

## ON "THE GLOBAL" CONCEPTION OF MEANING

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Many attempts have been made on the part of linguists, logicians and philosophers to create a satisfactory and comprehensive theory of semantics of a natural language. But, as J. Lyons says<sup>1</sup>, "no one has even yet presented the outlines" of such a theory. In the present paper a new approach to meaning, diverging from many an authoritative view on the problem, is being formulated in a sketchy and probing manner.

In what follows the semantics of a natural language will be spoken of as a certain system of non-verbal and verbal meanings; I shall briefly delineate the general character of the system and then draw some more important consequences from what I call "The Fundamental Principle of Interpretation".

The whole process of human cognition (man's learning to orient oneself in the surrounding environment) is a process of the acquisition of information about external reality in the long run (including man himself). Roughly speaking those portions of information are namely what I call "meanings". Language is not the sole channel of information / =meanings/ introduced into a subject. There is much empirical evidence (communication among the blind and deaf-mute, aphasiology, child psychology as we know of it from J. Piaget, etc.) that we come to know about the world around us long before language expressions / =verbal expressions/ are introduced to us.

The information we get about the world in this pre-language phase of cognition will here be called "non-verbal meanings". Respectively the information we get about the world through language I shall call "verbal meanings". To cut it short, both non-verbal and verbal meanings are what in our view make up the semantic plane (component), or the plane of content v. the plane of expression made up of verbal expressions (words, sentences, whole texts).

It is our concern now to show that the plane of content being the inventory of non-verbal and verbal meanings is systematic in character, i. e. it is a general /non-verbal / verbal/ system of meanings (GSM).

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<sup>1</sup> J. Lyons, Introduction to Theoretical Linguistics, Cambridge Univ. Press, 1968, p. 402.

To account for structural relations between components of the system I shall make use of the logical function of incompatibility based on the operation of negation.

According to the way I conceive negation I shall distinguish three modes of the incompatibility function: the material (1), the formal (2) and what I shall term "the global" (3) function. The formal function of incompatibility will be considered to be a special case of the material function, and the material function will be viewed as a special case of a more comprehensive, the global function. To appeal to a verbal illustration, the description  $\neg p$  (not  $p$ ), where  $p$  is "John is human", could be interpreted as equivalent to "John is not human" or "John is non-human" in case (2); in case (1), as equivalent not only to "John is not human" or "John is non-human" but also to e. g. "Vilnius is the capital of the USA" or " $2 \times 2 = 5$ ", etc., i. e. to any false proposition; in case (3) " $\neg p$ " could be interpreted as referring to any sentence save "John is human", e. g. "Vilnius lies on the Neris", "Pegasus flies", "My uncle is the president of the USA", "The theory of relativity is blue", etc. I. e. by " $\neg p$ " in (3) we mean a set of sentences which are not  $p$ ; the set of true and the set of false propositions are subsets of this set.

The picture above is very sketchy but it is merely a verbal illustration of the idea of negation as it could be applied to the analyses of GSM (general system of meanings). For eventually we are going to speak about the meanings of GSM and the relation of incompatibility holding between them, namely of one meaning (or, as we shall see, some complex of meanings) being a negation in the sense of (3) of some other meaning (or some other complex of meanings).

To repeat, a process of cognition is one of acquisition of information (= meanings). In this process meanings that we have already acquired or, to be more precise, formed serve as basis for the introduction /= interpretation, determination, semantic definition, i. e. definition on the level of GSM/ of new meanings; between the two (*definiens* and *definiendum*) there is always a relation of incompatibility expressed by different degrees of negation.

Let us postulate a world consisting of two things<sup>2</sup>  $p$  and  $q$  to be interpreted /= determined, defined/ by us. Let us assume further that we know the meaning of  $p$  and that we strive to learn /= determine, define/ the meaning of  $q$ . We can accomplish this exclusively on the basis of the meaning of  $p$ <sup>3</sup> for it is the sole information we possess.

Thus if there is something in  $p$  to be made use of in determining /= defining, interpreting/  $q$ , the latter being identical with  $p$ , means that  $p$  is taken all in order to

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<sup>2</sup> In the most comprehensive meaning of this word.

<sup>3</sup> To simplify, instead of saying "the meaning of  $p$  ( $q$ )" we shall say simply " $p$ " (" $q$ ").

define  $q$ . In this case we shall say that  $q$ 's negation power ( $N$ ) with respect to  $p$  equals  $O$ .

(1)  $q = p$  if  $N_{q/p} = 0$ , where  $N_{q/p}$  is the negation power of  $q$  with respect to  $p$ .

If there is something in  $p$  to be made use of in determining  $\neq$ -defining, interpreting/  $q$ , and if  $p$  is not identical with  $q$ ,  $p$  does not fully participate in the determination  $\neq$ -definition, interpretation/ of  $q$ . In this case  $N_{q/p} \neq 0$ .

(2) From  $q \neq p$  follows  $q = -p$  if  $N_{q/p} \neq 0$ .

The question to what degree  $q = -p$  ( $q$  is not  $p$ ) is equivalent to the question to what degree  $p$  participates in the determination  $\neq$ -definition, interpretation/ of  $q$ . It appears, the less  $p$  participates in the determination of  $q$ , the greater the degree in which  $q = -p$  (the more  $q$  is not  $p$ ). In terms of negation power, the greater  $q$ 's negation power with respect to  $p$ , the less of  $p$  participates in the determination  $\neq$ -definition, interpretation/ of  $q$ . The simplest mathematical form expressing this relationship is the complement to (1).

Let  $N_{q/p}$  be  $q$ 's negation power with respect to  $p$  provided  $N$  can range continually from 0 to 1 ( $0 \leq N \leq 1$ ). Then  $1 - N_{q/p}$  is the part of  $p$  which participates in the determination  $\neq$ -definition, interpretation/ of  $q$ . We shall mark it  $\overset{+}{p}$ . The part of  $p$  which does not participate in the determination of  $q$  will be marked respectively  $\bar{p}$ . Then:

$$(3) \quad \overset{+}{p} = 1 - N_{q/p}$$

$$(4) \quad N_{q/p} = 1 - \overset{+}{p}$$

(5)  $\overset{+}{p} = \overset{+}{q}$  where  $\overset{+}{q}$  is the part of  $q$  determined  $\neq$ -defined, interpreted/ by  $\overset{+}{p}$ .

$$(6) \quad \bar{p} = N_{q/p}$$

To summarize:

$$(i) \quad q = p \quad \text{if } N_{q/p} = 0$$

$$(ii) \quad q = -p \quad \text{if } N_{q/p} \neq 0$$

$$(ii_a) \quad q = -p_{\max} \quad \text{if } N_{q/p} = 1$$

$$(ii_b) \quad q = -p_{\min} \quad \text{if } N_{p/p} \rightarrow 0$$

(In a trivial case  $p = -p$  for  $N_{p/p} = 0$ )

It is necessary to stress here that the case  $q = -p$ , when  $0 < N < 1$ , means a partial, i. e. not complete, determination of  $q$ . Thus to render it (more) complete some other meanings should be involved in the process. The latter point is important for it bears to say that various complexes of meanings may partake in the determination  $\neq$ -definition, interpretation/ of a "new meaning". It follows that components of GSM are meanings of diverse complexity.

Let  $r$  be the meaning resorted to in order to render the determination of  $q$  complete. Knowing  $N_{q/p}$  and bearing in mind that  $p$  and  $r$  exhaust the number of mean-

ings participating in the determination of  $q$ ,  $N_{q/r}$  could be found by the formula:

$$(7) \quad N_{q/r} = 1 - N_{q/p}$$

If negation power is taken to mean the distance between meanings of the system, then:

$d[p, q] < d[r, q]$  if  $N_{q/p} < N_{q/r}$ , where  $d[p, q]$  — the semantic distance between  $p$  and  $q$ .

The formula shows that  $p$  is more than  $r$  involved in the determination of  $q$ . The degree of negation power shows the degree of incompatibility between the meanings of the system. By the distance between meanings we mean the possibility of determining / = defining, interpreting/ meanings, the possibility of "passing" from one meaning (or a complex of them) to another, the possibility of "translating" one meaning in terms of another, i. e. the possibility of introducing new meanings into an available system of them, — by entering the system (or to be more precise, by being constructed, formed in the system) the new meaning enriches the system by new combinatorial possibilities.

The case (ii<sub>b</sub>) is *sine qua non* of the introduction of new meanings. I shall formulate it as the Fundamental Principle of Interpretation (FPI). It is the fundamental principle of constructing, building up the GSM: if  $Z$  is a system of meanings and  $T$  is the meaning to be introduced into the system, then  $N_{T/Z}$  should be less than 1 ( $N_{T/Z} < 1$ ). The Principle calls for consistency in meaning introduction / = interpretation/: interpretation of meanings requires the necessary condition stated by the Principle to be fulfilled; the latter explicitly says that interpretation of meanings is a matter of degree. The cases (i) and (ii<sub>a</sub>) are not equivalent from the viewpoint of GSM. The cases differ essentially since in (1) we may say that the system potentially possesses a combination of meanings equivalent to a "newcomer", that is the necessary combination of meanings "exists" potentially in the system and is being actualized (made into a virtual combination) when, that is to say, "called for from the outside". In case (ii<sub>a</sub>) the system neither potentially nor actually possesses such a combination of meanings.

With respect to the GSM the FPI says that the system is indiscrete, or continuous in character (to put it roughly there can be no gaps between the *definiens* and the *definiendum* on the level of the GSM: the system is growing up, or expanding, in a continuous way).

Now I shall briefly discuss some more important consequences of the FPI.

1. The FPI explains the logical possibility of cognition and simultaneously fixes the cognition boundary of a given semantic system: we can know / = understand, interpret/ of the world no more than the combinatorial resources of the

semantic system allow us, i. e. both the way we interpret the world and how much we interpret of the world depend on what there is in my or your's GSM. To put the idea in a modern linguist's (transformationalist's) phrase the existence of a definite GSM accounts for a subject's ability to understand /≠interpret/ a novel sentence (if what is interpreted are sentences) one has never heard before.

It should be noticed here that building up the GSM is entirely an individual matter, i. e. the process of interpretation (introduction) of new meanings is of an individual character. Thus there may well be discrepancies of content between individual GSMs (individual "conceptual schemes"): these discrepancies are particularly articulate when there are big differences in an individual experience of a subject.

2. The FPI explains the possibility of language introduction stipulating the necessity of a prior existence of non-verbal meanings arranged in a continuous system, i. e. the information we get about the world through non-linguistic channels. These non-verbal meanings, or rather the system of them, provide the semantic basis for the interpretation of verbal expressions<sup>4</sup>.

The first stage of language introduction is the process of naming some non-verbal meanings acquired by the subject. It is important to stress "some" as it is empirically well attested that not all non-verbal meanings can be given verbal expression. Postulation of a continuous semantic system explains the nature of limitations on the expressive capacity of a particular language to say more (or less) than another language, i. e. to cover more (or less) of the GSM of a subject. The continuous semantic system and discrete verbal expressions can not be brought into one-to-one correspondence: roughly speaking, many meanings may be given one verbal form<sup>5</sup>, and vice versa. The *definiens* and/or the *definiendum* on the level of verbal expression can be represented by diverse complexes of verbal symbols (words, sentences, whole texts). For instance, to understand /≠interpret, determine/ a word or a sentence representing some meaning we may need to have in our GSM a meaning that determines /≠interprets/ the meaning of the word or the sentence and itself is fixed by a group of sentences or even a whole text (the picture is even more convincing when we consider a subject to be master of one GSM and more than one language). Thus generally verbal form is not equivalent to meaning.

The next stage of language introduction is one of the intensive flow-in of verbal meanings (i. e. meanings represented by linguistic signs), which are interpreted

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<sup>4</sup> The so-called non-verbal meanings continue to be acquired on a par with verbal ones throughout the cognitive process.

<sup>5</sup> This is the cause of indeterminacy of a verbal expression. Cf. indeterminacy of meaning which is the effect of what has been called "negation power" since we allow the latter to range continually from 0 to 1 and view the process of meaning interpretation as one of degree.

by combinations of meanings of the existing system, some of them already given verbal expression.

It is the characteristic feature of non-verbal meanings that they relate to the actual experiences of a subject, whereas verbal meanings apply rather to the possible experiences of a subject, i. e. they represent information which otherwise could not be introduced into a subject. It is this feature of language revolutionary in function which enables us to break through the limits of an actual experience, to enormously extend our frontiers of orientation in the world, and to possibly build up such GSMs ("conceptual schemes") – due to interaction of meanings within the system – that are hard or impossible to bring into correspondence with the world we live in. It is due to the acquisition of a necessary amount (and quality) of verbal meanings that we are not only in a position to reflect the external world in its overt and covert aspects but to reflect ourselves in this puzzling situation of being simultaneously the object and the subject of reflection. The situation turns clearer if we consider this purely human phenomenon in terms of some meanings of GSM (a part of a continuous system of meanings) interpreting, or "reflecting", the whole system of meanings that we represent.

3. The proposed approach to meaning sheds light upon some difficulty of a semantic nature met with in automatic language translation. The difficulty is well-known and consists in the sheer helplessness of a machine to give proper reading, or interpretation (i. e. to choose the right one from a number of possible) of a verbal expression. The difficulty gets resolved if it is analysed in terms of the proposed approach. Indeed, when faced with a phenomenon to be interpreted, the system provides ("searches for") – on condition the requirements of the FPI are satisfied – a combination of meanings related to the whole continuous system as it were to "decipher" the newcomer. This combination of meanings is what I call "context of the system". Since one verbal expression in isolation may be given many readings, or many interpretations (i. e. it may be interpreted by various contexts of the system) the system provides the right one with regard to the verbal and non-verbal contexts of a verbal expression. Scanning thus the surrounding contexts of a given verbal expression<sup>6</sup> (however vast and distant) and relating them to some context of the system, i. e. to some combination of meanings of GSM which itself being a component of a continuous system of meanings is related by different degrees of negation power to every other context of the system, we are in a position to determine – within our own system – the meaning of a verbal expression. Thus the system's "ability" to give the right interpretation to a verbal expression (if what is interpreted are verbal expressions) is made to depend exclusively on the "inner resources" of the system in question, that is on the number

<sup>6</sup> That is to say, "taking them into consideration".

and, of course, "the quality" of possible combinations of meanings /= contexts of GSM/ it can contract within itself.

4. The notion of the context of a continuous system of meanings throws light on the problem of the meaningfulness of a verbal expression. In terms of the proposed approach to meaning it is possible to account for the so-called "deviant" (to a various degree) verbal expressions (e. g. "*Colourless green ideas sleep furiously*", "*Quadruplicity drinks procrastination*", etc.). In our view such verbal expressions are not meaningless provided they can be in some way interpreted by the system, that is if the system in question can provide at least one combination of meanings /= one context/ to interpret them. For all of them the guarantee of at least one interpretation is secured since the system will always be in a position to interpret them as a specific kind of physical phenomenon, namely, graphic signs: so they will be considered meaningful at least in this respect. For some verbal expressions (the cited sentences are examples of such) the interpretation of them as grammatically well-formed<sup>7</sup> could be given, so they would be considered meaningful in that respect, too. For others still an interpretation of them as signalling some possible event in some possible world could be provided, so they would be judged meaningful in this additional respect and so on. Thus meaning is always relative to context. It is always relative to interpretation possibilities of a given semantic system, to the logical possibility of a phenomenon to be interpreted /= defined, determined/ in a given semantic system. It is irrelative to any ontological considerations (on the level of GSM "unicorn" has the same status as "table", " $\sqrt{-1}$ ", "electron", etc. — the status of a meaning interpreted by other meanings of the system). "To be" in this sense is "to be in the system", "to be in the GSM", i. e. to be interpreted by meanings of GSM.

There are neither absolutely meaningful nor absolutely meaningless verbal expressions. We need context to determine both meaningfulness and meaninglessness of an expression, for in one context (relative to one context) it can be meaningful while in another (i. e. relative to the other, or any other) it may turn out meaningless. In isolation (regardless of context) it is indeterminate. (E. g. in the case of grammatical meaninglessness, or ungrammaticalness, of a verbal expression the FPI allows an expression to violate the rules of grammar to the extent which does not preclude its interpretation in a given semantic system: much of everyday talk we know is ungrammatical yet pretty meaningful.)

5. As noted above, ontological considerations are irrelevant in an overall determination of the meaningfulness of a verbal expression. They are relevant if we care for the truth of our propositions. But true and false propositions make but a

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<sup>7</sup> That is as grammatically meaningful.

subset of a set of sentences. Only a part of meaningful sentences allow characterization in terms of truth. The general function of verbal expressions is not to represent, or "reflect", some definite situation in the actual world but to formulate possibilities. The latter consideration seems to be well in harmony with our division of meanings into non-verbal and verbal and with an earlier made distinction between the three modes of the incompatibility function: the material, the formal and the global.

6. To use the jargon of the generative transformational grammar but endowing it with a radically new sense there is one inventory of "deep structures" for the different languages a subject knows, that is the GSM comprising in one continuous system non-verbal and verbal meanings. Bringing meanings of GSM into the "*definiens-definiendum*" pair is what we take to be predication on the level of GSM, the fundamental structural semantic relation.

Finally, it seems that the FPI "regimentating" the character of this predication process, on the one hand, and the existence of a GSM, on the other hand, are what one calls the semantic universals that enable speakers of different tongues to successfully communicate with one another.

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## О „ГЛОБАЛЬНОЙ“ КОНЦЕПЦИИ ЗНАЧЕНИЯ

### Резюме

В статье на основе определенной интерпретации формальных понятий отрицания и математического понятия континуума формулируется подход к семантике естественного языка как непрерывной вербальной / невербальной системе значений. Предполагаемый подход, по убеждению автора, способствует решению основного вопроса логико-лингвистического анализа семантики естественного языка — определения осмысленности языковых конструкций.