

Peirce's
Theory
of Signs

T. L. Short

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Peirce's Theory of Signs

In this book, T. L. Short corrects widespread misconceptions of Peirce's theory of signs and demonstrates its relevance to contemporary analytic philosophy of language, mind, and science. Peirce's theory of mind, naturalistic and nonreductive, bears on debates of Fodor and Millikan, among others. His theory of inquiry avoids foundationalism and subjectivism, while his account of reference anticipated views of Kripke and Putnam. Peirce's realism falls between "internal" and "metaphysical" realism and is more satisfactory than either. His pragmatism is not verificationism; rather, it identifies meaning with potential growth of knowledge. Short distinguishes Peirce's mature theory of signs from his better-known but paradoxical early theory. He develops the mature theory systematically on the basis of Peirce's phenomenological categories and concept of final causation. The latter is distinguished from recent and similar views, such as Brandon's, and is shown to be grounded in forms of explanation adopted in modern science.

T. L. Short is Chairman of the Board of Advisors to the Peirce Edition Project (Indiana University–Purdue University, Indianapolis). He has published broadly in the philosophy of science, conceptual change, teleology, and aspects of the philosophy of C. S. Peirce in journals such as *The Monist*, *American Philosophical Quarterly*, *Grazer Philosophische Studien*, *the Transactions of the Charles S. Peirce Society*, *Biology and Philosophy*, and *Synthese*.

for

Mike, Polly, Ben, Becky, and Dave

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T. L. SHORT



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Preface

Peirce's theory of signs, or semeiotic, misunderstood by so many, has gotten in amongst the wrong crowd. It has been taken up by an interdisciplinary army of 'semioticians'¹ whose views and aims are antithetical to Peirce's own, and meanwhile it has been shunned by those philosophers who are working in Peirce's own spirit on the very problems to which his semeiotic was addressed. Those problems are two: to construct a naturalistic but nonreductive account of the human mind, and to explain and defend the claim that the sciences are objective in their mode of inquiry and in fact yield knowledge of an independently existing reality. In the following pages, I attempt to show how contemporary discussions in the philosophies of mind and science might benefit from a deeper study of Peirce's ideas. The purpose of this book is to say what Peirce's theory of signs is and to suggest what its philosophical significance may be.

As to the philosophy of mind: Peirce's mature theory of signs (as opposed to his early theory) is germane to the issues framed by Putnam, Searle, Dretske, Dennett, Fodor, and others. Obviously, a detailed taxonomy of signs, such as Peirce provided, might be of some help to anyone attempting to account for thought as a form of representation. Much more importantly, however, the mature semeiotic was developed in an attempt to explain, on a naturalistic basis, what we (not Peirce) call the 'intentionality' of mind. I argue that that attempt succeeds

¹ I use 'semeiotic', in Peirce's occasional spelling, for his theory or theories of signs, and the more usual 'semiotic' for that movement which originated in Europe (chapter 1, section 5) independently of Peirce and that later appropriated him, with confusion all around.

where similar, more recent attempts falter, because it was in one respect bolder.

Peirce was bold in many ways, but the particular boldness that matters here is in the ontological depth of his theory of final causation. But for that depth, his theory would be little different from the views of teleological explanation recently propounded by biologically minded philosophers such as William Wimsatt, Larry Wright, Robert Brandon, and Ruth Garrett Millikan, none of whom denies that the real world is mechanistic *au fond*. Please do not misunderstand: despite his occasional adoption of the language of the romantic idealists (Schelling particularly), Peirce's teleology is not a rejection of the physicalism that prevails in philosophy today. Instead, it challenges contemporary philosophy's unexamined conception of the physical. Peirce argued that physical explanations are not always mechanistic and that what is explained teleologically cannot be explained mechanistically; we shall conclude that what is explained teleologically or otherwise nonmechanistically are irreducibly nonmechanical aspects of physical processes.

Necessarily, we will also touch on issues in the philosophy of language; for they are implicated in contemporary debates in every area of philosophy. Besides, a theory of signs as broad as Peirce's must entail a philosophy of language. In particular, we cannot avoid reconstructing Peirce's defense of a version of realism that, contrary to the usual view taken of his philosophy, falls between 'internal realism' and 'metaphysical realism', as these are defined by Hilary Putnam. What I shall name 'Peirce's realism' rejects that dichotomy. Peirce's realism is essential to his theory of knowledge and philosophy of science, but his argument for it belongs to the philosophy of language; hence, it is to be found within our systematic statement of the mature semeiotic.

Some of Peirce's anticipations of later philosophers – Reichenbach's frequency concept of probability, Popper's idea of theories as conjectures and his propensity concept of probability – are well known, but others, equally important, are not. The 'holistic' account of meaning presupposed in the worries about scientific objectivity raised by Feyerabend and Kuhn was anticipated by Peirce, as was the view sometimes deployed in opposition to holism, namely, the causal account, associated with Kripke and Putnam, among others, of some kinds of reference. Peirce's pragmatism combined those seemingly disparate views, with a third element added, of a potentiality for future growth as essential to present meaning. That is clearer in his semeiotic writings than in those canonically 'pragmatic', and it removes the standard objections that have been made to

his pragmatism. It also shows how scientific inquiry is objective despite observation's being 'theory-laden'.

A thorough discussion of any contemporary issue, let alone so many, is impossible within the limits of this one book, which must cover so much else besides. I do no more than indicate the ways in which Peirce's theory bears on some questions of current interest. That occurs here and there but primarily in the last three chapters. Although I have made those remarks as exact, complete, and persuasive as I could, I do not pretend that they are anything more than sketchy suggestions.

So, why bother? Apart from their possibly being of some use, another virtue I would claim for these suggestions is that they hang together. In one respect, the tenor of Peirce's work runs counter to contemporary philosophical fashion, which is to atomize issues. Every new puzzle disclosed becomes a site for a new flood of specialist debate, pursued largely out of relation, except for the borrowing of techniques, to work on every other puzzle.² (Specialization is essential to modern science, but is it appropriate to philosophy?) Not that Peirce had a grand system. He was always dissatisfied. His emphasis was on inquiry, on endless growth of knowledge, in philosophy no less than in the special sciences. But system building is not the only alternative to fragmentation. Here, too, the study of Peirce's thought may prove salutary.

How to Read this Book

This is the plan: the first two chapters are introductory, the next three lay the foundations for the mature semeiotic, which is developed systematically in the succeeding four chapters, and the last three chapters seek to apply the foregoing to contemporary issues. It works out almost that way, but there is a good deal of leakage between compartments.

Some chapters or sections of chapters contain fairly dense textual analyses that readers willing to take my word for what Peirce said may want to skip. These are: all of chapter 2, sections 7–9 of chapter 6, section 1 of chapter 7, and sections 1, 3, and 4 of chapter 9.

Those doubting the value of time spent grappling with Peirce may want to look first at chapters 10–12, and only then, if curiosity has been aroused, read chapters 3–7. But everything depends on Peirce's phaneroscopy

² There are of course important exceptions, but as to the general tenor, at least in the philosophy of language, see Scott Soames' Epilogue to vol. 2 of his masterly summation of analytic philosophy in the twentieth century (Soames 2003).

(chapter 3) and the development and defense of his idea of final causation (chapters 4 and 5).

I have not assumed that the reader has any specialist knowledge, whether of Peirce's philosophy or of formal logic or of contemporary philosophy. Thus the book should be accessible to anyone philosophically interested. Yet I cannot claim that it is easy reading. For many difficult issues are discussed in it, all of them concisely.

One last remark in this vein: it may be objected that a great deal of my own thought obtrudes in my account of Peirce's views. I blush and am embarrassed, but I cannot help it. For one cannot make sense of Peirce's semeiotic without filling in the gaps, selecting the variants that make the most sense, and showing how the parts fit together, even if that means making a few corrections. After all, he was never satisfied with his own statements of the doctrine; he never finished any statement of it. And besides, Peirce wrote philosophy 'like a scientist',³ setting out ideas not intended as final but to be applied and developed, perhaps by others. The argument for those ideas is not wholly on the page but consists in what can be done with them – just as pragmatism prescribes. Everything I say here that is in some sense 'mine', I first thought in an effort to comprehend Peirce's thought.

Other Views of Peirce's Semeiotic

In the interest of setting out my interpretation of Peirce's theory succinctly, I have avoided to a large extent examining contrary views; areas of controversy are indicated by citations of the literature or, often, by citation of my own articles in which that literature is cited and addressed. It may be well, then, to enumerate here the major alternatives to the view I shall present. Despite the vast amount that has been written on or that exploits Peirce's sign theory, its direct expositions are few and brief.

The major alternatives, I would say, are Karl-Otto Apel's 'semiotic transformation of transcendental logic' (1980, 1981, 1995) and David Savan's 'ordinal' interpretation (Savan 1987; cf. Short 1986a and Savan's response, Savan 1986). More or less in the Savan mode are James Jakób Liszka's 1996 book, a comprehensive, systematic exposition, and Gérard

³ The words are those of the geologist Victor Baker in conversation, explaining why he found reading Peirce more rewarding than reading other philosophers. It got me thinking. I think it explains why philosophers find Peirce's writings frustrating, and I think it indicates how Peirce ought to be read.

Deledalle's 1987 and 2000 books, written with swift *élan* by the leading, recently deceased, French expositor of American philosophy. In Short 1996b, I have disputed earlier expressions of Liszka's view; my objections apply as well to his book, which appeared in the same year. Another alternative, emphasizing semeiotic's application to the analysis of communication, and perhaps overemphasizing the role of that analysis in Peirce's semeiotic, is due to the anthropologist Richard Parmentier (1985, 1994), and is illuminatingly discussed by Mats Bergman (2000); see also Jürgen Habermas's 1995 article and Klaus Oehler's 1995 response thereto. Douglas Greenlee's 1973 monograph continues to be cited despite its having been shown, repeatedly and irrefutably, to be entirely wrong (Oehler 1974, Brock 1977, Ransdell 1977, and some long footnotes in Short 1981a, 1982). Charles Morris (1938, 1946, 1964) is often taken as a guide to Peirce, but wrongly. Morris never claimed to be presenting Peirce's views, and, in fact, his theory, unlike Peirce's, was behavioristic, especially in its earlier formulations.

There have also been many publications less thoroughly opposed to the view I shall develop here. I mention only those that address Peirce's theory as a whole. First in importance are articles of 1978 and 1983 by Max Fisch, the late dean of Peirce scholars (Fisch 1986, chs. 17–18). Although not a systematic exposition of Peirce's semeiotic, John J. Fitzgerald's 1966 book should also be mentioned for its early success in placing that theory in its philosophical context. Joseph Ransdell, in articles but alas no book, forcefully states a view that in some ways is close to mine but that differs from it in interesting and important ways (1976, 1977, 1979, 1981). A 1993 book by the Danish literary theorist Jørgen Dines Johansen contains an extensive and sensitive exposition of Peirce's theory citing many manuscript sources. These authors have not distinguished Peirce's mature from his early theory as decisively as I do – something they may feel is to their credit.

Continental writers, approaching Peirce from a background of Saussurean semiology, have systematically misinterpreted his semeiotic. For the two doctrines are fundamentally incompatible (chapter 1, section 5). The unholy union of Saussure's supposed conventionalism with the breadth of Peirce's mature semeiotic gave bastard birth to an extreme relativism and irrealism – a modern version of sophistry that Saussure and Peirce would both have rejected. I therefore treat those writings not as an alternative reading of Peirce's semeiotic but as an alternative to it. For the most part, it is an alternative I ignore, but see chapter 2, section 6,

for brief comment on Jacques Derrida's and Umberto Eco's reading of Peirce.

One last strain of interpretation of Peirce's semeiotic must be mentioned. With the encouragement of the late Thomas Sebeok, the linguist and American impresario of semiotics, a number of authors, some of them from the natural sciences, have extended the naturalistic view I favor beyond what I take to be intelligible limits. To be sure, the concepts of information theory may be extended to genetics, but that does not mean that Peirce's semeiotic may be so extended; unlike information theory, it accounts for intentionality, but it does not bring intentionality down to the level of DNA and RNA. Nevertheless, Claus Emmeche (1991, 1998), Jesper Hoffmeyer (1996), Emmeche and Hoffmeyer (1991), and Lucia Santaella Braga (1999a, b) are of interest. Helmut Pape's long and ambitious study (1989) properly places Peirce's semeiotic in phenomenological and teleological context but overextends the theory, less biologically than cosmologically.

A Note on Terminology

I avoid technical language where possible and explain such terms as I do use. My slight use of formal logic and occasional references to its apparatus are not sufficient to block the understanding of anyone not familiar with that subject. Peirce's famously rebarbative neologisms are explained where they cannot be avoided. Concepts evolved in the long history of philosophy are another matter. They might be taken to be well established and understood, except for the awkward fact that in every philosophy they are understood differently. Peirce's glosses on such terms as 'real' and 'individual' are of the greatest interest. Perhaps least in need of definition are the nouns 'universal' and 'particular', as their use in philosophy has been fairly uniform. And yet they are so fundamental to every phase of this book's argument that I define them here and then review some of the finer points, so as to forestall misunderstandings.

'Universal' is the standard translation of Aristotle's *katholon* and is universally understood as Aristotle understood the latter (not in all texts equally but in *De Int.* 7 primarily), as that which is said of many. We may gloss this as: that which, as a matter of grammar, not as a matter of real possibility, may be true of many. Being a unicorn is therefore a universal, as it would not be ungrammatical to speak of many unicorns. Opposed to the universal is the particular, which cannot grammatically be said of

many. No two people are Socrates, even if two are named 'Socrates'. (Only figuratively may one say, 'Would there were another Socrates'.) Socrates is a particular, while being old, being red, being a unicorn, being named 'Socrates', or being a particular are universals.

Notice that what is being defined here are these terms as nouns, hence, as naming kinds of thing. This usage is philosophical. The same terms as adjectives are parts of ordinary speech and are used with related meanings, though the adjective 'particular' is used more broadly, while the adjective 'universal' is used more narrowly than are the corresponding nouns. Thus, when two philosophers are debating about universals, it would not be incorrect for one to say to the other, 'Which particular universal have you in mind?' And while *a* universal is that which *may be* true of *many*, something *is* universal only if it *is* true of *all* (all, that is, of some understood class), as in, 'It is a truth universally acknowledged.' The adjective 'general' corresponds more closely, though imperfectly, to the noun 'universal' than does the adjective 'universal'.

It should not be assumed that every philosopher who uses the word 'universal' as a noun is committed to the proposition that universals exist or are real. For one can ask, 'Are universals real?' and 'Do they exist otherwise than in name?' Realists (in one sense of that overworked word) are those who assert that universals are real, that is, that there are universals independently of their being named or thought of, while nominalists are those who assert that universals exist in name (*nomen*) only.

What of something that, by conception, can be true of one particular at most and yet might have been true of some other particular than the one it is true of? There can be only one twenty-sixth president of the United States and yet it might have been someone other than Theodore Roosevelt, for example, had McKinley not been shot. I think we shall have to say that that is a universal, too, since there is more than one of which it could have been true, though it could not have been true of more than one. But notice that a phrase such as 'the twenty-sixth president,' used as the grammatical subject of a sentence, will normally denote a particular – the individual who was the twenty-sixth president in fact – not a universal.

The noun 'universal' tends to be used to refer only to that which may be true of subjects taken one at a time, for example, being human or being red. But relations may be true of things taken two at a time or three at a time, and so on. The sentence 'John is taller than' is ungrammatical; it wants to be completed by Bill. Being taller than is true of some pairs of particulars. We will count relations as universals.

Peirce often used 'general' as a noun, in place of 'universal'. That is awkward, given the military meaning that that noun has in ordinary English. Thus, he spoke of properties, relations, and laws as 'generals'. The motive is not given. Perhaps it was for the sake of agreement with the adjective (see above). Perhaps it was because a law, whether customary, enacted, or natural, is not a universal. It is general in the sense that it applies to many instances, actual or possible; but the law cannot grammatically be said of those instances. What can be said of them is that they conform to the law. The issue between nominalism and realism may nevertheless be extended to laws, hence, to all 'generals', and Peirce did so extend it.

Bibliographical Note

Peirce's writings are cited in the text parenthetically, in the ways that have become standard among Peirce scholars, as follows: citations of the form (*n.m*) refer to paragraph *m* of volume *n* of the *Collected Papers*; (*Wn:m*) to page *m* of volume *n* of the new, chronological edition of Peirce's *Writings* (regrettably, not yet complete); (*EPn:m*) to page *m* of volume *n* of the *Essential Peirce*; (*NEMn:m*) to page *m* of volume *n* of the *New Elements of Mathematics*; (*LW:n*) to page *n* of Peirce's letters to Lady Welby in the volume *Semiotic and Significs*; (*RLT:n*) to page *n* of Peirce's 1898 lectures in Cambridge, Massachusetts, in *Reasoning and the Logic of Things*; and, finally, citations of the form (*MSn*) or (*Ln*) are to manuscript *n* or letter *n*, as numbered in Robin 1967. See the Bibliography.

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Antecedents and Alternatives

The purpose of this chapter is to put Peirce's semeiotic into context. What are its antecedents and alternatives? What is the type of question it is meant to answer? It might seem that we should begin with the theory itself, so that we can know what it is that we are talking about. But that theory is complex, and a preliminary statement of it would only raise objections before they can be answered. Sketching in the background leaves an empty space for the foreground objects. My hope is that this will allow you to see the shape of things to come and that it will provide some motive for enduring those rigors that lie grimly in wait.

1. Peirce

Charles Sanders Peirce (1839–1914), whose surname is pronounced 'purse', was a son of Benjamin Peirce, a Harvard professor of mathematics and astronomy and, at the time, America's foremost mathematician. Benjamin Peirce was also a major figure in, or, more accurately, one of the creators of, the American scientific establishment. With others, he founded the National Academy of Sciences and had a hand in much else of that kind. He recognized Charles' genius and raised him accordingly, with the consequence that the latter developed an extraordinary degree of intellectual discipline and almost no moral discipline. Although trained in chemistry, Charles Peirce made a number of profoundly original contributions of the first importance to mathematical logic, meanwhile earning his living making exacting empirical measurements in astronomy and geodesy (he made several important contributions to the theory and practice of measurement, as well). Formal logic

and experimental work had each its impact on his philosophy. But what is perhaps most remarkable in Peirce's vast output is the number of fertile fields of investigation that he opened up and the startling originality of his ideas.

Pragmatism, for which Peirce is now best known, is the only major philosophical movement, barring the religious philosophies of the East, to have originated outside Europe. His work on the logic of relations, following Augustus De Morgan's and developed in turn by Ernst Schröder, contributed to Russell and Whitehead's epoch-making *Principia Mathematica* (1910–13). Slightly prior to Edmund Husserl, Peirce invented a phenomenology, or 'phaneroscopy', as he came to call it, that is comparable to Husserl's yet fundamentally different; we shall rely on it extensively in this book. He anticipated later developments, by such philosophers as Hans Reichenbach, Karl Popper, and Stephan Toulmin, in probability theory and in the theory of the natural sciences and their methods. I argue, in chapter 12, that he is still in advance of contemporary philosophy of science with respect to the issues raised in the 1960s by Paul Feyerabend and Thomas Kuhn. Moreover, he was the first of modern philosophers to recognize chance as being a basic feature of existence; at the same time, and deliberately against the modern temper, he revived Duns Scotus' realism as opposed to William of Ockham's nominalism. And so on.

All of this was accomplished even while his professional career and personal life fell into disarray. In the end, Peirce was impoverished and isolated, endlessly revising essays that he never finished. He never succeeded in bringing his ideas into systematic unity; he never published a philosophical book. The incompleteness, digressiveness, and profusion of technical detail of his writings accounts for the educated public's ignorance of his life and work and for the relative neglect of his philosophy even by professional philosophers.

2. Sources of Peirce's Semeiotic in Locke and Kant

Peirce's theory of signs had its origin in Kant's theory of knowledge. However, the term 'semeiotic' is almost certainly a transliteration of the Greek word that Locke used, at the end of his 1690 *Essay*, to name a new 'doctrine of signs'. That doctrine, Locke said, will be 'another sort of logic . . . than what we have been hitherto acquainted with' (Bk. IV, Ch. XII). This is a problematic legacy.

Among signs, Locke included both words and ideas, words being ‘signs of ideas’ by which we convey ideas to one another, and ideas being ‘signs the mind makes use of for the understanding of things’. Locke’s reason for treating ideas as signs was that

since the things the mind contemplates are none of them, besides itself, present to the understanding, it is necessary that something else, as a sign or representation of the thing it considers, should be present to it; and these are *ideas*.

Does that make sense? It seems correct to distinguish ideas from things. My idea of an elephant is not the elephant itself. My idea may embody some error and is in any case incomplete; nor does it weigh as much. But is not my idea, for all of its defects, precisely how the elephant *is* ‘present to [my] understanding’? Locke wrote as if I contemplated my idea, and not the elephant, and then inferred the elephant from it, much as I might infer an elephant from its footprint. But that is not how we employ ideas.

And is it not startling to be told that ideas are signs? A sign, in ordinary parlance, is something that makes us think of something else. Thus the footprint is a sign of the elephant: I see it in my garden and think, ‘Elephant!’ But an idea is not one thing that makes us think of another. It *is* the thought of that other. How, then, can it be a sign?

Locke explained, in the earlier and better-known parts of his *Essay*, that ideas are derived from particular experiences of sense or of reflection and that they are related to their objects or ‘archetypes’ as effect to cause and, in some cases, by resembling their causes. Presumably, it is through these two relationships, of causality and resemblance, that ideas are signs. For, in ordinary usage, we call the footprint a sign of the beast that produced it, and we infer which beast that was from the resemblance of print to foot. As causal relations and resemblances ground signification in that sort of case, one might suppose that they do also in the case of ideas.

But that lands us in the same difficulty over again. For the ground of signification is one thing, and signification itself is another. Causal relations and resemblances make something, X, a sign of something else, Y, only because they cause us to think of Y once we apprehend X. Whatever the ground of its power to cause us to think of Y, X signifies Y only because it has that power. Now, if X itself is a thought of Y, then Y *is* being thought of. Another step is not required to make Y an object of thought. Hence, X does not have to produce a thought – a further thought – of Y. But, then, it is not a sign of Y. It is of no relevance in that case, that X is either caused by its object, Y, or that it resembles Y. Those relations,

even if they obtain and even if they are somehow involved in X's being a thought of Y, do not make X a sign.

These reflections are sufficient to justify serious doubt about any attempt to analyze thought as being a species of sign. Of course, thoughts sometimes are signs. If you notice that thoughts of food keep recurring to you, you might take that as a sign that you are hungry. If I notice that you are thinking a great deal about death, I might take that as a sign that you are depressed. But what these thoughts signify is something other than what they are thoughts of.

Locke's semeiotic theory of mind faced another difficulty as well. Since he held that all ideas derive from particular experiences, as if they were lingering images thereof, he had difficulty accounting for general ideas, for example, of triangularity in general rather than of this or that particular triangle. Below (chapter 3, section 5), we distinguish a sense of generality in which an image, its cause being ignored, is general; but that is still not the generality of a common noun or of a concept, which comprises a continuum of possible variations. The concepts in which we think are always general – gray in general, elephant in general – even when they are applied, through perception, to particular objects. To think, 'This elephant is gray', is to conceive of it as one of the varied class of elephants and as having some particular shade of the color, gray; but that thought does not distinguish this elephant from all the others, nor its shade of gray from other shades. So far as we think of it as 'an elephant' and as 'gray', we are not thinking of it *in* its particularity. To be sure, we think of it *as being* particular; but nothing is more general than being particular. Being particular is a property that every particular shares.

Kant, unlike Locke, supposed ideas to be general, but he did not say what ideas are. As a term for any mental content, Kant followed Christian Wolff in using *Vorstellung*, or presentation; but he did not say what *Vorstellungen* in themselves are. Peirce developed the Kantian doctrine in a contemporary (though also Platonic) way, by identifying thought as internalized discourse: we think in the words of the language we have learned. Peirce did not limit thinking to the verbal – it can be diagrammatic and otherwise in images – but we think mostly in words, and thus our capacity to think is dependent on our having learned a language. With a different language to think in, we would think somewhat differently. (Peirce did not entertain the very speculative hypothesis, now in vogue, that there is a language common to all minds – 'mentalese' – distinct from the languages people speak.) But common nouns, verbs, adjectives, and adverbs are general, and we cannot say anything without using some

of those general terms. There is no meaningful sentence (unless elliptical) wholly couched in proper names and demonstrative pronouns. That holds for any language (but not for diagrams or images, except so far as, by verbal commentary, they are made to stand for variations they do not themselves comprise). Hence, thought is inherently general.

Now, words no more than ideas are normally called 'signs'. Nevertheless, words, when spoken or written, do conform to the general idea of signs as being that which leads one to think of something else. One hears or reads the word 'elephant' and thinks, not of that sound or inscription, but of a large, gray mammal. And there is a philosophical tradition, going back to Aristotle, of talking about words as being signs. But if thought is essentially verbal and if words are signs, then thoughts are signs. Thus we may reconstruct Peirce's return to Locke's implausible doctrine, albeit on a new basis and modified.

But how do words signify? Equivalently, how do they acquire their meanings? Locke and many others have supposed that the answer is that words express ideas, by convention. Recall our earlier distinction, between significance and its ground. The conventional relation of word to thought is a third ground of significance, alternative to causality and resemblance. As grounding the significance of a word, the idea must exist already (not necessarily in the mind of the speaker, and never only in his mind, but within the stock of ideas possessed by that community to which speaker and hearer belong). It is expressed, not produced, by the word spoken. Thus, linguistic meaning is accounted for by assuming an independent realm of thought. First there is thought, and then there is language, the primary function of which is to express thought. The first statement of this view was by Aristotle:

Now spoken sounds are symbols of affections in the soul, and written marks symbols of spoken sounds. And just as written marks are not the same for all men, neither are spoken sounds. But what these are in the first place signs of – affections in the soul – are the same for all; and what these affections are likenesses of – actual things – are also the same. (*De Int.* 1, Ackrill trans.)

For 'affections in the soul' we may read thoughts and sensations. As they are likenesses of their objects, the relationship is natural and universal; words, being conventional, vary from nation to nation. Words obtain objects only by standing, by convention, for affections in the soul.

Peirce could not adopt that view. For him, we learn to think in learning to speak. Thought therefore depends on words having a meaning. Meaning therefore cannot depend on thought. But if the meaning of

a word is not the thought that it expresses, then how do words mean? On what is their significance based? Possibly, neither thoughts nor words exist without the other; possibly, they are significant together or not at all. But even if so, whence is their significance?

We have, now, two questions and two problems. First, what is significance? Is it for one thing to produce a thought of something else? If so, then if a thought is a sign, we have an infinite *progressus*: each thought must produce another, *ad infinitum*. Second, what is the ground of significance? If a word signifies by expressing a thought and thoughts are words, then we have an infinite *regressus*: each thought-word must express a preceding thought-word, *ad infinitum*.

3. Brentano on Intentionality

What makes one thing to be of or about another? Being of or about is a peculiar property, hard to explicate. It is also a property that thoughts and signs share. We need a name for it. Peirce, since he held that thoughts are signs, could rely on the word 'significance' to cover all cases of being 'of' or 'about'. If we wish to hold the question open, whether thoughts are signs, we shall need another term. 'Intentionality' is the best candidate. It has come to be commonly used in lieu of the term 'intentional inexistence', which was introduced in this connection by a contemporary of Peirce's, the Austrian philosopher Franz Brentano (1838–1917), in his 1874 book, *Psychologie vom empirischen Standpunkt*. Peirce appears never to have read that book; he never referred to Brentano and never used 'intentional' or its cognates in Brentano's sense, though he did occasionally refer to the Scholastic doctrine of first and second intentions, from which Brentano derived the term.

Intentionality in this sense, at least so far as Brentano saw, does not imply a purpose, as does the English word 'intend'. They have the same root, however: *intendo*, the Latin for stretching or straining toward something. Thus Brentano:

Every mental phenomenon is characterized by what the Scholastics of the Middle Ages called the intentional (or mental) inexistence of an object, and what we might call . . . reference to a content, direction toward an object (which is not to be understood here as meaning a thing), or immanent objectivity. . . .

This intentional inexistence is characteristic exclusively of mental phenomena. No physical phenomenon exhibits anything like it. We can, therefore, define mental phenomena by saying they are those phenomena which contain an object intentionally within themselves. (Brentano 1973[1874], pp. 88–9)

There are three things to notice in this passage: Brentano took intentionality to be coextensive with the mind; he understood intentionality as involving an ‘inexistent’ object; and he supposed that that object is somehow contained in the thought or other mental act in which it is, as we shall say, intended. We will return to the first and third propositions anon. For the present, let us try to understand what is meant by ‘intentional inexistence’.

To think is to think of something, which is the object of that thought. ‘Object’ is here being used in a broad sense, for anything about which one can think, and not for physical objects only. The point is, one cannot say what a thought is without mentioning its object. Two thoughts are distinguished from one another by having different objects. And so also for desires, which are for this or that; fears, which are of this or that; and so on. Each has an object (normally; though there are also nameless dreads and restless yearnings for one-knows-not-what). And yet these objects need not exist; one fears the unreal and desires the impossible. Consider unicorns and griffins. Neither is real, neither exists at all, yet the concept of the one is distinguished from the concept of the other by the fact, and only by the fact, that a unicorn is one thing and a griffin is something else. One has a horn, the other has wings. These objects are ‘inexistent’ in this sense: existence is immaterial to their being objects of thoughts, fears, desires.

But how can something be an object without existing? That is the sort of question, it would seem, that led Brentano to declare that the inexistent object is ‘in’ a thought or other intention, as its ‘content’. It exists after all, only not where it was thought to exist. But that is clearly wrong. A unicorn is not the sort of thing that could be in a thought; what would it find there to eat?

A way to avoid attributing existence to the inexistent is to shift from the ‘material mode’ of talk about things to the ‘formal mode’ of talk about talk. Very roughly: something has an inexistent object if (a) it cannot be fully described without mentioning that object and (b) that object need not exist in order for the description to be true. More on this in the [next section](#). On the assumption that some such explication can succeed, we proceed to speak freely of the intentionally inexistent.

In addition to his conception of intentionality, we can distinguish two theses that Brentano propounded about intentionality. The first is his claim that intentionality is distinctive of the mental. Physical things and events do not have objects of or about which they are. According to Brentano, everything mental possesses intentionality, and nothing that is

not mental does. The second thesis is the one he was primarily concerned to establish in his book, that the mental is so fundamentally different from the physical that it eludes any attempt at naturalistic explanation: it must be made the subject of a science, descriptive psychology, that is not explanatory and that differs in method from the natural sciences. Let us examine both theses, beginning with the second.

In the natural world, relational properties, such as fatherhood or sitting, require real objects. One is not really a father if there is not a real child that he fathered, and one is not really sitting if there is not something real on which he sits. But one can really be thinking of unicorns. Brentano concluded that the mind is inexplicable by the natural sciences. At what point in a physical explanation can something that does not exist be introduced? If at no point, then physics cannot account for intentionality. Nor, thought Brentano, can intentional states be observed in accordance with the canons of observation in the natural sciences. We can see, locate, and measure only what does exist. Therefore, we could never detect mental states by such means, as they have inexistent objects. The dichotomy Brentano discerned between the psychical and the physical is a methodological variant of Descartes' ontological dualism of mind and body.

Some of Brentano's students, but most importantly Husserl, replaced his idea of psychology with that of a new science, of phenomenology, in which the identification of intentionality with the mental is a fundamental principle, and in which the exclusion of naturalistic explanation is developed and strengthened. In all its variants, even Peirce's, phenomenology is merely descriptive, not explanatory. But in Continental phenomenology it is usually maintained that intentionality can only be grasped in a self-reflective consciousness (the phenomenologists reject Brentano's reference to mental *phenomena*), and never explained. These additional assertions are omitted from Peirce's phenomenology.

I take the philosophy of Brentano, Husserl, and Continental phenomenology generally to be a major alternative to Peirce's mature semeiotic. The former denies the very possibility of a naturalistic explanation of intentionality, whereas a central thrust of Peirce's mature semeiotic is that intentionality may be explained naturalistically. Peirce rejected all dualisms, on the principle that, by positing inexplicables, they block the road of inquiry. As a corollary of that principle, he in later years proposed a doctrine of 'synechism', of the continuity of all things. The principles, of synechism and of not blocking the road to inquiry, are grand pronouncements. Of more moment would be the concrete development of

a theory that does exhibit mind's continuity with nature. And that is what I shall argue Peirce's mature semeiotic does.

As between Peirce and the phenomenologists, the *crux criticorum* is Brentano's first thesis, of which one part is that intentionality is not to be found outside of the mind. For if there were extra-mental examples of intentionality, they would provide that element of continuity, satisfying Peirce's synechism, by which the natural and the mental, the observable and the introspectable can be bridged.

The identification of intentionality with the mental is often treated as if it were a tautology. That was not Brentano's view. He began with a rough enumeration of mental phenomena *not* overtly identified by their intentionality. And his account of intentional inexistence makes no allusion to the mind. The definition of the mental, as 'those phenomena which contain an object intentionally within themselves', is a conclusion for which Brentano argued. Hence, it presupposes that we understand what intentionality is without reference to the mind. Thus it is conceivable that one might find mental phenomena lacking intentionality and/or nonmental phenomena possessing intentionality. And, indeed, apparent examples of both sorts – apparent counterexamples to Brentano's thesis – have been discussed in the literature, and to some extent by Brentano himself.

There are types of phenomena Brentano counted as mental that seem to lack intentionally inexistent objects and some that lack any object at all. For example, seeing is mental, but if something does not exist we cannot see it (though we may think we see it). And pains, though they have locations, have no objects at all; we simply suffer them. Brentano dealt with seeing easily: it involves having an image of, or thinking of, an object, and the objects of images and thinking are inexistent. The mental, then, can be said to be either that which has an inexistent object or that which has a part that has an inexistent object. That way, intentional inexistence is still part of anything mental. Pains require a further stretch. To accommodate them, Brentano denied that there is a sharp boundary line between feeling and striving (1973 [1874], pp. 235ff.). Pain is hardly separable from the desire to be rid of it, and desire has intentionally inexistent objects.

We have no need to form an opinion about those topics. Of more importance to us are the examples of nonpsychical phenomena that seem to possess intentionality. They fall into two groups. First, spoken or written words, as well as natural signs such as smoke or a falling barometer, are physical, and yet they have objects that, in typical cases, need not exist.

Words can lie, not all smoke is caused by fire, and so on. Such examples clearly conform to Brentano's definition of intentionality and yet they are not thoughts or other mental acts or states. They may nevertheless be accommodated to Brentano's thesis easily, if it can be shown that their intentionality is derivative from that of the thoughts that words and other signs either express or elicit. That is the line that Roderick Chisholm (1952) took, and it is implicit in Husserl.¹ It leads straight back to the view shared by Aristotle and Locke, that significance derives from thought. By its means, Brentano's thesis is amended, but its underlying idea is preserved intact: there is intentionality outside of the mind, it can be said, but that sort of intentionality is utterly dependent on the mind.

The other candidate for extra-mental intentionality is animal behavior, which seems always to be goal-directed. Dogs look for bones they have buried and salmon swim upstream toward the beds from which they were spawned. But a bone might be gone and a spawning bed destroyed. Can the behavior of the dog and the salmon be adequately described without referring to the objects sought, which might not exist? If not, then those actions would seem to be intentional, since they have inexistent objects. Suppose that is so. Brentano's thesis survives nonetheless if we can plausibly attribute something like thought to the lower animals.² The idea here may be that goal-directed behavior is always directed by some thought or image, and so on, of the goal. However, that stratagem becomes increasingly implausible as we work down the animal kingdom, from dogs to salmon to lice to paramecia. For paramecia, too, exhibit goal-directedness, for example, swimming up chemical gradients toward a food source. But is it plausible to attribute ideas of their goals even to salmon, much less to paramecia?

An alternative strategy, proceeding from the same assumption, that goal-directedness always requires direction by something mental, is to deny that animal behavior, at least beneath a certain level, roughly mammalian, is genuinely goal-directed. On that view, what appears to be goal-directedness is purely mechanical, the operation of mechanisms indifferent to consequences. The description of those operations will be a complete account of the animal's behavior, and in that description there will be no reference to anything that does not exist or that need not exist.

¹ E.g., 'A thing is only properly an indication if and where it in fact serves to indicate something to some *thinking* being'. Husserl 1970 [1900-1], p. 270, emphasis added.

² Brentano does that forthrightly (1973 [1874], pp. 40-1); for a more recent statement of the same, see Searle 1983, p. 5.

If that can be done, then talk of salmon, and the like, as ‘seeking’ anything may be dismissed as anthropomorphic. Such talk, it will be said, attributes something like human purposefulness to what is only a scaly machine. (The next step often taken is to argue that human purposefulness, also, is simply a machine function.)

However, can a mechanistic reduction of apparent purposefulness be carried out? Of course, mechanisms are involved. But can animal behavior be *fully* described and understood without mentioning intentionally inexistent objects – those things that are sought, fled, or attempted? The plausibility of Peirce’s mature semeiotic depends on a negative answer to that question. The question itself, however, needs clarification and refinement, as follows.

4. Chisholm, Quine, et al. on Intentionality

Clarification of Brentano’s idea of intentionality, so as to avoid attributing existence to the inexistent, was begun by Brentano himself, in essays of 1911 (1973 [1874], pp. 271–2 and 89n11). His student and editor, Oskar Kraus, in his introduction and notes to a 1924 edition of the *Psychologie* (ibid., pp. 370–1), shifted the question from material to formal mode, and formal mode analyses were pursued vigorously by a number of analytic philosophers, most notably by Roderick Chisholm in various publications from 1952 to 1967.³

There are many forms of expression that violate supposed canons of scientific language. For example, in the *Tractatus*, Wittgenstein supposed that in an ideal language the value, true or false, of any proposition is a function of the values of logically simple (elementary) propositions; the value of the whole is determined by the values of the parts. But ‘Jones believes that p ’ has a value that is not a function of p ’s value. Jones is notorious for believing false things as well as true ones. Another supposed canon of scientific language is the principle of substitutivity of identicals, *salva veritate*: if $x=y$, S is a sentence in which x occurs, and S' is obtained from S by substituting y for x , then S is true if and only if S' is true. And yet it may be true that you believe that your father is a good man and false that you believe that the head of Murder, Inc. is a good man, though in fact your father is the head of Murder, Inc. (He is good enough to hide his business from you.) Facts of these kinds about the logic of ‘believes’

³ Chisholm 1957, ch. 11, and Castañeda 1967, pp. 11–35. See also the papers by Chisholm and others collected in Marras 1972 and Marras’s bibliographical note, pp. 506–8.

gave hope of a linguistic criterion by which to distinguish the intentional from the physical.

Before descending to details about what such a criterion might be, let us enumerate the components of the dialectical situation defined by Chisholm's project.

1. There are assumptions made, and that might be questioned, about what constitutes an ideal or canonical scientific or physicalistic language. One might also question the equation of scientific with physicalistic and/or the very idea of there being a canonical form of scientific language.
2. There is an intuitive idea of intentionality, expressed by Brentano, for which a formal-mode counterpart is wanted. It is assumed that this will be a classification of idioms – let us call them 'intentional idioms' – that do not conform to the aforementioned canons.
3. There are many expressions that do violate those canons, not all of which fit our intuitive idea of intentionality. For example, it is logically necessary that your father is a male but it is not logically necessary that the head of Murder, Inc. is a male; like 'believes', 'being logically necessary' is noncanonical, yet it seems not to be an intentional idiom. Thus, part of the task facing Chisholm was to distinguish the subset of noncanonical idioms that are intentional idioms.
4. Chisholm wished to defend Brentano's thesis that intentionality is the mark of the mental, and therefore he had not only to isolate the class of intentional idioms but also to show that all of these are psychological idioms and that no psychological idiom fails to be in the proposed class of intentional idioms. His analyses and those of others were therefore subject to test by counterexample – assuming that we can identify psychological and nonpsychological idioms independently of relying on criteria of intentionality. But what if one should find a psychological idiom that is not, by a proposed criterion, intentional? Does that refute the proposed criterion, or does it refute, instead, Brentano's thesis? Or does it call into question our intuitive idea of the psychological? The same alternatives are faced if one should find an idiom that is intentional by a proposed criterion but is evidently not psychological.
5. Chisholm wished to defend Brentano's thesis that the intentional is irreducible to the physical; in the formal mode, the task is to show that, while some uses of intentional idioms may in fact be

replaceable without loss of meaning by physicalist description, not all can be so replaced. It follows that the argument can never be conclusively ended, as it depends on the resourcefulness of two sets of disputants, those who devise physicalistic reductions and those who show that these reductions fail or who find new examples that they think will resist reduction. Every seeming conclusion is open to challenge by someone bringing new resources to bear on the question. That is not an objection to the enterprise, merely a feature of it.

Some other philosophers in the analytic tradition, most notably, W. V. O. Quine, have agreed with Chisholm that intentional idioms are irreducible to nonintentional idioms, but have drawn a different moral: namely, that intentional idioms do not denote anything real, or that the irreducible part of their meaning does not. Quine admitted that they are practically indispensable, but maintained that they do not belong in science:

If we are limning the true and ultimate structure of reality, the canonical scheme for us is the austere scheme that knows no quotation but direct quotation and no propositional attitudes but only the physical constitution and behavior of organisms. (1960, p. 221)

Direct quotation reports the words actually spoken, as if they were merely physical events. Indirect quotation provides the propositional content of such 'propositional attitudes' as believing that . . . , knowing that . . . , fearing that Quine also banished from scientific discourse all expressions that are referentially opaque (1960, §32), that is, that violate the principle of substitutivity of identicals, *salva veritate*. To take an example that is not of a propositional attitude, you may be looking for your father and yet, in one sense of 'looking for', not looking for the head of Murder, Inc.

In effect, Quine denied that believing, seeking, and so on are real conditions or activities, though he did not deny that there is something real that we misleadingly describe in such language; the realities so described are perfectly physical and lack all intentionality. Two assumptions, (a) that reality is physical and (b) that physicalist language is wholly free of intentional idioms, are shared by most contemporary philosophers of mind, whether or not they deny the reality of mind: see chapter 11. This stands as a second major alternative to Peirce's view. For Peirce held that mind is real and yet his semeiotic implies that it cannot wholly be described without recourse to intentional idioms.

The major alternatives, then, are (i) Brentano/Chisholm's, that mind is real, irreducibly intentional, and inexplicable naturalistically, (ii) that of Quine et al., that whatever is real is nonintentional and explicable naturalistically; and (iii) Peirce's, that mind is real, irreducibly intentional, and explicable naturalistically.

The dialectical situation defined by Peirce's view is less demanding than is that of Chisholm's project. Components (1) and (4) drop out. No assumption need be made about what scientific language ought to be. As the thesis that intentionality marks the mental is not to be defended but, rather, challenged, a thicket of possible counterexamples is evaded. In fact, some of the examples that occasioned Chisholm and his colleagues the most difficulty are grist for a Peircean mill. And (2) plus (3) is softened, as a complete theory of intentional idioms is not needed. It suffices to identify a broad class of idioms that (a) violate Quine's canons and (b) are plausibly a formal mode counterpart of Brentano's material mode conception of intentional inexistence. We can then state a sufficient (not a necessary) condition, in the formal mode, of material-mode intentionality. It is this: something possesses intentionality if it cannot fully be described without implying the truth of a proposition that cannot be stated without employing one or another idiom of the defined class of intentional idioms.

Dialectical component (5) still applies in full force: determining intentionality by this criterion depends on the resourcefulness of two sets of disputants, those who try to find instances of seemingly irreducible intentionality and those who try to reduce those instances. The question faced by Quine et al. is whether one can plausibly maintain that no information about the world is lost if we refrain from using intentional language. Brentano's thesis will be refuted if a class of examples is found that are not mental in his sense but that are by this criterion irreducibly intentional.

For our purposes, a sketch will suffice. Consider the transitive verbs 'throw' and 'look for'. What is thrown must exist, what is looked for need not exist. There are grammatical contexts in which neither verb takes an object that must exist, for example, 'Joe does not throw a ball', 'Joe should throw a ball', 'Grandpa would like to see Joe throw a ball'. And there are ways of specifying the object ('the ball', 'his ball') that imply its existence in any case. But in the grammatically simplest singular affirmations where the object is indefinite ('a ball'), the difference between these two verbs is clear. From 'Joe throws a ball', we may infer that a ball exists; from 'Joe looks for a ball', that same inference may not be made. We shall call any

verb of the latter kind 'intentional', regardless of the context in which it occurs.

A parallel distinction can be made between verbs ('believes that', 'sees that') that take propositional objects, the question being whether, in a simple singular affirmation, the proposition may be inferred. (Some verbs, e.g., 'disproves', license inference to the denial of the propositional object; for our purposes, we may, for the sake of simplicity, mandate restatement by which, e.g., 'S disproves *p*' is replaced by 'S proves not-*p*', making *p*'s negation the propositional object.) Wrapping up the two cases together, let us say that a verb is intentional if its use in simple singular affirmations does not license an inference that its object, if indefinite, exists or, if propositional, obtains.

This definition is stipulative and not subject to disproof by counterexample (of course, it might be open to other kinds of objection). It makes no difference that many verbs used to ascribe intentionality are not by this definition intentional. It makes no difference that instances can be found of verbs that are intentional by this definition, for example, 'wants', that are not invariably used to ascribe intentionality ('This frying pan wants a handle').

The claim is that something possesses intentionality if it cannot fully be described without implying the truth of a simple affirmation *about it* that employs an intentional verb (or gerund, etc., derived from that verb). (No one such verb is privileged; the same thing can be said in many ways. Also, the implied affirmation may be specified or it may be an unspecified member of a specified class.)

The fact expressed in 'This frying pan wants a handle' can be stated without making any simple affirmation that is about the pan and employs an intentional verb. (It may be that such a verb must be applied to something else, e.g., that someone *wishes* that the pan had a handle.) There are a great many examples not so easily decided. Can the behavior of a paramecium be described fully without implying one or another proposition on the order of 'It seeks *X*'?

The criterion suggested bears comparison to many that have been entertained by Chisholm and others;⁴ G. E. M. Anscombe (1965) stated something like it as one of three conditions she thought jointly sufficient for a verb's being intentional. The reason it or equivalent or

⁴ William Lycan gives a fairly comprehensive account of what has been done in this area (Marras 1972, ch. 6). My focus on the dialectical situation is adapted from his.

near-equivalent conditions were not held to be sufficient alone is that they do not exclude nonmental examples. Our point exactly.

5. Saussure's Semiology

Another alternative to Peirce's semeiotic was provided by another of his contemporaries, the Swiss linguist Ferdinand de Saussure (1857–1913). Whereas the one implies a semeiotic philosophy of mind, the other is a theory of signs that takes mental functions largely for granted. Peirce was unlikely to have heard of Saussure, whose fame and influence are due to his posthumously published lectures, *Cours de linguistique générale* (1916). That volume was a primary source of the broad intellectual movement, now *passé*, known as structuralism. It was also the source of European semiotics. The latter subsequently discovered Peirce, whom it claimed, contrary to the usual conventions of paternity, as a second father. That, unsurprisingly, has generated much confusion. The main task of this section is to establish that Saussure's view is fundamentally different from and incompatible with Peirce's.

Saussure distinguished *langage* and *parole*, or speech, from a particular tongue, *langue*, which he defined as a system of linguistic rules employed in speaking. And he argued that, in a scientific approach, the study of the former must be based on a prior and independent study of the latter. For it is the rules of the language used that give acts of speech their meaning and thereby explains their occurrence. He also distinguished the diachronic study of the development of languages over time from the synchronic study of a given *langue*. Again, it is the understanding of a *langue* that is prior, scientifically, to the study of its evolution. Or so, at least, Saussure argued. That was the inspiration of structuralism: the idea that the multitudinous, concrete, historical facts of human existence can be explained on the basis of an abstract representation – precise, complete, certain – of an underlying structure that is largely unknown to those whose actions it determines. Marxism and Freudianism lent themselves to that interpretation – the underlying structures being material or psychic, respectively – thus swelling the structuralist movement, for awhile.

Saussure suggested that his approach to linguistics might be generalized into a study of all the sign systems embedded in social behavior: customs, gestures, modes of artistic representation, and so on. Here, too, it is a system of rules, yet to be articulated, that makes particular behavior possible by giving it its meaning. Saussure named this broader study 'semiology', after the Greek word for sign, *semeion*.

There are two assumptions in semiology that Saussure carried over from his linguistics. One is that a word or other sign is a two-part entity, consisting of a material signifier (*signifiant*) coupled with a signification (*signifié*). Since the object studied is *langue* not *parole*, the material signifier is not a particular sound but is a sound pattern; ergo, it is not itself material but is, rather, an abstraction. For the same reason, Saussure took the signification to be a concept rather than a particular thing that satisfies the concept. Thus, 'tree' signifies tree in general and smiling signifies amiability. The other assumption is that the relation between these two parts is essentially arbitrary. Saussure sometimes wrote of arbitrariness as a matter of convention but at other times implied the opposite, since the growth of language is an unconscious evolution and since linguistic rules cannot be changed by fiat. In any case, he argued that onomatopoeia and the like play inessential and indeed marginal parts in language.

It might seem, at first, that for Saussure, linguistic meaning does not derive from thought. He wrote, 'No ideas are established in advance, and nothing is distinct, before the introduction of linguistic structure'. For, 'setting aside its expression in words, our thought is simply a vague, shapeless mass'. An idea, he said, 'is fixed in sound' and only thereby does the sound become a sign of the idea (1983, pp. 110–11; pp. 155–7 in the pagination, now standard, of the 2nd French ed.). But we shall see below that Saussure does assume thought's intentionality, independent of language.

Saussure also held that human vocalization does not fall into distinct, repeatable units before being matched with thoughts (pp. 111–20; 157–69). It is their subordination to forming meaningful words that gives sound units (let us follow current usage in calling them 'phonemes') definition: a range of sounds count as variants of the same phoneme when the substitution of one for another forms the same parts of the same words, where a word is an expression of fixed meaning. The pairing of sound and sense establishes a system of mutual exclusions on the sound level and another system of mutual exclusions on the conceptual level. A range of sounds is one phoneme by virtue of being distinguished from those ranges that constitute other phonemes, and a range of meaning is one concept by virtue of its not being other concepts. (Thus, in French, *vague* includes the vacant, which the English concept of vagueness does not include, as vacancy is reserved, in English, for another word.) It is this paradoxical suggestion, that meaning is created out of two systems of pure differences arbitrarily paired, which accounts for so much of the excitement that Saussure has generated.

But despite Saussure's insights and subtlety, there is also in his theory a surprising vagueness or, perhaps, vacancy, where Peirce had much to say. Saussure does not explain, or even attempt to explain, how thought and language manage to be about the world. He did not deny that there is a world independent of language and thought about which we think and speak. But he did not account for its being an object of representation. He simply assumed that the undifferentiated mass of preverbal thought is already directed toward the world and that language serves only to carve that mass into discrete units. It is the mental concept of tree that determines, for Saussure, what the word 'tree' refers to. Saussure is therefore in the tradition of Aristotle and Locke in making the intentionality of speech to be dependent on the intentionality of the mind. That is one difference between semiology and Peirce's semeiotic.

In the usual contrast drawn between their theories (e.g., Deledalle 2000, chs. 4 and 9), Saussure is said to have had a dyadic conception of a sign, as consisting of a signifier and what is signified, whereas Peirce had a triadic conception, by the addition of an 'interpretant'. The interpretant is a response to the sign that the sign elicits and in which that sign is taken to be a sign of an object: it is this that accords the sign its significance. Peirce did not say so, but presumably an interpretation comprises equivalent interpretants. Thus, if we see smoke and I think, 'Fire!' and you think, in French, 'Feu!' then we interpret the smoke in the same way, as a sign of fire, though our two interpretants are distinct.⁵ The concept of the interpretant is central to Peirce's theory of signs, in all periods of its development.

Nevertheless, it is a basic error to suppose that the difference between the two concepts of sign is simply that one is dyadic and the other triadic. Saussure made the sign a dyad, a two-sided entity. Peirce, on the contrary, made the sign just one relatum of a triadic relation, of which the other two relata are the sign's object and the sign's interpretant. All three items are triadic in the sense that none is what it is – a sign, an object, or an interpretant – except by virtue of its relation to the other two. But that does not mean that any of the three is in itself a triad; if the object, the sign, or the interpretant is in itself triadic, that must be for another reason. Peirce's and Saussure's ideas of sign differ, then, not

⁵ As there must always be differences of nuance and as these differences will be for some purposes important, it follows that the equivalence of interpretants that defines 'an interpretation' must be less than absolutely strict. What constitutes equivalence will vary with our interest.

only in number of items combined but in the way they are combined. It is the difference between a composite entity and a relational property. This seems persistently to be misunderstood, and therefore, with some reluctance, I shall belabor the point.

Is it not odd to say that a word is not only a pattern of sound but is also a concept? For it is the sound that is made and that is heard when the word is spoken. That is what we call a 'word' in English or a *mot* in French. To be sure, it is only a word because it has a meaning. But what is had is not always a part of that which has it. A man may have a nose, a wife, and a reputation, but only the first of these is one of his parts. Similarly, 'sign' in English and *signe* in French refer to the signifier alone and not to the signified as well. Saying that its meaning is part of a word or that its significance is part of a sign is like saying that a husband is a union of two persons, rather than one person united with another.

Writers who suppose that Peirce held the sign to be a triad or a triadic relation, rather than one relatum of a triadic relation, must then invent a third part or third relatum, in addition to the sign's object and its interpretant. This they usually call a 'sign vehicle'.⁶ They then identify a sign either as vehicle plus object plus interpretant or as the relation that binds the three. But there is no basis for this in any Peircean text. The 'sign vehicle' is the sign, as Peirce conceived of signs, and the object and interpretant are other things, distinct from the sign.

Another difference often misconstrued concerns the breadth of semiology and semeiotics. Peirce admitted a variety of grounds of significance, including resemblance and causality. Thus his semeiotic embraces natural signs and images, as well as arbitrary signs. Furthermore, he made particular signs as well as types of signs a primary study. And finally, he admitted that, in addition to thoughts, other responses to signs, such as feelings and actions, can be interpretants. Hence, sign interpreters are not necessarily humans only. This breadth appears to be one of its features that has caused semeiotic to be favored over semiology. However, it does not follow that Peirce's semeiotic embraces Saussure's semiology as a part. If Saussure was right that systems of arbitrary signification can be studied in abstraction from their particular uses and in abstraction from natural signs and other nonarbitrary forms of significance, then Peirce was wrong. And if Peirce was right that language can be understood only in the concrete context of its uses, in coöperation with other

⁶ The term appears to have been introduced in Charles Morris (1938), not, however, as an interpretation of Peirce's theory.

kinds of signs, then Saussure was wrong. One system cannot be a part of the other, because one contradicts the other.

And that is something about which Saussure and Peirce, had they known of each other's work, would have agreed. For each wanted to make sign theory a science and each regarded any science as necessarily including a taxonomy that, as the stock phrase has it, carves nature at its joints. Those joints are presumed to exist objectively. Thus Saussure wrote,

A language as a structured system . . . is both a self-contained whole and a principle of classification. As soon as we give linguistic structure pride of place among the facts of language, we introduce a natural order into an aggregate which *lends itself to no other classification*. (Saussure 1983, p. 10; 25, emphasis added)

Similarly, Peirce:

If the question were simply what we *do* mean by a sign, it might soon be resolved. But that is not the point. We are in the situation of a zoölogist who wants to know what might be the meaning of 'fish' in order to make fishes one of the great classes of vertebrates. (8.332)

Peirce thereby warns us that he will use 'sign' in a technical sense not necessarily identical with its ordinary usage. Its reference will be determined not by usage but by the needs of science: items explained by the same principles are to be grouped together, those by different principles are to be separated.

As each way of carving the beast is meant to be the only objectively correct way, they cannot both be correct. At least one of the two systems of classification must be factually mistaken. Such facts, however, are not easily established. How are we to choose between these rival claims? Not on the basis that Peirce's semeiotic ropes in more phenomena and thus creates a larger empire on which 'semioticians' may plant their standard. Perhaps he has put things together that should be held further apart. No, the question is: which system is the more illuminating? They are to be decided between (unless both are rejected in favor of some third alternative) in the way that any rival scientific theories are (cf. chapter 12, section 3): in minor degree by their internal coherence and conformity to known truths, in major degree by their respective fecundity in prompting further discoveries and yielding additional insights. Peirce sometimes expressed his pragmatism in the words of Jesus, 'By their fruits ye shall know them'. But let us not confuse the fruits of science with mere numbers of publications and conferences.