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By

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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 sug-
gested that a sign is best understood simply as a term of the tri-
adic 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 con-
jointly 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 rep-
resentation relation is thought of by Peirce as being identical
with the fundamental inference relation, and that the categorial

analysis is in turn an analysis of this latter relation.

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

# NOTE ON CITATIONS

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

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

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

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## CHAPTER 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 phil-
osophical 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 phil-
osophical sense from it, the usual interpretive strategy
being to collate a number of prima facie incompatible state-
ments and conclude that, as usual, Peirce was hopelessly
confused.[1] This fact may justify the somewhat speculative

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[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 inter-

pretation of the icon-index-symbol distinction were devel-

oped somewhat independently, and the links between the two

are not yet sufficiently clear to me to warrant attempt-

ing 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,

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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 ap-
proach 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 judg-
ment.  (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

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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 prob-
lem 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 cog-
nition:  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 sup-
posed that our knowledge of an object is always by means of
or via an appearance or idea of it.  A three-element dis-
tinction is thereby set up consisting of knowing mind, (pu-
tatively) known object, and intervening or intermediating
idea through or by means of which the knowing mind is con-
nected with the known object.  The problem then arises as
to how the knowing mind manages to get "past" the inter-
vening 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 be-
yond 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 char-
acterization 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 pre-
cisely to replace the trouble-making assumption noted above
and to make it possible both to retain a general represent-
ative 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 func-
tion of some character which it has, and therefore it must
surely be known first as _having_ that character in order to

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3This 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 representa-
tive 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 ca-
nonical in scholastic semiotic):

> Words spoken are symbols or signs of affections or im-
> pressions 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_ trans-
lated 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

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[4]Trans. H. P. Cooke, p. 115 (16a3-7). See also
William of Ockham, _Philosophical Writings_, trans.
Philotheus Boehner (Indianapolis: The Bobbs-Merrill 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 tra-
dition, 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, how-
ever: that with which the mind or soul becomes identical
in cognition is the form of the object.[5] Now, complica-
tions 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

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

[6]This is, of course, where the "problem of uni-
versals" 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 dis-
cussed above) for recognizing the existence of non-instru-
mental 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 ca-
pable 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

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[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 con-
sciousness, 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 quali-
tative form (firstness) insofar as it figures in cogni-
tion 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 im-
plicit in many places in the Collected Papers and is sub-
stantially 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 actu-
> ally having an Object. (2.275)

Applying this especially to the case of the iconic sign,
it will be noted that this implies that everything whatso-
ever, 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 it-
self. 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

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[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,

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[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

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[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 percep-
tion of it _via_ 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]

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[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 con-
tent 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 differ-
ence 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 reason-
ing, but which he extends to cover cases of reasoning

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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 in-
> telligence 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 ex-
> perience 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 observa-
> tion. 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 <u>as such</u> 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 <u>there-
fore</u> in any better position to determine whether the
desire is still present, <u>provided</u> 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 inade-
quate; but in respect to scientific and mathematical rea-
soning 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

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[12]It would <u>verify</u> 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" char-
acteristics), 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 percep-
tion 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 percep-
tion 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 signif-
icance 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 compre-
hensive 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

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[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 pecul-
iar to the category of law." (1.427)  I know of no further
way to characterize these two types of entitative gener-
ality, 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. any-
thing) is red whenever and wherever such-and-such condi-
tions 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

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[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 <u>can</u> an idea attain generality if not through abstraction, and how <u>can</u> 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

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[6]<u>Ibid</u>., Vol. II, p. 274.

[7]George Berkeley, <u>A Treatise Concerning the Principles of Human Knowledge</u>, Introduction, Sec. 10. See also <u>Alciphron, or The Minute Philosopher</u>, 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:

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[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 con-
> sider a figure merely as triangular, without attending
> to the particular qualities of the angles, or rela-
> tions 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 re-

torted 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 func-

tion 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 ex-
> tensive signification, and makes them recall upon occa-
> sion other individuals, which are similar to them.[12]

This "great discovery" he attributes to Berkeley. I be-

lieve that Hume is in fact reading something into Berkeley

here, though the above remarks will indicate that this way

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[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 sugges-
tive 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

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[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 interchange-
ably 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. How-
ever, 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 <u>one</u> idea, determinate in its
characteristics, and can pronounce upon its character in
such a way as to be entitled to suppose that our pronounce-
ment holds true of all others of its <u>sort</u>?  Thus, for ex-
ample, in determining the properties of a triangle we con-
sider 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 <u>generally</u> 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 <u>not</u> truly apply, then that idea comes be-
fore 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

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[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

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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 man-
ner, 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 deter-

minate 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 commen-

tators -- 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 iden-

tified as a range by citing the single schema to which

they conform, then the schema cannot in its turn be

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[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 mani-
festations 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 it-
self which bespeaks the fact that its object is real or
fictitious, as the case may be. In both cases, the ele-
ments 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,

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[20]Thus it would seem that he should have intro-
duced 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

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

therefore a matter of the concept ranging over a variety
of <u>individuals</u> having the character of being blue, but
rather of its ranging over a variety of at least poten-
tially 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 con-
text 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 resem-
blance was <u>prior</u> 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 <u>because they
are associated</u>, rather than being associated because
they are similar. The association <u>constitutes</u> the re-
semblance. (7.498)[23] The following passage is important
enough in this connection to require quotation despite
its length:

Suggestion by <u>resemblance</u> is easily enough understood,

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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 under-
stand why Peirce lays so much stress on the importance of
continuity, speaks of ideas "spreading," and relates con-
tinuity 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 to-
gether. 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

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[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 _is_ a power
or habit, and that (b) we could always inquire further as
to the explanation of _why_ it is that there is the power or
habit in question. Thus, for example, the _virtus dormitiva_
of opium is a real power or habit of opium -- it really is
true that opium _puts_ us to sleep -- but what it is about
opium that causes this, what laws lie behind _that_ 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 im-
portant 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

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[26]See 2.333 where Peirce comments on his own pen-
chant 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 partic-
ular case Peirce would seem to be identifying the concept
proper with the concept as actual; but it is more consis-
tent 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 com-
> pared to a composite photograph surges up into vivid-
> ness, and this composite idea may be called a _general_
> _idea_. It is not properly a _conception_; because a con-
> ception 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 strength-
> ening 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,

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[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)

remember, is directly perceived <u>as</u> 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 <u>fusion</u> 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 <u>sets</u> in perception. Thus he draws a picture as follows:
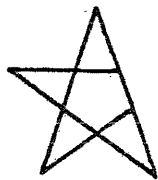
And then he says:

> 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 <u>sets</u>, so does the mind too, by its occult nature, cluster certain ideas into <u>sets</u>. 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 <u>class</u>. The clustering of ideas into <u>classes</u> is the simplest form which the

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[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 ex-
press 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 see not just five lines but a broken star,
i.e. we see it as 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 immediately as is the actual image it-
self, 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 pre-
sumably 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]

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[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 <u>icon</u>.  Now the
icon is an <u>entitative</u> general of the <u>qualitative</u> sort.
And it will be seen why the word "entitative" is prefer-
able 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 ques-
tion then arises as to whether the icon or general idea
is not also <u>referentially</u> general.  The answer to this is,
I believe, that it is <u>not</u> referentially general, on
Peirce's view.[30]  A given <u>iconic</u> 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

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[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 spe-
cific semiotic properties. Now, even though there are

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[31]Some of Peirce's most flagrant sins against his
own "ethics of terminology" are committed in his many dis-
cussions of symbols, concepts, words, meaning, and signifi-
cation. 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," "signifi-

cation," 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

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[32]In "Upon Logical Comprehension and Extension"
(2.391-426), he urges that a third "quantity," in addi-
tion to the traditional notions of comprehension (inten-
sion, depth) and extension (denotation, breadth), is re-
quired 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, how-
ever. 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 repre-

sentamens 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 interpretation of the replicas.

That is, the existent in question is the actualization of

the concept by the replicas, which actualization takes the

form of the manifestation of a general idea.  Now this is

not 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 anticipatory

set occurs, such that if my attention is directed to some

object I am set to see it as 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

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[33]Note the interesting relation between the psycho-
logical 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 con-
current concrete imagery and others with relatively little.
But if I actually <u>understand</u> the word "man" in that narra-
tive then minimally there must be something <u>like</u> an antici-
patory 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 mani-
fest 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 <u>tendency</u> 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 preju-
diced 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

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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

"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 pre-
supposes 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

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[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

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[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 cross-road 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 onto-logical 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, con-
> cern 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 knowl-
> edge 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 <u>conditio sine qua non</u>, 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 (<u>allgemeines</u>) 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 (<u>Namenerklärung</u>);[7] and since mere analysis of the content

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

[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 system 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 _ulti-mately_ 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 <u>ad libitum</u> 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 <u>given</u> or <u>assumed</u> 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 <u>truth</u> of a given judgment.

Now a philosopher who adopts such a theory will be constrained to deny that the <u>singular</u> judgment is a genuine logical form of judgment. That is to say, he will not deny that what seem <u>prima facie</u> 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 it-
self 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 <u>not</u> based upon its intra-systematic
status -- and this, of course, denies the general formal-
ist 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 argu-
ment for the denial of such status, except on the inde-
pendent 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 <u>Phenomenology of Mind</u>,[8] the

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[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 <u>this</u> or a <u>that</u>, or can be <u>here</u> or <u>there</u> or <u>now</u> or <u>then</u>; 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]

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

[9]<u>The World and the Individual</u> (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 _therefore_ the individual cannot be discriminated through the judgment. What the formalist overlooks, on Peirce's view, is the function of the _indexical_ 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 _singular_ judgment as the unique mode of reference to the individual, but rather to take the much more radical position that _all_ judgments involve an indexical sign and thus make reference to the individual: "One such index at least must enter into every proposition,

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[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 at-
tempted here. However, I think some points of philosoph-
ical 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 in-
quiry is precisely the point underlying Peirce's rejec-
tion of the notion of Cartesian doubt, for example. Car-
tesian doubt is a doubt which pretends to take nothing for

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[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 infer-
ence (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 in-
quiry. 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 ac-
count 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 inves-
tigatory 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 speci-
fied 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 be-
tween, on the one hand, the real or actual relation char-
acteristic 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 fur-
ther that an indexical sign is said by Peirce to be related
to its object regardless of whether or not it is interpre-
ted as such (2.92, 2.304, 4.447), this suggestion is rein-
forced; for the premissed propositions in a given inquiry
are not in that inquiry regarded as actual inferences de-
pending 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 <u>assumed to be</u> 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 char-
acterizations 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 <u>consist
in</u> 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 <u>identical</u>. 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 <u>object</u> (subjectmatter)
for a given inquiry is thereby an <u>indexical</u> 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 roll-
ing 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 con-
stitutes the index, and it is not clear to me that this
can be distinguished from the fact that the man has a roll-
ing gait. The following case would be analyzed in a simi-
lar 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, weather-
cocks, 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 <u>primarily</u> 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 <u>said</u>
that the thing is an F (for he might be a liar).  The con-
clusion 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 <u>said</u> 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 pass-
> engers." 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 con-

clusion that there is a vessel out there at a certain

approximate place. But this is based upon such assump-

tions 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 dif-

ferent considerations, though the strategy of analysis

here is not essentially different:

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[12]The words "this" and "that," in their demon-
strative 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 point-
ing 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 in-
> tended 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 conse-
> quence 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 sup-

posed 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 stand-

ard 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 it-

self 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

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[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 logi-
cal 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 yard-
age.  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 index-
ical 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 <u>real</u> connection with the London stick is
determined. Hence, the use of the stick really did give
me information which, in conjunction with further informa-
tion (viz. the co-efficient of error), would yield correct
information about the yardage length of whatever I meas-
ured. Perhaps this point could be generalized as follows.
Anything used as an index <u>ipso facto</u> becomes an actual
index of whatever it is potentially capable of being an
index of. What a thing is <u>actually</u> an index of is not
necessarily what it is <u>supposed</u> to be an index of, how-
ever. 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 <u>are</u> actual indices because they instance real con-
nections. 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 <u>locates</u> the problem of singularity or individuality within Peirce's theory and in no way explains what individuality <u>is</u>. 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 inter-
changeably 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 semi-
otic trivium are called by him: (1) "speculative gram-
mar," (2) "critical logic" (i.e. logic in a narrow
sense), and (3) "speculative rhetoric," in obvious anal-
ogy to the grammatica, dialectica, and rhetorica of the
medieval trivium. It is likely that Peirce envisioned
the development of a theoretical and philosophical ana-
logue 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 rela-
tion 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 educa-
> tion, 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

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[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

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[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 capac-
ities 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 trans-
> lated 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

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[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 <u>ought</u> to be pursued in the investigation, in the exposition,

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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 "meth-
odeutic," but it might simply be called "theory of meth-
ods."[7] Thus whereas critical logic is concerned with the
conditions of the validity of (putative) knowledge, specu-
lative rhetoric is concerned with the conditions of ac-
quiring 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 distinc-
tion 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 crit-
ical logic.

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

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[7]Peirce also called this branch of semiotic "formal
rhetoric," "pure rhetoric," "universal rhetoric," "objec-
tive logic," "methodology," "methodeutic," and just plain
"method." It should also be noted that Peirce regards this
as similar or analogous to Kant's transzendentale Methoden-
lehre 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.)

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

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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
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