacious conclusions is based finally on that index (as well as others, no doubt), there is an indexical reference even in the case of the final conclusion, albeit a highly mediated one. In other words, the final judgment that he should kill as many people as possible would be analyzed, roughly speaking, into the logical form of a sorites. This would save the principle that every judgment must involve at least one index, since no judgment would be regarded as fully analyzed until an index had thus been located. But it may be asked why the principle must be saved. The only answer I could give to this would be to point out that this principle is, after all, only a variation on an ancient and familiar dictum which runs: Nihil est in intellectu quod non fuerit in sensu.

APPENDIX

THE SEMIOTIC TRIVIUM

The term "semiotic," which Peirce uses interchangeably with "logic" when the latter is taken in a very broad sense (1.444), comprehends what he called a "trivium" of sciences. (1.559) It is worth noting that the use of this latter term, suggestive as it is of the medieval liberal arts curriculum, is almost certainly a studied one on his part. The members of Peirce's semiotic trivium are called by him: (1) "speculative grammar," (2) "critical logic" (i.e. logic in a narrow sense), and (3) "speculative rhetoric," in obvious analogy to the grammatica, dialectica, and rhetorica of the medieval trivium. It is likely that Peirce envisioned the development of a theoretical and philosophical analogue to this curriculum, constructed on the basis and findings of modern science and modern logic, as an ideal for a genuinely liberal education. Thus he says, for example, that "a liberal education -- so far as its relation to the understanding goes -- means logic [i.e. in the broad sense]. That is indispensable to it, and no other one thing is." (7.64) And he says further:

> In short, if my view is the true one, a young man wants a physical education and an aesthetic education, an education in the ways of the world and a

> moral education, and with all these logic has nothing in particular to do; but so far as he wants an intellectual education, it is precisely logic that he wants; and whether he be in one lecture-room or another, his ultimate purpose is to improve his logical power and his knowledge of methods. To this great end a young man's attention ought to be directed when he first comes to the university; he ought to keep it steadily in view during the whole period of his studies; and finally, he will do well to review his whole work in the light which an education in logic throws upon it. (7.68)

(1) According to Peirce, speculative grammer is "the general theory of the nature and meaning of signs." (1.191) It treats of "the general conditions of signs being signs" (1.444); or, in other words, it is "the doctrine of the general conditions of symbols and other signs having their significant character." (2.93) The term which in current use probably comes closest to indicating the sort of study which Peirce had in mind would be "theory of meaning," though some other term -- say "theory of significance" -- might be preferable in order to avoid any restrictive or misleading connotations which the former term may have due to its use in other philosophies.[1] Peirce's term "speculative grammar" (grammatica speculativa) is the title of a work formerly attributed to Duns Scotus but now known to be by Thomas of Erfurt.[2] But it also signified a general type of inquiry which the

---

[1]Peirce himself did not seem to be able to settle on a suitable label for this (or the other) branches of semiotic. In addition to calling it "speculative grammar," he also called it "formal grammar," "pure grammar," "stecheotic," "stechiology," and "stoicheiology,"

[2]Etienne Gilson, History of Christian Philosophy in the Middle Ages (New York: Random House, 1955), p. 313.

medieval historian Etienne Gilson characterizes as follows:

> The grammarians of the thirteenth century noticed that each language raised two sorts of problems, some proper to the language in question (Hebrew, Greek or Latin grammar), others common to all languages (what is a noun, a verb, an adverb, etc.). The first sort of problems could not become an object of science; the second sort of problems, on the contrary, could be taught in a scientific way on account of their generality. Hence the progressive constitution of what was to be called later on "speculative grammar" (grammatica speculativa), whose object it was to teach the general rules followed by the human intellect in expressing itself, namely, its various "ways of signifying" what it thinks (modi significandi).[3]
>
> Its two characters are: 1) to be an abstract speculation about the classification and function of words in language; 2) to be, in virtue of its very abstraction, independent from the grammars of particular languages. He who knows, in this way, the grammar of a single language, knows the grammar of all languages. . . .[4]

This universality, i.e. independence from the grammars of particular languages, is repeatedly insisted upon by Peirce,[5] and the point might be expressed in contemporary jargon by saying that he was concerned with developing a "general" rather than a "special" semiotic. The fact that semiotic is not to be relativized to a particular language does not mean that Peirce was not concerned with modes of expression or notation at all; it means rather that, insofar as he was concerned with notation, he was concerned primarily with the conditions for a logically adequate mode of expression. Thus, for example, one of

---

[3] Ibid.

[4] Ibid., p. 781

[5] 2.341, 3.340, 4.7, 4.48ff, 4.55, 4.438n1.

the special virtues of the notation which Peirce developed in his existential graphs is that it contains no notational features beyond those minimally required for expressing purely logical functions (e.g. there is no need in it for punctuation marks of any kind).

Peirce also says of this branch of semiotic that "it has for its task to ascertain what must be true of the representamens [i.e. signs] used by every scientific intelligence in order that they may embody any meaning." (2.229) This reference to "every scientific intelligence," by which Peirce means any beings whose cognitional capacities are like those of human beings (as opposed e.g. to infra-human and divine minds), brings up a further point, viz. that Peirce conceives of speculative grammar as being an Erkenntnisstheorie (2.206) or Erkenntnisslehre (2.83), i.e. a theory of cognition. Thus he says, for example, that speculative grammar considers:

> . . . in what sense and how there can be any true proposition and false proposition, and what are the general conditions to which thought or signs of any kind must conform in order to assert anything. Kant, who first raised these questions to prominence, called this doctrine transcendentale Elementarlehre, and made it a large part of his Critic of the Pure Reason. But the Grammatica Speculativa of Scotus is an earlier and interesting attempt. The common German word is Erkenntnisstheorie, sometimes translated Epistemology. (2.206)

(2) The second branch of semiotic is logic in the narrower and more usual sense, "critical logic," as Peirce sometimes called it.[6] It is "the theory of the general

---

[6]Peirce uses the term "logic" sometimes as

conditions of the reference of symbols and other signs to their professed object, that is, it is the theory of the conditions of truth." (2.93) Since, on the one hand, Peirce defines the validity of an argument in terms of the truth of its leading principle, and since, on the other hand, all cognition is inferential on his view, an alternative way of expressing the function of critical logic is to say that it "classifies arguments and determines the validity and degrees of force of each kind." (1.191) Since critical logic utilizes such notions as that of being true, being a sign, being asserted, etc., it presupposes the prior doctrines of speculative grammar. In point of fact, though, much of Peirce's development of the latter followed upon extensive explorations in critical logic and it is to a large extent an attempt to hypothesize from it.

(3) The third branch of semiotic has as its task "to ascertain the laws by which in every scientific intelligence one sign gives birth to another, and especially one thought brings forth another." (1.229) Somewhat more prosaically expressed, it is "the theory of the method of discovery." (2.108) It "studies the methods that ought to be pursued in the investigation, in the exposition,

---

equivalent to "semiotic" and sometimes as equivalent to "critical logic" (cf. 1.444), and it is not always contextually clear which sense he intends. However, it usually makes no difference in such cases, anyway, since either meaning would fit. He also calls critical logic "critic" and "logic proper."

and in the application of truth." (1.191) Peirce usually calls this branch either "speculative rhetoric" or "methodeutic," but it might simply be called "theory of methods."[7] Thus whereas critical logic is concerned with the conditions of the validity of (putative) knowledge, speculative rhetoric is concerned with the conditions of acquiring and utilizing knowledge.

It may be thought odd that Peirce should have used the term "rhetoric" in this connection, since this term is usually thought of as signifying something altogether extra-logical. However, it should be remembered that Peirce defines truth in terms of the settlement of belief; hence, if we regard rhetoric as the theory of persuasion, and take "being persuaded" in the perfectly straightforward sense of "being brought to a settled belief," then we can see why a general theory of method might very well be called a "rhetoric." This does not eliminate the distinction between good and bad persuasion, but this distinction depends upon the theory developed in critical logic, which is one reason why speculative rhetoric depends upon critical logic.

In fine, then, semiotic consists of three branches; one concerned with the conditions of meaning of signs, one

---

[7] Peirce also called this branch of semiotic "formal rhetoric," "pure rhetoric," "universal rhetoric," "objective logic," "methodology," "methodeutic," and just plain "method." It should also be noted that Peirce regards this as similar or analogous to Kant's transzendentale Methodenlehre and to Hegel's Objective Logic. (1.444)

one concerned with the conditions of truth of signs (including the validity of arguments), and one concerned with the conditions of development of signs (i.e. the methods by which knowledge is augmented). The present study is primarily concerned, of course, with the first of these.

The following table shows in broad outlines Peirce's classification of the sciences, insofar as it is pertinent here.[8] Each successive science presupposes, in part at least, those preceeding it in the classificatory order.

I. THE MATHEMATICAL SCIENCES

II. THE PHILOSOPHICAL SCIENCES
- A. Phenomenology
- B. The Normative Sciences
  1. Esthetics
  2. Ethics
  3. Semiotic (Logic in the broad sense)
     - a. speculative grammar
     - b. critical logic
     - c. speculative rhetoric
- C. Metaphysics

III. THE SPECIAL SCIENCES (i.e. physics, psychology, biology, etc.)

---

[8] A lengthy discussion of the classification of the sciences is in 1.180ff.

BIBLIOGRAPHY

For an extensive bibliography of secondary works on Peirce the reader should consult "A Draft of a Bibliography of Writings about C. S. Peirce," compiled by Max H. Fisch, with the assistance of Barbara E. Kretzman and Victor F. Lenzen, in 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), 486-514; and also a first supplement to this, compiled by Max Fisch, in Transactions of the Charles S. Peirce Society, Vol. II, No. 1 (Spring 1966), 54-59. The following bibliography does not represent all material directly pertinent to the topic of this study, nor does it represent all material consulted, nor does it include all works cited in the text. It consists rather of (a) standard book-length studies or collections of studies of Peirce's philosophy, and (b) miscellaneous works -- many of them not on Peirce at all -- which I have, in point of fact, found especially helpful or especially pertinent in writing this.

Abbot, Francis Ellingwood. Scientific Theism. Boston: Little, Brown and Company, 1886.

Alston, William. "Pragmatism and the Theory of Signs in Peirce," Philosophy and Phenomenological Research, XIV (1956-57), 79-88.

Bernstein, Richard J. (ed.). Perspectives on Peirce. New Haven: Yale University Press, 1965.

Bird, Otto. "What Peirce Means by Leading Principles," Notre Dame Journal of Formal Logic, III (1962), 175-78.

Blau, Joseph L. Men and Movements in American Philosophy. Englewood Cliffs: Prentice-Hall, 1952.

Boler, John. Charles Peirce and Scholastic Realism: A Study of Peirce's Relation to John Duns Scotus. Seattle: University of Washington Press, 1963.

Buchler, Justus. "The Accidents of Peirce's System," Journal of Philosophy, XXXVII (1940), 264-69.

_____. Charles Peirce's Empiricism. London: Kegan Paul, Trench, Trubner & Co., Ltd., 1939.

_____. Nature and Judgment. New York: Columbia University Press, 1955.

_____. "Peirce's Theory of Logic," Journal of Philosophy, XXXVI (1939), 197-215.

_____. Toward a General Theory of Judgment. New York: Columbia University Press, 1951.

Burks, Arthur W. "Icon, Index and Symbol," Philosophy and Phenomenological Research, IX (1948-49), 673-89.

De Morgan, Augustus. On the Syllogism, and Other Logical Writings, ed. Peter Heath. New Haven: Yale University Press, 1966.

Dewey, John. "The Development of American Pragmatism," Studies in the History of Ideas. New York: Columbia University Press, 1925, 351-77.

_____. Logic: The Theory of Inquiry. New York: Holt, Rinehart & Winston, 1938.

_____. "Peirce's Theory of Linguistic Signs, Thought and Meaning," Journal of Philosophy, XLIII (1946), 85-95.

_____. "Peirce's Theory of Quality," Journal of Philosophy, XXXII (1935), 701-08.

_____. "The Pragmatism of Peirce," Journal of Philosophy, XIII (1916), 709-15.

_____. "What are Universals?", Journal of Philosophy, XXXIII (1936), 281-88.

_____, and Bentley, Arthur F. Knowing and the Known. Boston: Beacon Press, 1949.

Feibleman, James K. An Introduction to Peirce's Philosophy. New York: Harper & Bros., 1946.

Fitzgerald, John Joseph. "Peirce's Theory of Signs as the Foundation for his Pragmatism." Dissertation, Tulane University, 1962.

Gallie, W. B. Peirce and Pragmatism. Hammondworth, Middlesex, England: Penguin Books, 1952.

Goudge, Thomas A. The Thought of C. S. Peirce. Toronto: University of Toronto Press, 1950.

James, William. The Principles of Psychology. 2 Vols. New York: Henry Holt & Co., 1890.

John of St. Thomas. The Material Logic, trans. Y. R. Simon, J. J. Glanville, and G. D. Hollenhorst. Chicago: University of Chicago Press, 1955.

_____. Outlines of Formal Logic, trans. Francis C. Wade. Milwaukee: Marquette University Press, 1955.

Kant, Immanuel. Critique of Pure Reason, trans. Norman Kemp Smith. London: MacMillan & Co., Ltd., 1961.

Knight, Thomas. Charles Peirce. New York: Washington Square Press, Inc., 1965.

Moore, Edward C. American Pragmatism: Peirce, James & Dewey. New York: Columbia University Press, 1961.

_____, and Robin, Richard S. (eds.). Studies in the Philosophy of Charles Sanders Peirce: Second Series. Amherst: University of Massachusetts Press, 1964.

Murphey, Murray G. The Development of Peirce's Philosophy. Cambridge: Harvard University Press, 1961.

Nagel, Ernest. "Charles Peirce's Guess at the Riddle," Journal of Philosophy, XXX (1933), 365-86.

_____. "Charles S. Peirce, Pioneer of Modern Empiricism," Philosophy of Science, VII (1940), 69-80.

O'Connor, Daniel D. "Peirce's Debt to F. E. Abbot," Journal of the History of Ideas, XXV (1964), 543-65.

Peirce, Charles S. 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; 1958.

_____. Charles S. Peirce's Letters to Lady Welby, ed. Irwin C. Lieb. New Haven: Whitlock's, Inc., 1953.

_____. Values in a Universe of Chance, ed. Philip P. Wiener. Garden City: Doubleday & Co., Inc., 1958.

Perry, Ralph B. The Thought and Character of William James. 2 Vols. Boston: Little, Brown & Co., 1936.

Randall, John Herman, Jr. Nature and Historical Experience. New York: Columbia University Press, 1958.

Roberts, Don Davis. "The Existential Graphs of Charles S. Peirce." Dissertation, University of Illinois, 1963.

Royce, Josiah. Logical Essays, ed. Daniel S. Robinson. Dubuque: Wm. C. Brown Co., 1951.

_____. The Problem of Christianity. New York: The Macmillan Co., 1913, Vol. II, Lectures XI-XIV.

_____. The World and the Individual. 2 Vols. New York: Dover Publications, Inc., 1959.

Schneider, Herbert W. A History of American Philosophy. New York: Columbia University Press, 1946.

Thompson, Manley. The Pragmatic Philosophy of C. S. Peirce. Chicago: University of Chicago Press, 1953.

Transactions of the Charles S. Peirce Society. Vol. 1, Nos. 1 and 2; Vol. 2, No. 1. Amherst: University of Massachusetts Press, 1965-66.

Weiss, Paul, and Burks, Arthur. "Peirce's Sixty-Six

Signs," Journal of Philosophy, XLII (1945), 383-88.

Welby, Victoria. What is Meaning? London: Macmillan & Co., Ltd., 1903.

Wennerberg, Hjalmar. The Pragmatism of C. S. Peirce. Copenhagen: Ejnar Munksgaard, 1962.

Whewell, William. History of Scientific Ideas. London: John W. Parker and Son, 1858, 2 Vols.

_____. Novum Organon Renovatum. London: John W. Parker and Son, 1858.

_____. On the Philosophy of Discovery. London: John W. Parker and Son, 1860.

Wiener, Philip P., and Young, Frederic H. (eds.). Studies in the Philosophy of Charles Sanders Peirce. Cambridge: Harvard University Press, 1952.

Wright, Chauncey. Philosophical Discussions. New York: Henry Holt & Co., 1877.