

INTRODUCTION AND SURVEY OF CONTRIBUTIONS TO THIS ISSUE

This is the first of two issues on the philosophical relevance of the concept of meaning. It was impossible to divide the articles into two more or less homogeneous groups because several authors were unable to meet the deadline.

The rationale for editing two *Philosophica* issues on the problem of meaning is obvious. Western philosophers have been concerned with meaning ever since early Greek philosophy. Our own century has witnessed an enormous flowering of the philosophy of language and of linguistic philosophy. The direct relevance of meaning problems to almost any part of philosophy has become apparent. On the other hand, there is not as yet a unique, or even a predominant theory of meaning, and it might even be questioned whether it would make sense to consider any theory at all a full theory of meaning. It seems to me that the present situation should be described as one in which several partial theories of meaning coexist, some of which are seen by their proponents as suited for an extension into a full-blown theory of meaning. I use 'partial theory of meaning' in a loose way, including e.g. theories of consequence relations, theories of action that state relations between sentences and the actions induced by the statement of sentences, and the like.

The meaning of a word or a sentence clearly does not exist. There are two main reasons for this. First of all, the meaning of a sentence or word is dependent on the (linguistic and non-linguistic) context in which it is used. But even if the context maximally determines the meaning of a sentence or word, there is another sense in which one has to distinguish between "several meanings". Depending on one's general conception of meaning, one will have to distinguish between several aspects of meaning or between several kinds of meaning: extension, referent, intention, comprehension, connotation, etc. Each of these involves so many complications, and the relations between them are so difficult, that the construction of a general theory of meaning seems to be an Homeric enterprise — and, as

Strawson correctly remarks in his "Meaning and truth", an Homeric struggle calls for gods and heroes.

A general theory of meaning would have to answer such questions as: "What kinds of entities are meanings?" and "How does one determine the meaning(s) of a given sentence or word (in a given context)?" If one is concerned with a problem to which the theory of meaning is relevant, a partial theory might do. Such problems are: "How may one avoid the position that any two different scientific theories are logically isolated?", or "How is it that people understand each other?", or "What is the difference between 'a=a' and 'a=b', given that both are true?", or "How do we test empirical hypotheses?". Of course, the use of a partial theory of meaning involves a danger, viz. that it would turn out to be impossible to vindicate that partial theory by incorporating it into a general theory of meaning. This is especially so if the partial theory is *ad hoc*, i.e., if there is no independent evidence for it apart from its solving the problem under consideration.

However, the use of partial theories of meaning has a major disadvantage, viz. that the theory is overestimated in that it is considered a general theory of meaning. A well-known example of such an overestimation is operationalism. Operational definitions are connected with meaning in that they enable one, given certain restrictions and in certain situations, to decide about the truth of a sentence. But to claim, as Bridgman and many others after him did, that the operational definition of a term is the meaning of the term, leads to an untenable position. Not only is there no such animal as *the* operational definition of a term, and not only did Carnap's and Hempel's work on the problem show that operational definitions run into trouble for logical reasons and have to be replaced by weaker (non-definitional) expressions, but also the now generally accepted view on the theory-ladenness of all terms involves a strong argument against the operationalist theory of meaning. By way of a second example, let us consider the problem of the meaning of logical mathematical terms. The meaning of such terms may be defined with respect to a given language (respectively, language schema) by defining the set of all sentences (respectively well-formed-formulas) of the language (respectively language schema), that are taken to be true in virtue of the meaning of these terms. This set may be defined by means of an axiomatic system, or a semantics (in the logician's sense of the term) or by some other means. Again, it is a mistake to say that this set is the meaning of the terms considered, as immediately becomes clear if one considers partial systems (e.g. positive logics) or systems extended by other logical mathematical

terms (e.g. the two-valued propositional calculus extended by modalities). Let us now consider a last example which deals with the meaning of sentences. The meaning of a sentence is certainly related to the set of its consequences. However, some people have identified the two. I shall now briefly show that such a view leads to absurdities. If the view is true, then nothing is more natural than the position that the common meaning of two sentences is the intersection of their sets of consequences. Let us consider the following sentences.

(1) John is tall and blond

(2) John is tall and strong.

Obviously these sentences have a common meaning, and according to the view under discussion (3) belongs to it.

(3) John is tall.

Nothing seems to be wrong so far. However, consider (4).

(4) Ravens are black.

According to the view under discussion (1) and (4) have a common meaning, viz. (5) is a consequence of both of them.

(5) Either ravens are black or John is tall and blond.

But obviously the relation between (1), (2) and (3) and that between (1), (4), and (5) is different in an essential sense. (3) is the common meaning of (1) and (2), whereas (5) certainly is not the common meaning of (1) and (4). It is impossible to account for this difference on the view under discussion, and I have demonstrated elsewhere that it is possible to account for such differences (see the first chapter of my *Studies in the logic of induction and in the logic of explanation*).

It seems to me that I have warned enough against the danger of partial theories of meaning by now. On the other hand the necessity of such theories should be stressed. In view of the present situation, the construction of such theories is the best we can do. Furthermore, any general theory of meaning will have to account for the results that are gained by partial theories.

For the sake of completeness I have still to mention that the construction of both general and partial theories may be started from the study of formal languages as well as from the study of natural languages. I do not claim that both approaches will ultimately turn out to be equally successful, nor do I claim that both approaches will ultimately be connected. There is no need to explain the advantages of either procedure.

I shall not try to give a survey of general and partial theories of meaning. In view of the space limitations of this introduction such a survey would be too short to have any use. I shall rather give a brief

survey of the articles contained in this issue. Most of them discuss or explicitly advocate a partial theory of meaning in connection with problems either internal or external to a theory of meaning.

Herbert Hochberg's article deals with Frege's theory of meaning, viz. with Russell's attack on this theory. Frege's work, including, incidentally, the first complete axiomatization of the two-valued propositional calculus, was largely underestimated in his time. In our century his work, and not least his theory of meaning (*Sinn*) and denotation (*Bedeutung*), has had an enormous influence. Michael Dummet published a voluminous book on Frege's philosophy of language in 1973, Alonzo Church based the introductory chapter of his standard work in logic on Frege's theory of meaning, and large parts of Rudolf Carnap's work are directly inspired by Frege's philosophy, to name only a few examples. Yet Bertrand Russell rejected Frege's theory of meaning and denotation in his "On denoting". After referring to several authors who consider the relevant passage in Russell unintelligible, obscure, or misguided, Herbert Hochberg follows the passage step by step, and argues that Russell not only understood Frege's theory correctly, but that his criticism is fatal to this theory. The main argument has to do with the fact that Frege cannot properly account for the relation that must hold between the meaning and the denotation of a phrase.

Next follow two articles that are concerned with scientific terms and more especially with the problems connected with theory change. Scott A. Kleiner discusses the logical empiricist and the historicist views of the meaning of theoretical terms, and spells out the difficulties of each of them. He argues that the historicist view might be vindicated by introducing pragmatic considerations and substantiates the argument by discussing how the Grice-Schiffer account of meaning enables one to meet the considered difficulties of the historicist view.

Richard Arthur discusses mainly the same problem but rejects the historicist view. He does not introduce pragmatic considerations, but argues that the problems connected with theory change may soundly be solved by means of the concept of reference. He distinguishes reference clearly from Frege's denotation or extension (*Bedeutung*): the referent of a term is not a set of existing entities, but is an entity which is itself theory dependent and need not be exemplified in reality in order to be a sound referent. In other words "reference is a conceptual classification of objects". Arthur places the discussion in a wider philosophical perspective by rejecting instrumentalism and by arguing that his theory is fully in accord with realism.

The fourth and fifth articles deal explicitly with problems

concerning the meaning of logical mathematical terms. Charles Castonguay discusses the analytic-synthetic distinction in mathematics, and concentrates on Kant's concept of synthetic a priori. He describes Hintikka's explication of this Kantian concept, and points to several difficulties. Castonguay's own vindication of Kant relies directly on Church's theorem and its consequences for the epistemology of mathematics. Furthermore, Castonguay opts for a radically dynamic point of view, and relates the analytic-synthetic distinction in mathematics to activities rather than to a static set of data. Whether a mathematical statement is to be considered analytic or synthetic will depend on the developmental stage of mathematics as a field and of the individual mathematician. The analytic-synthetic distinction is thus defined as context dependent in a specific way.

In his contribution concerning the meaning of logical mathematical terms, Robert Kraut presents an interpretation for the possible worlds semantics. One of the problems here is the identification of a same individual in different worlds (resulting in a world line). Kraut considers several approaches on which the question of the existence of an individual in a certain world might be construed. This kind of work is important if semantics (in the logician's sense of the word) should not only be considered useful from a formal point of view (e.g. with respect to defining validity), but also as a means to elucidate the meaning of the relevant logical terms from a philosophical point of view. The interpretation of two-valued truth-tables is older than the truth tables themselves, but to a lot of people the possible worlds semantics, apart from Hintikka's work on the semantics of deontic logic, has been perplexing rather than elucidating. In a separate section of his article Kraut discusses the philosophical relevance of Hintikka's semantics of propositional attitude ascriptions.

The last three articles deal explicitly with problems in the semantics of natural languages. William Ulrich discusses a specific problem: the "alleged ambiguity in the nominalizations of illocutionary verbs". Such nominalizations (e.g., statement, question, promise) are usually held to be ambiguous in that they may either mean the act involved or the "object" of this act. Furthermore, they are usually held to refer to acts, and their objects depending upon the sense involved. Ulrich argues that nominalized phrases are referential, but that they are furthermore univocal. He discusses the arguments in favor of the ambiguity, and shows them not to be conclusive. He furthermore defends the position that nominalized phrases neither refer to acts nor to the objects of acts, but to other entities.

The aim of the following two articles is more general. Henry Hiž proposes and discusses some axioms which he considers as starting principles for understanding the semantics of language. The concepts of truth and consequence are used as primitives in these axioms. The first six axioms are intended as general principles that hold for all languages. The other axioms apply to specific languages. The author explicitly discusses his approach from a methodological point of view and describes the place of his work within the general problem field of the relation between language and reality.

In the final article Asa Kasher deals with the problem of the adequacy of semantic theories for natural languages. With constant reference to the complex present situation in the field he considers two adequacy conditions each of which is central and minimal. A semantic theory is considered elementary adequate if it is a finite representation of a system of rules. Explanatory adequacy is characterized as relevancy to non-linguistic mental activity. After a detailed and careful discussion of these adequacy conditions Kasher arrives at a tentative conclusion about the possibility of logical rationalism in the realm of language, i.e. about the possibility of a formal theory (in the sense of Montague's intensional frameworks) that agrees with "the philosophical foundations, theoretical goals and articulated methodology of Chomsky's linguistics".