Meaning as Explanation
Advances in Linguistic Sign Theory

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Meaning, data, and testing hypotheses*

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> Of all the relations and correlations in language and in the science which observes it, the most important, and the most neglected (the least taken into account), is that between the physical and the mental.
> (Guillaume 1984: 69)

1. The problem

I hope I can take it for granted here that meaning is "the one thing that matters most in language" (Bolinger 1977: 3) because there is little to be gained in justifying what should be self-evident. More profitable, I believe, would be to examine the reason why so many linguists today fail to take this self-evident fact into account. Wierzbicka (1988: 1) suggests a reason:

> Nothing is as easily overlooked, or as easily forgotten, as the most obvious truths. The tenet that language is a tool for expressing meaning is a case in point. Nobody would deny it — but many influential schools and trends in modern linguistics have ignored it, and have based their work on entirely different and often incompatible assumptions.

While the importance of meaning may have been overlooked because it is so obvious, a mere oversight can easily be corrected by pointing it out to those who have overlooked or forgotten it. Such, however, is not the case here, and so I am convinced that there is a more deep-seated reason why so many linguists ignore, wittingly or unwittingly, the most obvious and the most important fact about language.

In my opinion, Lyons (1968: 408) comes closer to the real reason when he remarks:

> Traditional semantics makes the existence of 'concepts' basic to the whole theoretical framework, and therefore (almost inevitably) encourages subjectivism and introspection in the investigation of meaning. To quote Haas: "an empirical science cannot be content to rely on a procedure of people looking into their minds, each into his own".

That is to say, it is the nature of meaning as something strictly mental which poses the problem. Since one's mental life, one's conscious aware-

ness, is personal, it cannot be observed by others. What is in my mind cannot, according to this reasoning, become the common experience of observers, and so it cannot give rise to scientific data.

The following passage contains the most explicit description I have seen of this confrontation between science based on observation and language based on meaning:

> The inner aspect [of language] − the 'content' or 'meaning' − cannot be observed except by introspection on the part of the speaker himself; it cannot be objectively recorded or described at all. Meaning cannot be dealt with, at any level of analysis, in scientific terms; and it is in any case too exclusively qualitative for statistical treatment. There is therefore a great deal to be said for the position taken up by those structuralists who endeavour to achieve scientific objectivity by completely disregarding the inner aspect of speech and treating their text as if it were unintelligible. If linguistics is a genuine science they are its only true exponents. If on the other hand linguistics is to be the study of language as a whole, it must abandon the claim to be a science; for few students of language would deny that meaning is an integral part of it. (Reid 1956: 34)

Posing the problem so bluntly has the advantage of making two things abundantly clear − if this reasoning is sound. From the point of view of linguistics, it means that a science of language is impossible. Even more significant, from the point of view of science there is an area of reality which is inaccessible to the scientific method.

One attempt to get out of this impasse argues that, even though meaning cannot be observed and provide data, one can deal with it scientifically by hypothesizing it on the basis of data arising from the physical side of language. As Diver put it (oral presentation), in linguistics there are "no other observations than the sound waves... Everything else is hypothesis." The difficulty with this attempt is that, in a discipline based on observation, hypothesizing supposes a conditioning relationship between the observed data and the proposed hypothesis, whereas this is not the case between sound waves and meaning. Indeed, one of the few points of agreement among linguists today is that the relationship between the physical sign and the mental significate is arbitrary and no amount of hypothesizing can establish one on the basis of the other. Meaning can be treated scientifically only if one understands what is being said, what the physical signs signify. It will be argued below that the very fact of signs calling to mind their mental significate makes observation of meaning possible and this can provide valid data.

This, then, appears to be the reason so "many influential schools and trends in modern linguistics" fail to give meaning a central place: they

have no way of dealing with it in scientific terms. However, whether they banish meaning from the domain of language, as did the structuralists of some forty years ago, or simply try to ignore it, as do those who argue for an "antonomous" syntax, the result is the same: a linguistics without significance. Indeed I believe that sterility is the inevitable outcome of an approach to language, or any other intellectual endeavor for that matter, that ignores some pertinent aspect of reality, because not only is human intelligence capable of understanding reality but its prime function appears to be just that. This is why science is such a vital activity and why it is important to reconcile the study of language, the whole of language, with science.

Thus the essential question is how to treat meaning in a scientific fashion. That is: 1) How can meaning be observed in such a way as to give rise to valid data? 2) How can hypotheses be proposed to explain the data? 3) How can these hypotheses be tested? Allow me to insist on the importance of this question. To declare meaning out of bounds involves not only a serious limitation of the scientific method but leaves us with no means of reaching an understanding of language as a phenomenon, a man-made phenomenon at that. Let us, then, examine this point of view, which would dismiss meaning as an object of science, to see if it is well founded.

2. Meaning, observation, and data

In the above citations, the observation of meaning is characterized as "people looking into their minds", "introspection on the part of the speaker". Certainly, because it is mental by nature, the only access we have to meaning is introspection, a process leading to subjective results. Since "it cannot be objectively recorded", the conclusion is drawn that meaning cannot provide valid data for scientific generalization. One cannot argue with this insofar as private experience is concerned: through introspection one can observe, for example, the sensations arising from the state of one's stomach, the recall of a dream, or how one imagines tomorrow's activities. In themselves, such states of consciousness cannot give rise to scientific data because nobody else can observe them. This is not because what one observes introspectively is necessarily or even usually false − on the contrary − but rather because science is both general in its aim and public in its access; as a consequence, it requires for its data a basis wider than just a single observation on the part of one indivi-

dual. Hence it is necessary to admit as data only facts resulting from the observations that are repeatable, that are based on the consensus of various competent observers. Hence also the unquestionable utility of "objective" means of observation (a thermometer, for example, rather than one's finger to observe the temperature of a liquid): competent observers can more readily reach a consensus. As one standard text puts it: "... science starts by selecting for its consideration those judgements alone concerning which absolutely universal agreement can be obtained ..." (Campbell 1957: 22).

The purpose of recalling these commonplaces of scientific procedure is to show that in one crucial respect meaning, as represented and expressed through one's use of language, is to be distinguished from the other entities that make up our conscious mental life. What sets meaning off from other components of conscious awareness is that, although part of our private experience, it is not therefore limited to one person's private experience. To avoid confusion here, it should be kept in mind that the meaning potential or range of possible meanings of a word or morpheme cannot be made conscious, only the different senses arising in particular uses. That is, the potential meaning associated with a linguistic sign in our preconscious linguistic system, tongue, can never emerge into consciousness and so cannot be observed. Only one of the actualizations made possible by this potential can be expressed in a given use, and so only this actual meaning or sense can be observed, as we shall see below.

Thus, although the meaning expressed by a given word or sentence exists only in the mind, never outside the mind, it arises substantially the same in the consciousness of others who speak the language. This we know because of the fact that we use language to communicate, to evoke in the mind of a listener the meaning of an expression so that the other person can then reconstruct the *message* we have in our own mind.[1] This message, which starts as something in my individual experience, would have to remain forever private were it not first represented and then expressed in a manner accessible to others. It is this depicting of a private experience by means of shared semantic representations which permits language to be a means of communication. If meaning were not common, in some measure, to all speakers of a language, communication of our experience, which is strictly private, would be impossible.

For linguists, the importance of looking at meaning in this way is clear: competent observers can observe, each in his own mind, the meaning expressed by a given sentence or word, or even morpheme. Since the notion of competence in observing meaning may not be familiar, it calls for a short comment. If "The whole of science is nothing more than a refinement of everyday thinking", as Einstein (1954: 290) maintains, it would appear that scientific observation is nothing more than a refinement of everyday observation. This implies that ordinary speakers' understanding of their language is the starting point for a scientific observation of meaning, so a competent observer must be a native speaker, or at least have a sufficient understanding of the language. Moreover an observer must, obviously, be interested, not in just communicating, but in making the meaning expressed by a sentence, word, or morpheme an object of observation, in isolating this meaning before it is converted into the resulting extra-linguistic message. As in other disciplines based on observation, competence in observing meaning can be increased through practice, the observer becoming more and more sensitive to distinctions of nuance in usage.

Granted, then, that observers develop sufficient competence to observe the meaning of a given linguistic expression, to the extent that their observations give rise to the same result they provide a basis for valid data, notwithstanding the fact that each is carried out introspectively. That is to say, it is neither the means of observing (introspection vs. instruments), nor the type of object observed (subjective vs. objective) but the results obtained — agreement or disagreement of the observers — which determines whether what is observed can provide a sound basis for theorizing because this is what ensures public access to scientific reasoning. In short, "introspection" and "subjective" should no longer be dirty words for the linguist.

Thus in linguistics, as in any other discipline based on the observation of its object, a consensus of competent observers gives rise to scientifically valid data. An example of data obtained with little difficulty from the observation of meaning is given by comparing:

(1)   a. *a book for sale*
       b. *books for sale*

in order to discern the meaning expressed here by the suffix -*s*. One could get a measure of the wide consensus by consulting on this matter the thousands of English grammars that have been written. I venture that all of them describe the actual meaning of this -*s* in some such terms as 'plural', or 'more than one'. Although each of these descriptions is the result of introspection,[2] nobody, I believe, would ever call into question the validity of this fact. Similarly, all grammars I have consulted so far agree that the perfect in uses like:

(2)   *We've lived in London since September.*

expresses 'state-up-to-the present'. Again, I do not see how any competent observer could contest this, and why, therefore, this observation should not be part of the data on which a theory of the perfect is based.

This does not, of course, solve all the difficulties. One problem arising here is how to describe the meaning expressed since it is not measurable by instruments and so reducible to discrete quantities. Paraphrase, which I have just made use of, amounts to depicting it by using the meanings of other words, a process which can never be fully satisfactory. On the other hand, formalization and attempts to quantify meaning have not so far provided a more satisfactory solution to the difficulty. So we may well have to put up with this inadequate description of the reality observed, assuming others to be competent observers, that is, counting on their ability to grasp what we have in mind when describing the meaning expressed by -*s* or the perfect or some other item.

The point of all this is that data derived from introspectively observing meaning can be just as sound for scientific purposes as those derived from observing some "objective" measurable object. The position presented in the citations from Lyons and Reid is, therefore, untenable and meaning is not, because of its mental nature, to be excluded from scientific treatment. It follows that, provided one is prepared to accept what competent observers agree to as data, even if it cannot be measured objectively, then language is accessible to the scientific method and a science of language is possible.

3. A meaning postulate

Granted, then, that valid data can be obtained through observing meaning, the next step in treating meaning scientifically is to situate the data in a general framework to permit understanding and explanation. Here, however, a major problem arises because even cursory observation reveals that a given form can express diverse senses. The cases just mentioned are typical. For example, the sense of the -*s* in a sentence like

(3)   *Books provide food for the mind*

can hardly be described as 'more than one', 'plural', but rather as 'all', 'generic'; and one can hardly maintain that the perfect in:

(4)   *We have lived in London.*

expresses 'state-up-to-the present'. Such polysemy is by no means rare for morphemes and words. On the contrary, a glance at a dictionary or a grammar suffices to show that it is in fact the general rule and as such constitutes an important part of the data for discerning the meaning potential of any such item. Polysemy poses not only a frequent problem of observation but also, because it spotlights the relationship between the physical sign and the mental significate, a fundamental problem of analysis: the same form can express different senses and yet it is generally admitted that communication is possible only if signs have one meaning.

Being so widespread and so basic, the problem of polysemy calls for some general postulate concerning the nature of language meaning itself. Any approach which does not offer a solution to this problem at the outset tends to overlook, downplay, or even deny the existence of polysemy.[3] Refusing to acknowledge something, however, will not make it go away. Besides, the whole aim of observation in science is to be as complete as possible so the diverse senses of any item should be expressly sought out since they can each tell us something about the underlying meaning common to all speakers. That is, accepting polysemy as one of the facts of linguistic life provides a starting point for analyzing the meaning of any item because it poses the real problem: how can a single commonly known meaning – a necessary condition for communication – give rise to different senses in discourse? This puts the linguist in much the same position as the physician trying to diagnose a disease from its symptoms, or a geologist trying to explain a given rock formation: taking into account all the diverse data observed, one must attempt to work back to the causal factor that produced them, must try to imagine the underlying hidden condition that gave rise to them.

The only theory I know which considers polysemy not only as one of the basic facts of language but also as a heuristic means, a stepping-stone to the underlying meaning potential, is the Psychomechanics of Language. The basic postulate of this approach is that language is operational by nature, and, by way of consequence, that the underlying meaning of any word or morpheme is essentially a process capable of producing its different observed senses in discourse. That is, this approach postulates that the meaning of an item involves not only an impression or set of impressions (characteristic features, semes, traits, etc.) but also an operational dimension, a mental program for actualizing the impression or impressions in the manner required by the particular message the speaker has in mind. Conceived as such, a potential meaning is like an adjustable lens or set of lenses for focussing on a particular facet of the

speaker's experience and representing it linguistically. Considering meaning neither as the content of consciousness constituting the message, nor as extra-mental entities or relationships, but rather as a mental construct proper to language has the distinct advantage of making the meaning of any item adjustable, within limits, by the speaker. That is, potential meaning is not just a fixed, static set of impressions "underlying" the senses observed in discourse; it also involves a mechanism, an operational program for activating these impressions to produce all the observed senses, including even the metaphorical ones (cf. Hirtle 1992).

The great advantage of this operational postulate concerning meaning is that it is general enough to provide a basis for exploring all cases of polysemy. Its only disadvantage is that it is radically new, so new, in fact, that it calls for a paradigm jump from the traditional view of meaning as static, underlying, to the psychomechanical view of it as operational, potential. Since it is never easy to change long accepted ideas, an example will perhaps be appropriate here, the simplest in English being the *-s* of the system of number in the substantive (cf. Duffley [1992] and Hirtle [1988] for other examples).

We have already seen that a substantive with *-s* in a typical use like:

(5)   *There were books all over the place.*

has the plural sense of 'more than one', 'a number of', whereas in:

(6)   *Books provide food for the mind.*

with the same *-s* it has the generic sense of 'all', 'in general'. To imagine a specific potential meaning of *-s* which could produce these two distinct senses, one must first of all see what they have in common: obviously an impression of quantity, but quantity seen in a particular way — as discontinuate. Besides this common impressive element of "discontinuate quantity", the meaning potential requires a process to engender the two senses observed. This calls for an operation to represent increasing quantity, an expansive movement from a position signifying 'more than one' (which may be only 'two'), through positions signifying greater and greater quantities to the final position corresponding to the maximum quantity, 'all'. This movement can be symbolized as in Figure 1.

This hypothesis of the meaning process of *-s* easily explains the two observed senses if we consider that it is speakers who are adjusting the *-s* lens to focus on a particular experience, and that a speaker will stop the adjusting process, intercept the movement, at the point where the impression signified by the substantive with *-s* corresponds best to what
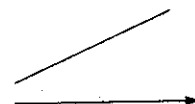

Figure 1. Number: The form of the *-s* movement

they are talking about. This was, then, the explanatory hypothesis adopted to explain these and many other uses of the morpheme until some unexpected data came to hand which obliged us to rethink it.

The new data first arose in the form of examples mentioned by grammarians like *a crossroads* and *a stairs*. To account for the apparent contradiction between an impression of plural expressed by a substantive with *-s* and an impression of singular expressed by the indefinite article, we first thought of postulating two separate words in each case — *a crossroad* and *a crossroads*, *a stair* and *a stairs*. We soon realized, however, that this led to difficulties (e. g., why is the plural of *crossroads* not **crossroadses*, like that of *lens/lenses*?) and when we began listening, observing how people speak, we heard examples like:

(7)   a. *a new airlines*
             b. *an outstanding opening ceremonies.*

Thus it became evident that this is another sense of the morpheme, one which is considerably rarer that the other two but which must nevertheless be produced by the same representational process — if our operational postulate is valid. In this way we were led to extend our original postulate to include the possibility of a singular interception in the *-s* movement. This movement, starting from a position corresponding to 'singular' or better, minimum quantity (m), moving through positions corresponding to 'plural' or intermediate quantities (I), and ending at a position corresponding to 'generic' or maximum quantity (M), can be diagrammed as in Figure 2:
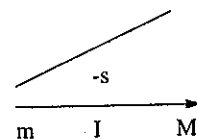

Figure 2. Number: The potential meaning of *-s*

This extension of the hypothesized movement, indeed this whole operational approach, entails regarding 'plurality', not as the "basic" meaning

of *-s* but merely as one of its senses along with the less frequent 'generic' sense and the even rarer 'singular' sense. That is, what is inherent in all the uses of the morpheme is the impression of a discontinuate quantity, but this impression will give rise to different expressive effects depending on the particular concept and the actual quantity — minimum, intermediate, or maximum — represented. Particularly curious is the expressive effect of *-s* singulars, where a discontinuate is represented in a minimal space, as though it takes several elements to make up a single unit. Other attested examples of this use are:

(8)   *a scissors, a very popular overalls, a singles, a scales, a means, an Olympic Games, a series, a barracks, a stables, a picnic-grounds.*

The question of the rarity of this use may well arise. From the standpoint of the morpheme's potential meaning, of the representational mechanism signified by *-s*, quantitative considerations such as frequency of use are of little pertinence since the potential, like a computer program, must incorporate the conditions permitting all actual uses, whether they be frequent or not. On the other hand, it must not be forgotten that a grammatical morpheme like *-s* is used only to give a way of representing, of forming, the lexical meaning of a word, and not all lexemes offer the same possibilities.[4] Thus from the standpoint of usage, the infrequency of the 'singular' sense here is to be attributed to the fact that relatively few lexemes lend themselves to this particular grammatical treatment.[5]

It will not be possible in the present context to give further illustration of *-s*, nor to give a full demonstration of how the general operational postulate is applied to the data by contrasting it with the other part of the system, ∅ morpheme (see Hirtle [1982] for the detail). This sketch will therefore have to suffice to suggest how the potential meaning of *-s* can be hypothesized. Let us turn now to the third step in treating meaning scientifically: how such a hypothesis can be tested.

4. Testing the hypothesis

To be seriously entertained as an explanatory theory, any hypothesis must meet two tests. First, of course, it must be corroborated by the data. That is to say, a hypothesized potential meaning like the *-s* movement must be capable of producing the data. An important point here is that testing is more than just checking to see that the data do not contradict the explanatory hypothesis. Our operational postulate obliges us to see all the different senses of the morpheme observed in discourse as consequences of the hypothesized process. This potential meaning is therefore a necessary condition of the actual meanings expressed. In other words, there is a causal link between hypothesis and data and thanks to this link the type of explanation provided here has something in common with that found in other sciences based on observation.

A minimum requirement for the explanatory hypothesis, then, is that it be able to engender the senses for which it was originally conceived — the 'singular', 'plural' and 'generic' senses, in our case. But to have a real test, one must confront the hypothesis with uses other than those that gave rise to it, and here the field is vast, in fact unlimited, because language users are creative. So our hypothesis was used as a viewing device for examining a wide variety of uses:

(9)   a. Ailment names such as: *measles, mumps, hives, the heaves, the heeby-jeebies, the trots, the gimmes*;
     b. Tool names such as: *pliers, bellows, forceps*;
     c. Bifurcate garment names such as: *trousers, jeans, shorts*;
     d. Ocular instruments such as: *glasses, binoculars, spectacles*;
     e. Liquid names such as: *spirits, turps, drippings*;
     f. Children's terms such as: *dibs, benches, corners*;
     g. Various uses such as: *heads, tails.*

Wickens' extensive and detailed study (1991), the first attempt to observe the meaning expressed in most of these uses, has shown that in all cases there is an impression of something discontinuate, but this general impression is materialized in the particular lexeme in such a variety of ways that often one cannot reduce the expressive effect, even of intermediate interceptions, to the commonplace 'more than one' sense usually associated with the morpheme. Until one has gone through all the data, it may sound unduly vague to speak of an impression of something discontinuate, but this is in fact a generalization, an attempt to characterize what is common to the different senses expressed by several thousand attested uses. Attempts to characterize this with less general terms have proved unsatisfactory, but it can be made more precise by contrasting it with the meaning of ∅ morpheme (see below). It remains, however, that paraphrase is never fully satisfactory as a means of describing meaning.

Wickens' study thus shows that the hypothesized meaning is really a potential, that is, a representational process offering the possibility of multiple realizations corresponding to our multiple experiences of discrete

extension in space. I do not wish to give the impression that all uses of
-*s* have been explained and catalogued in this way. It seems to be the fate
of all scientific hypotheses to have a few cases which resist analysis, and
it is thanks to such cases that the hypothesis can be extended, rectified
or even proved inadequate. For example, there may be a problem of
observing the particular expressive nuance, as in:

(10)   *The Snows of Kilimanjaro* (cf. *the snow of Kilimanjaro*).

Such instances may involve a sort of *pis aller*, where speakers, confronted
with a complex message wherein they discern some nuance of discrete
quantity, find the -*s* morpheme less inappropriate than $\emptyset$ morpheme (cf.
Guillaume 1984: 75). Again, it may be a problem of determining the
nature of a determiner, as in:

(11)   *zero grams*,

or of classifying a use, as in:

(12)   *He is bananas* (an ailment name?),

or simply of collecting enough data, as for words ending in -*ics*. There is
nothing surprising in this because usage is open-ended and one can never
be sure of having observed everything. As a consequence, this first way
of testing the potential meaning hypothesis of a morpheme can never be
considered over and done with. It remains, however, that corroborating
data may well be accumulated to a point where, for all practical purposes,
the hypothesis is considered sufficiently confirmed to offer a base for
further hypothesizing.[6]

The second step in testing a hypothesis is to examine how it relates to
other hypotheses concerning the object under observation, in our case
the grammatical morphemes of the substantive in English. A minimal
requirement is that they be consistent, that one hypothesis not conflict
with another. For example if, to explain the $\emptyset$ ('singular') form of the
substantive, I were to propose a rule-based hypothesis, one would be
quite justified to point out that it is not consistent with the meaning-
based hypothesis just proposed for the -*s* form. Two such hypotheses
would betoken contradictory views of the nature of language, one imply-
ing that language is rule-governed behavior, the other that it is meaning-
representing-and-expressing activity. In the approach adopted above,
consistency is guaranteed by the general principle of a mental operation,
which appears a necessity insofar as the very nature of human language
is concerned, and so is postulated of all morphemes, of all grammatical

systems. Since this principle provides the starting point for analyzing the
data of particular problems like the -*s* or the $\emptyset$ morpheme, it ensures that
what is proposed is not some *ad hoc* explanation in basic opposition with
what is proposed is not some *ad hoc* explanation in basic opposition with
some other *ad hoc* explanation.

But consistency, taken in the sense of 'not conflicting with', is not
enough in our case because language is, in its formal (= grammatical)
structure, systematic. That is to say, whatever is proposed for the -*s* mor-
pheme must not only not conflict with what is proposed for the $\emptyset$ mor-
pheme, but it must entertain systematic relations with it. Together, the
two meaning potentials must form a coherent whole, a mechanism for
representing quantity in two complementary modes, if our postulate that
grammatical structure consists of operative systems is exact. This is, in
fact, the case. Like the -*s* form, the $\emptyset$ form of the substantive was ob-
served in order to discern the different senses it can express: 'singular' of
course, but also a 'mass' sense and a 'generic' sense as in, respectively:

(13)   a. *I took an aspirin.*
          b. *Is there aspirin in this medication?*
          c. *Aspirin is an analgesic.*

Thus there is a variation in the particular quantity expressed. This is
similar to the -*s* morpheme, but in all uses the $\emptyset$ morpheme expresses
quantity represented as continuate, not discontinuate, as shown by vari-
ous oppositions between the two morphemes: *one apple / two apples*, *some
egg / some eggs*, *three bear / three bears*, etc. These and numerous other
observations led to a hypothesis for the $\emptyset$ form of the substantive: that
the $\emptyset$ movement is a mirror-image of the -*s* movement, that is, one going
from maximum to minimum but for continuate quantities. Together these
two movements, $\emptyset$ + -*s*, constitute the operational basis of the system of
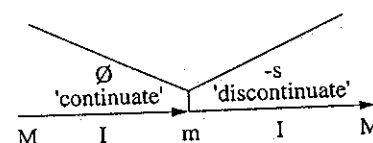grammatical number in English, as illustrated in Figure 3:

Figure 3. Number: The system

But this cohering of the two morphemes in a little system is not the
whole story because grammatical number is just one of the systems in
the substantive. If our postulate concerning the systematic nature of
grammar is valid, what is proposed for number must be both consistent

and coherent with what is proposed for the other subsystems of the substantive. In fact, recent research by Lori Morris (1991) on grammatical gender in English has resulted in a hypothesis concerning the relationship between gender and number. If this hypothesis proves tenable, it will explain why the two categories are so closely linked and eventually throw considerable light on the system of the substantive itself. On this level, at two removes from the raw data, coherence is the more important factor in testing a hypothesis since it is rare that one can relate a hypothesis on this level directly to some observed fact. The aim of all this observing and hypothesizing is a coherent view of the parts of speech in English as an operative system of representation, as a theory of the word in English (cf. Hirtle 1993).

5. Conclusion

I hope these remarks have shown that meaning can be treated scientifically. Observing the different senses of a morpheme by introspection can result in valid data — provided competent observers agree. A hypothesis to explain these different senses can be arrived at — provided one postulates a meaning for representing some facet of experience as a potential involving a mental process to be intercepted at the appropriate point. Finally, this explanatory hypothesis can be tested — provided one takes the trouble to confront it with a sufficient number of attested examples in context. All this to explain what? To explain why a given form is used — $\emptyset$ rather than -s, the perfect rather than the past, *any* rather than *some*, etc. Notice what is implied in all this work: that we use a form because of the meaning it expresses. That is, meaning is a necessary condition, a causal factor, governing the use of a form. Not only the use of morphemes and of words, but of all that follows on from words, namely the construction of phrases and of sentences. In short, syntax is not, as some linguists would have us believe, autonomous and therefore insignificant, but rather word-based and meaning-motivated from beginning to end, as Reid (1991) argues for subject/verb agreement in English. To be consistent with our general postulate, this syntax must also be operational and so must be analyzed in terms of how the speaker establishes relationships between the actual meanings of words and phrases. This amounts to a new approach to syntax, the bases of which are outlined in Valin (1981).

   The consequences of postulating that language is essentially operative are important because it provides a similar method of analysis for both syntax and morphology. Further reflexion shows that the procedure involved in hypothesizing the hidden potential meaning to explain the various observable actual meanings which motivate the use of a given form is essentially the same as the comparative method, applied under very different circumstances, in historical grammar.[7] It can therefore produce results of equivalent scientific validity. This ensures us that language, mankind's noblest construct, is after all accessible to science, mankind's most remarkable intellectual venture. Such, then, is the prospect for linguistics if one accepts that the relationship between the physical signs and the mental significate is the most important "of all the relations and correlations in language and in the science which observes it".

Notes

* My thanks to those who took the trouble to comment on earlier versions of this text.
1. The term "message" is used here to designate the extra-linguistic content of experience. For detail, see Hirtle (1994).
2. Unless some grammarian, lacking the necessary understanding of English, simply copied what he found in another grammar, in which case he could not be considered a competent observer of English.
3. A clear illustration of the failure to grapple with the problem at the outset is provided by the following:
   It seems clear, then, that undeniable, though only imperfect correspondences hold between formal and semantic features in language. The fact that the correspondences are so inexact suggests that meaning will be relatively useless as a basis for grammatical description. (Chomsky 1957: 101)
4. Revealing cases in this respect are the substantive *cattle*, which is not found with the -s morpheme, and the following sentence heard in conversation: *Both the twins have sweet tooths.*
5. There may also be a historical factor here, since this use seems to be a fairly recent innovation. Research is called for on this point.
6. For an example of hypothesizing on the basis of observed meanings in the use of verbs in English and Dutch, see Korrel (1991).
7. See Valin (1964) for a detailed description of the comparative method as applied in historical linguistics and in psychomechanical analysis.

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