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OUTLINE OF A THEORY OF LANGUAGE.[1]

INDIVIDUAL ASPECT.

We can consider the language of an individual as something two-sided; on the internal side there is the thought—of which all we can say at present is that it is some highly complex activity taking place in the brain; on the external side there is the symbol. In this paper I wish to consider one special type of language only: speech,[2] in which the symbol is the sound produced by the vocal organs. This sound can be considered from several different points of view; thus we may consider it physiologically (how the sound is produced by the vocal organs), or physically (the character of the vibrations resulting from the activity of the vocal organs), etc. We may refer to the sound as the *expression* of the thought, and to the thought as the *meaning* of the sound.

If an individual says *David is a good man* these sounds[3] represent a *complete thought*, whereas the sounds *good* do not. We define a *sentence* as the expression of a complete thought. Consider the sentences:—

(1) *David is a good man.*
(2) *Bandits are not good men.*
(3) *This cake is very good.*
(4) *We are having good weather now.*
(5) *He gave David a good thrashing.*

[1] Lack of space prevents me discussing here how far this theory is new. I wish, however, to express a general indebtedness to the following works: A. Noreen, *Vårt Språk*; F. de Saussure, *Cours de linguistique générale*; H. Delacroix, *Le langage et la pensée*; H. Head, *Aphasia and Kindred disorders of Speech*; *Travaux du cercle linguistique de Prague* (certain papers); F. Brunot, *La pensée et la langue*; J. van Ginneken, *Principes de linguistique psychologique*; L. Hjelmslev, *Principes de grammaire générale*; and particularly to an essay by Meillet in *De la méthode dans les sciences* (edited by E. Durkheim, etc.).

[2] The theory can, however, readily be extended to other forms of language (such as gesture).

[3] For typographical reasons I avoid using phonetic notation wherever possible.

There is an element of sound common to all these sentences, the sounds *good*. If we consider the thoughts represented by the first two sentences there is apparently a corresponding common element of thought. Elements of thought such as 'good,'[4] which are common to one or more complete thoughts we call *ideas* and the corresponding elements of sound, which are common to the sentences expressing the complete thoughts in question, we call *words*. In sentences 3, 4 and 5 the ideas represented by the word *good* are similar (but different) to that represented by it in the other two sentences. We may say therefore that the word *good* has several different meanings. Keeping this possibility before us, if we now consider the sentences a little more closely, we see that the word *good* cannot be said to have exactly the same meaning in 1, as it does in 2, since it occurs in different contexts. But the meaning it has in 1 is much nearer to that which it has in 2, than to the meanings which it has in the other three sentences. It seems therefore that the position is rather more complicated than it appeared to be at first sight: a word such as *good* has a number of different meanings but each one of these meanings includes an almost infinite number of *contextual meanings;* expressed a little differently: a word such as *good* represents a number of different ideas, but each one of these ideas includes an almost infinite number of *contextual ideas*.

If we attempt to consider a word abstracted from its context we find that, in the majority of cases,[5] even if its exact meaning is not clear, some vague approximation to a meaning can nevertheless be assigned to it. Consider the sentence *I saw a dog*. The word *dog* is clearly one of those to which a vague meaning can be assigned even when it is abstracted from its context. The word *I*, however, has absolutely no meaning unless we know the context, i.e. to whom it refers, the events

[4] We may conveniently denote the idea represented by the word *good* by the notation good.'

[5] This is particularly the case when the word may be accompanied by activity in the sensory areas of the cortex; thus consider the words *dog*, *drum*, *eau-de-cologne* (accompanied by visual, auditory and olfactory activity respectively).

preceding the seeing of the dog, etc. We call a word such as *I* a *pronominal word* (more shortly a *pronoun*). Words therefore fall into two great classes—pronominal and non-pronominal.[6] As examples of English pronouns we may mention: *I, he, here, now, then, there, this, that, thus.*

The ideas of an individual tend to be arranged in groups, those which have something in common being placed in the same group. Ideas arranged in this way we call *associated* ideas, and the groups we call *categories.* The following are examples of possible categories:—

1. 'horse,' 'cow,' 'dog,' etc. Associated because the objects concerned are all animals.

2. 'phosphorus,' 'arsenic,' 'antimony,' etc. Associated because the elements concerned all belong to the fifth group of the periodic table.

3. 'red,' 'blue,' 'green,' etc. Associated because the qualities concerned are all colours.

If we analyse the sound produced by an individual in speaking we find that (whether we regard it from the physiological or the physical point of view), it may be sub-divided into a number of comparatively simple elements. Moreover these elements are not all different; the sound is composed of a small number of elements recurring in the same or different combinations. These elements we call the *speech-sounds* (more shortly the *sounds*) of the individual. Thus in English[7] we find the sounds [p], [t], [k], etc. Moreover the sounds can be arranged in groups, each group consisting of one sound together with other very similar sounds which take its place in particular sound-combinations. We may call any speech-sound which belongs to such a group, a *phoneme.* Thus the English words *keep, cool,* have different initial sounds but the same initial phoneme.[8]

[6] Noreen, *Vårt Språk,* V, 63 *ff,* makes the distinction between these classes very clear.

[7] In the first section the term English is to be understood as the language of a typical speaker of Modern English.

[8] See Jones, *Travaux du cercle linguistique de Prague,* 4, 74.

Also a speech-sound, or a combination of speech-sounds, can be modified with regard to certain qualities (such as ' intensity,' ' duration,' ' intonation,' ' timbre,' etc.); such modifications we may refer to collectively as *sound-modifications*.

On the external side one word is, in general, distinguished from another by a difference in sound; and this can be either a difference between phonemes (ranging from a very simple difference, as in *got: cot*, to a highly complex one, as in *anticipate: hyperbola*), or between sound-modifications, as in *incréase: íncrease*, or a combination of the two.

Consider the words *strong horse*. Both *strong* and *horse* represent an idea; *strong horse* represents the idea formed by combining the ideas ' strong ' and ' horse.' Such an idea we call a *complex idea*. Complex ideas tend to be arranged in categories just as simple ones do; thus the complex ideas ' red flag,' ' blue flag,' ' green flag,' etc. might form a category since the objects concerned are all flags and the quality concerned is always colour.

Consider the set of similar complex ideas ' two houses,' ' three houses,' ' four houses,' etc. . . . . ' many houses,' ' houses ' and their expressions in Hungarian[8a]: *két ház, három ház, négy ház*, etc., ... *sok ház, házak*. We notice that, with one exception, similarity in expression corresponds to similarity in meaning. If we take a large number of different words we shall find that the case of the ' plural ' is always exceptional in Hungarian. Under these circumstances we call the exceptional complex ideas *derived ideas*, their expressions *derived words*, and the association of the idea which has apparently caused the exception, a type of *derivation*. As further examples of types of derivation the tenses and the aspects may be mentioned.

On the external side a word is in general distinguished from its various derived words by a difference in sound (as in *dog*,

[8a] In English there is a redundant element in the expressions of complex ideas such as ' three houses ' which is not present in Hungarian, and it is for this reason more convenient to take examples from the latter language.

plural *dogs*). We call the difference in sound between the expressions of a word and a derived word of a particular type the expression of the particular type of derivation for the idea in question. Thus the addition of the sound [z] at the end of the word is the expression of the plural type of derivation for the idea ' dog ' in English.

We have defined a complex idea (such as ' David's horse ') as an idea formed by combining two simple ideas (in this case ' David ' and ' horse '). A complex idea can therefore appropriately be represented by the notation (A—B) where A and B are simple ideas. But A or B or both can be replaced either by a complex idea (including a derived idea), or by a complete thought. All such combinations we call *complexes*; thus ' David's horse ' (idea—idea), ' David's lame horse ' (idea—complex idea), ' David's horses ' (idea—derived idea), ' David's horse is terribly lame ' (complex idea—complex idea), ' Queer that David's horse is so lame ' (idea—complete thought), ' David's horse is lame but Eric's is not ' (complete thought—complete thought) are examples of complexes. All complexes may appropriately be represented by the notation (X—Y). In the complex (X—Y) we define the *relation* of X to Y as the way in which X is combined with Y; similarly the relation of Y to X is the way in which Y is combined with X. Thus in the complex idea ' David's horse ' the idea ' David ' stands in a certain relation to the idea ' horse ' because David is the owner of the horse, and the idea ' horse ' stands in a certain relation to the idea ' David ' because the horse is owned by David. As examples of different types of relation we may mention, in the first place, all such relations as are usually expressed in the Indo-European languages by means of cases, prepositions, and conjunctions (both coordinating and subordinating)[9] e.g. the relations between the elements of thought represented by the words underlined in the following sentences; *the man hit*

[9] For a detailed discussion see Noreen, *Vårt Språk*, V, 137 *ff.*

the dog; a walk by the river; David and his horse; I came after he went. Further the relations in: *the man hit the dog; David is kind; the dog Sophie.*

Suppose that X and Y, the two parts of the complex (X—Y), are represented separately by the sounds x and y. When X and Y are combined in a particular relation to form the complex (X—Y) several different expressions are possible:—

I. x becomes x′, and y becomes y′; x′ precedes y′. As a special case we have that in which x and y remain unchanged.

II. x and y remain unchanged but y precedes x.

III. A combination of I and II.

Thus there is in English an expression of the complex 'David's horse' of Type I, since *David* has changed to *David's*, *horse* has remained unchanged, while the sound representing 'David' precedes that representing 'horse.' In Russian (*loshad' Davida*) it is of Type III, since *David* has changed to *Davida*, *loshad'* has remained unchanged, while the sound representing 'horse' precedes that representing 'David.' Suppose that in the complex (X—Y) we successively replace the second element Y by a number of different elements Y_1, Y_2, ... Y_n, keeping X intact. Then we frequently find that for large groups of Y-elements the relation of x′ to x, and of y′ to y remains constant, and so also does the relative order of these elements of sound. We call the constant relation and constant relative order of these elements of sound the expression of the type of relation in question for the element X. Thus in the complex 'David's horse' let us replace 'horse' by 'dog,' 'cat,' 'house,' etc. successively, obtaining the English expressions *David's dog*, *David's cat*, *David's house*, etc.; thus we conclude that in English an expression of the 'ownership' type of relation for the idea 'David' consists in placing the sound representing it first and adding the sound [z] to it. In Russian it consists in placing the sound representing 'David' last and adding the sound [a] to it. Similarly by considering complexes such as 'they say that David's horse is lame' we see that an expression of the 'objective' type of relation for the

thought ' David's horse is lame ' consists in placing the sound representing it last and prefixing the sounds *that* to it.

On the external side a complex in which the two elements stand in a particular relation is, in general, distinguished from other complexes composed of the same two elements standing in other relations either by a difference between the sounds representing the elements, or by a difference in the relative order of these sounds, or by a combination of the two. Thus in English it is the addition of a sound that distinguishes the ' ownership ' type of relation from others, whereas in Welsh (*ceffyl Dafydd*, etc.) it is the relative order.

It frequently happens that in the expression of the complex (X—Y) the whole of the difference in sound is not taken up with expressing HOW the two elements are related, but part of it apparently merely indicates that there IS a relation. Thus from a consideration of Russian sentences such as *David chelovek*, *Ol'ga chelovek* (' David, Olga is a human being '), etc., we see that the expression of the ' copulative ' type of relation in Russian consists in mere juxtaposition. The difference in the second words of the sentences *David khorosh*, *Ol'ga khorosha* (' David, Olga is honest ') cannot therefore be considered as an expression of the copulative type of relation but apparently it merely marks the fact that there IS a relation. This phenomenon we call *congruence*.

Consider the thoughts ' the horse is strong,' ' the horse may be strong,' ' is the horse strong? ' ' how strong the horse is! ' These thoughts are composed of exactly the same ideas related in exactly the same way and yet they are fundamentally different. Such a difference we call a difference in *mood*.[10]

On the external side a thought in one mood is, in general, distinguished from the same thought in other moods either by a difference in sound (as in *the horse is strong*: *the horse may be strong*: *the horse is strong*?) or by a difference in the relative

[10] Sometimes two or more moods are combined, as in ' Can the horse be strong? '

order of certain sounds (as in *the horse is strong*: *is the horse strong* ?) or by a combination of the two (as in Russian *vy govorite po russkij* 'you speak Russian': *govorite-li vy po russkij* ? 'do you speak Russian ? ')

Consider the Latin sentences *Romulus Romam condidit, Romam condidit Romulus, Condidit Romulus Romam.* These sentences represent the same thought in the same mood and yet they are fundamentally different. Such a difference we call a difference in the *emphatic state.* It is apparently due to the fact that one part of the thought is regarded as more prominent than others.

On the external side a thought in the unemphatic state (i.e. a thought, such as that expressed by *Romulus Romam condidit,* in which no one part is particularly prominent) is, in general, distinguished from the same thought in other emphatic states either by a difference in sound (compare the difference in intonation in the English translations of the above Latin sentences), or by a difference in the relative order of certain sounds (as in the Latin examples), or by a combination of the two (as in *you couldn't call him old*: *old you couldn't call him*).

Summarising the conclusions reached we may say that the speech of an individual is an external expression, effected by means of differences in sound and in the relative order of certain sounds, of certain *internal features.* These internal features are of five kinds 1) ideas 2) types of derivation 3) types of relation 4) moods 5) emphatic states. Finally there are phenomena of a character apparently 'redundant,' such as congruence.

Synchronic Aspect.

So far we have been considering the language of one individual only. If we consider a number of individuals, living at approximately the same time, we find that the expressions of the

internal features are never exactly the same for two different individuals, i.e. every individual has a different language Individuals can, however, be arranged in groups according to their languages; those with sufficiently similar[11] individual languages are said to belong to the same linguistic community, or to make use of the same language.[12] It is often convenient to consider one particular individual as typical of a linguistic community.[13]

Diachronic Aspect.

By social intercourse a language is passed on from one individual to another; in this way a language can be said to be both continuous and discontinuous in time; continuous despite individual births and deaths, discontinous because of them. We are thus justified in speaking of a language at different periods of its history. The central fact of diachronic philology is this: the languages of two typical individuals at two different periods in the history of a language are different; i.e. a language changes. The changes which take place may be classified in the following manner:—

A. Changes due to the influence of one language upon another.

B. Other changes, namely:—

1. Changes due to association.
2. Changes not due to this cause.

It is more convenient to consider these changes in the opposite order to that given above.

Type B.2.

Of changes of this type four different classes may be distinguished:—

[11] The arbitrary element in this definition corresponds well with the conditions actually observed. For example, as we proceed from Germany to Holland, how can we decide where German dialect ceases and Dutch dialect begins?

[12] Here the word *language* must not be understood as *individual language.*

[13] *Cf.* all the examples in the first section of this paper.

a.

An internal feature dies out or a new one appears; e.g. the idea expressed by O.E. *gold-wine* does not occur in Mn. E.; the idea 'aeroplane' is not found in O.E.

b.

'Sound-changes'; i.e. internal features which at one period had one expression at another period have an expression 'descended' from it; e.g. the idea 'stone' was expressed by the word *stān* in O.E.; that Mn. E. expression of the plural type of derivation, which consists in the addition of one of the sounds [z], [s], [iz] at the end of the word is descended from an O.E. form in *-as*; in that Mn. E. expression of the types of relation usually considered under the heading of the 'genitive,' which consists in the addition of one of these same sounds at the end of the word coupled with a constant relative order, the sound added is derived from an O.E. form in *-es*; the sound *may*, used in expressing certain moods in Mn. E., is derived from O.E. *mæg*. This type of change is so well-known that it will be sufficient to refer to standard works on the subject such as P. Passy, *Les changements phonétiques*; E. Schopf, *Die konsonantischen Fernwirkungen*.

c.

Internal features which at one period had one expression, at another period have an expression not descended from it; e.g. the expression of the idea 'dog' was *hund* in O.E.; O.E. *ic mæg gān* corresponds in meaning to Mn. E. *I can go*.

d.

Expressions (or their descendants) which at one period corresponded to one internal feature, correspond at another period to another internal feature of the same type; e.g. O.E. *hund* meant 'dog' whereas its descendant Mn. E. *hound* has a different meaning; the moods expressed by O.E. *ic mæg gān* and its descendant Mn. E. *I may go* are not the same.

Type B.1.

Changes of this type (conveniently called *analogical* changes) consist in the assimilation of the expressions of ideas, or of the expressions of types of derivation or of types of relation for ideas, which are placed, for any reason, in the same category; e.g. O.E. (Lindisfarne Gospels) *seofa* '7' is due to the association of '7' (**seofo*) and '8' (**æhta*); the dative plural Gothic *nahtam* is due to the association of 'day' (dat. pl. *dagam*) and 'night'; the '*s*-plural' in Mn. E. is descended from an O.E. form in *-as* proper to a limited number of O.E. nouns only; it has been extended by reason of the association of all derived ideas of a particular type, the plural; similarly the extension of the '*s*-genitive' is due to the association of all ideas standing in a particular relation to other ideas. Finally the association of ideas causes exceptions to sound-laws; thus the phonologically irregular vowel of Mn. E. *swam* is due to association with other preterites.

Type A.

One language ('M') tends to influence another ('N') when members of the two linguistic communities come in contact. Borrowing may take place in two ways:—

I. Some of the expressions of internal features which are used in M may come to be used in N also, and may in some cases ultimately replace those native to N; e.g. the Norse expression of the idea 'they' (Mn. E. *they*) has replaced the English one (O.E. *hie*); in Welsh the expression of 'genitival' types of relation consists in mere juxtaposition and this expression has come to be used in the English dialects of certain parts of Wales (e.g. Breconshire) also; thus *Jones Tyn-y-Caeau* 'Jones of Tyn-y-Caeau.'

II. A thought or complex idea in M is split up into several parts and the expression of each part in M is replaced by the expression of that part in N; i.e. a 'word for word translation' is made, and this may ultimately replace the expression native

to N; e.g. Mn. E. *that goes without saying* from French *cela va sans dire.*[14]

In concluding this discussion of the effect of one language upon another mention should also be made of the phenomenon usually called ' Lautersatz.' It is so well known that it will be sufficient to refer to a valuable recent treatment of the subject by Polivanov in *Travaux du cercle linguistique de Prague*, vol. 4.

Philology.

We have shown that language is the expression of certain internal features of the human mind. As we proceed from individual to individual, from linguistic community to linguistic community, and from period to period we find that the expressions of these internal features vary much more than the internal features themselves. Consequently it is only by considering language as an external representation of something internal, rather than as an internal representation of something external, that we can ever hope to obtain a consistent and uniform view of it. We have moreover shown that language can be considered from three aspects: with respect to the individual,[15] the linguistic community at one period (' synchronically,') or the linguistic community at different periods (' diachronically '). A fourth aspect is possible: we can consider the internal features of language apart from their expression. This we may call the *universal* aspect of language. We define *philology* as the study of language. As in other sciences two attitudes of mind are possible: we can describe or we can explain. The first process is essential to the second but the converse of this statement is not true.

From the individual and synchronic aspects descriptive

[14] These two types of borrowing may be combined as in M.E. *mor and min* from Norse *meiri ok minni.*

[15] If the internal picture differs profoundly from that of the normal adult (as it does for example, in the case of the aphasic, the imbecile and the young child), a special problem of great difficulty arises.

philology consists in describing the internal features[16] of languages and their expressions; from the diachronic aspect in describing the changes that take place in languages; from the universal aspect in enumerating the internal features of language.

From the individual and synchronic aspects explanatory philology would consist in explaining why the expressions of the internal features of language are what they are. In general,[17] however, this problem is insoluble and must for ever remain so. From the diachronic aspect explanatory philology consists in explaining why changes in languages take place. We have already seen that certain changes, those due to association, admit of comparatively simple explanations. Of the remaining changes a very few (such as why the idea ' aeroplane ' is present in Mn. E. but not in O.E.) are easily explained, but the majority —sound-changes, changes in meaning, borrowings of certain words, etc.—have not up to the present been explained. There is however no reason to assume that the problem is insoluble; it is to be hoped that ultimately a solution will be found.[18]

Finally let us turn to the universal aspect of explanatory philology. In the preceding sketch many problems, which must affect profoundly our view of the internal side of language have been left undiscussed; e.g. what is a complete thought, a mood, an emphatic state, how are ideas combined to form a complex idea, how associated to form a category? Also no

[16] Owing to the lack of an adequate system of classifying ideas in actual practice it is extremely difficult to describe words from the internal point of view. Consequently the system of arranging words in alphabetical order and giving their meanings may with profit be retained. But in some special cases (such as that of the pronouns) the method of classification by ideas is recommended.

[17] As notable exceptions we may mention (1) the imitative words, such as English *miaow* and (2) languages such as Ewe in which the connection between sound and meaning is not arbitrary (see Hjelmslev, *Principes de grammaire générale*, p. 183 *ff.*).

[18] In the meantime a methodological problem arises: if we find an unexplained change in one language and an apparently similar change in another language, also unexplained (for example the sound-change [θ] > [s] found in English and in the Semitic languages, or the change in meaning ' pot ' > ' head ' attested by French *tête* and German *Kopf*) should the two be compared or is such a comparison unprofitable? But until we know for certain that the explanations of the two changes are totally different (in which case no good purpose would be served by such a comparison), it is surely safer to continue to compare them.

mention has been made of the discrepancy between language and logic; to our minds the internal features which I have called ideas, types of relation, moods and emphatic states seem essentially logical, whereas the types of derivation seem essentially illogical. It has sometimes been suggested that such problems do not concern the philologist but only the psychologist or the philosopher. But thought and language are so closely fused together[19] that we can, in general, only study thought through the medium of language. Hence to pretend that these fundamental problems of human intelligence are not as much a part of philology as of any other subject is shirking the issue. But it is unfortunate that this aspect of explanatory philology is almost as unsatisfactory as the individual and synchronic aspects; no solution of the problems is available and there seems to be small hope of reaching one.

ALAN S. C. ROSS.

[19] The chief service that Head has rendered to philology is that he has been able, by studying aphasia, to establish the closeness of this fusion.