

Draw me a picture.

Walker Percy¹

TOWARD AN UNDERSTANDING OF PEIRCE'S MASTER ARGUMENT

In working with Peirce's writings for several years I believe I have detected an outline of what I shall identify as his master argument. By that phrase, I mean the basic thrust of the way he would attempt to justify on a large scale the results of his decades of thinking about philosophy and science. I shall outline about half of it here. I present this as a hypothesis, and in outline form. Nor will I provide as many references as a full-scale study would require, but perhaps what I offer will be plausible. I conclude with a few remarks about some possible consequences.

First, Peirce thought it was fruitless to wonder from what point we *must* begin our study of philosophy, for

...we cannot start from any other condition than that in which we actually are. To attempt such a solution of the problem as Hegel has done, seems like going to China by proceeding first due north to the pole and thence due south to China—a method which certainly has the merit of being highly systematic, and also has a pleasing paradoxical appearance, but which would present certain inconveniences in practice. We really *believe* many things, and, therefore, philosophic doubts upon such matters must be mere pretence and can result in nothing but a show of demonstration of things really taken for granted. Nothing can be gained by gratuitous and fictitious doubts, nor can any conclusions be reached without premisses. Now whatever is doubted by men whom there is reason to think competent judges, is so far doubtful; and, therefore, a certain shade of doubt will hang over almost all psychological or very general propositions. It is, therefore, proper to rest philosophy,—upon what every real science must rest—namely those ordinary facts of which (in a general way) we are actually assured and therefore *cannot*, if we would, mistrust. Moreover, to hold your own system to be certain when intelligent, candid, and well-informed persons cannot agree with you, is a thing to be ashamed of and to be eradicated, as a sin; and on that principle metaphysics must be held to be very uncertain. Thus, the strictly demonstrative style or argu-

mentation usually adopted by philosophers has utterly failed of its purposes, and we might as well content ourselves with such probable inferences as support astronomy and chemistry, since if we can only reduce the uncertainty of metaphysics to a hundred times that appertaining to those sciences, we shall have much to congratulate ourselves upon. (From a manuscript of 1868, in Moore 1984: 189-190).

From this we gain knowledge both of Peirce's base of operations, and of his first sortie. The base is simply the set of beliefs we find that we already have as we enter into philosophical duties. What are here called «ordinary facts» acquired the label of «Common Sense» in later works².

The second moment arrives with doubt, a conflict in our present beliefs. On such an occasion, we are faced with the task of freely choosing a method which will take us out of doubt. This choice is an existential one (a person-creating choice); Peirce clearly understood that, and even expressed it in language that would please both French and Danish existentialists (Peirce 1877, in Hartshorne and Weiss 1965, 5: pp. 245-7). The method Peirce chose for all the doubts that might arise in Science and Philosophy (a subclass of science, according to him) is generally known today as the hypothetico-deductive method. He referred to this as the method of Science, and he regarded it as the general method for all science, from mathematics to medicine to metaphysics. I shall refer to it here as the objective method. In effect, that choice set the tone for all of Peirce's work, especially in philosophy, where his efforts can be seen as a lifelong search for an understanding of the nature of objective method and its consequences. Peirce thought that the alternative to the method of objective inquiry was some form of egocentric arbitrariness (also sketched in Peirce 1877). An elementary concomitant of objective inquiry is the Will to Learn that which one does not now know (Peirce 1898, Lecture IV, surviving as MSS 442 and 825)³.

This is a factor that has important consequences, reaching even into religious questions (see Peirce 1905).

Peirce's initial methodological efforts produced an early set of now famous results, recorded in the *Journal of Speculative Philosophy* series of 1868-69 (in Moore 1984: 193-272, but see also the important but hitherto unpublished manuscripts preceding the series at 162-192).

As Peirce applied the methods of «astronomy and chemistry» to questions in philosophy he soon discovered that there we possess no intuitive power of finding ultimate premisses. The likely hypothesis recommended by that discovery is that no cognition is absolute—one can always ask for (and get) a cognition prior to the one under consideration. From such thoughts came Peirce's dictum that there is no premiss that could not be considered as a conclusion from other premisses in a later interpretation of the matter. In other words, there is no logically first cognition, and there is no cognition that cannot be additionally interpreted. Upon what, then, does one rely? One depends upon the self-corrective nature of objective method, and upon all those beliefs that are not now in doubt, being careful to remember that one is fallible. Rochberg-Halton has given an eloquent account of this and related matters (1986).

The next crucial moment in Peirce's approach is often unnoticed, perhaps because it usually is implicit and seldom openly mentioned. Here are two examples I have found.

...Whatever we know, we know only by its relations, and in so far as we know its relations (from a manuscript of 1868 in Moore 1984: 164).

In reality, every fact is a relation. Thus, that an object is blue consists of the peculiar regular action of that object on human eyes. This is what should be understood by the «relativity of knowledge.» Not only is every fact really a relation, but your thought of the fact *implicitly* represents it as such. Thus, when you think «this is blue», the demonstrative «this» shows you are thinking of something just brought up to your notice; while the adjective shows that you recognize a familiar idea as applicable to it. Thus, your thought, when explicated, into the thought of a fact concerning this thing and concerning the character of blueness. (Peirce 1892, 3: pp. 258 f.)

develops ↗

The thesis coming at this juncture is: what we can know are relations —all knowledge is of relations. The second citation above shows that this probably arose in Peirce's mind as a hypothesis suggested by thought or language, and through reflection upon those ordinary facts not now in doubt. If we can call the primacy of the objective method Peirce's fundamental methodological hypothesis, his proposal that relations are what there is for us to know could be identified as his fundamental notion of the content of knowledge (or perhaps as his primary thesis about the basis of intelligibility, since Peirce urged that relations are really «out there», not just in our minds or in our language). At this point he had a method and an subject matter (relations) upon which to focus it.

His next step involved use of a technique he learned from biology and chemistry. (In one sense, Peirce's career can be described as that of an adaptive methodologist: one who specializes in applying methods from one science into likely areas in other sciences, particularly philosophy—see Ketner 1983a). This was a way of classifying which he had learned while studying biology with Agassiz at Harvard (Fisch 1986: 37). He referred to this as Cenopythagoreanism, and described it this way.

In classification generally, it may fairly be said to be established, if it ever was doubted, that Form, in the sense of structure, is of far higher significance than Material. Valency is the basis of all external structure; and where indecomposibility precludes internal structure, as in the classification of elementary concepts—valency ought to be made the first consideration. I term (this) the doctrine of *cenopythagoreanism*. (MS 292: 34 f., compare 292: 98).

'Valency' is also borrowed from chemistry—recall how a molecule with one free ion is said to have valency one or is a monad, how those with two loose ions are dyads, with three triads, and so on.

Peirce in effect generalized the notion of chemical valency to encompass the valency of all relations. That can be illustrated in this fashion. Consider that the black dots below are some molecules, while the lines emerging from them stand for free ions, in effect points of possible connections with other loose ions.



Figure 1—Diagrams for monads, dyads, and triads.

Now instead of molecules, let the dots represent any relation content whatever (of the internal working of which we assume no knowledge), while the lines show places in the relation's external form where appropriate kinds of connections with other relational loose ends might connect. In sentences about relations, for instance, we note that «— is a Bolivian» is a monad, «— caused —» is a dyad, and «— represents — to —» is a triad. If we further generalize these sentence forms by letting the words that remain turn into place markers for any content appropriate to relations of that valency, we get diagrams in the fashion of those of figure 1.

These diagrams Peirce called Valent Graphs, or just Graphs. And with some clues from topology, he drew (!) the following conclusions about how they could combine. (These matters are discussed in some detail in Ketner 1986).

Every graph has a definite valency... A number of dyads can only make a chain, and the compound will still be a dyad... unless the two ends are joined making it a medad (zero valent)... But a number of triads can be joined so as to make a compound of any valency not exceeding the number of triads by more than two, and any odd number giving any odd valency under the same restriction. This shows that there are five natural classes of forms of graphs, namely medads, monads, dyads, triads and higher perissids (odd valents), tetrads and higher artiads (even valents)... (MS 292: 33 f.).

This remark is but one of many in which we see Peirce applying mathematical method to philosophy or logic. He thought mathematics was the first science (see Peirce's intellectual autobiography in Ketner 1983b), and he regarded it as essential in his entire system of Science (see Eisele 1979), and especially so in semeiotic (Ketner 1984). If we recall that relations are what there is to be known, and add on these findings from valency studies, we find Peirce concluding that there are but three natural classes of irreducible forms of relations: the forms for monadic relations, dyadic relations, and triadic relations. That is to say, within the graphical system Peirce considered, he found that: (1) monads cannot be combined to construct relations with dyadic form; (2) dyads cannot be combined to

construct relations with triadic form; (3) but with triads we can construct the forms of medads, monads, or dyads; (4) moreover, relations having the form of tetrads or greater can be constructed using only triads.

Peirce thought this (and other considerations) lent strength to the hypothesis that all relations can be classified according to three natural kinds, parallel to the *external forms* of monadic, dyadic, and triadic relations. (Remember, he was practicing philosophy as a hypothetical science, so he did not offer proofs in any strong sense of that word). Hence, he concluded that all relations (which is all that there is to know) fall into natural categories, which he called by the quite abstract names of Firstness, Secondness, and Thirdness (or Firsts, Seconds, and Thirds). My proposal is that the vexed question of the nature of Peirce's categories can be answered in the way sketched above. A tempting, but I think erroneous, understanding is that his categories are kinds based upon content of some type—for instance, Firsts as all the qualities or feelings or properties in the cosmos. If I am correct, a First is not the feeling in its content, but a First is the external form of a feeling or any item that has but one means of connecting to a «free ion» in the external form (valency) of some other relation⁴.

The next step in the master argument is to notice that thought is dialogic, or sign-like in nature, and that if one classifies it according to the external form of the kind of relation it is, it falls into category Third. Peirce noticed early in his career that it seems likely that all thought is in signs (for example see his development of this in Moore 1984: 162-272). At this point, we add the result from above, that relations which are Thirds cannot be reduced to combinations of Seconds exclusively. In more traditional philosophical language, that would mean that thought (or mind) cannot be reduced to any number or combination of efficient causes (mechanical causes). From these considerations, it follows (among other important things) that all attempts to analyze or explain thought (the valency of which is triadic) EXCLUSIVELY in terms of factors that exhibit only dyadic valency—items such as materials, or finite algorithms, or efficient causes (chemical reactions, mechanical interactions, electrical discharges)—will fail.

Peirce's methodological pursuits culminated in his semeiotic, which is a grand hypothesis about the nature of signs and thirds. Using his tentative findings in semeiotic about the nature of relations and methods for studying same, he probed further into metaphysics, the traditional areas of philosophy. It is noteworthy that Peirce did not enter metaphysical study until he had first assured himself, to the extent possible, of a sound method in the form of semeiotic. This is a large subject in Peirce's writing, and many important passages are still not published.

The thesis about the irreducibility of Thirds is basic in Peirce's approach, and is one of his most distinctive results. Probably some readers question it, so it might be wise to devote some additional space to it here.

The fundamental distinction of semeiotic is that between sign action (intelligent action, triadic action) and dynamic action (brute action, mechanical action), which is only a slightly altered form of the way we have been discussing the matter (in terms of valency)⁵.

Consider dyadic action between three events, A, B, and C. A may produce B, and in turn at a later time B may produce C. But the fact

that C is about to be produced by B has no effect upon the production of B by A. Of course, an intelligent agent, for instance a physician, could intervene to have such an effect, but that would spoil the assumption that this is an example of dyadic action only. On the other hand, if we assume an intelligent or triadic relationship between these three events, we have A producing B as a means for production of C. Suppose an infantry officer (A) who wants a squad to place their rifles on the ground (C) gives the command (B) «Ground arms!» The action of the officer's will is not strictly dyadic, for if she thought the soldiers to be deaf, or recruits, or Chinese, she would not utter this command as a means likely to produce rifle-butts-placed-on-the-ground. The grounding of arms (C) in this example is an interpretant. Interpretants are the kinds of effects peculiar or proper to triadic action (intelligent action, sign action).

Another way to see the difference between dyadic and triadic relation forms is to consider the meaning of denying a triadic relational form. It would be sufficient to deny *Sabc* (*a* sold *b* to *c*) if one could show that there was only a chain of dyadic causes here, for instance that *c* forced *a* at rifle point to sign a deed for *b*, after which point *c* presented the deed in a courthouse as proof of ownership of *b*. If we subsequently came to know these underhanded events, we would say, «It is not the case that *Sabc*». Notice also that this pattern seems to be preserved in the case of dyads, for it is sufficient to establish the negation of the dyad «A causes B» if we can show that A and B are independent or monadic events (A happens and B does not, or A doesn't happen, and B does). So, we seem to have found but another difference between the forms for dyads and triads: positing some relevant independent monads is sufficient to deny a dyad, positing some relevant dyads is sufficient to deny a triad. Yet another difference occurs to me, but I only conjecture it. It is well known that dyadic relations can be symmetric, or reflexive, or transitive (or all of the above, as in the case of « --- is identical with --- »). I am unable to see how any triadic relation could be either symmetric, or reflexive, or transitive (but that may simply be a personal inadequacy). The reason that this seems to be the case lies in the appearance that these three properties require an even valency in the relation to which they are to be applied.

Now if we try to represent sign (triadic) action in the way that has become virtually traditional in some circles (Figure 2),

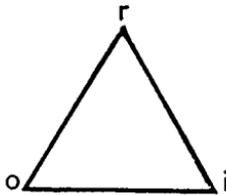


Figure 2—Sign action Pictured as a Triangle.

we will fly in the face of all of Peirce's considerations. For on his approach, this drawing amounts to stating that the relations between object, representamen, and interpretant is exclusively constituted by the conjunction of

three dyadic relations, *Ror*, *Rri*, and *Roi*. That is but another way of attempting to analyze sign action (triadic sign relations) exclusively in terms of dyads.

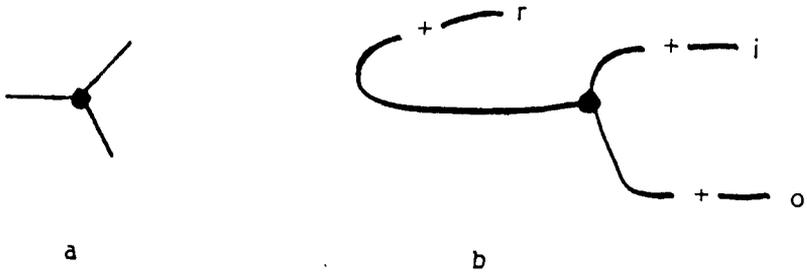


Figure 3—An Abstract and A Concrete Sign Relation.

Figure 3a shows the irreducible external form of a triadic relation in Peirce's pictorial manner. Figure 3b shows how three entities (things, ideas, habits, persons) can come to be related in an irreducibly triadic manner. Moreover, how we use a sign relation may in part be dependent upon how we «look into» it, our perspective we might say. For instance, if I am the receiver of a sign, I ask «To which of my habits of interpretation is this sign intended to appeal»? If I am the sender, I ask «How shall I constitute the nature of this representamen so that it will activate the one habit of interpretation in the receiver that I want to be activated»? If I am a representamen (as, for example, the Queen of England could be seen to be, on some occasions), I might worry about the proper use of my capacity to bring two persons or two social movements together. In all these cases, however, the secret of success, it seems to me, is to realize that there is an irreducibly triadic element, and that such a factor is logically primitive.

How then can we analyze thought, or signs, or mind or communication? In this era, we seem to have an urge to analyze. That seems innocent enough. But if 'analyze' always means 'reduce to dyadic forms', then a hidden (and perhaps false) assumption accompanies use of the word. If 'analyze' means 'come to have a better understanding of x', then the answer seems to be that we must analyze signs (triadic relations) by means of other signs or triadic relations. In particular, if there is a matter about which we lack understanding, we can use a set of relations we comprehend reasonably well to model the relations in the area of relative ignorance (a relative pun). Stated in a very abstract fashion, this is Peirce's method of diagrammatic thought, a technique he originally developed out of mathematical considerations, but adapted for other problem areas.

We might pause to ask at this point (following Percy 1975), by way of some possibly useful speculation, Why do we know relatively little about phenomena such as language and mind (if I can shock contemporary psychologists by using one of their unpopular but founding concepts)? The answer consistent with Peirce's approach would be that we lack progress in these areas because by and large scholars are (so to speak) trying to

write poems by firing howitzers at stacks of newsprint. We are using the wrong methods, in other words. This is not to deny that we learn many useful and relevant things by studying the physiology and chemistry of the brain. But we will lack the whole story about mind unless we study it according to diagrammatic thought, for a Third about which we are relatively ignorant can only be fully understood in terms of Thirds we already partially understand. Where are any to be found that we already partially understand? They are among those «ordinary facts» or «common sense beliefs» that we do not now doubt, and which have evolved with our species over millenia. Peirce, by the way, saw the evolution of these beliefs as itself an extended kind of cosmic objective inquiry (but this is a deep pot-hole in the road of inquiry; see further resources on this topic in Orange 1984).

In diagrammatic method, Peirce preferred visual diagrams (pictures), probably because they appealed to sight which is our most evolved sense. He also recognized diagrams based on auditory or other sensory channels, for example, speech as an auditory diagram (see Peirce 1892: p. 259). But he thought sight was probably best adapted for detecting new features of relational patterns in diagrams that model Thirds which are presently not well understood and which are under study. To «Draw a picture», then, is to proceed in the way that Peirce would recommend in response to the question, «How then can we study thirds if dyadic considerations alone cannot exclusively handle the load?» If we add here that Peirce recognized algebras or other arrays of symbols as also being visual diagrams, then we can state that mathematics, as the science that models relations in areas under study, would be among the finer tools for «drawing pictures» that mankind has yet developed. Peirce said as much in regard to semeiotic in *MS 798* of 1897 (printed in Hartshorne and Weiss 1965, 2: pp. 134-135).

But he did not limit the concept of visual diagram to sketches or marks. He clearly allowed for mental diagrams, in a way that would make a behaviorist blush, as being important intellectual tools (*MS 798*, for instance). Some contemporary psychologists, in a way quite consistent with Peirce's ideas, have made good empirical progress on the notion of mental diagrams (Block 1982). But I think there are even further consequences which we can extract here. The principles of diagrammatic thought extend even into art. An exploration of this notion for visual art may be found in Scott's recent essay (1985). But it seems to me that we could easily and profitably extend these insights to nonvisual art: for instance, we could think of a novel as a tool for producing mental diagrams on the part of readers. These are then available to readers who can perhaps learn something about an area of relative ignorance (perhaps within their person) by exploring the relations that are partially understood within the world (the diagram, the relational patterns) of a novel. So perhaps we could say that a novel is a large sign (a Third on a large scale) that can be a tool in diagrammatic thought, the technique whereby a Third that is relatively well understood is used to model, by means of mental diagrams, some relations (often personal ones) that are not as well understood. If so, novels might be outstanding tools of ANALYSIS.

- ¹ Personal letter, 1987.
- ² Ayim 1972 is an excellent study of this topic; see also Ketner 1972 for a survey of Peirce's Common Sensusm.
- ³ References to Peirce's Harvard manuscripts employ a number assigned by Robin (1967), preceded by *MS*.
- ⁴ Obviously I am condensing a lot here. Readers are encouraged to examine Brunning 1981, Herzberger 1981, Ketner 1986, Percy 1975, and Tursman 1987 for details that tend to make this proposal plausible.
- ⁵ The account that follows is adapted from *MSS* 318 (1907), which is partially redacted in Hartshorne and Weiss 1965: pp. 317 f., and L 327.5 (CSP to Papini 10 April 1907) which is a discussion of *MS* 318.

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