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The Logic of Meaning

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Logic has two major applications to language. One is the relating of truth-value, taking units of language as wholes and relating them to each other in the manner of the propositional calculus. This we shall call macro-logic. The second application is the study of the logic of meaning relationships in language, which we denominate as the micro-logic of language. The concern of this paper will be with the micro-logic of meaning. But first we must lay some groundwork.

A. Background Considerations

Certain premises govern all that is said in this paper. The first is that language is a system of actions whereby a person affects the universe about him. It is an intentionally devised and intentionally used human tool. The principal use of this tool is one person affecting or controlling others. We note the following categories of this social affect and control by distinguishing three kinds of language usage:

- 1) Phatic usage: Language used to fill up time.
- 2) Esthetic usage: Language used to stimulate imagery and/or feelings.
- 3) Informative usage: Language used to formulate testable hypotheses about the universe.

It is noteworthy that in usage, these categories are not usually found in the pure state. Language usage may be phatic, esthetic and informative all at the same time. But usually one of these functions will be dominant in a given usage.

The informative use of language itself has three subdivisions:

- 1) Disclosure: The speaker reveals his inner states.
Example: I have a headache.
- 2) Directive: The speaker reveals his desired hearer response.
Example: What time is it?
- 3) Description: The speaker reveals his ideas about something outside himself.
Example: This dog is old.

Every informative use of language is disclosure, because the speaker is revealing himself, but some disclosures are also commands (directives). Some disclosure commands are also descriptions. In all three the speaker reveals himself, but in some he purports to reveal the nature of the universe as well.

Revelations about the universe may take one of two forms, or be couched in two different types of language. The difference comes in the mode and precision of definition being used. One type of language is "ordinary," the common vernacular languages of mankind which everyone learns as a child. The basic form of definition used in this language is ostensive. By induction a person learns to see pattern in objects which are given names by his mentors. Dogs have aspects in common, and as one

observes enough dogs a pattern forms in his mind which he then uses both to understand and to indicate that pattern when conversing with others. This kind of pattern or meaning is not exact, is not usually specifiable in terms of a specific number of elements all of which are common to the pattern *dog*. This is "family resemblance" meaning, as celebrated by Wittgenstein.

The second type of informative language is technical usage. Technical terms are those which have a precise meaning, a meaning based on essence rather than family resemblance. To have an essence means that there is a finite set of qualifications which necessarily apply to an object being referred to. This does not mean that the object may have no other characteristics: it need not be pure. It means that speaker and hearer both intend that the object referred to has at least the characteristics, the "essence," agreed upon by prior stipulation. For instance, to be a legal contract in the technical sense, certain factors are stipulated in advance, such as: 1) both parties must be competent to contract; 2) there must be a meeting of the minds; 3) there must be an anticipated benefit to both parties; and 4) there must be an exchange of consideration. If those stipulations were the agreed essence of a contract in a society, any agreement lacking one of those components would not be considered a legal contract and could not be enforced.

It is noteworthy that many of the terms used in a technical listing of essential characteristics themselves need further technical definition, such as "meeting of the minds" and "consideration" in the example of the preceding paragraph. But eventually all technical definitions must rest on terms which are not technically defined. Formally speaking, this is to say that defined terms must be defined in terms of undefined primitives. In the real world, our primitive definitions are non-technical, family resemblance definitions which we invent by induction through ostensive definition. This is to say that all technical use of language is embedded in a larger context of ordinary language. Technicality is a matter of degree. Only one term of a conversation might be used technically. Or a majority may be used technically. When the number of technical terms becomes so great that the non-initiated hearer cannot grasp the gist of the conversation, the language has become technically oriented jargon.

Meaning is a matter of pattern. The meaning of any word or sentence is the pattern of ideas which the speaker intends or the hearer infers. The atomic elements of these patterns are either irreducible sensory items (a shade of blue, the fragrance of lilac) or constructed elements (line, wishing, angry). Constructed elements usually may be further subdivided at the constructor's desire; thus to be elemental is to be considered elemental by the constructor. The meaning of *tulip* is, for ordinary language, the indication of a spring blooming bulb which produces a flower of greatly varied shapes and colors, the pattern being a vague one which enables its constructor to identify tulips with a high (say 90%) rate of success. The technical meaning of tulip specifies exactly the parameters necessary for a plant to be tulip, enabling the user to identify correctly with something like a 99% rate of success.

B. Parameters Necessary for Truth

We are now in a position to ask, what are the parameters of information necessary to make an informative statement about the universe? We find that there are four basic kinds of information necessary to form a minimum complete statement. These are: a) A target pattern, b) An overlay pattern, c) Affirmation or denial of the overlay, d) Specification of relevance factors. We will explain each of these factors.

The target pattern is something like the subject of a sentence, but it is the meaning subject, not the grammatical subject. In the sentence "It is raining," the target pattern is "current weather." Be it a simple or a complex pattern, the target pattern is simply the subject being operated upon in a given situation of linguistic usage.

The overlay pattern is the pattern being brought to bear upon or to modify the target pattern. A sentence functions to overlay or to add the overlay pattern upon the target pattern. In the example of the preceding paragraph, "raining" is the overlay pattern.

The third element of an informative sentence is the affirmation or denial of the overlay. Affirmation is to assert the overlay, as in "It is raining." This sentence would be used principally in case the pattern of current weather is unknown to the hearer or to emphasize the fact of the overlay. Or we might deny the overlay by saying, "It is not raining." This sentence would ordinarily be used when the hearer is uncertain whether or not it is raining, or has been afraid it might be raining, or believes that it is raining because someone has said so. Affirmation or denial is strictly an on/off matter. It admits of no degrees or variations. Should degrees or variations be necessary, those factors would be put into the pattern of the target or overlay class, as in "It probably is raining." In this example we have an affirmation of overlay of "probably is raining" on target pattern "My idea of current weather." This shifts the focus of the sentence from description of the weather to epistemological considerations about whether one knows what the weather is or not.

The fourth consideration, relevance factors, give the information necessary to test the pattern established by overlay or subtraction of overlay against the "real world." Four relevance factors are necessary: 1) Spatial location, 2) Temporal location, 3) Mode of reference, and 4) Specification of ordinary or technical usage.

Spatial location is the designation of the boundaries within which the overlay pattern is asserted to hold. Just where is it raining? Difficulty of description limits most usages of the example sentence to specification of the fact that it is raining or not raining at a particular spot. Weather persons on television have the ability to show satellite photos with areas of rain indicated.

Temporal location is again best done by specifying time when it was raining at a particular place, or saying that rain began at a certain time and continued to a certain time. To speak of future time is to forecast, which is the relevant issue since the past is already gone and that past rain rains

no more. But future rain has very practical consequences. Needless to say, forecasting future time rain is a guess, but sometimes a very sophisticated guess which turns out to be vindicated.

Mode of reference designates whether one is speaking in the disclosure, directive, or descriptive mode. The same sentence could be used in any of the three modes, hence the need to specify. In real life this factor is seldom overly specified because the context makes evident what is going on. But sometimes the context is insufficient. "It is raining" could be a description if the person has been asked what the weather is. That sentence could be a directive if the speaker previously had told the hearer to move indoors as soon as it started raining. And that sentence could be a disclosure if it is a response to the question "What is your guess as to what the weather is right now?"

The specification of ordinary or technical usage is of great practical importance. Weather reports almost always are given in ordinary language. This means that though rain is reported over a certain area at a certain time, that does not mean that every open square foot of the area is being rained upon. The meaning is approximate, family resemblance type, and is thus usually given in percentages. "There is a 70% chance of rain falling in this area." Such a statement seems silly when one looks out the window and sees pouring rain. But the statement is intended to give a percentage over an area, not at a specific location. Technical usage would have to assure rain or not rain at a specific number of specified areas.

Thus we see that two kinds of information are needed in the relevance factors of language usage: Where and when to look to see if something is true, and what kind of language usage the speaker is using to assert what he does. Only as these relevance factors are explicitly specified can the exact nature of the utterance be described. This is to say that we are attempting to give a technical definition of the relevance factors necessary to linguistic usage.

It is interesting to note what is necessary when verbal communication is reduced to the absolute minimum, when context provides everything but the minimum. The minimum is the specification of the overlay pattern. Thus when someone cries out "Fire," this word is a specification of the overlay. The target pattern (conditions), the affirmation, the present time and place, the mode of reference, and the ordinary use of language are all assumed.

C. The work of Jean-Marie Zemb

In an unpublished paper entitled "*The Trios, the Duos and the Solo in the Structure of Propositions*" (Translated by Alan K. Melby of Brigham Young University), Jean-Marie Zemb of the College of France has approached the problem of the relationship of the grammar of linguistic usage as related to the structure of meaning. He concludes that the structure of meaning is not tied to grammatical form as is inferred by the hearer as the hearer infers the meaning of the sentential formulation.

Zemb analyzes the structure of meaning in a manner similar to that which has been done in this paper. He concludes that the structure of the

proposition is that of *thema-phema-rhema*. *Thema* is analogous to what we have designated as the target class. *Rhema* is like that which we have called the overlay class. *Phema* is a pattern like that of the affirmation or denial of the overlay.

If one uses Zemb's terminology we see that a fourth element is necessary. That fourth element has been called above the relevance factors. To match Zemb's terminology one might designate these relevance factors as *schema*, the pattern or ordering of the assertion relative to the universe of human experience.

Zemb has made a contribution by showing clearly that grammar and meaning are not correlated uniquely. His suggestion of the *thema-phema-rhema* is seen to be consonant with the pattern employed in this paper. Zemb's focus is on the proposition, whereas this paper focuses on the assertion as the basic unit of human language. But it is possible that a fruitful accommodation of terminology may consolidate Zemb's work and the present paper into a viable approach in the philosophy of language.

D. Conclusion

The conclusion of the matter is that the micro-logic of meaning is very simple compared with the macro-logic of truth. The logic of meaning is simple addition or subtraction of overlay pattern to or from a target pattern. Using this device of overlay recursively, any meaning can be reduced down to its simplest elements or built up into a most complex idea, such as the idea of the universe.