



On Selection, Projection, Meaning, and Semantic Content*

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*Sponsored in part by the National Science Foundation through Grant GN-534 from the Office of Science Information Service to the Information Sciences Research Center, The Ohio State University.

1. Introduction

Bertrand Russell has suggested that the state of our knowledge about nature is like our knowledge about a language of which we know only the grammar and the syntax, but not the meanings of its words. Given a statement in that language, we would not know the possible meanings of such a statement, nor the meanings of the unknown words which would make it true (1919, p. 55). As he says, we know much more about the form of nature than about its matter. But his remarks need not be taken only as an analogy-- they apply directly to our present understanding of language. Our knowledge about the syntactic form of language, though far from complete, and lacking at present a compelling explanatory theory to organize it (see Langendoen (1967 b)) for an effort to begin to remedy the latter situation), is formidable. Not so our knowledge concerning the semantic properties of language. The reason for this is that knowledge of the semantic properties of sentences and discourses is not systematically obtainable; for reasons which, unfortunately, are only rather sketchily supplied in the final two sections of this paper, systematic understanding of the meaning of lexical items can be obtained (and then only for some of them), but beyond that it is in general inappropriate to speak of meaning at all. In this paper, we thus return to the Saussurean conception of words as belonging to langue, but sentences and discourses as belonging to parole-- not because we lack the theoretical apparatus to deal with sentences and discourses syntactically, but because we lack the necessary apparatus for dealing with them semantically in any systematic fashion.

In addition, we support the loyal opposition to generative grammar who have tried to maintain over the past ten years that the ability of humans to determine the interpretation of so-called deviant sentences under particular contextual conditions is a part of linguistic data. Linguistics must come to grips with the problem of explaining this ability and of showing how it works in particular cases; it must not be dismissed as lying outside

the domain of linguistic competence. I must admit, however, that at present I have no serious proposals to make concerning this matter.

The first two sections following this one prepare the ground somewhat for the material presented in the final two, but their primary function is to effect what I think are some terminological and conceptual clarifications and improvements in semantics. These clarifications are independent of the more controversial aspects of this paper.

2. Selection and projection the same

Recent work in generative grammar has made it possible for us to consider as one and the same phenomenon what had formerly been treated as two separate matters: grammatical selection and semantic projection. The bases for the identification of selection and projection are (1) the further identification of deep structures with semantic structures, and (2) the essentially predicate-argument form of semantic deep structures. Typically, selection has been described as the process by which a verb, adjective, or predicate noun can occur with a subject or object noun phrase without anomaly. This can now be stated more simply (and accurately) as the process by which a predicate occurs with an argument without anomaly. Projection, on the other hand, has been characterized as the process by which higher-level constituents receive semantic interpretation on the basis of the semantic interpretations of their parts. This process can now be stated as the means by which predicates impose semantic characteristics on their arguments. Thus in the sentences:

- (1) The child drank the water.
- (2) The child drank the stuff.
- (3) The child drank the spoon.

we say that the predicate drink selects the argument the water, but not (without anomaly) the spoon; and that it imposes on, or projects onto, the argument the stuff the information that it is liquid.

But there is no point in separating and separately naming the processes so described. In (1), we could as well say that drink projects onto the argument the water the information that it is liquid, but that this information is redundant, since the water inherently designates a liquid. Similarly in (3), drink may be said to project onto the spoon that it is liquid, which is incompatible with the inherent specification of that argument as not being liquid. Thus, sentences such as (3) which contain a semantic incompatibility may be called internally incompatible, a term to be preferred to the neutral term anomalous as it also conveys the idea of how it is that such sentences are in fact semantically anomalous. Such sentences, moreover, are not to be considered ungrammatical; this for a variety of reasons, one of them being that internally incompatible sentences may not be obviously so, their anomaly becoming apparent only upon semantic "computation," as in the sentence:

(4) I am eleven years older than my father's brother's son's only cousin.

Another reason is that a sentence may stop being internally incompatible as soon as another sense of one of its lexical items becomes acquired. Thus a person for whom screwdriver refers only to an instrument for turning screws would find a sentence such as the following internally incompatible:

(5) The child drank a screwdriver.

but not as soon as he acquires for screwdriver reference to a particular mixed drink. In general, an internal incompatibility may be said to be resolved if there is some interpretation of the arguments in the sentence which, no matter how seemingly preposterous, eliminate the incompatibility. These usually involve, but not necessarily a special context or a "possible world;" in fact knowing the context means that no resolution of incompatibility has to take place. The incompatibility is really a fiction of the detached linguist-observer.

It should be clear from considerations such as the foregoing that the semantic content of predicates--verbs, adjectives, and

predicate nouns--is projective. That which is projected by a predicate noun onto its subject noun phrase is, moreover, exactly as that which we are accustomed to thinking of as the characteristics of its referents. Thus the characteristics of the referents of woman are precisely the same as those which are projected onto the argument this in the sentence:

(6) This is a woman.

and the characteristics of the referents of wife are also that which are projected onto the argument that person in the sentence:

(7) That person is the wife of the mayor.

But this is no accident since, as Bach (1968) has shown, a surface structure noun which is not a predicate noun occurs in deep structure as a predicate noun, and is transformationally substituted for the variable which is its argument. Thus the sentence:

(8) I first met my wife in Boston.

is interpreted the same way and has the same deep structure as:

(9) I first met the one who is my wife in Boston.

while the sentence:

(10) Our chauffeur retired six months ago.

has the same deep structure as:

(11) The one who was our chauffeur retired six months ago.

3. The semantic content of sentences and of discourses.

Restricting our attention for the time being to simple declarative sentences, we assert that the semantic content of a sentence consists of what the predicates contained in it project onto the arguments contained in it. In terms of the notion projection as originally proposed by Katz and Fodor (1963), the semantic content of a sentence is a composite of the contents of its constituent noun phrases. In case the main predicate is a one-place predicate, (i.e., is intransitive) matters appear relatively straightforward; in a sentence such as:

(12) The woman died.

the argument the woman simply received the specification of having died (much more than this, of course, is involved in the meaning of (12)); in particular, attention must be paid to the tense of the verb, the original predicate status of woman, the definite article, and the inchoative character of die (i.e., its relationship to the semantic properties of dead), and the declarative form of the sentence itself). In case the main predicate is a two-place one (i.e., is transitive), then we require in addition means of describing the relationship established by the predicate between its two arguments; for example, the relationship established by swallow between the whale and Jonah in the sentence:

(13) The whale swallowed Jonah.

The means that we suggest is the following: describe the two-place predicate as separately ascribing the relationship to each of its arguments. In (13), then, we would say that the argument the whale receives the specification SWALLOWED JONAH and Jonah, SWALLOWED BY THE WHALE. The reason for separately ascribing the relationship to each argument is that each one, whenever it occurs in a discourse following sentence (13), is understood to be so specified. Thus (14), while not internally incompatible in and of itself, expresses an incompatibility when taken together in a discourse with (13):

(14) However, Jonah managed to escape being swallowed.

The reason is that (14) ascribes to Jonah the specification NOT SWALLOWED, which is incompatible with its specification from (13). Similarly, it is possible to construct a sentence ascribing to the whale a specification which is incompatible to the one ascribed to it by (13).

In general, we may say that the specifications received by arguments are not limited to those which it receives in any particular sentences, but that these specifications pile up throughout a discourse. Thus, we may generalize our characterization of semantic content to the discourse; the semantic content of a discourse consists of the specifications projected onto the arguments contained in it.

The specifications ascribed to particular arguments, moreover, may carry over from discourse to discourse, the resulting conglomeration being what we may call our knowledge or beliefs about the world, which may in turn be widely shared. Accordingly, such sentences as the following, in the context of such shared knowledge and belief, express incompatibilities:

(15) Lyndon Johnson was defeated in the U.S.
presidential election of 1965.

(16) Paris is the capital of Sweden.

Notice, in particular, that (16) is doubly incompatible; it is incompatible with what we know (or believe) about both Paris and Sweden. Of course, knowledge about the world need not come from prior verbal experience, but rather from prior sense experience in general. Thus one may have never had occasion to talk about or hear about the color ink used to print the New York Times, but one's experience with having seen that paper will doubtless lead one to perceive an incompatibility in a sentence such as:

(17) The headlines of the New York Times are printed
in blue ink.

It is quite possible that what I am getting at here is what the British linguists Malinowski, Firth, Halliday, and others have had in mind by the context theory of meaning--this despite the disparaging things I have to say about their version of that theory in Langendoen (1967)--except I would not grant that what I have been talking about in this section is meaning at all, but rather semantic specifications of particular arguments with, n.b., particular reference. On this distinction, see especially the recent work of John Lyons (1964, 1966) on semantic theory--his terms are meaning and having meaning.

4. The meaning of lexical items.

We are accustomed to thinking of the meaning of a lexical item as consisting of a distillation of the semantic contents of tokens of that item used without incompatibility in sentences. This distillation is, in standard dictionaries, expressed as a

definition of that item, the definition itself being either a sentence or a linguistic expression readily convertible, without addition of semantic content, into a sentence. This accustomed way of thinking about meaning strikes me as fundamentally sound. One consequence of this, not often noted, is that meaning is not a property of sentences of parole at all--such sentences cannot even be said to have meaning (pace Lyons), but only, to repeat the rather vague term used in the preceding section, semantic content. Sentences only take on meaning upon conscious reflection, as for example when the applicability of a section of a legal document such as the First Amendment of the U.S. Constitution to a particular situation is determined. But at this point such sentences become part of langage, and are no longer part of parole.

The experience of lexicographers, moreover, is that meanings for lexical items are extraordinarily difficult to pin down, even if dialect differences are overlooked (we may view the task of a lexicographer, at the risk of sounding prescriptive, as dealing with the meaning of an item in a standard language); one can almost never be sure that some element has been overlooked, or conversely that some superfluous material has been included. Alternative ways of defining items are almost always possible, and considerations of simplicity or elegance are often of no help in choosing among alternatives, and may be downright misleading. Nevertheless, one has the feeling that the lexicographer's job is well-defined. In fact, it may well be the very fact that lexical items have meanings that makes it sometimes difficult to put some particular semantic content into words--those that come to mind possess shades of meaning which do not contribute to or even subtly contradict the intended semantic content. Conversely it is possible to speak meaningfully but without conveying semantic content. Empty talk is possible precisely because lexical items carry meaning and can be strung together such that the impression of semantic content is conveyed, but not any actual content.

5. Meaning and semantic content further contrasted.

It is well-known that the meanings of many kinship predicates, for example uncle, involve the existence of parties other than those which comprise its arguments. Thus for x to be the uncle of y it must be the case that x is either a brother or the husband of a sister of one of x's parents. Yet it is unlikely that one has in mind these intermediate parties when one uses terms in sentences, for example:

(18) Bill's uncle is in the Peace Corps.

Indeed it is most likely that children acquire the ability to use such terms appropriately long before they learn their definitions. Even adults can be caught off-guard and not immediately perceive any internal incompatibility in such sentences as (4) or even the following:

(19) My grandfather was childless, the poor man.

This suggests that the semantic content of sentences containing such predicates does not involve the intermediate parties referred to in the definition of those predicates; moreover that the semantic content of sentences is comprehended by children long before characterizations of the meanings of lexical items arise in their minds. It goes without saying that the meaning of particular items may change for people over time, or may become completely forgotten.

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