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## ON LANGUAGE SIGN AND STRATIFICATION OF LANGUAGE

**1. Language and linguistic language.** L. Hjelmslev has said: "If it is true that language is a social institution, existing outside and independently of the individuals, it must follow that it cannot be defined as a psychological phenomenon."<sup>1</sup> Accordingly, (1) the definition of language can be derived only from language itself, and (2) it is that which is given in the language proper that is to be described, but not what a speaker or describer thinks about it.

A **language** is a paradigmatic the paradigms of which can be manifested by whatever purport.<sup>2</sup> A **text** is a syntagmatic the chains of which, if expanded indefinitely, can be manifested by whatever purport.<sup>3</sup> It is obvious that a text is unimaginable without a language just as a syntagmatic is unimaginable without a paradigmatic, or a process without a system. An "ordinary language" which connects in itself both a language and a text is called a **linguistic language**.<sup>4</sup>

**2. Sign function.** At the basis of any language is the sign function. Below the sign function in language as well as in linguistic language will be dealt with.

Already F. de Saussure considered language to be a **sign system**. According to de Saussure a language sign connects a **concept** (but not an object) and a **sound image** (*image phonique*).<sup>5</sup> The latter cannot be identified with any physical sound, it shall be identified with a psychical impression of sound. It should be noted that the sound image as defined by de Saussure and, consequently, a language sign as such is in certain contradiction with the idea of L. Hjelmslev cited and accepted at the beginning of § 1. It also contradicts F. de Saussure's own ideas about the social character of human language. But instead of treating the sound image from a psychical point of view it can be viewed as an image, or better: a mapping in the very sense we speak about iso- and homo-

<sup>1</sup> L. Hjelmslev, On the principles of phonematics. — Proceedings of the Second International Congress of Phonetic Sciences, Cambridge 1936, p. 49.

<sup>2</sup> L. Hjelmslev, Omkring sprogteoriens grundlæggelse. — Festskrift udgivet af Københavns Universitet. November 1943, København (= OSG), p. 96 and *id.*, Prolegomena to a theory of language (= Memoir 7 of the IJAL. Suppl. to Vol. 19 1), Baltimore 1953 (= PTL), def. 88.

<sup>3</sup> OSG p. 97, PTL def. 89.

<sup>4</sup> L. Hjelmslev, La stratification de langue. — L. Hjelmslev, Essais linguistiques (= TLCX XII), Copenhagen 1959, pp. 36—68, see p. 41.

<sup>5</sup> F. de Saussure, Cours de linguistique générale, Paris 1922, p. 98.

morphous mapping. Then a correspondence between the second component of de Saussure's sign and the sounds would have been arranged; it is expedient to define this correspondence as the **manifestation function**.

According to F. de Saussure the concept of a language sign is called a **designatum** (*signifié*), and the sound image, i. e. the component manifested by sounds, is called a **designator** (*signifiant*). It can be said that the designatum is designated by the designator. When both the designatum and the designator are given, it is said that the **sign function** is defined. A **language sign**, or simply: sign is, hence, an algebraic system where the sign function is defined.

**2.1. Connection of sign with language-external reality.** Proceeding from F. de Saussure H. St. Sørensen describes the sign and its connection with language-external reality as follows:<sup>6</sup>

designator	○	}	○ denotator	According to Sørensen the denotator is always a sign, the denotatum is a language-external ("extra-linguistic") real object, and the designatum is said to be identical with meaning.
designatum	○			
			○ denotatum	

Given the Estonian words *haug* and *vaskuss* which are signs:

/aũgi/  
○  
|  
○  
'pike'

/vazge-usi/  
○  
|  
○  
'blind-worm'

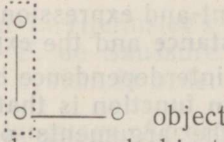
it is simple to arrange a correspondence between the signs and definite creatures such as *Esoc lucius* and *Anguis fragilis*. Replacing the designators by Onega Vepsian ones realized as [*ho-ũgi* ~ *hã-ũgi*] and [*va-šnẽ ga-d*], or Finnish ones realized as [*ha-uki*] and [*va-ski-kã:rme*], or Russian ones realized as [*':uka ~ 't'uka*] and [*mã'danka*], the designata and the real objects remain the same. Replacing the designatum 'pike' by 'smelt' (*Osmerus eperlanus*) one sees that both the designator and the object change, and there can be found no other designata different from the given ones that would deviate from this rule. In the same way the pike or the blind-worm can be replaced, say, by a bear. Then both the designator and the designatum change, and this remains the rule for any other object.<sup>7</sup> So it can be seen that H. St. Sørensen's scheme does not prove to be quite correct.

The scheme can be improved by arranging a correspondence between the designatum and the language-external object (denotatum), supposing that the denotator is superfluous. The sign has been surrounded by a dashed line:

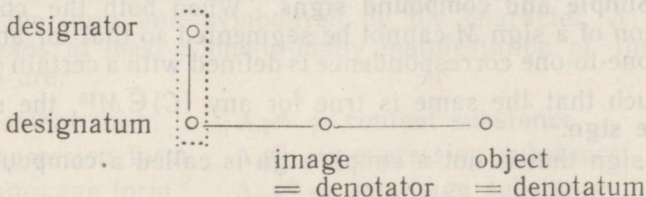
<sup>6</sup> H. St. Sørensen, *Word-classes in Modern English*. With special reference to proper names. With an introductory theory of grammar, meaning and reference, Copenhagen 1958, pp. 11—23, esp. p. 15.

<sup>7</sup> Although some deviations from this and the preceding rule can be found in concrete linguistic languages, they are of no importance for theory.



designator  Let us now have an Estonian word *näkk* which has /näki/ as its designator and 'nixe' as its designatum. One finds no real object such that a correspondence could be arranged between it and the sign. A nixe is, in the imagination of a native speaker, a creature in the form of a woman with long hair or in the form of a horse enticing human beings into water to drown them. Accordingly, a correspondence can be arranged between the designatum (or the sign) and a certain imagined being. Now the images connected with words *haug* and *vaskuss* should be examined. To a pike no properties are ascribed different from those one can come across in biological literature or experience while fishing or eating it. The blind-worm has no poison, as the biologists say, but it is commonly believed to possess both poison and an extreme anger against mankind.

Accordingly, an image can be either a true or a false mapping of an object; the designatum is in immediate connection with this mapping (i. e. with the image), but there is no obligatory accordance between an object and a sign: there are things one can think about but cannot speak about. Consequently, a fourth component — image — is needed for the scheme presented above. It will be seen that the image corresponds to H. St. Sørensen's *denotator* (Sørensen, by the way, was unable to define the denotator) and the object to *denotatum*:



As we have seen, the object cannot always be ascertained when the image is a false mapping of the object.<sup>8</sup> Accordingly, there is a determination between the object and image which can be defined so that the image is the determined (i. e. the constant), and the object is the determinative (i. e. the variable). Then, as was seen above, a designatum can be related with more than one of different images (for example, the designatum 'nixe' and the corresponding images), so that the determination (manifestation) can be defined between them. The designatum will be a constant (i. e. the form), and the image, or denotator will be a variable (i. e. the substance).

It has to be noted that the result obtained here is in full accordance with the result of L. Hjelmslev attained in a somewhat different way.<sup>9</sup>

**2.2. Content and expression.** The values of the designatum in a sign function are called the **content**, and the values of the designator are called the **expression**. As was seen earlier, both the designatum and the designator constitute the constant in manifestation, i. e. they are the form; accordingly one can speak of the **content form** and the **expression form**

<sup>8</sup> H. St. Sørensen, *op. cit.* § 22 speaks about possible denotata. But this is a somewhat strange way of treating the possibility.

<sup>9</sup> L. Hjelmslev, *Pour une sémantique structurale*. — TCLC XII, pp. 96—112, divisions 4—5.

(instead of speaking about the content and expression); the corresponding variables are called the **content substance** and the **expression substance**.<sup>10</sup>

It is easy to see that there is an interdependence between the designatum and the designator, i. e. **the sign function is that of interdependence**. Due to this fact, the valuation of the arguments of the sign function (i. e. the concrete content and the concrete expression) is arbitrary,<sup>11</sup> e. g. it is conventional, accidental that /aügi/ is connected with 'pike' and not 'cuckoo', or that it is 'pike' and not 'sleep' that is connected with /aügi/.

It has to be noted that according to L. Hjelmslev the sign function is that of solidarity, i. e. an interdependence in process. This seems to be an incorrect judgment based on the Indo-European languages. Given a Modern Hebrew rhizeme expression<sup>12</sup> גדל /gd/ 'greatness', one can never find it in the process as continuous (the unpunctuated written texts are not considered here). Compare the words גדל /godel/ 'greatness' (a noun), גדל /gadal/ 'he was great', יגדל — /jigdal/ 'he will be great', גדול /gadol/ 'great', and גדולים /gədolim/ 'the great ones', /im/ being a pluralizer. The words contain other sign expressions which are also discontinuous. The discontinuity of sign expression does not mean that it is possible to speak about the discontinuity of sign contents (pleremes). There is no part of the rhizeme content such that a correspondence can be arranged between them and the גד, ד, ג, i. e. /g/, /d/, /l/.

**2.3. Simple and compound signs.** When both the content and the expression of a sign  $M$  cannot be segmented so that for any content segment  $\{C\}$  a one-to-one correspondence is defined with a certain expression segment  $/E/$  such that the same is true for any  $\{C\}\bar{E}M$ <sup>13</sup>, the sign  $M$  is called a **simple sign**.

A sign that is not a simple sign is called a **compound sign**.

**3. Language as a sign system and language as a figure system.** According to F. de Saussure language is a sign system.<sup>14</sup> He does not say, however, whether this system is closed or opened.<sup>15</sup> When the system is a closed one, i. e. when the number of signs is definite, then adding or omitting a sign, a new system, different from the previous one, is automatically obtained. When the system is an opened one, an answer has to be given to the question of under which conditions judgments can be made about the system. In both cases the analysis of a language should be limited by the analysis of relations of signs, but as can be seen from de Saussure's "Cours", this is not precisely what is meant.

L. Hjelmslev has shown that although language is a sign system as to its purpose, it cannot be described as a pure sign system. Language must, namely, (1) be ready to form new signs, roots, words, and (2) be convenient for use. Because of this a definite number of non-signs are used in language to form an indefinite number of signs. Such non-signs are called **figures**.<sup>16</sup>

<sup>10</sup> Compare L. Hjelmslev, OSG, division 13 and *id.*, TCLC XII, pp. 40–41.

<sup>11</sup> Cf. F. de Saussure, *op. cit.*, pp. 100–101.

<sup>12</sup> *Rhizeme expression* corresponds to *root* in traditional linguistics.

<sup>13</sup>  $\{C\}\bar{E}M$  is to be read:  $\{C\}$  is not an element of  $M$ .

<sup>14</sup> F. de Saussure, *ibid.*, p. 107.

<sup>15</sup> Cf. F. de Saussure, *ibid.*, pp. 157 and 182.

<sup>16</sup> L. Hjelmslev, OSG, p. 43, and B. Siertsema, *A study of glossematics. Critical survey of its fundamental concepts*, The Hague 1955, p. 138.



It is obvious that L. Hjelmslev's approach is more general and more simple than that of F. de Saussure. But one should bear in mind that language is a figure system in order to be also a sign system.

**4. Stratification of language.** According to the sign function language is divided into a content plane and an expression plane. According to the manifestation function these planes consist respectively of content form and content substance and expression form and expression substance. Thus, one can speak about four strata of language. This twofold binarism on the basis of the sign and manifestation functions and, hence, the concept of stratification, is a characteristic feature of glossematics.<sup>17</sup>

As there is a correspondence between (content and expression) form and (content and expression) substance, it is possible, in a way, to consider the last two as a form. Accordingly, the content form and the expression form are referred to as the pure form, and the content substance and the expression substance as the material form.<sup>18</sup> It is obvious that the pure form, just as the glossematic form, substance, etc., cannot be confused with corresponding esthetic-philosophical concepts.

**4.1. Relations of strata.** The following symbols are used below:<sup>19</sup> Greek characters are employed for the content plane, Roman characters for the expression plane, except when there is a preceding \*, in which case the Roman character acts for the language plane (i. e. for both the content plane and the expression plane); ° postposed to a character means a stratum or a class in a stratum.  $\Lambda$  with a postposed character means the manifestation of the form unit symbolized by the character.  $\Lambda$  with a postposed dot means at least a one-to-many manifestation of the form unit. The symbols are:

$$\begin{array}{ll} \gamma^{\circ} = \text{content form,} & \Lambda.\gamma^{\circ} = \text{content substance,} \\ g^{\circ} = \text{expression form,} & \Lambda.g^{\circ} = \text{expression substance,} \\ *g^{\circ} = \text{language form,} & \Lambda.*g^{\circ} = \text{language substance.} \end{array}$$

A text manifestation of a linguistic language can contain segments of expression such that no correspondence can be between these and any units of pure form (e. g. Estonian /tip-tip-tip/ used when calling hens, Onega Vepsian /ψu-kei-ψu-kei/ used when calling cows, or /ψū-/ used for stopping a horse), as such exclamations have no content in these languages. But these and other exclamations are not devoid of sense, they can be considered as one-way languages between man and a hen, or a cow, etc. There are even such sounds which in no way can be considered as belonging to any language, e. g. Estonian [keļ], [pim-pam], Finnish [pium-paum], etc. Taking account of these facts and also of the fact that there are things one can think of, but cannot speak about, one can formulate the following concepts:

$$\begin{array}{l} \Lambda\gamma^{\circ} = \text{content purport (and its subsets } \Lambda.\gamma^{\circ} \text{ and } \Lambda\gamma^{\circ} \setminus \Lambda.\gamma^{\circ}),^{20} \\ \Lambda g^{\circ} = \text{expression purport (and its subsets } \Lambda.g^{\circ} \text{ and } \Lambda g^{\circ} \setminus \Lambda.g^{\circ}), \\ \Lambda.*g^{\circ} = \text{language purport (and its subsets } \Lambda.*g^{\circ} \text{ and } \Lambda.*g^{\circ} \setminus \Lambda.*g^{\circ}). \end{array}$$

Now it will be possible to formulate the content plane and the

<sup>17</sup> Cf. H. Spang-Hanssen, *Glossematics — Trends in European and American linguistics 1930—1961*, Utrecht The Netherlands, Antwerp Belgium MCMLXI, p. 72.

<sup>18</sup> Cf. L. Hjelmslev, *Langue et parole*. — TCLC XII, p. 72.

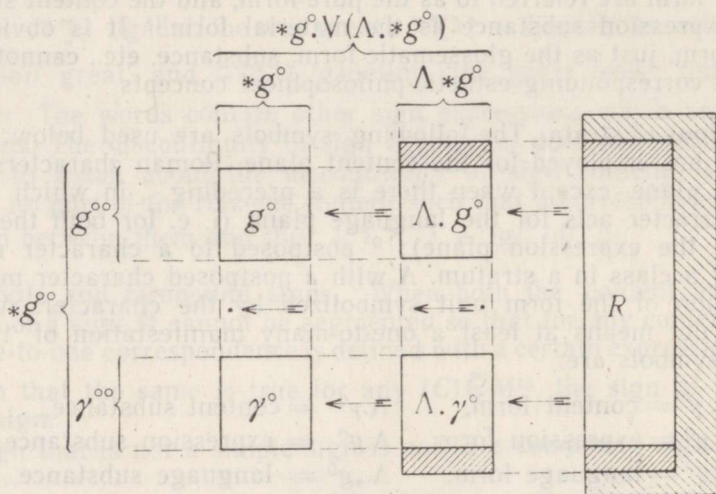
<sup>19</sup> The symbols were presented by L. Hjelmslev, TCLC XII, pp. 40—42; here some changes have been made.

<sup>20</sup>  $\Lambda\gamma^{\circ} \setminus \Lambda.\gamma^{\circ}$  means the difference of  $\Lambda\gamma^{\circ}$  and  $\Lambda.\gamma^{\circ}$ .

expression plane by means of the symbols presented here. As there is a determination on both planes, then there are two possibilities: (1)  $*g^0.V (\Lambda.*g^0)$  <sup>21</sup> and (2)  $*g^0$ . Thus, the existence of the language substance and, hence, the manifestation function, are possible but not unconditional components of a language (although they are needed for the social realization of the language). It makes sense to add some more symbols:

- $\gamma^{00}$  = content plane,
- $g^{00}$  = expression plane,
- $*g^{00}$  = language plane.

Marking the language-external reality by  $R$ , the following general chart for a linguistic language can be constructed, where the streaked fields will mark those subsets of  $\Lambda.*g^0$  or  $R$  which are not values of the variable in determination <sup>22</sup>:



At least in the case of nonlinguistic abstract languages there may be (1) no  $\Lambda.*g^0$  (or, what is more correct,  $\Lambda.*g^0 \equiv *g^0$ ) or (2) no  $g^{00}$  (i. e.  $g^{00} \equiv \gamma^{00}$ ).

**4.2. On interpreting the general chart.** It is obvious that the general chart presented in § 4.1 describes relations between language, mentality, and language-external reality (naturally, there is no reason to oppose language to reality as such). Thus the chart includes contact areas of several sciences and outlooks.

Avoiding the classification and analysis of different outlooks and taking into account only their rational kernel, one can see that the main problem here is what should be considered as primary. Moreover one must not confuse the problem of primarity and that of precedence in time. When the glossematic theory considers the  $*g^0$  as being primary and does not take into consideration the language-external reality  $R$ ,

<sup>21</sup>  $a.V.b$  is to be read 'a is manifested by b',  $a.V.b$  means that there is at least a one-to-many manifestation of a, cf.  $\Lambda$  and  $\Lambda$ . in § 4.1.

<sup>22</sup> When  $c$  and  $k$  being constants, and  $v$  and  $u$  being variables,  $c \leftarrow \leftarrow v$  or  $u \rightarrow \rightarrow c$  assign the determination,  $c \downarrow k$  assigns the interdependence, and  $v \uparrow u$  the constellation.

In our chart  $\leftarrow \leftarrow \cdot$  assigns the interdependence between the strata above and below the symbol; likewise  $\leftarrow \leftarrow \cdot$  assigns the constellation.



this is merely a useful and necessary working hypothesis. It is equally sensible to consider the stratum  $\gamma^0$  as preceding  $g^0$  in time.

From the point of view of glossematic theory, there is no need to take into consideration even such occurrences as, e. g.  $\Lambda.g^0 \setminus \Lambda.g^0$ , although the latter was discussed above, because it is well known from experience in the analysis of linguistic language texts. If something is not taken into account by theory, this does not mean that it is negated in practice, and *vice versa*.

It is easy to see that the main directions both of linguistics and philosophy have provided different solutions of the problem of primarity. Leaving aside the solution of the precedence problem, then at least in relation to the solution of the primarity problem these directions can be considered as reference systems, and the truth of one system does not exclude the validity of the other systems.

ТИИТ-РЕЙН ВИИТСО (Тарту)

### О ЯЗЫКОВОМ ЗНАКЕ И СТРАТИФИКАЦИИ ЯЗЫКА

Исходя из глоссематической теории, автор вносит ряд поправок в трактовку означающего, представленную Ф. де Соссюром, в схему Х. Ст. Сёренсена, изображающую знак и соотношения знака с внеязыковой действительностью, а также в определение знаковой функции, предлагаемое Л. Ельмслевом. Рассматриваются некоторые проблемы стратификации языка.