Pragmatism

(M. x 318, 1907)

MS 318. [A highly complex and multi-layered manuscript, MS 318 contains five intermingled versions of an article initially conceived as a long "letter to the editor." The article was rejected by both the Nation and the Atlantic Monthly. All versions share the same beginning—the "introduction" below, also found in CP 5:11-13 and 464-66. Other portions are published in CP 1.560-62 and 5.467-96. "Variant 1" below is the third version, composed in March-April 1907, and "Variant 2" the fifth, composed a few months later.] In this selection, Peirce comes closer than in any other to fully expressing his brand of pragmatism and to giving a clearly articulated proof. He begins by reaffirming that pragmatism (pragmaticism) is not a doctrine of metaphysics, nor an attempt to determine the truth of things, but is only a method of ascertaining the meanings of hard words and abstract concepts. By this time, Peirce has thoroughly integrated his pragmatism with his semiotics, and he bases his proof in his theory of signs (rather than in his theory of perception as he had for the 1903 proof in his Harvard Lectures). His semiotic proof begins with the premise that every concept and every thought beyond immediate immediate perception is a sign, and works its way to the proposition that a logical interpretation must be of the nature of a habit. "Consequently," Peirce concludes, "the most perfect account of a concept that words can convey will consist in a description of that habit which it is calculated to produce. But how else can a habit be described than by a description of the kind of action to which it gives rise." Since Peirce's conclusion amounts to a paraphrase of his definition of pragmatism, his proof is complete.

[Introduction]

Mr. Editor:

The philosophical journals, the world over, are just now brimming over, as you know, with pragmatism and antipragmatism. The number of Leonardo that reaches me this morning has an admirable piece on the subject by a writer of genius and of literary skill, Giovanni Papini. Yesterday brought news of discussions along the same line in New Zealand. Often, however, one hears glib utterances that betray complete misunderstanding of this new ingredient of the thought of our time; so that I gladly accept your invitation to explain what pragmatism really is, how it came into being, and whither it is tending. Any philosophical doctrine that should be completely new could hardly fail to prove completely false; but the rivulets at the head of the river of pragmatism are easily traced back to almost any desired antiquity.

Socrates bathed in these waters. Aristotle rejoices when he can find them. They run, where least one would suspect them, beneath the dry rubbish-heaps of Spinoza. Those clear definitions that strewed the pages of the Essay concerning Humane Understanding (I refuse to reform the spelling) had been washed out in these same pure springs. It was this medium, and not tar-water, that gave health and strength to Berkeley's earlier works, his Theory of Vision and what remains of his Principles. From it the general views of Kant derive such clearness as they have. Auguste Comte made still more—much more—use of this element; as much as he saw his one to using. Unfortunately, however, both he and Kant, in their rather opposite ways, were in the habit of mingling these sparkling waters with a certain mental sedative to which many men are addicted—but the brutal businessmen very likely to their benefit—but which plays sad havoc with the philosophical constitution. I refer to the habit of cherishing contempt for the close study of logic.

So much for the past. The ancestry of pragmatism is respectable enough; but the more conscious adoption of it as lanterna pedibus in the discussion of dark questions, and the elaboration of it into a method in aid of philosophic inquiry came, in the first instance, from the humblest souche imaginable. It was in the earliest seventies that a knot of us young men in Old Cambridge, calling ourselves, half-ironically, half-defiantly, "The Metaphysical Club," for agnosticism was then riding its high horse, and was frowning superbly upon all metaphysics,—used to meet, sometimes in my study, sometimes in that of William James. It may be that some of our old-time confederates would today not care to have such wild-oats-sowings made public, though there was nothing but boiled oats, milk, and sugar in the mess. Mr. Justice Holmes, however, will not, I believe, take it ill that we are proud to remember his membership; nor will Joseph Warner Esq. Nicholas St John Green was one the most interested fellows, a skillful lawyer and a learned one, a disciple of Jeremy Bentham. His extraordinary power of disrobing warm and breathing truth of the draperies of long worn formulas was what attracted attention to him everywhere. In particular, he often urged the importance of applying Bain's definition of belief, as "that upon which a man is prepared to act." From this definition, pragmatism is scarcely more than a corollary; so that I am disposed to think of him as the grandfather of pragmatism. Chauncey Wright, something of a philosophical celebrity in those days, was never absent from our meetings. I was about to call him our corypheus; but he will better be described as our boxing-master whom we,—I, particularly,—used to face to be severely pummelled. He had abandoned a former attachment to Hamiltonianism to take up with the doctrines of Mill, to which, and to their cognate, agnosticism, he was trying to weld the really incongruous ideas of Darwin. John Fiske and, more rarely, Francis Ellingwood Abbot, were sometimes present, lending their countenances to the spirit of our endeavors, while holding aloof from any assent to their success. Wright, James, and I
were men of science, rather scrutinizing the doctrines of the metaphysicians on their scientific side than regarding them as very momentous spiritually. The type of our thought was decidedly British. I, alone of our number, had come upon the threshing-floor of philosophy through the doorway of Kant, and even my ideas were acquiring the English accent.

Our metaphysical proceedings had all been in winged words (and swift ones, at that, for the most part) until at length, lest the club should be dissolved without leaving any material souvenir behind, I drew up a little paper expressing some of the opinions that I had been urging all along under the name of pragmatism. This paper was received with such unlooked-for kindness, that I was encouraged, some half-dozen years later, on the invitation of the great publisher, Mr. W. H. Appleton, to insert it, somewhat expanded, in the Popular Science Monthly for November 1877 and January 1878, not with the warmest possible approval of the Spencerian editor, Dr. Edward Youmans. The same paper appeared the next year in a French redaction in the Revue Philosophique. In those medieval times, I dared not in type use an English word to express an idea unrelated to its received meaning. The authority of Mr. Principal Campbell weighed too heavily upon my conscience. I had not yet come to perceive, what is so plain today, that if philosophy is ever to stand in the ranks of the sciences, literary elegance must be sacrificed,—like the soldier's old brilliant uniforms,—to the stern requirements of efficiency, and the philosophist must be encouraged,—yea, and required,—to coin new terms to express such new scientific concepts as he may discover, just as his chemical and biological brethren are expected to do. Indeed, in those days, such brotherhood was scorned, alike on the one side and on the other,—a lamentable but not surprising state of scientific feeling. As late as 1893, when I might have procured the insertion of the word pragmatism in the Century Dictionary, it did not seem to me that its vogue was sufficient to warrant that step.

It is now high time to explain what pragmatism is. I must, however, preface the explanation by a statement of what it is not, since many writers, especially of the starry host of Kant's progeny, in spite of pragmatists' declarations, unanimous, reiterated, and most explicit, still remain unable to catch on to what we are driving at, and persist in twisting our purpose and purport all awry. I was long enough, myself, within the Kantian fold to comprehend their difficulty; but let it go. Suffice it to say once more that pragmatism is, in itself, no doctrine of metaphysics, no attempt to determine any truth of things. It is merely a method of ascertaining the meanings of hard words and of abstract concepts. All pragmatists of whatsoever stripe will cordially assent to that statement. As to the ulterior and indirect effects of practicing the pragmatic method, that is quite another affair.

All pragmatists will further agree that their method of ascertaining the meanings of words and concepts is no other than that experimental method by which all the successful sciences (in which number nobody in his senses would include metaphysics) have reached the degrees of certainty that are severally proper to them today,—this experimental method being itself nothing but a particular application of an older logical rule, "By their fruits ye shall know them." But beyond these two propositions to which pragmatists assent nem. con., we find such slight discrepancies between the views of one and another declared adherents as are to be found in every healthy and vigorous school of thought in every department of inquiry. The most prominent of all our school and the most respected, William James, defines pragmatism as the doctrine that the whole "meaning" of a concept expresses itself either in the shape of conduct to be recommended or of experience to be expected.

Between this definition and mine there certainly appears to be no slight theoretical divergence, which, for the most part, becomes evanescent in practice; and though we may differ on important questions of philosophy,—especially as regards the infinite and the absolute,—I am inclined to think that the discrepancies reside in other than the pragmatistic ingredients of our thought. If pragmatism had never been heard of, I believe the opinions of James on one side, of me on the other, would have developed substantially as they have; notwithstanding our respective ways of connecting them at present with our conception of that method. The brilliant and marvellously human thinker, Mr. F. C. S. Schiller, who extends to the philosophic world a cup of nectar stimulant in his beautiful Humanism, seems to occupy ground of his own, intermediate, as to this question, between those of James and mine.

I understand pragmatism to be a method of ascertaining the meanings, not of all ideas, but only of what I call "intellectual concepts," that is to say, of those upon the structure of which arguments concerning objective fact may hinge. Had the light which, as things are, excites in us the sensation of blue, always excited the sensation of red, and vice versa, however great a difference that might have made in our feelings, it could have made none in the force of any argument. In this respect, the qualities of hard and soft strikingly contrast with those of red and blue; because while red and blue name mere subjective feelings only, hard and soft express the factual behavior of the thing under the pressure of a knife-edge. (I use the word "hard" in its strict mineralogical sense, "would resist a knife-edge.") My pragmatism, having nothing to do with qualities of feeling, permits me to hold that the predication of such a quality is just what it seems, and has nothing to do with anything else. Hence, could two qualities of feeling everywhere be interchanged, nothing but feelings could be affected. Those qualities have no intrinsic significations beyond themselves. Intellectual concepts, however,—the only sign-burdens that are properly denominated "concepts,"—essentially carry some implication concerning the general behavior either of some conscious being or of some inanimate object, and so convey more, not merely any feeling, but more, too,
than any existential fact, namely, the "would-acts" of habitual behavior; and no agglomeration of actual happenings can ever completely fill up the meaning of a "would be." But that the total meaning of the predication of an intellectual concept consists in affirming that, under all conceivable circumstances of a given kind, the subject of the predication would (or would not) behave in a certain way—that is, that it either would, or would not, be true that under given experiential circumstances (or under a given proportion of them, taken as they would occur in experience) certain facts would exist—that proposition I take to be the kernel of pragmatism. More simply stated, the whole meaning of an intellectual predicate is that certain kinds of events would happen, once in so often, in the course of experience, under certain kinds of existential circumstances.

But how is this pregnant principle to be proved true? For it seems to be in violent contrast to what one will read, let us say, for example, in Mr. Bradley's Appearance and Reality, and in the other works of the high metaphysicians; as it no less decidedly conflicts with the simpler doctrines of Haeckel, Karl Pearson, and other nominalists. I might offer half a dozen different demonstrations of the pragmatist principle; but the very simplest of them would be technical and lengthy. It would not be such as a reader of this journal, a student of current literature, could be expected to undertake critically to examine. Such a reader would like to know the color of the thought that supports the positive assertion of pragmatism, without entering too minutely into details. Just such desire I shall endeavor to satisfy, though the smallest sufficient measure of detail will scare away some readers who if they were to persevere would find the detail interesting.

To begin with, every concept and every thought beyond immediate perception is a sign. So much was well made out by Leibniz, Berkeley, and others about two centuries ago. The use of the word σήμειον shows that the Greeks, before the development of the science of grammar, were hardly able to think of thought from any other point of view. Let anybody who may desire evidence of the truth of what I am saying just recall the course of what passed in his mind during some recent sincere and fervid self-deliberation. If he is a good introspector, he will remark that his deliberations took a dialogic form, the arguer of any moment appealing to the reasonableness of the ego of the succeeding moment for his critical assent. Now, it is needless to say that conversation is composed of signs. Accordingly, we find the sort of mind that is least sophisticated and is surest to betray itself by its language is given to such expressions as "I says to myself, says I," or even to audibly talking to himself, like Launcelot Gobbo, according to the subtle psychologist who created him. Oh, I am confident the reader will grant that every thought is a sign.

Now how would you define a sign, Reader? I do not ask how the word is ordinarily used. I want such a definition as a zoologist would give of a fish, or a chemist of a fatty body, or of an aromatic body—an analysis of the essential nature of a sign, if the word is to be used as applicable to everything which the most general science of σήμειον must regard as its business to study; be it of the nature of a significant quality, or something that once uttered is gone forever, or an enduring pattern, like our sole definite article; whether it professes to stand for a possibility, for a single thing or event, or for a type of things or of truths; whether it is connected with the thing, be it truth or fiction, that it represents, by imitating it, or by being an effect of its object, or by a convention or habit; whether it appeals merely to feeling, like a tone of voice, or to action, or to thought; whether it makes its appeal by sympathy, by emphasis, or by familiarity; whether it is a single word, or a sentence, or is Gibbon's Decline and Fall, whether it is interrogatory, imperative, or assertory; whether it is of the nature of a jest, or is sealed and attested, or relies upon artistic force; and I do not stop here because the varieties of signs are by any means exhausted. Such is the definitum which I seek to fit with a rational, comprehensive, scientific, structural definition, such as one might give of "loom," "marriage," "musical cadence"; aiming, however, let me repeat, less at what the definitum conventionally does mean, than at what it were best, in reason, that it should mean.

Everybody recognizes that it is no inconsiderable art, this business of "phaneroscopic" analysis by which one frames a scientific definition. As I practice it, in those cases, like the present, in which I am debarred from a direct appeal to the principle of pragmatism, I begin by seizing upon that predicate which appears to be most characteristic of the definitum, even if it does not quite apply to the entire extension of the definitum. If the predicate be too narrow, I afterward seek for some ingredient of it which shall be broad enough for an amended definitum and, at the same time, be still more scientifically characteristic of it.

Proceeding in that way with our definitum, "sign," we note, as highly characteristic, that signs mostly function each between two minds, or theatres of consciousness, of which the one is the agent that utters the sign (whether acoustically, optically, or otherwise), while the other is the patient mind that interprets the sign. Going on with my account of what is characteristic of a sign, without taking the least account of exceptional cases, for the present, I remark that, before the sign was uttered, it already was virtually present to the consciousness of the utterer, in the form of a thought. But, as already remarked, a thought is itself a sign, and should itself have an utterer (namely, the ego of a previous moment), whose consciousness it must have been already virtually present, and so back. Likewise, after a sign has been interpreted, it will virtually remain in the consciousness of its interpreter, where it will be a sign,—perhaps, a resolution to apply the burden of the communicated sign,—and, as a sign should, in its turn have an interpreter, and so on forward. Now it is undeniably conceivable that a beginningless series of successive utters should all do their work in a brief interval of time, and that so should an endless series of interpreters. Still, it is not likely to be denied that, in some cases, neither the series of utters nor that of interpreters forms an
infinite collection. When this is the case, there must be a sign without an utterer and a sign without an interpreter. Indeed, there are two pretty conclusive arguments on these points that are likely to occur to the reader. But why argue, when signs without utterers are often employed? I mean such signs as symptoms of disease, signs of the weather, groups of experiences serving as premises, etc. Signs without interpreters less manifestly, but perhaps not less certainly, exist. Let the cards for a Jacquard loom be prepared and inserted, so that the loom shall weave a picture. Are not those cards signs? They convey intelligence—that is, intelligence that, considering its spirit and pictorial effect, cannot otherwise be conveyed. Yet the woven pictures may take fire and be consumed before anybody sees them. A set of those models that the designers of vessels drag through the water may have been prepared; and with the set a complete series of experiments may have been made; and their conditions and results may have been automatically recorded. There, then, is a perfect representation of the behavior of a certain range of forms. Yet if nobody takes the trouble to study the record, there will be no interpreter. So the books of a bank may furnish a complete account of the state of the bank. It remains only to draw up a balance sheet. But if this be not done, while the sign is complete, the human interpreter is wanting.

Having found, then, that neither an utterer, nor even, perhaps, an interpreter is essential to a sign, characteristic of signs as they both are, I am led to inquire whether there be not some ingredient of the utterer and some ingredient of the interpreter which not only are so essential, but are even more characteristic of signs than the utterer and the interpreter themselves. We begin with seeking the essential ingredient of the utterer. By calling this quiescent an ingredient of the utterer, I mean that where this quiescent is absent the utterer cannot be present; and further that where there is no utterer, it cannot be that this quiescent together with all the others of a certain body of "ingredients" should all be present. This latter clause, however, has so little importance and is so nearly self-evident that I need not insist upon it. A fact concerning our quiescent, which we can know in advance of all study, is that, because this quiescent will function as a sort of substitute for an utterer, in case there be no utterer, or at any rate fulfills nearly the same, but a more essential, function, it follows that since it is not the sign that constructs or voices or represents the utterer, but, on the contrary, the utterer that constructs, voices, and sets forth the sign, therefore, although ex hypothesi the quiescent is something quite indispensable to the functioning of the sign, yet it cannot be fully revealed or brought to light by any study of the sign alone, as such. Knowledge of it must come from some previous or collateral source. Moreover, since it is conceived to act upon the sign, it must be conceived as singular, not general. But perhaps this is not very clear and needs illustration.

Example 1. Suppose I chance to overhear one man at a club say to another "Ralph Pepperill has bought that mare Pee Dee Kew." Never having heard before either of Ralph Pepperill or of Pee Dee Kew, it means to me only that some man has bought some famous trotter; and since I knew already that some men do make such purchases, it does not interest me. But the next day I hear somebody inquire where he can find a copy of Stevent's edition of Plato; to which reply is made that Ralph Pepperill says he has a copy. Now although I never was knowingly acquainted with any purchaser of crack trotting-horses, yet I should not have supposed that such a person would be aware of possessing an old edition of Plato whose chief value is due to the circumstance that modern citations from the Dialogues usually refer to it. After this, I begin to pay attention to what I hear of Ralph Pepperill; until, at length, that which the name means to me probably represents pretty fairly what it would mean to an acquaintance of the man. This imparts, not merely an interest, but also a meaning to every little scrap of new information about him—to scraps that would have conveyed no information whatsoever, had they first introduced his name to my ears. Yet the name itself will remain a designation devoid of essential significance, and so much of the accidental kind as it may at any time have acquired will not have been derived, in however slight measure, from the utterer of any sentence which it may furnish with informative interest;—at least, not from him in his capacity as utterer of that sentence.

Example 2. I remember a blazing July noon in the early sixties when a fellow-student in the chemical laboratory, in whose company I was crossing the Harvard "College Yard," while the grass shone like emeralds, and the red-brick buildings, not red enough by nature for the taste of the curator, were blazing in a fresh coat of something like vermilion,—when this fellow student casually remarked upon the pleasing harmony of color between the grass, the foliage, and the buildings. With eyes feeling as if their balls were being twisted by some inquisitor, I at first understood the remark as a sorry joke, like the gibes of some Indian captive at the want of skill of his tormentors. But I soon found that it was the utterance of a sincere feeling, and then, by a series of questions, soon discovered that my friend was blind to the red element of color. A man may have learned that he is color-blind; but it is impossible that he should be conscious of the stupendous gulf between his chromatic impressions and those of ordinary men; although it is needful to take account of this in all interpretations of what he may say about colors. In the course of my examination of that young gentleman, which occupied several days, I learned a more general lesson, worth multiples of the time it lost me from the laboratory.

Example 3. Toward the end of a sultry afternoon, three young gentlemen are still lounging together; one in a long chair, one supine upon a lounge, the third standing by the open casement that looks down seven stories upon the Piazza di Spagna from its Pincian side, and seems to be half glancing at the newspaper that has just been brought to him. His is one of those natures that habitually hold themselves within the limits of extreme calm, because they
too well know the terrible expense of allowing themselves to be stirred. In a few moments, he breaks the silence with the words, "Verily, it is a terrible fire." What does he mean? The other twain are too lazy to ask. The long-chaired one thinks the utterer was looking at the newspaper when he made his exclamation, and concludes that there has been a conflagration in Teheran, in Sydney, or in some such place, appalling enough to be flashed round the globe. But the couched man thinks the utterer was looking out of the window, and that there must be a fire down in the Corso, or in that direction. Here is another case in which the whole burden of the sign must be ascertained, not by closer examination of the utterance, but by collateral observation of the utterer.

Example 4. I find (let us suppose) among my books, a quarto volume among the leaves of which an old manuscript letter has got bound, which gives some details about a fire,—apparently a considerable conflagration, since the writer speaks of it as "the fire," as if the addressee could not possibly misidentify it, and since different houses being consumed are mentioned as small details. If it refers to the great fire of London, it is certainly of remarkable interest. But how am I to know whether it does so or not? I need not say that the binder in trimming the edges has cut off the date; since the oath of their trade, as it would seem, must oblige binders to do this whenever the margins carry matter of special interest. I can, therefore, only submit the manuscript to some experts in diplomacy who can pronounce on the date of the writing and of the paper. In this case, again, the whole significance of the sign depends upon collateral observation.

Example 5. Pronouns are words whose whole object is to indicate what kind of collateral observation must be made in order to determine the significance of some other part of the sentence. "Which" directs us to seek the取暖 in the previous context; the personal pronouns to observe who is the speaker, who the hearer, etc. The demonstrative pronouns usually direct this sort of observation to the circumstances of the utterance (perhaps to the way a finger points) rather than to the words. Since the most acute minds, in dealing with conceptions unfamiliar to them, will blunder thus, no logic makes us habituated to such dealings, I will propose, as an additional example, that of a weathercock. Now a weathercock is one of those natural signs, like any sign of the weather, which depend upon a physical connection between the sign and that of which it is the sign. But a weathercock having been devised, as everyone knows, to show which way the wind blows, itself signifies to what it refers; and consequently it may be argued that no collateral observation is called for to complete its significance. But this reasoning commits two faults. In the first place, it confuses two incompatible ways of conceiving of a weathercock: as a natural sign, and therefore as having no utterer; and as a human contrivance to show the direction of the wind, and as such, uttered by its original inventor (for I speak of the weathercock,—the type, not the single instance). In the second place, the reasoning overlooks the obvious truth that when thoughts are determined or revealed by a sign, the sign exists first (virtually, at any rate), and those thoughts subsequently. Hence, thoughts applied to devise a weathercock cannot be revealed by the weathercock, but come under the head of "previous or collateral" information. To this all-sufficient reply, it may be added, by way of surplusage, that prudent persons, in consulting a weathercock, watch it to see whether it veers, as a security against the possibility of its being jammed by rust or otherwise, and against its being deflected by any other force than that of the wind.

It is now easy to see that the *requesitum* which we have been seeking is simply that which the sign "stands for," or the idea of that which it is calculated to awaken. We now have a clearer idea of the *requesitum* than we had, at first, of the "object of the sign." Our remarks may be regarded as attempts to analyze the idea of "standing for" or "representing." The *requesitum*, when there are both an utterer and an interpreter, is that which the former has in mind, but which it does not occur to him to express, because he well knows that the interpreter will understand that he refers to that, without his saying so. I am speaking of cases in which the sign stands alone without any context. Thus if the utterer says "Fine day!" he does not dream of any possibility of the interpreter's thinking of any mere desire for a fine day that a Finn of the North Cape might have entertained on April 19, 1776. He means, of course, to refer to the actual weather, then and there, where he and the interpreter are alike influenced by the fine weather, and have it near the surface of their common consciousness. Marine fossils found on a mountain, considered as a sign of the sea level having been higher than the levels of deposit of those fossils, refers to a distant but indefinite date. Here, there is no utterer; but this is what might have been unexpressed in the mind of the utterer, though essential to the significance of the sign, if that sign had been devised and constructed to give the human race a first lesson in geology. Where the sign is only a part of another sign, so that there is a context, it is in that context that the *requesitum* is likely, in part at least, to be found; though it is not absolutely necessary that it should be found in any part of the sign.

This *requesitum* I term the *Object* of the sign;—the *immediate* object, if it be the idea which the sign is built upon, the *real* object, if it be that real thing or circumstance upon which that idea is founded, as on bedrock.

The *Object* of a Sign, then, is necessarily unexpressed in the sign, taken by itself. Indeed, we shall soon see that whatever is so expressed comes under quite a different category. But the above examples show that that idea which though essential to the functioning of a sign can only be attained by collateral observation is the idea of a strictly individual thing, or individual collection or series, or an individual event, or an individual *ens rationis*. This sufficiently proves the truth of the proposition. There are deeper causative reasons that cannot be given here. The proposition does not amount to so much as it has the air of doing, since whatever actually exists is an individual. For a finite
plural is nothing but the singular of an indefinite collective noun; while the endlessness of an indefinite collection is of a hypothetical, or ideal, nature, and lacks completed existence. The object of a sign, though singular, may nevertheless be multiple, and may even be infinitely so. Take a verb in the indicative mood out of its context, and what is its object? What, for example, is the object of “runs”? *Answer:* it is something, a runner. What is the object of “kills”? *Answer:* it is a pair of indesignate individuals, the one a killer, the other killed by him. So “gives” has for its object a triplet of related indesignate singulants, a giver, a gift, a recipient of that gift from that giver. “Buys” is predicated of a quartette composed of the seller, the buyer, the legal right that is transferred from the former to the latter, and the price. The different members of the set which is the object of a verb, its partial objects, as they may be called, often have distinctive characters which are the same for large numbers of verbs. Thus, the partial objects of an ordinary transitive verb are an agent and a patient. These distinctive characters have nothing to do with the form of a verb, as a sign, but are derived from the form of the fact signified. By taking note of this, one may avoid some perplexity when the verb itself expresses the functioning of a sign. For example, one of the partial objects of the verb “expresses” is of course the thing expressed, which in some drowsy moment might seem an instance refuting the principle that the object of a sign cannot be expressed by the sign itself. To avoid the puzzle, one need but note that the verb “expresses” not only is a sign and expresses something, but also signifies the action of a sign, or expresses its expressing something. Its accusative is the object of the outer sign, but not of the other, inner, sign which this outer sign implies.

It should be mentioned that though a sign cannot express its Object, it may describe, or otherwise indicate, the kind of collateral observation by which that Object is to be found. Thus, a proposition whose subject is distributively universal (not plural or otherwise collectively universal), such as “Any man will die,” allows the interpreter, after collateral observation has disclosed what single universe is meant, to take any individual of that universe as the Object of the proposition, giving, in the above example, the equivalent “If you take any individual you please of the universe of existent things, and if that individual is a man, it will die.” If the proposition had been, “Some Old Testament character was translated,” the indication would have been that the individual must be suitably selected, while the interpreter would have been left to his own devices to identify the individual.

Now that we have attained, you and I, Reader, as I hope, a pretty clear notion of what, in strictness of speech, must be meant by the Object of a sign, it becomes pertinent to inquire how far such strictness of speech is practicable and convenient. Of the two loosely synonymous terms, “individual” and “singular,” the former translates Aristotle’s τὸ ἐξουσί, the latter his τὸ καθ’ ἐκατέσχον.10 “Individual” is usually and well defined as that which is absolutely determinate; the “singular” is that which is absolutely determinate as long as the time is so, or to generalize this definition, is variable only in two precisely opposite and converse ways of varying. Now it is quite impossible that any collateral observations, however they might be eked out by imagination or thought, should ever approach a positive idea of a singular, let alone an individual; that is, that we should actually think it as determinate in each one of the more than millions of respects in which things may vary. Suppose, for example, that it is visible; and consider only the outline of a single aspect of it. Even though this outline were restricted to being one of a family of curves, say ellipses, the different possible shapes between any two limiting shapes are more than innumerable; for there is a continuum of them. It would be impossible to complete our collateral observation, aided though it were by imagination and thought, even in this one, almost insignificant, respect. It is plainly impracticable, therefore, to restrict the meaning of the term “object of a sign” to the Object strictly so called.

For, after all, collateral observation, aided by imagination and thought, will usually result in some idea, though this need not be particularly determinate; but may be indefinite in some regards and general in others. Such an apprehension, approaching, however distant, that of the Object strictly so called, ought to be, and usually is, termed the “immediate object” of the sign in the intention of its utterer. It may be that there is no such thing or fact in existence, or in any other mode of reality; but we surely shall not deny to the common picture of a phoenix or to a figure of naked truth in her well10 the name of a “sign,” simply because the bird is a fiction and Truth an ens rationis.

If there be anything real (that is, anything whose characters are true of it independently of whether you or I, or any man, or any number of men think them as being characters of it, or not) that sufficiently corresponds with the immediate object (which, since it is an apprehension, is not real), then whether this be identifiable with the Object strictly so called or not, it ought to be called, and usually is called, the “real object” of the sign. By some kind of causation or influence it must have determined the significant character of the sign.

So much for the object, or that by which the sign is essentially determined in its significant characters in the mind of its utterer. Corresponding to it there is something which the sign in its significant function essentially determines in its interpreter. I term it the interpretant of the sign. In all cases, it includes feelings; for there must, at least, be a sense of comprehending the meaning of the sign. If it includes more than mere feeling, it must evoke some kind of effort. It may include something besides, which, for the present, may be vaguely called “thought.” I term these three kinds of interpretant the “emotional,” the “energetic,” and the “logical” interpretants.

If a sign has no interpreter, its interpretant is a “would be,” i.e., is what it would determine in the interpreter if there were one. In its general nature, the interpretant is much more readily intelligible than the object, since it includes all that the sign of itself expresses or signifies. But there is some difficulty in
defining the three kinds of interpretant. It may possibly be, for example, that I am taking too narrow a conception of the sign in general in saying that its initial effect must be of the nature of feeling, since it may be that there are agencies that ought to be classed along with signs and yet that at first begin to act quite unconsciously. But since this error, if it be one, does not seem to have anything to do with the subject of pragmatism, I do not now stop to consider it. A much more serious question, especially in the present connection, concerns the nature of that logical interpretant, the conveyed thought, which we easily assure ourselves that some signs have, though we do not straightforwardly discern in what it consists.

I am now prepared to risk an attempt at defining a sign,—since in scientific inquiry, as in other enterprises, the maxim holds, Nothing hazard, nothing gain. I will say that a sign is anything, of whatsoever mode of being, which mediates between an object and an interpretant; since it is both determined by the object relatively to the interpretant, and determines the interpretant in reference to the object, in such wise as to cause the interpretant to be determined by the object through the mediation of this “sign.”

The object and the interpretant are thus merely the two correlates of the sign; the one being antecedent, the other consequent of the sign. Moreover, the sign being defined in terms of these correlates, it is confidently to be expected that object and interpretant should precisely correspond, each to the other. In point of fact, we do find that the immediate object and emotional interpretant correspond, both being apprehensions, or are “subjective”, both, too, appertain to all signs without exception. The real object and energetic interpretant also correspond, both being real facts or things. But to our surprise, we find that the logical interpretant does not correspond with any kind of object. This defect of correspondence between object and interpretant must be rooted in the essential difference there is between the nature of an object and that of an interpretant; which difference is that the former antecedes, while the latter succeeds the sign. The logical interpretant must, therefore, be in a relatively future tense.

To this may be added the consideration that it is not all signs that have logical interpretants, but only intellectual concepts and the like; and these are all either general or intimately connected with generals, as it seems to me. This shows the species of future tense of the logical interpretant is that of the conditional mood, the “would-be”.

At the time I was originally puzzling over the enigma of the nature of the logical interpretant, and had reached about the stage where the discussion now is, being in a quandary, it occurred to me that if I could find a moderate number of concepts which should be at once highly abstract and abstruse, and yet the whole nature of whose meanings should be quite unquestionable, a study of them would go far toward showing me how and why the logical interpretant should in all cases be a conditional future. I had no sooner framed a definite wish for such concepts, than I perceived that in mathematics they are as plenty as blackberries. I at once began running through the explications of them, which I found all took the following form: Proceed according to such and such a general rule. Then, if such and such a concept is applicable to such and such an object, the operation will have such and such a general result; and conversely. Thus, to take an extremely simple case, if two geometrical figures of dimensionality $N$ should be equal in all their parts, an easy rule of construction would determine, in a space of dimensionality $N$ containing both figures, an axis of rotation, such that a rigid body that should fill not only that space but also a space of dimensionality $N + 1$ containing the former space, turning about that axis, and carrying one of the figures along with it, while the other figure remained at rest, the rotation would bring the movable figure back into its original space of dimensionality $N$, and when that event occurred, the movable figure would be in exact coincidence with the unmoved one, in all its parts; while if the two figures were not so equal, this would never happen.

Here was certainly a stride toward the solution of the enigma. For the treatment of a score of intellectual concepts on that model, only a few of them being mathematical, seemed to me to be so refugently successful as fully to convince me that to predicate any such concept of a real or imaginary object is equivalent to declaring that a certain operation, corresponding to the concept, if performed upon that object, would (certainly, or probably, or possibly, according to the mode of predication) be followed by a result of a definite general description.

Yet this does not quite tell us just what the nature is of the essential effect upon the interpreter, brought about by the sign in the sign, which constitutes the logical interpretant. (It is important to understand what I mean by semiosis. All dynamical action, or action of brute force, physical or psychical, either takes place between two subjects,—whether they react equally upon each other, or one is agent and the other patient, entirely or partially,—or at any rate is a resultant of such actions between pairs. But by “semiosis” I mean, on the contrary, an action, or influence, which is, or involves, a cooperation of three subjects, such as a sign, its object, and its interpretant, this tri-relative influence not being in any way resolvable into actions between pairs. Semiosis in Greek is in Greek of the Roman period, as early as Ciceron’s time, if I remember rightly, meant the action of almost any kind of sign; and my definition confers on anything that so acts the title of a “sign.”) 22

Although the definition does not require the logical interpretant (or, for that matter, either of the other two interpretants) to be a modification of consciousness, yet our lack of experience of any semiosis in which this is not the case leaves us no alternative to beginning our inquiry into its general nature with a provisional assumption that the interpretant is, at least, in all cases, a sufficiently close analogue of a modification of consciousness to keep our conclusion pretty near to the general truth. We can only hope that, once that conclusion is reached, it may be susceptible of such a generalization as will eliminate any possible error due to the falsity of that assumption. The reader may well wonder why I do not simply confine my inquiry to psychical semiosis,
since no other seems to be of much importance. My reason is that the too frequent practice, by those logicians who do not go to work without any method at all, of basing propositions in the science of logic upon results of the science of psychology,—as contradistinguished from commonsense observations concerning the workings of the mind, observations well known even if little noticed, to all grown men and women that are of sound minds,—that practice is to my apprehension as unsound and insecure as was that bridge in the novel of *Kenilworth* that, being utterly without any sort of support, sent the poor Countess Amy to her destruction; seeing that, for the firm establishment of the truths of the science of psychology, almost incessant appeals to the results of the science of logic,—as contradistinguished from natural perceptions that one relation evidently involves another,—are peculiarly indispensable. Those logicians continually confound *psychical* truths with *psychological* truths, although the distinction between them is of that kind that takes precedence over all others as calling for the respect of anyone who would tread the strait and narrow road that leadeth unto exact truth.

Making that provisional assumption, then, I ask myself, since we have already seen that the logical interpretant is general in its possibilities of reference (i.e., refers or is related to whatever there may be of a certain description), what categories of mental facts there be that are of general reference. I can find only these four: conceptions, desires (including hopes, fears, etc.), expectations, and habits. I trust I have made no important omission. Now it is no explanation of the nature of the logical interpretant (which, we already know, is a concept) to say that it is a concept. This objection applies also to desire and expectation, as explanations of the same interpretant; since neither of these is general otherwise than through connection with a concept. Besides, as to desire, it would be easy to show (were it worth the space) that the logical interpretant is an effect of the energetic interpretant, in the sense in which the latter is an effect of the emotional interpretant. Desire, however, is cause, not effect, of effort. As to expectation, it is excluded by the fact that it is not conditional. For that which might be mistaken for a conditional expectation is nothing but a judgment that, under certain conditions, there would be an expectation: there is no conditionality in the expectation itself, such as there is in the logical interpretant after it is actually produced. Therefore, there remains only habit, as the essence of the logical interpretant.

Let us see, then, just how, according to the rule derived from mathematical concepts (and confirmed by others), this habit is produced; and what sort of a habit it is. In order that this deduction may be rightly made, the following remark will be needed. It is not a result of scientific psychology, but is simply a bit of the catholic and undeniable common sense of mankind, with no other modification than a slight accentuation of certain features.

Every sane person lives in a double world, the outer and the inner world, the world of percepts and the world of fancies. What chiefly keeps these from being mixed up together is (besides certain marks they bear) everybody’s well-knowing that fancies can be greatly modified by a certain nonmuscular effort, while it is muscular effort alone (whether this be “voluntary,” that is, pretended, or whether all the intended endeavor is to inhibit muscular action, as when one blushes, or when peristaltic action is set up on experience of danger to one’s person) that can, to any noticeable degree, modify percepts. A man can be durably affected by his percepts and by his fancies. The way in which they affect him will be apt to depend upon his personal inborn disposition and upon his habits. Habits differ from dispositions in having been acquired as consequences of the principle, virtually well known even to those whose powers of reflection are insufficient to its full significance, that multiply reiterated behavior of the same kind, under similar combinations of percepts and fancies, produces a tendency,—the habit,—actually to behave in a similar way under similar circumstances in the future. Moreover,—here is the point,—every man exercises more or less control over himself by means of modifying his own habits, and the way in which he goes to work to bring this effect about in those cases in which circumstances will not permit him to practice reiterations of the desired kind of conduct in the outer world shows that he is virtually well acquainted with the important principle that reiterations in the inner world,—fancied reiterations,—if well-intensified by direct effort, produce habits, just as do reiterations in the outer world; and these habits will have power to influence actual behavior in the outer world; especially, if each reiteration be accompanied by a peculiar strong effort that is usually likened to issuing a command to one’s future self."

(I here owe my patient reader a confession. It is that when I said that those signs that have a logical interpretant are either general or closely connected with generals, this was not a scientific result, but only a strong impression due to a life-long study of the nature of signs. My excuse for not answering the question scientifically is that I am, as far as I know, a pioneer, or rather a backwoodsman, in the work of clearing and opening up what I call semiotic, that in the doctrine of the essential nature and fundamental varieties of possible semiosis; and I find the field too vast, the labor too great, for a first-comer. I am, accordingly, obliged to confine myself to the most important questions. The questions of the same particular type as the one I answer on the basis of an impression, which are of about the same importance, exceed four hundred in number; and they are all delicate and difficult, each requiring much search and much caution. At the same time, they are very far from being among the most important of the questions of semiotic. Even if my answer is not exactly correct, it can lead to no great misconception as to the nature of the logical interpretant. There is my apology, such as it may be deemed.)

"I well remember when I was a boy, and my brother Herbert, now our minister at Christiana,24 was scarce more than a child, one day, as the whole family were at table, some spirit from a "blazer," or "shaping-dish," dropped on the muslin dress of one of the ladies and was kindled; and how instantly he jumped up, and did the right thing, and how skilfully each motion was adapted to the purpose. I asked him afterward about it, and he told me that since Mrs. Longfellow’s death⁴ he had often run over in imagination all the details of what ought to be done in such an emergency. It was a striking example of a real habit produced by exercises in the imagination.
It is not to be supposed that upon every presentation of a sign capable of producing a logical interpretant, such interpretant is actually produced. The occasion may either be too early or too late. If it is too early, the semiosis will not be carried so far, the other interpreters sufficing for the rude functions for which the sign is used. On the other hand, the occasion will come too late if the interpreter be already familiar with the logical interpretant, since then it will be recalled to his mind by a process which affords no hint of how it was originally produced. Moreover, the great majority of instances in which formations of logical interpretants do take place are very unsuitable to serve as illustrations of the process, because in them the essentials of this semiosis are buried in masses of accidental and hardly relevant semioses that are mixed with the former. The best way that I have been able to hit upon for simplifying the illustrative example which is to serve as our matter upon which to experiment and observe is to suppose a man already skillful in handling a given sign (that has a logical interpretant) to begin now before our inner gaze for the first time seriously to inquire what that interpretant is. It will be necessary to amplify this hypothesis by a specification of what his interest in the question is supposed to be. In doing this, I by no means follow Mr. Schiller's brilliant and seductive humanistic logic, according to which it is proper to take account of the whole personal situation in logical inquiries. For I hold it to be very evil and harmful procedure to introduce into scientific investigation an unfounded hypothesis, without any definite prospect of its hastening our discovery of the truth. Now such a hypothesis Mr. Schiller's rule seems to me, with my present lights, to be. He has given a number of reasons for it; but, to my estimate, they seem to be of that quality that is well calculated to give rise to interesting discussions, and is consequently to be recommended to those who intend to pursue the study of philosophy as an entertaining exercise of the intellect, but is negligible for one whose earnest purpose is to do what in him lies toward bringing about a metamorphosis of philosophy into a genuine science. I cannot turn aside into Mr. Schiller's charming lane. When I ask what the interest is in seeking to discover a logical interpretant, it is not my fondness for strolling in paths where I can study the varieties of humanity that moves me, but the definite reflection that unless our hypothesis be rendered specific as to that interest, it will be impossible to trace out its logical consequences, since the way the interpreter will conduct the inquiry will greatly depend upon the nature of his interest in it.

I shall suppose, then, that the interpreter is not particularly interested in the theory of logic, which he may judge by examples to be profitless; but I shall suppose that he has embarked a great part of the treasures of his life in the enterprise of perfecting a certain invention; and that, for this end, it seems to him extremely desirable that he should acquire a demonstrative knowledge of the solution of a certain problem of reasoning. As to this problem itself, I shall suppose that it does not fall within any class for which any general method of handling is known, and that indeed it is indefinite in every respect which might afford any familiar kind of handle by which any image fairly representing it could be held firmly before the mind and examined; so that, in short, it seems to elude reason's application or to slip from its grasp.

Various problems answering this description might be instanced; but to fix our ideas, I will specify one of them, and will suppose that this is the very one which our imaginary inventor wishes to solve. It shall be the following "map-coloring problem": Let a globular body be bored through in two wide holes; and, though it is unnecessary, the edge at each end of each tunnel shall be smoothly rounded off. Then the problem is, supposing its utterer is free to divide the whole surface of this body,—including the surfaces of the bores,—into regions in any way he likes (no region consisting of separated pieces), and supposing that it will then fall to the interpreter to color the whole area of each region in one color, but never giving to two regions that abut along a common boundary-line the same color; required to ascertain what will be the least number of different colors that will always suffice, no matter how the surface may have been divided.

Under the high stimulus of his interest in this problem, and with that practical knack that we have supposed him to possess in coloring maps without too frequently being obliged to go back and alter the colors he had assigned to given regions, we need not doubt that our inquirer will be thrown into a state of high activity in the world of fancies, in experimenting upon coloring maps, while trying to make out what subconscious rule guides him, and renders him as successful as he usually is; and in trying, too, to discover what rule he had violated in each case where his first coloration has to be changed. This activity is, logically, an energetic interpretant of the interrogatory he puts to himself. Should he in this way succeed in working out a determinate rule for coloring every map on the two-tunnelled (or, what is the same thing, the two-bridged) everywhere unbounded surface with the fewest possible colors, there will be good hope that a demonstration may tread upon the heels of that rule, in which case, the problem will be solved in the most convenient form. But while he may very likely manage to formulate his own usually successful way of coloring the regions, it is very unlikely that he will obtain an unfulfilling rule for doing so. For after some of the first mathematicians in Europe had found themselves baffled by the far simpler problem, to prove that every map upon an ordinary sheet can be colored with four colors, one of the very first logico-mathematicians of our age, Mr. Alfred B. Kempe, proposed a proof of it, somewhat, though not exactly, of the kind we are supposing our imaginary inventor to be aiming at. Yet I am informed that many years later a fatal flaw was discovered in Mr. Kempe's proof.27 I do not remember that I ever knew what the fallacy was. We may assume with confidence, then, that our imaginary interpreter will, at length, come to despair of solving the problem in that way. What way shall I imagine him to try next?

It will be very natural for him to pass from endeavoring to define a uniformly successful rule of procedure, to endeavoring either, first, to define the topical conditions under which two different regions must be colored alike, if the colors are not to exceed a given number; whence he will deduce the
conditions under which two regions that do not abut must be colored differently; or else, first to define the conditions under which two regions cannot, by being stretched out, be brought into abuttal along a boundary, and thence to define the conditions under which two regions must be colored alike. Either of these methods is more promising than the one with which he began; and yet were either capable of being perfected without some very peculiar aperçu, the easier task of demonstrating that four colors suffice for every map on an ordinary limited sheet or globular surface must long ago have been brought to completion, which never has been accomplished, I believe, in print. We may assume, then, that he will, at length, come to abandon every such method. Meantime, he cannot fail to have noticed several obvious propositions that will be useful in his further inquiries. One of these will be that by minute alterations of the boundaries between regions, which alterations can neither diminish nor increase the number of colors that will in all cases just suffice, he can get rid of all points where four or more regions concur, and thus reduce the number of points of concurrence two-thirds as many as the number of boundaries, so that the latter number will be divisible by three, and the former by two, unless fewer colors are required than are generally necessary. He will also have remarked that there must for each color be at least one region of that color which abuts upon regions of all the other colors, that for each of these other colors there must be at least one region that besides abutting upon the first region abuts upon regions of all the remaining colors, etc.

I shall suppose that it now occurs to him that it not only makes no difference what the proportions of dimensions either of the whole surface or of any of the regions are, but that it is equally indifferent whether any part of the whole surface be flat, convex, concave, curved, or broken by angles, or whether any boundaries are straight, curved, or broken by angles, and are convex or concave to either of the regions it bounds; whence it will follow that the problem belongs neither to Metrical, nor to Graphical (or Projective) Geometry, but to Topical Geometry, or Geometrical Topics. This is the most fundamental, and no doubt, in its own nature, much the easiest of the three departments of geometry. For just as metrics is but a special problem in the easier graphics, as Cayley showed, it is so obviously graphics is a special problem in the easier topics. For there is no other possible way of defining unlimited planes and rays, than by the topical statement (which does not fully define them) that the unbounded planes are a family of surfaces in three-dimensional space of which any two contain one common line only, which is a ray, and of which any three that do not all contain one common ray have one point and only one in common; and further, any two points are both contained in one and in only one ray, while any three points not all in one ray are contained in one and only one unbounded plane. *

*This supposes the unbounded three-dimensional space to have a peculiar shape. For if it had the simplest shape possible (or what seems to me such, and what Listing assumed to be the real shape of space), every unbounded surface in it would separate it into two parts, and the

But though Topics must be the easiest kind of geometry, yet geometers were so accustomed to rely on considerations of measure and of flatness, that when they were deprived of these, they did not know how to handle problems; so that, apart from mere enumerations of forms, such as knots, we are still in possession of only one general theorem of Topics, Listing's census-theorem. Consequently, our imagined investigator, as soon as he remarks that he has a problem in topical geometry before him, will infer that he must utilize that sole known theorem of topics; albeit it is sufficiently obvious that that theorem of itself is not adequate to furnishing a solution of his problem. I will state the census-theorem of Listing with some sacrifice of exactitude to perspicuity, in so far as it applies to the map-coloring problem. The surface which is divided into regions may be bounded by a line or unbounded. If it be unbounded and separates a solid into two parts, I call it articed; if it does not, I call it perissid. The Cyclosy, or ringiness, of the surface of a body unperced by any tunnel (i.e. not bridged over by an unbounded bridge) is zero; and every tunnel through the body adds two to the cyclosy of its surface. The cyclosy of the simplest perissid surface, such as an unbounded plane, is one, and every tunnel connecting two parts of it in an additional way (or every cylindrical bridge, which will be a tunnel on the other side of the surface) adds two to the cyclosy. A region, or an uninterrupted boundary that does not return into itself (as I will assume is the case with all regions and boundaries between two regions), has zero cyclosy. I will further assume that there is more than one region on the surface. Under these circumstances, the census-theorem takes this form, supposing all points of concurrence of regions are points where three regions and no more run together: One third of the number of boundaries from one point of concurrence to the next diminished by the number of regions is equal to one less than the cyclosy of the whole surface, if this be bounded, or to two less than the cyclosy, if the surface be unbounded. In the case of the surface of a body pierced by two tunnels, the surface is unbounded, and its cyclosy is 4. The investigator will see at once that the number of colors must be at least seven, and is likely to be more. For were the body pierced by but one tunnel, let the number of regions each abutting upon all the rest be $x$. Then, the number of boundaries would be $\frac{1}{3}(x-1)$, and the census-theorem applied to this case would be $\frac{1}{3}(x-1)-x = 2-2$. That is, $x^2 - 7x = 0$, or $x = 7$. Since, then, even with but one tunnel seven colors might be required, at least that number will be required for the case of two tunnels. On the other hand, were two tunnels made in a projective plane, where the cyclosy would be 5, instead of 4, only nine regions could touch one another; so that it is likely that for a surface of cyclosy 4, the requisite number

unbounded line common to two surfaces would cut any third unbounded surface in an even number of points, since this line would pass alternately from one to the other of the two parts into which the first surface had cut the unbounded solid space. The peculiar shape of the solid space is that of "projective space."
of colors is less than nine. The investigator will, therefore, only have to ascertain whether eight, and if so whether nine, colors can be required. He is still not very near his solution, but he is not hopelessly removed from it.

In every case, after some preliminaries, the activity takes the form of experimentation in the inner world; and the conclusion (if it comes to a definite conclusion) is that under given conditions, the interpreter will have formed the habit of acting in a given way, whenever he may desire a given kind of result. The real and living logical conclusion is that habit; the verbal formulation merely expresses it.

I do not deny that a concept, proposition, or argument may be a logical interpretant. I only insist that it cannot be the final logical interpretant, for the reason that it is itself a sign of that very kind that has itself a logical interpretant. The habit alone, though it may be a sign in some other way, is not a sign in that way in which the sign of which it is the logical interpretant is a sign. The habit conjoined with the motive and the conditions has the action for its energetic interpretant; but action cannot be a logical interpretant, because it lacks generality. The concept which is a logical interpretant is only imperfectly so. It somewhat partakes of the nature of a verbal definition, and is as inferior to the habit, and much in the same way, as a verbal definition is inferior to the real definition. The deliberately formed, self-analyzing habit,—self-analyzing because formed by the aid of analysis of the exercises which nourished it,—is the living definition, the veritable and final logical interpretant. Consequently, the most perfect account of a concept that words can convey will consist in a description of the habit which that concept is calculated to produce. But how otherwise can a habit be described than by a description of the kind of action to which it gives rise, with the specification of the conditions and of the motive?

If we now revert to the psychological assumption originally made, we shall see that it is already largely eliminated by the consideration that habit is by no means exclusively a mental fact. Empirically, we find that some plants take habits. The stream of water that wears a bed for itself is forming a habit. Every ditcher so thinks of it. Turning to the rational side of the question, the excellent current definition of habit, due, I suppose, to some physiologist (if I can remember my bye-reading for nearly half a century unblurred at, Brown-Sequard much insisted on it in his book on the spinal cord), says not one word about the mind. Why should it, when habits in themselves are entirely unconscious, though feelings may be symptoms of them, and when consciousness alone,—i.e., feeling,—is the only distinctive attribute of mind?

What further is needed to clear the sign of its mental associations is furnished by generalizations too facile to arrest attention here, since nothing but feeling is exclusively mental. But while I say this, it must not be inferred that I regard consciousness as a mere "epiphenomenon"; though I heartily grant that the hypothesis that it is so has done good service to science. To my apprehension consciousness may be defined as that congeries of non-relative predicates, varying greatly in quality and in intensity, which are symptomatic of the interaction of the outer world,—the world of those causes that are exceedingly compulsive upon the modes of consciousness, with general disturbance sometimes amounting to shock, and are acted upon only slightly, and only by a special kind of effort, muscular effort,—and of the inner world, apparently derived from the outer, and amenable to direct effort of various kinds with feeble reactions, the interaction of these two worlds chiefly consisting of a direct action of the outer world upon the inner and an indirect action of the inner world upon the outer through the operation of habits. If this be a correct account of consciousness, i.e., of the congeries of feelings, it seems to me that it exercises a real function in self-control, since without it, or at least without that of which it is symptomatic, the resolves and exercises of the inner world could not affect the real determinations and habits of the outer world. I say that these belong to the outer world because they are not mere fantasies but are real agencies.

I have now outlined my own form of pragmatism; but there are other slightly different ways of regarding what is practically the same method of attaining vitally distinct conceptions, from which I should protest from the depths of my soul against being separated. In the first place, there is the pragmatism of James whose definition differs from mine only in that he does not restrict the "meaning," that is, the ultimate logical interpretant, as I do, to a habit, but allows percepts, that is, complex feelings endowed with compulsiveness, to be such. If he is willing to do this, I do not quite see how he need give any room at all to habit. But practically, his view and mine must, I think, coincide, except where he allows considerations not at all pragmatic to have weight. Then there is Schiller, who offers no less than seven alternative definitions of pragmatism. The first is that pragmatism is the doctrine that "truths are logical values." At first blush, this seems far too broad; for who, be he pragmatist or absolutist, can fail to prefer truth to fiction? But no doubt what is meant is that the objectivity of truth really consists in the fact that, in the end, every sincere inquirer will be led to embrace it;—and if he be not sincere, the irresistible effect of inquiry in the light of experience will be to make him so. This doctrine appears to me, after one subtraction, to be a corollary of pragmatism. I set it in a strong light in my original presentation of the method. I call my form of it "conditional idealism." That is to say, I hold that truth's independence of individual opinions is due (so far as there is any "truth") to its being the predestined result to which sufficient inquiry would ultimately lead. I only object that, as Mr. Schiller himself seems sometimes to say, there is not the smallest scintilla of logical justification for any assertion that a given sort of result will, as a matter of fact, either always or never come to pass; and consequently we cannot know that there is any truth concerning any given question; and this, I believe, agrees with the opinion of Monsieur Henri Poincaré, except that he seems to insist upon the nonexistence of any absolute truth for all questions, which is simply to fall into the very same
error on the opposite side. But practically, we know that questions do generally get settled in time, when they come to be scientifically investigated; and that is practically and pragmatically enough. Mr. Schiller's second definition is Captain Bunsby's that "the 'truth' of an assertion depends on its application," which seems to me the result of a weak analysis. His third definition is that pragmatism is the doctrine that "the meaning of a rule lies in its application," which would make the "meaning" consist in the energetic interpretant and would ignore the logical interpretant; another feeble analysis. His fourth definition is that pragmatism is the doctrine that "all meaning depends on purpose." I think there is much to be said in favor of this, which would, however, make pragmatists of many thinkers who do not consider themselves as belonging to our school of thought. Their affiliations with us are, however, undeniable. His fifth definition is that pragmatism is the doctrine that "all mental life is purposive." His sixth definition is that pragmatism is "a systematic protest against all ignoring of the purposiveness of actual knowing." Mr. Schiller seems habitually to use the word "actual" in some peculiar sense. His seventh definition is that pragmatism is "a conscious application to epistemology (or logic) of a teleological psychology, which implies, ultimately, a voluntaristic metaphysics." Supposing by "psychology" he means not the science so called, but a critical acceptance of a sifted common sense of mankind regarding mental phenomena, I might subscribe to this. I have myself called pragmatism "critical common-sensism"; but, of course, I did not mean this for a strict definition.

Signor Giovanni Papini goes a step beyond Mr. Schiller in maintaining that pragmatism is indefinable. But that seems to me to be a literary phrase. In the main, I much admire Papini's presentation of the subject.

There are certain questions commonly reckoned as metaphysical, and which certainly are so, if by metaphysics we mean ontology, which as soon as pragmatism is once sincerely accepted, cannot logically resist settlement. These are for example, What is reality? Are necessity and contingency real modes of being? Are the laws of nature real? Can they be assumed to be immutable or are they presumably results of evolution? Is there any real chance, or departure from real law? But on examination, if by metaphysics we mean the broadest positive truths of the psycho-physical universe,—positive in the sense of not being reducible to logical formulae,—then the very fact that these problems can be solved by a logical maxim is proof enough that they do not belong to metaphysics but to "epistemology," an atrocious translation of Erkenntnislebre. When we pass to consider the nature of Time, it seems that pragmatism is of aid, but does not of itself yield a solution. When we go on to the nature of Space, I boldly declare that Newton's view that it is a real entity is alone logically tenable; and that leaves such further questions as, Why should Space have three dimensions? quite unanswerable for the present. This, however, is a purely speculative question without much human interest. (It would, of course, be absurd to say that tridimensionality is without practical consequences.) For those metaphysical questions that have such interest,—the question of a future life and especially that of One Incomprehensible but Personal God, not immanent in but creating the universe,—I, for one, heartily admit that a Humanism that does not pretend to be a science but only an instinct, like a bird's power of flight, but purified by meditation, is the most precious contribution that has been made to philosophy for ages.

If this definition were to be interpreted as the same words ought to be interpreted if they came from me, I should certainly say that the term "pragmatism" has a marked difference of meaning for him and for me. But though I seldom am able to attach a very distinct significance to any statement by Professor James, least of all in philosophy, yet I have sufficiently studied the, to me, very difficult dialect of his thought to be satisfied that a minute analysis of a formal definition is not the right way to ascertain what he means. Without being able to make out exactly what he means by "pragmatism," I think there is the best of evidence, in the principal applications he makes of it, that it does not differ very widely from the signification I attach to the same word. Even where he deduces very different consequences from his pragmatism from those which I should draw from mine, it by no means follows that this is due to a divergence in our pragmatistic faith. I was bred in a scientific and particularly in a mathematical atmosphere. I insist upon starting from definite concepts, and on drawing up statements that strictly follow the rules of grammar and logic, making room, however, for familiar metaphors, and for such enormous generalizations as physicists, and still more, mathematicians are accustomed to make. I know very well that such a thing as an absolutely definite concept is beyond the power of the human mind; but I insist upon rendering the initial concepts as definite as they can be made. How Professor James, on the other hand, communes with himself, I cannot presume to say. I can only say that by processes I cannot comprehend he arrives at much the same practical conclusions that I should. Professor James's eloquence and his recognized eminence as a psychologist have caused the word "pragmatism" to be identified with such interpretations as have been put upon his doctrines; and the consequence has been that many thinkers whom I should reckon among pragmatists have appeared as opponents of pragmatism.

I shall endeavor, first, to give an idea of pragmatism as I understand it; and shall afterward give some very brief notices of the doctrines of other professors of pragmatism.

I understand pragmatism to be a method of ascertaining the meanings, not of all ideas, but only of such as I term "intellectual concepts," that is to say, of those upon the structure of which arguments concerning objective fact may hinge. But an example will answer better than this baffling and not altogether accurate definition. Had the light of the wavelength that excites in our consciousness, as things actually are, the sensation of blue, had the property of exciting in us, in the same measure, the sensation of red instead of blue, and
vice versa, however great a difference that might have made in our feelings, it could have made none in the force of any argument not relating to feeling. In this respect, the qualities of hard and soft strikingly contrast with those of red and blue; because while blue and red signify nothing but subjective feelings, hard (taking the term in its strict mineralogical sense of capable of resisting a knife-edge), with its contrary soft, express factual behavior of material surfaces. Pragmatism, or my variety of it, at any rate, has nothing to say to mere qualities of feeling, and so leaves me untrammelled to hold, as I do, that the reality of such a quality is just what it seems to be, without preventing others from holding (with Locke, if I remember rightly) from pronouncing these so-called "secondary" qualities to be false appearances, or from straddling the question by simply saying that they are relative to human sense. But arguments may turn upon such a quality as hardness, for the reason that its meaning has structure. It implies that its forces of elasticity and cohesion do not break down under so small an external force as do those of soft bodies; so that it may, for example, be argued that solids expanded by heat will, other things being equal, be softer than the same bodies at a lower temperature, and that the skin of a body brought by cooling, and contraction, to the solid state, since it will cool more rapidly than the interior, and thus be stretched, will be harder than the inner parts. Accordingly, two such qualities, say, for example, hardness and specific heat, could not be interchanged, as we have supposed the feelings of blue and red to be interchanged, without considerable (in fact, without enormous) disturbance of the general condition of nature, as well as of a revolution in chemical physics, and other physical theories.

How is the truth of the doctrine of pragmatism to be proved? Two distinct bodies of thinkers declare against it. The one is the army of so-called absolutists, the Bradleys and the Taylors, toward whose main proposition of a unitary entirety in the universe I decidedly lean, myself, while I think that the reputation of the present representatives of that school, though they have, of course, corrected some of the errors of their predecessors, is somewhat inflated, and that in real power of thought they are far below some representatives of the so-called German romanticist school. On the other hand, pragmatism is opposed by some positivistic (nominalists) Haeckel and Karl Pearson, who rank, in my esteem, a good deal higher than do the present absolutists, as being, up to a certain point, sound and useful men of science; although I have not the same disposition to find truth in their philosophical positions that I have in the case of the absolutists. What of real decisive weight is to be said for the pragmatism that on two such opposite sides meets with denial and disdain? If I were content to bring against those two bodies of argument, counter-arguments, honest and free from fallacy, and a good deal stronger and more telling than they, I flatter myself that my readers would be well content and would see reason on the side of pragmatism. But I have a scruple that forbids it.

The great majority of those who interest themselves in "philosophy," as it is now called, "moral philosophy" as it used to be called, when physics and chemistry were reckoned as branches of philosophy, are (as I suppose, for I have no statistics to support the surmise) of two classes. The larger I take to consist of those who study philosophy in the hopes of finding therein support for religion, without perceiving how poor a religion it must be that rests on the feeble and cold support of metaphysics. To such, pragmatism cannot appeal, because it must honestly acknowledge the uncertainty of metaphysical doctrine, while religion calls for an entire belief of the whole soul. It cannot rest on metaphysics without an entire falsification of the security of metaphysical argument, to which pragmatism utterly refuses to lend itself. (I beg leave to say, by the way, that I am myself a miserably unworthy follower of Jesus, and that I am far from approving any religion that rests on mere gush.) The other and smaller of the two principal classes of students of philosophy is composed, as I imagine, of those who read ethics, "epistemology" (atrocious translation of Erkenntnislehre), and other branches of philosophy, not because they anticipate any extraordinary gain of moral or mental strength from their studies, but because they find the subtle swordplay of reason amazingly entertaining, as it certainly is, and because they deem it in every way an improving amusement, in which I concur. I imagine the number of those to be insignificant who, like myself, are so deeply interested in doing what in them lies toward rendering philosophy truly scientific that they are unwilling to partake in any controversies in the spirit of controversy (though I confess with shame that in one article I was, many years ago, provoked into far too much of this), or to advance any arguments except such as would appeal to a sincere searcher for the truth.

Even of arguments for pragmatism of this cool and disinterested kind, and which seem to me to be conclusive, I know of two or three. They rest mostly upon the same considerations, yet are independent arguments. Unfortunately, they are one and all of a pretty intricate structure; as much so, for example, as is that of Euclid for his 47th proposition (the Pythagorean theorem), and what is worse, are decidedly "technical," that is to say, call for as exact thought as do the average of the major theorems of mathematics, which in some respects they considerably resemble. In addition to that inconvenience, the very briefest of them is intolerably long. It is needless to say that they are, one and all, utterly unfit for presentation in a literary journal; and for that reason, the writing of this letter has halted at this point for several months, while I made experiments in this and that manner of continuing it. I have finally decided that the best way is not to attempt to present any considerable part of the argument itself, but simply to give an outline sketch of how I was myself brought to a conviction of the truth of pragmatism.

Before I came to man's estate, being greatly impressed with Kant's Critic of the Pure Reason, my father, who was an eminent mathematician, pointed out to me lacunae in Kant's reasoning which I should probably not otherwise have discovered. From Kant, I was led to an admiring study of Locke, Berkeley, and Hume, and to that of Aristotle's Organon, Metaphysics, and psychological treatises, and somewhat later derived the greatest advantage from a deeply
pondering perusal of some of the works of medieval thinkers, St. Augustine, Abelard, and John of Salisbury, with related fragments from St. Thomas Aquinas, most especially from John of Duns, the Scot (Duns being the name of a then not unimportant place in East Lothian), and from William of Ockham. So far as a modern man of science can share the ideas of those medieval theologians, I ultimately came to approve the opinions of Duns, although I think he inclines too much toward nominalism. In my studies of Kant's great Critic, which I almost knew by heart, I was very much struck by the fact that, although, according to his own account of the matter, his whole philosophy rests upon his "functions of judgment," or logical divisions of propositions, and upon the relation of his "categories" to them, yet his examination of them is most hasty, superficial, trivial, and even trifling, while throughout his works, replete as they are with evidences of logical genius, there is manifest a most astounding ignorance of the traditional logic, even of the very summulae logicales, the elementary school-book of the Plantagenet era. Now although a beastlike superficiality and lack of generalizing thought spreads like a pall over the writings of the scholastic masters of logic, yet the minute thoroughness with which they examined every problem that came within their ken renders it hard to conceive in this twentieth century how a really earnest student, goaded to the study of logic by the momentous importance that Kant attached to its details, could have reconciled himself to treating it in the debonair and dégagé fashion that he did. I was thus stimulated to an independent inquiry into the logical support of the fundamental concepts called categories.

The first question, and it was a question of supreme importance requiring not only utter abandonment of all bias, but also a most cautious yet vigorously active research, was whether or not the fundamental categories of thought really have that sort of dependence upon formal logic that Kant asserted. I became thoroughly convinced that such a relation really did and must exist. After a series of inquiries, I came to see that Kant ought not to have confined himself to divisions of propositions, or "judgments," as the Germans confuse the subject by calling them, but ought to have taken account of all elementary and significant differences of form among signs of all sorts, and that, above all, he ought not to have left out of account fundamental forms of reasonings. At last, after the hardest two years' mental work that I have ever done in my life, I found myself with but a single assured result of any positive importance. This was that there are but three elementary forms of predication or signification, which as I originally named them (but with bracketed additions now made to render the terms more intelligible) were Qualities of feeling, dyadic Relations, and predications of Representations. It must have been in 1866 that Professor [De Morgan] honored the unknown beginner in philosophy that I then was (for I had not earnestly studied it for more than ten years, which is a short apprenticeship in this most difficult of subjects) by sending me a copy of his memoir "On the Logic of Relations, etc." I at once fell to upon it; and before many weeks had come to see in it, as De Morgan had already seen, a brilliant and astonishing illumination of every corner and every vista of logic. Let me pause to say that no decent semblance of justice has ever been done to De Morgan, owing to his not having brought anything to its final shape. Even his personal students, reverent as they perforce were, never sufficiently understood that his was the work of an exploring expedition, which every day comes upon new forms for the study of which leisure is, at the moment, lacking, because additional novelties are coming in and requiring note. He stood indeed like Aladdin (or whoever it was), gazing upon the overwhelming riches of Ali Baba's cave, scarce capable of making a rough inventory of them. But what De Morgan, with his strictly mathematical and indisputable method, actually accomplished in the way of examination of all the strange forms with which he had enriched the science of logic was not slight and was performed in a truly scientific spirit not unmanned by true genius. It was quite twenty-five years before my studies of it all reached what may be called a near approach toward a provisionally final result (absoluteaternity never being presumable in any universal science); but a short time sufficed to furnish me with mathematical demonstration that indecomposable predicates are of three classes; first, those which, like neuter verbs, apply but to a single subject; secondly, those which like simple transitive verbs have two subjects each, called in the traditional nomenclature of grammar (generally less philosophical than that of logic) the "subject nominative" and the "object accusative," although the perfect equivalence of meaning between "A affects B" and "B is affected by A" plainly shows that the two things they denote are equally referred to in the assertion; and thirdly, those predicates which have three such subjects, or correlates. These last (though the purely formal, mathematical method of De Morgan does not, as far as I see, warrant this) never express mere brute fact, but always some relation of an intellectual nature, being either constituted by action of a mental kind or implying some general law. Now law is distinguished from brute fact, either, as the nominalists say, by being a product of the human mind, or, as the realists say, by being a real intellectual ingredient of the universe. That it is true that triadic predicates are uniformly of this intellectual sort could not be made to appear in the space at my disposal. I must confine myself to two examples. If A gives B to C, he performs, not a mechanical, but a legal act; now human law is a creation of the mind. If A fastens B to C, either what he does to B is unconnected with the fact that B remains in contact with C, in which case the fact is a compound one, and does not fall within my assertion, or else what he does is the cause of B's adhesion to C; now the action of a cause is essentially a case of the operation of a law, and implies a law. That no indecomposable predicate can have four or more subjects is easily proved mathematically. I regret that the clumsiness of ordinary language prevents my giving any idea of how it is proved. No doubt, it could be expressed; but few would have the patience to read it,—I among
the last. The number of triads required to compose a higher predicate is usually very considerable.

When we inquire precisely how many they are, certain important difficulties arise, in which Kempe and Royce have taken one side and I the other, which, as they have not yet been cleared up, I shall not go into. I wish particularly to say, however, that the last proposition but one, that triadic predicates always have an intellectual basis, cannot be proved by merely formal logic, and rests, for the present, upon inductive evidence, which is always liable to be defective in generalization. For that reason I prefer to content myself with terming such predicates, which certainly express something more than mere physical force or brutal making, triadic, meaning that they are intellectual (as the great majority of them certainly are), or else something like it. A suspicion that not all triadic predicates are intellectual may arise. There are certain physical phenomena which certainly cannot be explained by any supposed mechanical forces. Those of them that are understood are explained by the doctrine of chances. The viscosity of gases is an example. Since the molecules of gases of which there is every reason to think that there are millions (i.e., millions of millions of millions) in a tumbler full, are supposed to move rectilinearly and indiscriminately in all directions, it is practically certain that they will pass one way and the other between two layers of gas having different average velocities, thus tending to equalize these mean velocities; and the laws of the phenomenon deducible from the hypothesis accord with observations. But there are other phenomena neither explicable by force nor, so far as it appears, by the doctrine of chances. Thus, elastomers, or students of elasticity, seem to have come to the conclusion that the elastic properties of crystals cannot be accounted for by any mere attractions and repulsions between pairs of free particles. It naturally suggests itself that there is some elementary inanimate action that involves more than pairs, contrary to all our notions of dynamics. But the subject is still too obscure to render this a very formidable objection as yet. Another and more familiar phenomenon is the fact that some vimes insist upon twisting to the right and others to the left. I believe some dynamical explanation of this has been proposed. But I cannot help doubting it, because it is impossible to state the difference between a right-handed and a left-handed screw without mention of four places on each. A very similar phenomenon in the mineral kingdom (though always originating, so far as is known, in living organisms, unless one, like Pasteur, picks out the right-handed and left-handed crystals one by one under a microscope) is that of the unsymmetrical carbon atom. A carbon atom has four bonds, or links, by which other atoms can be connected with it. If it has distinguishable atoms at all four bonds, the compound will generally turn the plane of polarized light passing through it either to the right or to the left, and there are always two varieties of the compound which differ not at all in their ordinary physical properties nor in their reactions with ordinary chemical bodies, but which turn the plane of polarization by exactly equal amounts in opposite directions, and behave altogether differently toward other bodies containing unsymmetrical carbon atoms. The formation in equal amounts of the right-handed and left-handed varieties is well accounted for by chance. Their separation is said to be due to organisms that feed on one and not on the other; and this must be explained by their own substance being of a right-handed or left-handed composition. How this is to be accounted for, unless by some chance in the course of the evolution of their race, I cannot guess. On the whole, I suppose we must provisionally add chance to intelligence as one of the possible sources of triads, though how that chance can operate I am unable to guess. If we might trust to human instinct, which we must ultimately trust in all our reasonings, just as a bird trusts to its wings without understanding the principles of aerodynamics according to which it flies, and which show why its wings may be trusted, we might venture to say that there must be an intelligence behind that chance; but restrained as we are to scientific procedure, we must say no more than that we do not know how there come to be those divergencies of triadic phenomena.

A predicate may be described as a blank form of proposition from which when each blank has been filled with a proper name, a proposition, or assertion, however nonsensical, will result. Only, since the proposition will be different when two of the proper names are interchanged, it is proper to distinguish the blanks from one another, as for example by putting either $\star{}$, $\dagger$, $\ddagger$, etc., into each. This view of the matter renders it plain that a triadic predicate involves three dyadic predicates and three monadic predicates; while a dyadic predicate involves two monadic predicates. Thus, "$\star{}$ gives $\dagger{}$ to $\ddagger{}$" involves the possibility of "$\star{}$ gives $\dagger{}$ to $Z$," of "$\star{}$ gives $Y$ to $\ddagger{}$," and of "$X$ gives $\dagger{}$ to $\ddagger{}$," which last is precisely equivalent to "$X$ gives $\dagger{}$-wise from $X$ receives $\ddagger{}$."

To assert a predicate of certain subjects (taking these all in the sense of forms of words) means, intends, only to create a belief that the real things denoted by those subjects possess the real character or relation signified by that predicate. The word "real," pace the metaphysicians, whose phrases are sometimes empty, means, and can mean, nothing more nor less. Consequently, to the three forms of predicates there must correspond three conceptions of different categories of characters: namely, of a character which attaches to its subject regardless of anything else such as that of being hard, massive, or persistent; of a character which belongs to a thing relatively to a second regardless of any third, such as an act of making an effort against a resistance; and of a character which belongs to a thing as determining a relation between two others, such as that of being transparent or opaque or of coloring what is seen through it. Moreover, turning from the three kinds of predicates to their subjects, since by the "mode of being" of anything can be meant only the kinds of characters which it has, or is susceptible of taking, corresponding to the three kinds of characters, there must be three categories of things: first, those which are such as they are regardless of anything else, like the living consciousness of a given kind of feeling, say of red; secondly,
think he will acknowledge that it took a dialogic form, every reasoning appealing to the self of the near following moment of time for assent and confirmation. But I do not believe you readers will hesitate to admit that concepts are signs.

Now a sign is something which functions triadically. A proposition which may be said to have been universally admitted for over seven hundred years, since John of Salisbury in the third quarter of the twelfth century mentions it as a thing "quod fere in omnium ore celebre est," is that any common noun, whether substantive or adjective, on the one hand signifies nothing and on the other hand names something else. All modern logicians have made much of this distinction; and many of them have pointed out that the term of its very essence signifies what it does, while that which it is intended to name must be ascertained not from the term itself but by observation of the context or other attendant circumstances of its utterance. But we need not restrict the proposition to nouns. It may be generalized, so as to be true of any sign whatsoever. For every sign, in functioning as such, produces a mental effect. How shall we name the entire mental effect which a sign by itself is calculated, in its proper significative function, to produce? The word signification is somewhat too narrow, since, as examples will soon show, this mental effect may be of the nature of an emotion or of that of an effort. No existing word is sufficiently appropriate. Permit me to call this total proper effect of the sign taken by itself the interpretant of the sign. But merely producing a mental effect is not sufficient to constitute an object a sign; for a thunder-clap or avalanche may do that without conveying any meaning at all. In order that a thing may be a true sign, its proper significate mental effect must be conveyed from another object which the sign is concerned in indicating and which is by this conveyance the ultimate cause of the mental effect. In order to be the cause of an effect,—or efficient cause, as the old phrase was,—it must either be an existent thing or an actual event. Now such things are only known by observation. It cannot be itself any part of the mental effect, and therefore can only be known by collateral observation of the context or circumstances of utterance, or putting forth, of the sign. But the sign may describe the kind of observation that is appropriate and even indicate how the right object is to be recognized. The meaning of the sign is not conveyed until not merely the interpretant but also this object is recognized. But although the full realization of the meaning requires the actual observation, direct or indirect, of the object, yet a close approach to this may be made by imagining the observation. If the sign is not a true, but only a fictitious sign, it is the mere semblance of a sign. If, however, it be so far true as to profess to be in certain respects fictitious, the conditions of a true sign hold, though somewhat modified.

From this point on the argument calls for more and more active attention and criticism on the part of a mind that would follow it; for no argument is really comprehended unless every step of it has been criticized. Should it have occurred to the reader before reaching this point that there has been a certain resemblance to mathematics in the argument, he will find this resemblance
It is easy to see that there are three kinds of interpreters of signs. Our categories suggest this; and we have only to run over in our minds a sufficient variety of remembered signs, with a slight examination of each, to gain ample confirmation of the division. Namely, the interpreter may be a feeling. Thus, an air for a guitar, if considered as meant to convey the genuine or feigned musical emotions of its composer, can only fulfill this function by exciting responsive feelings in the listener. But in the second place, the interpreter may be an effort. Thus, when a drill-officer gives a company of infantry the word of command, “Ground arms!” if this is really to act as a sign and not in a purely “physiological” way (I use this inaccurate distinction, rather than waste time in explanations), there must first be, as in all actions of signs, a feeling-interpreter, a sense of apprehending the meaning, which in its turn at once stimulates the soldiers to the slight effort required to perform the motion. This effect caused by the sign in its significative capacity is, by the definition, an interpreter of it. In the third place, our categories lead us to credit ourselves, in expectation, with a kind of interpreter of a triadic character, while our acquaintance with signs enters upon the debit side of the account a kind of interpreter not included in either of the enumerated two, but which is, we know, the interpreter par excellence, I mean of course the intellectual apprehension of the meaning of a sign. We cannot but be tempted to this debit entry as balancing the credit entry, that is to say, at once, that is the triadic interpreter that the categories authorize us to look for. But we now tread so closely upon the essence of pragmatism that we must walk warily lest we assume some position not authorized by full proof; and we cannot identify the two until we have more closely scrutinized the characters of each.

It is evident that a definition, even if it be imperfect owing to vagueness, is an intellectual interpreter of the term it defines. But it is equally evident that it cannot be the ultimate intellectual interpreter, inasmuch as it is itself a sign, and a sign of the kind that has itself an intellectual interpreter, which is thereby an intellectual interpreter of the term defined. This consideration compels us to seek elsewhere than among signs, or among concepts, since they are all signs, for ultimate intellectual interpreters. This same consideration cuts off from searching among desires, expectations, etc., for ultimate intellectual interpreters, since such intellectual character as desires, etc., possess is due solely to their referring to concepts. At the same time, the ultimate intellectual interpreters must be some kind of mental effects of the signs they interpret. Now after an examination of all varieties of mental phenomena, the only ones I have been able to find that possess the requisite generality to interpret concepts and which fulfill the other conditions are habits.

This is a good, sound argument; but, as it stands, it has hardly sufficient solidity to support the weight of so momentous a conclusion as that of the doctrine of pragmatism. Not that the induction is too loose; for the enumeration of mental phenomena was sufficiently careful to give it rather the character of an argument from enumeration than that of what is properly called an induction; but because it may be necessary, in order to render the conclusion true, to take the term “habit” in a much wider sense than that in which it is requisite that it should be understood in order that our conclusion should imply the truth of pragmatism. Just this turns out to be the truth of the matter. That it is so will be illustrated by my sole reply to a possible objection to our conclusion, which, though I am not sure that either the author of that important work The World and the Individual or anybody else would, as a fact, be disposed to consider it to be an objection, yet I think I had better take occasion to answer. The supposed objection is that, besides habits, another class of mental phenomena of a general nature is found in purposes. My reply is that while I hold all logical, or intellectual, interpreters to be habits, I by no means say that all habits are such interpreters. It is only self-controlled habits that are so, and not all of them, either. Now a purpose is only the special character (and what is, strictly speaking, special, as contradistinguished from individual, is essentially general) of this or that self-controlled habit. Thus, if a man has a general purpose to render the decorations of a house he is building beautiful, without yet having determined more precisely what they shall be, the normal way in which the purpose was developed, of which all other ways are probably inessential variations, was that he actually made decorations in his inner world, and on attention to the results, in some cases experienced feelings which stimulated him to endeavors to reproduce them, while in other cases the feelings consequent upon contemplation of the results excited efforts to avoid or modify them, and by these exercises a habit was produced, which would, we know, affect not only his actions in the world of imagination, but also his actions in the world of experience; and this habit being self-controlled, and therefore recognized, his conception of his character joined to his self-recognition, or adoption, of it, constitute what we call his purpose. It is to be noted that in calling a habit "self-controlled," I do not mean that it is in the power of the man who has it to cast it off,—to cease, in the example just given, to try to make his decorations beautiful; for we well know that he has not such power,—but what I mean is that it has been developed under the process just described in which critical feelings as to the results of inner or outer exercises stimulate to strong endeavors to repeat or to modify those effects. I may mention that I do not recognize pleasure and
pain as specific feelings but only as being whatever feelings may stimulate efforts, in the one case to reproduce or continue them, or, as we say, "attractive" feelings, and in the other case to annul and avoid them, or, as we say, "repulsive" feelings.

The only way of attaining any satisfactory general knowledge of experiential truth is by the inductive testing of theories. This is, therefore, the only way to ascertain the meaning of a current concept; and there are few fields of inquiry to which this method adapts itself so readily. Remembering that a concept has meaning only as it is predicated, one need only create in the imagination as great a variety of examples of objects to which would be applicable the supposed meaning as may seem desirable, and then try whether or not the concept would be applicable to each of them. One thus pursues a strict experimental method. It may turn out that the meaning lies in a feeling, or in some single thing or event. But in so far as either of these results are found, it will be shown thereby that the concept is not an intellectual one, though it may have other ingredients which are intellectual. In so far as it has an intellectual character, the experimental investigation will show that to believe the concept in question is applicable to anything is to be prepared under certain circumstances, and when actuated by given motives, to act in a certain way. This is quite clearly the case with all mathematical concepts. To say that a collection consists of seventeen single members involves, if thought out to its ultimate meaning, the act of counting in the imagination, and, of course, the action must be generalized into a habit connected with the predication of seventeen. A geometrical idea supposes one goes through the operation of making the figure. In these cases, and one will find in Berkeley's *Theory of Vision* more particular proofs, ideas of space all involve effort. Now when those ideas are general, the effort must be generalized; and the generalization of effort is habit. The same thing is more easily seen to be true of physical concepts, since the doctrine of the French psychologists of the early nineteenth century that the idea of force has at its foundation that of effort, is abundantly confirmed by analyses more exact than they were equal to making. As for psychical concepts, the same truth is much more easily ascertained and confirmed.

But while it is to me indubitable, and I think to anyone who may sufficiently think the matter out in concrete inner experiments, that every general predicate may have the intellectual part of its meaning analyzed into habits of conduct on the part of him who predicates it, yet I do not recommend carrying the analysis so far, in other than exceptional cases. My original exposition of pragmatism, which those who seek to depreciate it limit to one article in the *Popular Science Monthly* of January 1878, although I have, whenever such statements were brought to my attention, protested to each one of them personally that the argument is incomplete and insufficient without the article of November 1877 in the same journal,—but such persons are, for the most part, incapable of any exact thought,—in this original exposition, I laid down, in the very first place, the doctrine of Common Sense, namely, that there are some propositions that a man, as a fact, does not doubt; and what he does not doubt, he can, at most, make but a futile pretense to criticize. The test of doubt and belief is conduct. No sane man doubts that fire would burn his fingers; for if he did he would put his hand in the flame, in order to satisfy his doubt. There are some beliefs, almost all of which relate to the ordinary conduct of life, such as that ordinary fire burns the flesh, which, while pretty vague, are beyond the reach of any man's doubt. When the analysis of the meaning of a concept has carried us to such a "practical" matter, it is idle to go further in analyzing it into a habit of conduct. But along with such "instinctive" beliefs, as we may call them, because however they came about, they resemble the instincts of the lower animals, there are a good many formulae, almost universally accepted, which mean nothing, or, at any rate, nothing indubitable. For example, one often hears it said, "I could no more doubt that than I doubt of my own existence." But, after all, what does a man mean when he says that he exists? By what concrete experiments in the imagination will he exemplify his meaning? I will not stop to discuss this particular proposition. I will only say that if we are to admit that some propositions are beyond our powers of doubt, we must not admit any specified proposition to be of this nature without severe criticism; nor must any man assume with no better reason than because he cannot doubt it, that another man cannot do so. These remarks give some idea of what is meant by critical common sense, without which the doctrine of pragmatism amounts to very little. But perhaps a little illustration may aid the comprehension of what I am saying. When one seeks to know what is meant by a physical force, and finds that it is a real component acceleration of defined amount and direction that would exist whatever were the original velocity, it is possible to press the question further and inquire what the meaning of acceleration is; and the answer to this must show that it is a habit of the person who predicates an acceleration, supposing him to use the term as others do. For ordinary purposes, however, nothing is gained by carrying the analysis so far; because these ordinary commonsense concepts of everyday life, having guided the conduct of men ever since the race was developed, are by far more trustworthy than the exacter concepts of science; so that when great exactitude is not required they are the best terms of definition.
THE ESSENTIAL PEIRCE

Selected Philosophical Writings

VOLUME 2
(1893–1913)

edited by the Peirce Edition Project

Nathan Houser, General Editor
Jonathan R. Eller, Textual Editor
Albert C. Lewis, Associate Editor

André De Tienne, Assistant Editor
Cathy L. Clark, Editorial Associate
D. Bront Davis, Technical Editor

Indiana
University
Press

BLOOMINGTON AND INDIANAPOLIS
1998