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## THE SEMIOTIC OF CHARLES SANDERS PEIRCE AND THE FIRST DICTIONARY OF SEMIOTICS\*

### I. INTRODUCTION

We turn to the Preface of the *Wörterbuch der Semiotik* to learn that it is presented in answer to a need for a relatively uniform terminolōgy in the discipline of semiotics. In proposing this dictionary as a beginning toward that goal, Professors Bense and Walther ask us to realize that the terminological system of a young and highly interdisciplinary science represents an 'open system' that must continually be corrected, supplemented, focused, and even changed (5). We admire this kind of commitment to the spirit of inquiry. And in what follows, with regard to some of the issues raised either explicitly or implicitly in this dictionary, we hope that we can make some small contribution toward such a process of constructive correction, supplementation, focusing, and changing.

According to the editors, the existence of a relatively uniform terminology presupposes that there is a basic theory which defines the themes and problems in a given subject area (5). The theory they propose as such a basis for modern semiotics is that advanced by Charles Sanders Peirce, a theory he named 'semiotic' (see Robin, 1967: MS 318, for example; see also Peirce, 1931-1958: 2.227, 5.488, 8.302).<sup>1</sup> We sympathize with this proposal, although with some reservations. For one, it seems counter to the editors' announced goal of promoting sound terminology to suggest some sort of equivalence between Peirce's semiotic and present-day semiotics. The latter is eclectic, being a mixture (as the editors mention on p. 6) of Peircean semiotic, behaviorism, Saussurian linguistics, and other strands. Such an equivalence is suggested if one presents a dictionary of semiotics that takes Peirce's theory of semiotic as its base. We agree with Bense and Walther that Peirce's work is probably the most fruitful basis for a science of signs (what we understand to be a general science of communication processes), but we think it is inappropriate to contribute to the ambiguity of scientific terms,

because this is contrary to what Peirce called the 'ethics of terminology.' We believe that there are other ways in which the *Wörterbuch* promotes ambiguities, contrary to its goal of fostering a 'relatively uniform terminology'; but before we mention these, a brief excursion into some of the details of the ethics of terminology should be useful.

## II. THE ETHICS OF TERMINOLOGY

One of the questions for which Peirce intends the ethics of terminology to be an answer is 'What is the relationship between science and the language it uses?' The most perspicuous presentation of this general topic appears in the *Syllabus of Certain Topics of Logic* (Peirce, 1903; other sources used in preparing our synopsis are: MSS 434, 515, and 530 – see Robin, 1967). For Peirce, it is inaccurate to say that a good language is important to good thought; good language is instead the very essence of good thought, so that the life of science is the same as the life of the symbols used in its pursuit. Second, science progresses through collaboration among 'scientific intelligences' (see Brock, 1969) by an appropriate kind of communicative interchange. This interchange, which is characterized by an increasing precision in language as scientific dialogue advances (see, for example, Robin, 1967: MSS 280 and 288), also exhibits certain attitudes and attributes such as those which Peirce outlines in his account of the nature of scientific inquiry.<sup>2</sup> Furthermore, it would become an important duty of persons who are aware of these considerations to resist arbitrary nomenclature, or the introduction of ambiguities into nomenclature, in the practice of scientific communication. To act otherwise would be to bring unnecessary confusion into scientific discourse, and hence to limit or block the progress of scientific inquiry.

Given these considerations, what would be the characteristics of an ideal terminology for science? For one thing, each scientific term should have a single exact meaning. And naturally the duty of supplying this term falls upon the person who introduces the new conception. This task should not be undertaken without a thorough knowledge of the principles, the history, and the scientific details of the special terminology in which the new term will have a place; and it is also not to be undertaken without a sufficient understanding of the laws of signs in general – namely logic, or what is equivalent for Peirce, semiotic.

Logic, in its general sense, is, as I believe I have shown, only another name for *semiotic* ... the quasi-necessary, or formal, doctrine of signs. (Peirce, 1931-1958: 2.227)<sup>3</sup>

How does one seek to accomplish this ideal in terminology? Not by having congresses, Peirce suggests; nor by making dictionaries. It is best enforced through the power of the notion of right and wrong. That is, one urges upon one's colleagues that after the creator of a new idea has exercised his duty to provide it with an appropriate symbol according to the best logical techniques, it then becomes the duty of all members of that scientific community to hold to its original meaning. Peirce felt strongly about this: consider the language he chose to express it.

Whoever deliberately uses a word or other symbol in any other sense than that which was conferred upon it by its sole rightful creator commits a shameful offense against the inventor of the symbol and against science, and it becomes the duty of the others to treat the act with contempt and indignation. (Peirce, 1931-1958: 2.224)

Any question as to whether this is phrased too strongly should vanish when one remembers that Peirce has already observed that the very life of science (the activity and attitudes of the community of scientific intelligences) is the same as the life of scientific communication. Introduction of ambiguities, then, is a very serious moral question for persons with this kind of understanding of the nature of science.

This brief outline enables us to begin to appreciate that the ethics of terminology is an integral part of Peirce's semiotic, not another aspect of his philosophy which stands apart from his sign theory. We believe that there has been an unfortunate tendency among some students of Peirce to conceive his work in terms of logically separate compartments, much as one might think of semiotic and the ethics of terminology as distinct enterprises. Thus, some scholars (for example, Feibleman, 1946) present Peirce's work in terms of various compartments: his metaphysics, cosmology, pragmatism, ethics, semiotic, logic, mathematics, and so on. Perhaps it is useful for purposes of exposition to adopt this way of approaching Peirce. So, scholars might study Peirce with the intention of only wanting to know about his understanding of mathematics or cosmology. For semiotic, however, we suggest that this kind of approach (while practically feasible in many scholarly undertakings) is neither fruitful nor appropriate. That is, in Peirce's case, semiotic (or logic in the broad sense) which is his omnipresent epistemology, permeates his whole scholarly output, or one might say it provides the spirit of his intellectual life. It is true that semiotic is conceived by Peirce as one science among other sciences. Yet when Peirce turns to consider any of the sciences other than semiotic, the consideration is undertaken using the epistemological or philosophical approach that semiotic provides. This point is further strengthened by the fact that one finds im-

portant semiotic discussions and applications in what might at first impression seem to be odd places — for instance in his mathematical works (a distinguished edition of which will soon be available under Carolyn Eisele's editorship), or in discussion of pendulum experiments. Given this approach, then, philosophical psychology, for example (as presented in Peirce, 1868a, 1868b, and 1868c), is what semiotic (or general logic) appears to yield if one's purpose is to learn more about the human conditions in which communication occurs. Or, philosophical cosmology is what semiotic appears to yield if one's purpose is to find out what the natural conditions are in which communication can be seen to take place. One implication of this way of understanding Peirce is that present-day students of semiotic most properly should be conversant with all of his philosophical work, not merely with what they conceive to be a relatively restricted part which they identify as relevant to semiotics. (In his monograph of 1973, Douglas Greenlee seems to be burdened with this problem.)

Another way to make this point is to say that if one wanted an appropriate name for Peirce's whole work, probably 'semiotic idealism' would be best, for Peirce is undisputedly an idealist. This idealism, however, replaces the category of spirit with the process of semiosis. We do not pause here to argue this point in great detail, but simply offer the following few comments from Peirce as evidence.

The learned doctor [Paul Carus] pronounces me to be an imitator of David Hume, or, at least, classes my opinions as closely allied to his. Yet be it known that never, during the thirty years in which I have been writing on philosophical questions, have I failed in my allegiance to realistic opinions and to certain Scotistic ideas; while all that Hume has to say is said at the instance and in the interest of the extremest nominalism. Moreover, instead of being a purely negative critic, like Hume, seeking to annul a fundamental conception generally admitted, I am a positive critic, pleading for the admission to a place in our scheme of the universe for an idea generally rejected. In the first paper of this series [Peirce, 1891], in which I gave a preliminary sketch of such of my ideas as could so be presented, I carefully recorded my opposition to all philosophies which deny the reality of the Absolute, and asserted that 'the one intelligible theory of the universe is that of objective idealism, that matter is effete mind.' This is as much as to say that I am a Schellingian, of some stripe; so that, on the whole, I do not think Dr. Carus has made a very happy hit in likening me to Hume, to whose whole method and style of philosophizing I have always been perhaps too intensely averse. Yet, notwithstanding my present disclaimer, I have little doubt apriorians will continue to describe me as belonging to the skeptical

school. They have their wonderful ways of arriving at truth, without stooping to confront their conclusions with facts; and it is amusing to see how sincerely they are convinced that nobody can have science at heart, without denying all they uphold. (Peirce, 1893)

The foregoing considerations, then, give plausibility to our suggestion that if one wants a full understanding of Peirce's semiotic, one must study his whole philosophy in its context of the history of idealism and medieval philosophy, Scotistic realism, and Scottish common-sensism.

### III. THE 'BASISTHEORIE'

The ethics of terminology is one part of Peirce's theory of signs – called 'Basistheorie' in the *Wörterbuch* – the theory which Professors Bense and Walther propose to employ in establishing semiotics on firm ground. We want to report on their interpretation of other aspects of Peircean semiotic, and of Peircean semiotic as a whole, as exemplified in various entries in this dictionary and in other works by the editors and their associates.

In the Introduction to her most recent publication, *Allgemeine Zeichenlehre* (1974), Professor Walther rightly says that a general theory of signs has interested philosophers since the time of the ancients (8). Later in the same book she observes that semiotics is not only a science unto itself, but like the theory of science, it is a basis for other sciences and a tool with which to analyze those other sciences as well as the activities of man, which are based upon modes of expression and upon information and communication (146-147). Semiotics is of such singular significance, she argues, because man is apparently unable to perceive, recognize, and judge things directly: mankind can only judge them indirectly through signs. Man's relation to the world is thus always a semiotic one; only in and through signs does one 'have' the world and its objects, events, and so on (128). Professor Bense's view of semiotics is similar. In his brief essay, 'Semiotik' (1973: 13), for example, he claims that sign systems, and therefore rules, play a constant and indispensable role in all artistic, scientific, technical, religious, political – in short, in all linguistic or cultural activities. The preceding citations indicate that Bense and Walther (who are the leading scholars in the Institute for Philosophy and the Theory of Science at the University of Stuttgart, where semiotics is one of the principal subjects of interest) recognize the universal significance, applicability, and usefulness of a general theory of signs. Do they also recognize that Peirce's theory of signs is just as general, significant, and universal?

Professors Bense and Walther acknowledge that it was Peirce who enabled

later scholars to study the theory of signs as an independent science, because he regarded signs not as objects but as functions and because he was the first to speak of semiotic relations, especially the triadic relation of sign, object, and interpretant. They further acknowledge that Peirce was concerned with developing a methodic, or Speculative Rhetoric, a 'method of discovering methods.' And, in the Introduction to her first translation of Peircean writings, Walther rightly says that Peirce's philosophy is not conceivable without his theory of signs (Peirce, 1967: 35). But in Walther's most recent work we find this summary of Peirce's significance in the science of semiotics:

Peirce hat viele Beiträge zu einer theoretisch begründbaren Semiotik geleistet. Sie traten allerdings nur innerhalb seiner logistischen Arbeiten zur Relationentheorie bzw. Booleschen Algebra und mathematischen sowie allgemein pragmatistischen Überlegungen auf, wurden aber in keinem speziellen Werke über Semiotik zusammengefasst. (Walther, 1974: 7)<sup>4</sup>

It is true that Peirce never published one single, special, and comprehensive work on semiotic and that comments and reflections which might be regarded as useful to modern semiotics are found throughout his published articles; but certainly that alone is not reason enough to diminish his significance as a sign theorist. We remember first that the greater part of Peirce's published and unpublished writings must be regarded as aspects of his general philosophy, his semiotic idealism. And we then must realize that Peirce failed to publish a specific and comprehensive work on semiotic not because he was not capable of doing so or because he did not try. Like so many other 'masterminds' (see Jastrow, 1914: 571), Peirce was the victim of various attitudes of his time — a time that for its Victorian narrow-mindedness cost him his only academic job, and a time that was neither ready nor willing to accept persons with the kind of originality and profundity that Peirce possessed and never compromised. In the second half of the nineteenth century no American university — not even Johns Hopkins — had research institutes for advanced study; and many institutions of higher learning placed greater emphasis upon physical and social than on intellectual activities (as some still do today). Moreover, publishers were reluctant to produce works that did not have at least some measure of usefulness and popular appeal. Given these circumstances, we can understand why none of Peirce's full-length studies (except the more 'useful' *Photometric Researches* — 1878b) was published during his lifetime. But some intellectuals (among them Royce, James, Dewey, B. I. Gilman, J. M. Cattell, G. S. Hall, O. W. Holmes, Theodore Roosevelt, and J. B. Warner) did recognize the

great value of Peirce's thought, a fact shown very clearly in their letters of support for Peirce's 1902 application to the Carnegie Foundation, in which he asked for funds to make possible the preparation of a *magnum opus* on general logic or semiotic (see Robin, 1967: MS L 75). But even the Carnegie Foundation was unwilling to recognize Peirce's work and to support his publishing efforts. These are some of the reasons that virtually completed works like the *Grand Logic* and *Search for a Method* (see Robin, 1967: MSS 397-424 and MS 1583, respectively) remained unpublished during Peirce's lifetime. Peirce may not have published one single, special work on semiotic during his lifetime; but given the *Collected Papers*, the manuscripts available on microfilm, and the manuscripts available for inspection at the Houghton Library at Harvard University, we cannot consider the absence of a specific published work on semiotic a disadvantage or defect. To put this point differently: there actually is a huge, original, profound, and comprehensive work on semiotic written by Peirce — namely, a large part of his total literary production, most of which is now accessible in one form or another to interested scholars.

In nearly all their writings Bense and Walther refer to Peirce's theory of signs as the 'semiotische Basistheorie,' or the fundamental system of definitions ('fundamentales Definitionssystem' — Bense, 1973: 15). This system or theory, they say, should be understood as an 'open theory' that is to be continually re-examined, expanded, differentiated, and made more precise. Peirce would have agreed with this view, for according to his concept of 'fallibilism' all theories are essentially 'open' — open to revisions, differentiations, and precidings.<sup>5</sup> But when Bense and Walther speak of expanding ('erweitern') Peirce's 'Basistheorie', they apparently fail to acknowledge the breadth and comprehensiveness of semiotic as Peirce deployed it in a great part of his work in many subjects. Moreover, the very word 'Basistheorie' seems ambiguous. Does it mean that all semiotic investigation must need to be founded upon Peirce's theory of signs, or that Peirce merely provided a useful beginning for serious semiotic study? The second, we believe, is the meaning intended; for Bense says (1973: 13) that semiotics should be made into an independent science, and Walther intimates (1974: 8) that semiotics did not become useful to scholarly endeavors in other sciences until Peirce's 'Basistheorie' had been made more comprehensive, precise, and understandable, and had been converted into a general theory of signs. Running the risk of becoming repetitive, we yet must emphasize again that Peirce developed semiotic as an independent science and that in his hands it was already an exceptionally general theory of signs. It appears that Bense and Walther are doing here what on occasion they accuse others of doing: compartmentalizing. They say that New Critics, Behaviorists, Marxists, and others have misread and taken too little account of Peirce's theory of signs

and that, consequently, too much of what has been published dealing with semiotics suffers from disuniform semiotic terminology and concepts. It is true that, as Bense says (1967: 7), 'die klassische Theorie von Peirce ist innerhalb jüngst erschlossener Anwendungsbereiche nicht allgemein bekannt und nur schwer zugänglich.'<sup>6</sup> That alone, however, does not seem to justify Bense's (compartmentalizing) manner of presenting this theory: 'Wir werden . . . nur von den Grundlagen der Peirce'schen Theorie Gebrauch machen und auf die Verwendung der Feinkategorien seiner Klassifikationen verzichten' (*ibid.*).<sup>7</sup> Bense and Walther deserve credit for having made semiotics, or Peircean semiotic, accessible and useful to fields in which the theory of signs may be applied advantageously – as in design theory, and in literature, art, and architecture. But aren't they doing Peirce a great disservice by failing to represent his semiotic theory as being as precise and comprehensive as it actually is? And aren't they violating the ethics of terminology if in their own terminology (in the *Wörterbuch* as well as in other writings) they not only alter Peircean terms but represent as their own creations those semiotic concepts which had already appeared, though by a different name, in Peirce?<sup>8</sup> It would appear, then, that Bense and Walther do not represent the 'semiotische Basistheorie' as fully as they should, although they do acknowledge Peirce as the founder of modern semiotics. Would they have been more accurate if they had pointed out more clearly and emphatically that Peirce did indeed develop a general theory of (and a philosophy based upon) semiosis that is useful and applicable to most, if not all, modern sciences?

#### IV. DICTIONARY STRUCTURE AND THE *WÖRTERBUCH*

As a consequence of Peirce's recommendation that terms not be altered from their original state, we sought to compare a list of terms which Peirce created for semiotic with those presented in the present dictionary. We immediately faced a problem – a problem that underlines the wisdom of Peirce's recommendations about the ethics of terminology. That is, we had some difficulty, because nearly all of Peirce's terms in the *Wörterbuch* have been transferred into German forms. Now this may seem a reasonable procedure in a German-language dictionary. However, it does appear to be inappropriate to ruin Peirce's carefully devised Greek or Latin terms by changing them into Germanic equivalents, which may not actually be equivalent in meaning after all. This seems doubly unwise since semiotics, being an international and multilingual science, is in particular need of a body of terms that is not tied to translated forms. A better procedure for a dictionary of semiotics would be to preserve terms just as their creators presented them, and to urge modern semioticians to follow a system like that used by Peirce



in developing technical and scientific terms. In the present dictionary, perhaps it would have been best to list terms as originally given by their creator, and to offer German equivalents in parentheses.

Readers would probably like to know what resulted from our comparison of Peircean semiotic terms with those provided in the *Wörterbuch*. Our list is incomplete because it is, for the greatest part, derived from the *Collected Papers* – if completeness were being sought, one would have to consult more of the unpublished manuscripts. In any case, we found that approximately one-half of the terms on our list do not appear in the *Wörterbuch*, to wit: action of a sign; address; assertion; Cerebus, sop to; continuant; critic; deliverer; delome; diagram; emanation; grapheus; graphist; ground; habit; hecceity; image; life in signs; man-sign; pheme; quasi-interpreter; quasi-mind; quasi-proposition; quasi-sign; quasi-utterer; receiver; seme; sign-burden; sign *in actu*; sign-maker; stecheotic; stoicheiology; suadisign; sumi-sign; symbolide; thought-sign; token; tone; transuasion; tuone; type; utterer; vagueness, logic of; vehicle; vestige.<sup>9</sup>

Next we sought to examine aspects of the *Wörterbuch* relating to contemporary Peircean scholarship. We noticed, for instance, that there is no mention of the catalog of the Peirce manuscripts in the Harvard collection (Robin, 1967). Possibly this catalog is not mentioned because the editors take little account of Peirce's manuscripts: they list only MSS 308, 310, 312, and 1903. Of these, the first three pertain to the 1903 lectures on pragmatism which Professor Walther has so admirably edited in a bilingual volume (Peirce, 1973). Yet these three can hardly be considered an adequate search of the manuscripts for material on signs, for the manuscripts are full of relevant matter. (One of the most important manuscripts for semiotic, a draft in MS 318, has recently been 'rediscovered' by Joseph Ransdell and his associate, Jerry Dozoretz.) The last of the four, MS 1903, does not exist – there is no such manuscript number or manuscript. Probably, the editors of the *Wörterbuch* should also have included more articles from the *Transactions of the Charles S. Peirce Society* – they refer to only one from that journal. That means that they do not take account of the following useful or significant articles relating to semiotic which have appeared in the *Transactions*: Goudge, 1965; Martin, 1965; Turquette, 1967; Zeman, 1968; Martin, 1969; Turquette, 1969; Sanders, 1970; and Turquette, 1972. Furthermore, they take no notice of some of the best recent German or American scholarship on Peirce's semiotic. There is no mention of the following: Greenlee, 1973 (available as a dissertation earlier); Fitzgerald, 1966; and Ransdell, 1967. Of these, the last is by far the best, and together with Brock's work (1969) is essential for beginning to understand this whole matter adequately. Other such significant works not cited are: Alston, 1956; Burks, 1949; Dewey, 1946; Habermas, 1968; Kempfski, 1952;

Krausser, 1960; Peirce, 1967 and 1970 (the introductions); Peirce, 1968 (the introduction and commentary); Roberts, 1963; Wartenberg, 1971; and Weiss and Burks, 1945. Finally, the editors place a near exclusive reliance on the *Collected Papers*, a practice which, given the advances in Peirce scholarship, is no longer defensible or productive. It is our feeling that although modern students of semiotics often acknowledge Peirce as a founding father, some of them have hardly scratched the surface in understanding his work. One of the most obvious recent examples of this is an attribution to Peirce of the view that he established 'a typology of signs as if they were entities, whereas in fact they are *relations*; they stand for something else, but the problem of their meaning does not concern the 'they' or the 'something', but the function of *standing for*' (Eco, 1973: 1150). But, in direct opposition to what this scholar describes, Peirce is in fact a relationist — perhaps the *first* thoroughgoing relationist. The use of the phrase 'theory of signs' and allied locutions seems to encourage the tendency to think of 'sign' as an entity of some kind that can be isolated from the activity of communicating. Peirce uses the term in two significantly different senses: for referring to that which represents (also described as *representamen*), and for referring to a relational process. In most cases, it is clear from the context which of these two senses he intends. To avoid ambiguity we shall from this point use (where possible) 'sign' in the sense of *representamen* (one member of the triad which is completed with *object* and *interpretant*). We shall employ 'semiosis' in speaking of the communicating *PROCESS*. Of course, by offering the bibliographic data above, we do not mean to suggest that Bense and Walther are open to this kind of confusion between sign and semiosis. We only offer these data to suggest that their valuable research could be made even more valuable.

We turn now to a consideration of the mechanics of the *Wörterbuch*. Peirce was an expert on dictionaries and on dictionary making. He wrote a large number of definitions for the *Century Dictionary* and the *Dictionary of Philosophy and Psychology* (see Robin, 1967: MSS 238, 1149-1151, 1154-1155, 1157-1158, 1163-1171, 1253, 1297, 1597 plus 300, 1145-1148, and 1469), and he reviewed a number of dictionaries for *The Nation* (Peirce, 1889, 1890, 1894, 1901a, 1901b, and 1903). We have used some of his advice concerning dictionaries in preparing the following comments.

The *Wörterbuch* is a handsome hard-cover volume; but when examined according to the kinds of standards appropriate for dictionary making, it houses various shortcomings. The most obvious of these are misprintings, apparently the result of inadequate proofreading. To mention but a few, we find Moriss for Morris (14), Athropologie for Anthropologie (26), Revue for Review (33), trichtomisch for trichotomisch (48), Philosophie for Philosophy (61), Mexio for Mexico (103), Berkely for Berkeley (113), and Francis

Pouge for Francis Ponge (114).

Cross references are significant in any dictionary. Here marked by an arrow – the usual practice in German reference works – cross references have been handled unsatisfactorily by the editors. Some of the terms marked by an arrow appear nowhere in the *Wörterbuch*. *Symbol* (108) as well as *atomares Zeichen* (123) refer to *Einzelzeichen*; but all we find is *Elementarzeichen* (26). Under *Zeichenkoppelung* (130) there is a reference to *Zeichen-input* and *Zeichen-output* – two rather curious terms – neither of which is listed. *Ästhetische Realisation* (82) refers to *Gestaltmasse*, and *Argument* (17) to *Mittel*; yet only *Gestalt* and *Mittelbezug* appear. *Interpretation* (45) refers to *Expedient* and *Perzipient*: the former is not listed at all, and the main entry for the second is *Perzeptor* (76). *Argument* is defined as a ‘complete’ *Konnex*; but *Konnex*, a singularly significant term with the editors, does not have an arrow. *Bedeutung*, on the other hand, which is defined as the ‘interpretation of a sign,’ has an arrow despite the fact that it appears under the main entry *Bedeutung* (18).

There are other inconsistencies and inaccuracies in the *Wörterbuch*. We have *Klassifikation der Interpretanten* and *Klassifikation der Objekte* (48-49), but the classification of signs (what might be understood as ‘elements of semiosis’) is given as *Zeichenklassifikation* (129). There are two errors in alphabetizing, for *Fragment* should precede *Frequenz* (30-31), and *Zeichenschema* *Zeichenschichten* (134-135). Although we are told in the Preface that the author of each definition is identified by two letters appearing at the end, there are several definitions without those letters. Consequently, we do not know who is responsible for *Pragmatik* (78), *Subjektives Repertoire* (84), *Semiotik* (92), *Syntaktik* (108), *Textsemiotik* (114) – which is well defined in an essay by Elisabeth Walther (Bense, 1962) – or *Zeichenschema* (135). We might mention here that besides Bense and Walther, Renate Kübler and Wolfgang Berger are listed as collaborators – that despite the fact that they appear to be responsible for only one and two entries, respectively (31; 33 and 50).

The most disappointing parts of the entire *Wörterbuch* are the sections called ‘Literatur’ – bibliographical references appended to a number of terms and recommended for further study. Although according to the editors these references represent only a selection, it seems that the selection could have been more representative. Of the nearly 280 entries in the *Wörterbuch* some 130 have such bibliographical appendages, which except for *Modell* and *ontologisches Modell* (66-67) are always introduced by the word ‘Literatur.’ All in all, there are some 315 bibliographical citations. Nearly 115 of these refer to the editors’ own works, led by Bense’s *Zeichen und Design* (1971) which appears forty times. Wilhelm Meyer-Eppler’s *Grundlagen und Anwendungen der Informationstheorie* (1959) appears eleven

times. References to the *Collected Papers*, finally, are appended to a number of terms with full, albeit inconsistent, bibliographical apparatus. Our point here is simply that much space could have been saved, and that numerous inconsistencies could have been eliminated, if the works cited had been listed in a separate appendix and entered under each section labelled 'Literatur' in an abbreviated form. Furthermore, what is the use of a bibliographical guide dated 1914? (*Semantologie*, 91); and how can unpublished manuscripts be utilized for further study? Two such manuscripts are listed under *triadische Logik* (58), one by Bense, the other by Görhely and Joppich; the former is repeated on pp. 16, 86, 102, 115, and 119.

Many of the *Wörterbuch's* inconsistencies might be attributed to lack of coordination between collaborators, many others to proofreading. There are references to Peirce and Ch. S. Peirce, to Morris, Ch. Morris, and Ch. W. Morris, and to Bense, M. Bense, and Max Bense. The *Collected Papers* are cited as C.P., CP, and CP. Alfred Tarski's article on 'Wahrheitsbegriff' is variously cited as appearing in (1) *Studia Philosophica*, I, 1935, (2) *Studia Philosophia* (Leoli), I, 1936, and (3) *Stud. Philosoph.* I, 1936. Elisabeth Walther's excellent article, 'Die Begründung der Zeichentheorie bei Ch. S. Peirce,' was published in *Grundlagenstudien aus Kybernetik und Geisteswissenschaft*; the remainder of the bibliographical information appears in three different ways: (1) Jg. 3, 1962; (2) III, 2, 1962; and (3) Bd. 3, 2, 1962. Such inconsistency is true of journal entries in general. In one instance we have volume number, Roman or Arabic, and date; in another *vol.*, number, and date; then *Bd.* (*Band*); then *Jg.* (*Jahrgang*); and finally, *H.* or *Heft*.

Similar problems exist in references to full-length studies. Most monographs are italicized – as are some of the articles; most entries list the place of publication; few list the publisher; hardly any give page references. In some instances the editors list both the original publication and the later German translation, while in others the translation is represented as though it were the original publication. Some monographs, finally, are neither in italics nor in quotation marks – as the two listed under *semiotischer Filter* (30), although they have the advantage of giving page references. P. Guiraud's *La sémantique* (Paris, 1955) appears under *Semantik* (89); on the very next page (under *linguistische Semantik*) the same item is Pierre Guiraud, *Qu'est-ce que la sémantique?* Jakobson and Halle's *Fundamentals of Language* is given as published in 's Gravenhage on p. 76 (where the *e* of Halle has been left out), in Den Haag on p. 103. H. B. Curry's article, 'Grundlagen der kombinatorischen Logik,' is in quotation marks on p. 64, in italics on p. 16. *AJM* is not italicized on either page, although the latter entry – and both entries are by the same editor – does indicate that the article appears in volume 52 of the mathematical journal.

Like journals and monographs, manuscripts are treated inconsistently. The three Peirce manuscripts the editors mention are listed in three different ways: (1) *Ms 308* (Manuskript, Harvard) – 74; (2) *Ms. 312*, Microfilm-Archiv der Houghton Library, Harvard-Universität – 82; and (3) *Ms. 310* – 128. Bense's unpublished *Semiotische Aspekte der Wissenschaftstheorie* is listed in five different ways: (1) Ms., 1972 (16); (2) Ms. 1971 (58); (3) Ms. Stuttgart 1972 (86); (4) Mss., 1970/71/72 (102); and (5) Ms. 1970/71 (115). Under *Actizeichen* (11) there is a reference to Ch. S. Peirce, *Über Zeichen*, rot 20, Stuttgart 1965. Seven pages later we find this lengthy, though informative, entry: Ch. S. Peirce, *Briefe an Lady Welby* (C.P. 8.327), Ed. E. Walther, Serie 'rot', nr. 20 'Über Zeichen', Stuttgart 1965. In the remainder of the book, we see that the citations of this source are like the first entry, except that on p. 70 the title is not italicized. The citation on p. 18 is of course a bit long, but at least we have here one of the not more than ten instances in which the editors make specific reference to the *Collected Papers*.

Unfortunately even these are not always accurate. Under *semiotische Basistheorie* (18) the Trichotomies are said to be in 2.227-2.243 of the *Collected Papers*; in reality they are in 2.243-253. The Categories are discussed in 5.41-212, while the *Wörterbuch* lists them to be in 5.14-212. Peirce's 'Philosophy of Notation,' first published in *AJM* in 1885, is reprinted in Peirce, 1931-1958: 3.359-403 – but according to the *Wörterbuch* it is in 3.376-377 (61). The *Collected Papers* reference to 2.246-2.316 under *Replik* is misleading since 'replica' is discussed only in 2.246 and 2.316. *Replik*, by the way, is the only term in the entire *Wörterbuch* that receives any sort of etymological description; such descriptions would have been quite useful for terms like *Design*, *Dicent*, and *Rhema*. Furthermore, with terms taken directly from Peirce the editors would have done well to give the specific *Collected Papers* or manuscript reference first; then they could have referred German readers to their translations. Specific Peirce references are, as we indicated earlier, sparse in the *Wörterbuch*. Under *Zeichenhierarchien*, for example, we find a direct, three-line quotation from the *Collected Papers*; but the reference is simply 'Peirce'. The ten sign classes appear on the same page. Since they are taken directly from Peirce, and since Peirce has two such lists (1931-1958: 8.341 and 2.254-264), why not indicate that the more representative and detailed, and the one used here, is that from volume 2 of the *Collected Papers*? And for *Actizeichen*, why not refer the reader to *Collected Papers*, 8.347 B, and then give the specific page or section in *Über Zeichen*? And why not list *Collected Papers*, 2.250 for *Rhema*? But enough of examples. Our point is that for all terms used by Peirce it would have been much better to give both *Collected Papers* references and references to the microfilm edition of his unpublished papers. It

would also have been better to provide bibliographical information for authors referred to parenthetically in the *Wörterbuch*. Among others there are Post and Lukasiewicz (58), M. Speidel (85 and 88), H. Cartan (30), C. Shannon and R. M. Fano (50), and A. M. and J. M. Jaglom (50). Moreover, if with Georg Klaus the editors are willing to accept in German such awkward terms as *Appraisoren* and *Preskriptoren* (from Charles Morris), why not be similarly literal and accept all Peircean terms as they are? — a practice which Peirce, as we explained in our discussion of the Ethics of Terminology, would have advocated. Finally, we must note that all these kinds of difficulties are particularly inappropriate in a dictionary, a type of publication which one expects to set an example for accuracy and consistency (compare Peirce, 1901b). No doubt the responsibility for some of these matters must rest with the printer, but surely not for the majority of them.

After this lengthy discussion of the more or less physical problems of the *Wörterbuch*, we now turn to its 'microstructure'.<sup>10</sup> We have already observed that quite a few Peircean terms have been omitted by the editors. In the ones used we find various shortcomings, but also a number of merits. Some of Peirce's terms, and several of these are rather significant, are not given separate entries but are instead buried in a minor paragraph under another term. An example of this appears under *Zeichen* (122). With Peirce, semiotic is synonymous with logic, in its broadest sense (see Peirce, 1931-1958: 1.444), and it consists of three branches which are concerned with the conditions of the meaning, the truth, and the development of semioses: (1) speculative grammar, (2) critical logic, or logic in a narrow sense, and (3) speculative rhetoric. Speculative grammar is 'the general theory of the nature and meaning of signs' (Peirce, 1903b: 7 — 'sign' here is in the sense of semiosis) and treats of the 'general conditions of symbols and other signs having the significant character' (Peirce, 1931-1958: 2.93); it also becomes a theory of meaning and cognition, as well as a kind of epistemology or *Erkenntnistheorie*. Critical logic 'classifies arguments and determines the validity and degree of force of each kind' (Peirce, 1903b: 7), whereas speculative rhetoric is the 'theory of the method of discovery' and the 'method of discovering methods' (Peirce, 1931-1958: 2.108), or a methodic concerned with the conditions of acquiring and utilizing knowledge. When we realize that Peirce fashioned his three branches of semiotic after the medieval trivium *grammatica*, *dialectica*, and *rhetorica*, we recognize the profoundness and comprehensiveness of his theory of semiosis. In the *Wörterbuch*, then, the three branches of semiotic should not have been buried in a brief paragraph under *Zeichen*. Had the editors identified them as being taken from Peirce and treated them more fully in separate entries, they would have been able to give a better representation of Peirce's semiotic.

This inaccurate treatment of the larger aspects of Peirce's theory of semiosis occurs in the smaller, more specific aspects as well. The definitions of *Icon*, *Index*, and *Symbol* are a bit brief, but not at all unsatisfactory. Still the editors might have indicated that according to Peirce the fourth of the ten trichotomies is the 'most fundamental' division of signs (Peirce, 1931-1958: 2.275) and is 'the one which I most frequently use' (Peirce, 1931-1958: 8.368). The definition of *interpreter* is good, although *utterer* should also have been given, for Peirce makes some interesting remarks about the relation between interpreter and utterer. Under *Argument* the editors should have mentioned deduction, induction, and abduction. Peirce also has this to say about argument: 'The Argument must be a Symbol. As a Symbol it must, further, be a Legisign' (Peirce, 1931-1958: 2.263). One might improve Walther's translation, 'das Zeichen als Mittel kann nur Legizeichen sein' (our italics). *Semiosis* is according to Peirce 'an action, or influence, which is, or involves, a cooperation of *three* subjects, such as a sign, its object, and its interpretant' (Peirce, 1931-1958: 5.484 – here 'sign' means *representamen*). Why does Bense's translation leave out 'an action ... involves'? And for *Semiotik*, why did the editors not use Peirce's definition – 'the doctrine of the essential nature and fundamental varieties of possible semiosis' (Peirce, 1931-1958: 5.488)? The editors' differentiation of *Semiotik*, *Semiotizismus*, and *Semiotizität* is, etymologically at least, not clear. *Semiotizismus* is actually the best of the three, for it approaches and represents, if only by implication, the profoundness and comprehensiveness of Peirce's theory of semiosis. The separate entries for abstract, mathematical, syntactic-logic, technical, and triadic semiotic are quite satisfactory. *Potizeichen*, on the other hand, would have been better defined if Walther had included in her definition the word 'but' that we find in Peirce, and had said, 'nach Peirce potentielle, [aber] als positiv möglich empfundene Zeichen im Sinne von Mitteln' (77). Walther should also have included Peirce's example of a potisign: 'the seventh ray that passes through the three intersections of opposite sides of Pascal's hexagram' (Peirce, 1931-1958: 8.347 A). The definition of one term given in the *Wörterbuch* is simply wrong. Peirce says that an actisign is a sign experienced *hic et nunc*; there may be repetition in another place, but that other occurrence is not *this* word, or sign (Peirce, 1931-1958: 8.347 B). Walther, however, says that it is insignificant ('unerheblich') whether the sign occurs 'an dieser Raum- Zeitstelle oder auch an anderen' (11). And she uses Peirce's example for actisign – a single word in a single book of an edition of 10,000 – not for *Actizeichen* but for *Sinzeichen*. The definition of *Famizeichen* is short but good; but why not include Peirce's Charlemagne example (Peirce, 1931-1958: 8.347 C)? Also, why not include that the famisign can be copulant but not descriptive (Peirce, 1931-1958: 8.355)? Finally, why not mention the other name

Peirce sometimes uses for *famisign* – namely, type (Peirce, 1931-1958: 8.363.364)? Like type, neither tone nor token appear anywhere in the dictionary.

Other terms in the *Wörterbuch* are more fully satisfactory. The *operation of a sign* is well defined, as are *Repräsentamen* and *Repräsentation*, although the latter is fully defined only under *Präsentation*. Among the best entries are those defining 'object' and 'interpretant'. The separate entries for dynamic and immediate object even list their respective subdivisions into abstractive, concrete, and collective, and descriptive, designative, and copulative. Equally well defined are the six different interpretants, especially under the heading *Klassifikation der Interpretanten*, which goes into great detail. But one wonders whether the non-expert, unfamiliar with Peirce's discussion of 'habit-change', would be able to understand the full meaning of 'Wechsel der Denkgewohnheit' (45). The term *Information* is also well done, especially in its differentiation of trivial, scientific, and semiotic information. Bense's coinage, *Konnex*, the relation of signs in the interpretant relation, is equally good. The differentiation of 'offener, abgeschlossener, und vollständiger Konnex' (rheme, dicent, argument) is particularly appropriate. It seems curious, however, that Walther would write the definition of a term which Bense coined. Various figures and sketches which appear throughout the *Wörterbuch*, and which represent and clarify semiotic concepts, are generally helpful, although for purposes of reference they should probably have been numbered, especially since several pages contain more than one such figure. Unfortunately, inaccuracies are not entirely absent even in these figures. Under *Inklusionsschema der Zeichentrichotomien* the tenth trichotomy is said to be 'Instinkt, Erfahrung, Denken'; but in the following figure it is 'Instinkt, Erfahrung, Gesetz' (43). Mistakes like these will, one would hope, be corrected in reprintings and later editions of the *Wörterbuch*. All in all, we are pleased to find that the *Wörterbuch's* microstructure is less flawed than its macrostructure (its physical make-up and system of head-words). In the future, improved collaboration, proofreading, planning, selection of bibliographical material, and closer coherence and more faithful representation of Peirce's theory of semiosis will surely lead to a more fully satisfactory and useful dictionary of semiotics.

## V. CONCLUDING REMARKS

Our concise assessment of the *Wörterbuch der Semiotik* is that despite the various issues we have raised we believe that it will be useful to students, especially in German-speaking countries, who are interested in an introduction to semiotics, primarily from a Peircean point of view. Moreover, the dictionary is of use from a more advanced theoretical standpoint in that it



provides an excellent summary of the work of Bense and Walther as well as their associates. And in one way or another it raises the kinds of questions and issues that must be confronted if modern semiotics is to have a terminology that will properly serve an international science of communication processes. We should add that the *Wörterbuch* is intended as only part of a proposed Dictionary of Modern Aesthetics, and of Art and Design Theory, to be published at a later date. We have reason to expect that in that dictionary the weaknesses of the present dictionary will have been corrected, and that its strong points will have been strengthened even more. We hope that our critical comments will further that process. All in all, then, students of semiotics should be thankful to Professors Bense and Walther for their instructive and valuable effort toward that ideal dictionary of the science of semiosis yet to come.

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## NOTES

\* Bense, Max, and Elisabeth Walther, eds., *Wörterbuch der Semiotik* (Köln: Kiepenheuer & Witsch, 1973), 138 pp.

<sup>1</sup> Robin, 1967 is a catalog for Peirce's manuscripts, most of which are available in microfilm through the Harvard University Library. We refer to these manuscripts by citing the numbers assigned to them by Robin. References to the *Collected Papers* (Peirce, 1931-1958), such as 2.227, give the volume number followed by the paragraph number.

<sup>2</sup> His best known outline of scientific inquiry appears in the *Popular Science Monthly* series, 'Illustrations of the Logic of Science' (Peirce, 1877 and 1878a). For further discussion of this aspect, see Ketner, 1972.

<sup>3</sup> This often quoted passage from Peirce (2.228-229 should also be read) is a good example of how the *Collected Papers* frequently ruins manuscripts not published during Peirce's lifetime. Paragraphs 227-229 are excerpted (by the editors of the *Collected Papers*) from MS 798, the omitted beginning of which is as follows: 'These, let us honestly confess, are solid arguments; but those with whom they weigh ought, or their side, to confess that they are not absolutely demonstrative. For that reason, their precise value will be better estimated after we have examined the fundamental considerations which lie upon the other side of the question.' The MS then continues as given in 2.227-229. BUT, following 2.229, a new paragraph begins in the MS, which is given by the editors of the *Collected Papers* in 2.444 n<sup>1</sup> (q.v.), with one lead sentence omitted ('It would be impossible to advance any one of these branches, except in obscure and impure thought and in a haphazard way, without being governed and

guided by the recollection of the purpose of signs.'). After paragraph two in 2.444 n<sup>1</sup>, the MS continues for another page, which we will not cite here although it contains some very useful material. Other MSS in this sequence (approximately 793-804) contain important comments on semiotic, and they are largely unpublished. This example illustrates why it is a good rule to use the *Collected Papers* only for the study of articles published by Peirce during his lifetime, never for the study of his manuscripts.

<sup>4</sup> 'Peirce made many contributions toward making semiotics possible as a general theory. But they appeared only in his logistic works on the theory of relations or Boolean algebra as well as in mathematical and generally pragmatistic reflections, but were never collected in one special work on semiotics.'

<sup>5</sup> 'To precide,' meaning 'to render precise,' seems to be a Peircean coinage; it appears in 'Answers to Questions Concerning my Belief in God,' a manuscript of ca. 1906 (see Peirce, 1931-1958: 6.496), in which he also says that 'NO concept, not even those of mathematics, is absolutely precise' (emphasis added). For further information on *pre-* and *precision*, see Peirce's definitions in the *Dictionary of Philosophy and Psychology* (vol. 2, pp. 323-324).

<sup>6</sup> 'In recently opened-up fields of application [that is, in sciences which may apply semiotic principles] the classic theory of Peirce is not generally known, and it is accessible only with difficulty.'

<sup>7</sup> 'We shall utilize only the foundations (the basic principles) of Peirce's theory, and forego the use of the finer (the more refined) categories of his classifications.'

<sup>8</sup> Many of the terms in the *Wörterbuch* are identified as derivations from Peirce; but 'iteration' and 'metaphor,' to mention but two which Peirce used, are not. Furthermore, *Adjunktion*, *Superisation*, and *Iteration*, and *Bedeutungsfunktion*, *Bezeichnungsfunktion*, and *Zeichenoperationen*, all of which are attributed to Bense, may be new terms (except for *Iteration* and *Zeichenoperationen*), but they are not new concepts. In *Allgemeine Zeichenlehre* (1974) Walther attributes 'sign-vehicle' to Charles Morris, although Peirce had already used the term. She also says that according to Bense, the semiosis involving icon, index, and symbol is particularly relevant, although Peirce had said that in his semiotic system the fourth trichotomy (icon, index, symbol) is the most important. Finally, she changes Peirce's 'energetic' and 'final logical' interpretant (terms she adopted in her earlier publications) to 'external' and 'internal' interpretant.

<sup>9</sup> These terms are, of course, more closely related to semiotic as it compares to modern semiotics. But, as we have been urging, semiotic should be studied in the light of Peirce's whole philosophy. In that context, one would also have to include, as important to semiotic, terms such as: agapism; critical common-sensism; intuition; *logica docens* and *logica utens*; logical leading principle; material leading principle; musement; nominalism; phaneron; psychognosy; relatives, logic of; synechism; tychism; God.

<sup>10</sup> Josette Rey-Debove defines the microstructure of a dictionary as 'the information contained in each term'; see Ullmann, 1973.

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