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EXPRESSION AND CONTENT IN LINGUISTIC THEORY¹

Human speech, in the sense of the use of vocal expression in linguistic communication, has long been considered to be primary in relation to written language, and in fact presupposed by it. Nevertheless, there is a long tradition of confusing speech with language, as well as of confusing language with *written* language. Consequently, linguistics, in its attempt to be a scientific study of language has in fact tended first of all to reason in terms of grammar - even if this is rarely explicitly stated as such - i.e., in terms of conventions, rules and principles for correct linguistic expression *in writing*². My aim here is to make a contribution to the clarification of these confusions. I will begin by describing some features of the formalization of representations of speech in written language, i.e., in phonographically written records of speech, from its beginnings through its development in later centuries. This will provide a summary of some fundamental concepts of grammar, and hence of linguistics. Given this background, I will go on to make some remarks on the content/expression-distinction in modern linguistics.

Spoken Language and the Art of Writing

At the dawn of history, around 3000 B.C., writing and grammar emerged as Siamese twins; writing as a technique, and grammar as the conceptual framework informing the application of the technique.

Owing to the fact that writing was from the beginning an effort to represent speech graphically in a readable form, and since most activity was centered on the *technique* and on the *form* of the representation, a persistent *leitmotif* in linguistic thought ever since has been the tendency to confuse speech and writing. The feeling seems always to have been that writing is speaking by means of written signs, and that speaking is the reading aloud of signs somehow "written in the speaker's mind"³.

1 I want to thank Prof Sören Stenlund of the Department of Philosophy, Uppsala University, Dr John Sören Pettersson of Karlstad University, the editors of the present volume as well as graduate students in linguistics at Uppsala University, for valuable advice in the writing of this paper.

2 P. Linell, *The Written Language Bias in Linguistics*. SIC 2, Linköping 1982. See also S. Öhman, *Skriftlära (The Art of Writing)*. Forthcoming, in Swedish.)

3 The 'speech circuit' (*le circuit de la parole*) discussed by Ferdinand de Saussure in his *Cours* provides a striking example of the aforementioned idea. *Cours de linguistique générale, Place de la langue dans les faits de langage*, p.25 in T. de Mauro ed., Payot 1980. In referring to Saussure's *Cours*, I use the pagination of de Mauro's edition.

A crucial initial step in these developments was taken when the ancient scribes of Egypt and Mesopotamia started to write the names of persons or kings and gods using ideograms to represent, not the things they usually represented in their picto-ideographic script, but the *speech sounds produced* when those things were mentioned in speech. (The *rebus* principle).

If the name was phonetically complex, as was e. g. the disyllabic name of the king *Narmer*, more than one such sign might be needed, such as the hieroglyphic sign for a fish, *nr*, together with the hieroglyphic sign for a chisel, *mr*⁴ (vowels were not noticed at first⁵; the vowel/consonant distinction came two thousand years later, with the Greeks). This was a step toward a fully phonographic writing.

The phonographics idea was not complete, however, until several further steps had been taken. One of the more important of these was the establishment of a fixed sign list by a semitic people living in the Biblical land of Canaan, who worked out a list ('alphabet') consisting of 27 consonantal signs. This *Proto-Canaanite* or *Proto-Sinaitic*⁶ script was complete in the sense that all syllables articulated in the course of a Semitic spoken utterance could be written down by means of it. Thus a spoken utterance could be reproduced from the written record through the reader's reading the consonant string aloud while voicing the vowels in the 'obvious' way⁷.

Much later (approximately 1000 B. C.), this script evolved into the Old Hebrew, Old Arabic, and Phoenician alphabets. In the 10th century B. C., the aforementioned script was adopted by the Greeks, through whom the art of writing was passed on to the Etruscans and, *via* them, further on to the Romans. In the modern world, it is of course this Roman script which has become the most predominant⁸.

For us, living at a time when phonographic writing has been in extensive use for more than three thousand years, it may appear self evident that *bill* and *bull* start with the same sound, and that *rib* and *job* end in the same sound, the former two identical with the latter two. But judgements of this general kind cannot be supposed to have come easily in ancient times⁹.

4 Sir Allan Gardiner, *Egyptian Grammar*, London: Oxford University Press 1958, p. 8

5 Ancient Egyptian phonetics appears to have regarded speech as the voicing of a vowel stream, modulated by consonants into a sequence of consonant-vowel (CV) syllables. The vowel following the consonant was felt to constitute the release of the consonant, so that the consonant and its vowel release together were felt to form a unity. For further discussion of this idea, see J. S. Pettersson *Grammatological Studies* (Dissertation) RUUL #29, 1996, Uppsala Univ., Dept. of Linguistics. See also S. E. G. Ohman, *Coarticulation in VCV Utterances*, *Journal of the Acoustical Society of America* #39, 1966, and *A Numerical Model of Coarticulation*, *Journal of the Acoustical Society of America* #41, 1967.

6 The Proto-Sinaitic inscriptions and some recently discovered in Southern Egypt have been claimed to be essentially similar to findings made in the Bible's 'Land of Canaan'. For further details, see J. Naveh, *The Origins of the Alphabets*, Jerusalem 1998.

7 That is to say, 'obvious' to the native speakers of the language in question.

8 The *Cyrillic* alphabet used in Russia, Bulgaria, and Serbia derives from an early medieval, Byzantine Greek source. The Greeks, of course, have kept their traditional (Byzantine) script.

9 On this point, see Gelb's *A Study of Writing*, Chicago University Press 1952 rev. ed. 1963, for a discussion of several types of *syllabic* scripts, and John Sören Pettersson op. cit.

It would not be wrong to say that Trubetzkoy's principles in his famous *Grundzüge der Phonologie*, published in Jena in 1934, summarize very succinctly, in the form of a 'rational reconstruction', the *spirit* of our contemporary, historically inherited phonographic (alphabetic) writing. Trubetzkoy actually formalized the very operations to which I referred above in eight postulates, which were intended, of course, primarily for contemporary grammatical research purposes. Among his basic principles were those of *Opposition (in minimal pairs)* and *Complementary Distribution*.

The motivation behind this somewhat formalistic approach to grammatical phonology was the obvious inadequacy both of the then current work in phonetics and of the representations provided by current orthographies to reveal the linguistically relevant sound structure of spoken language. The system offered by the Prague linguists set out to remedy this situation by providing a *scientifically* motivated method of representation of the speech conveyed in conventional orthography. The project resulted in a 'rational reconstruction' of the principles implicit in alphabetic script. Trubetzkoy reasons roughly as follows.

Opposition in minimal pairs is exemplified by English *bill/dill* which shows that substitution of *d* for *b* in *bill* brings about something other than bill, namely dill, a fact which may be taken to show that *b* and *d* can be regarded as grammatically *distinct* sounds of speech.

Complementary Distribution, on the other hand, is the principle by which what may appear as audible variations in a certain speech sound may be taken to be, in fact, the *very same* unit of writing, viz. when the variants only occur in complementary, i.e., different *phonetic environments*, and never in the *same* environment.

Thus, for instance, the initial k-sound of *key*, although of a slightly different (brighter) sound quality than the (darker) k-sound of *coo* may nevertheless be identified with the latter on account of the variation-conditioning mutually exclusive environments - *ey* and -*oo*, respectively.

An analogous argument seems to have been the reason why the Greeks discarded the Phoenician letter Qoppa, in favor of Kappa for these k-sounds.

Of course, we should not think that in the ancient process of gradual development of phonographic writing, the scribes of pre-Biblical times went about their work with Trubetzkoy's axioms somehow 'present' in the back of their minds.

For one thing, with the exception of early semitic writing, in Greek and Roman script they did not yet, like Trubetzkoy, have available a fully evolved orthography with fixed conventions for *division of the letter string into words*. The discovery of the possibility and usefulness of word division was actually made by the scribes much later. Trubetzkoy's theory tacitly takes word division for granted and develops a phoneme analysis by systematically comparing such words¹⁰.

10 The minimal pair *bill/dill* is, of course, a pair of ready-made text words. So is the basis for the establishment of the complementary distribution of *key/coo*.

The scribes happened to work out the beginnings of a phonographic writing technique to which Trubetzkoy's phonological principles are surprisingly fitting. In saying this, we do not commit ourselves to the opinion that *all* phonographic writing of all languages must necessarily be constructed on Trubetzkoy's principles. What the ancient scribes did was to set up a discrete code through which spoken utterances could be recorded in writing by means of a writing tool together with the writer's own speaking and listening abilities. They probably made use of observations on linguistic *distinctions* that could be made in speech, and that seemed to motivate corresponding distinctive representations in writing.

This codification certainly works. But contrary to what is widely believed, it does not exhaust the whole universe of *all workable* phonographic codifications of speech. Today, with more advanced techniques available, other, radically different, codifications are possible, e. g. the long strings of ones and zeroes of the discrete binary coding used in GSM telephony¹¹, as well many other coding methods¹² which do *not* fit into Trubetzkoy's system.

The *segmental-phonemic structure* of speech that may seem to be presupposed by the most widespread and best known kinds of phonographic (alphabetic) writing consequently does not reflect any *universal intrinsic structure* of speech. I.e. in other words, we cannot assume that speech *already, in and of itself, possesses* a certain sound structure that the scribes, so to speak, *revealed to the world*. Rather, acoustically formless speech turned out to be phonetically codable in the way the ancient scribes did it. They did not 'discover' the phoneme, they *invented* it, to put the matter somewhat emphatically!

This means, of course, that the so-called 'Segmental principle' must be regarded as a principle governing the structure of alphabetic writing, or the structure of some technical linguistic system of representation rather than that of speech itself. If speech is not *intrinsically* the string of invariant sound segments suggested by script, then what *is* the nature of the relationship between script and speech?

The relationship between speech and the representation of speech in writing is that the fluent reader may perform a reproduction of the speech recorded by reading the written record aloud.

I state this explicitly here in order to emphasize the point that, although writing since antiquity can be said to be a convenient codification of speech, it is this particular codification, or *grammar*, that has attributed a structure to spoken utterances, different in different languages: the structure of their codification in phonographic script. If we think of grammar as a description of speech, it is the grammar that assigns a certain structure to

11 In this method, the acoustic pressure wave of the speech signal is sampled as a binary number by means of an electronic device called analog-to-digital (A/D) converter, and stored in a digital memory as a long list of digital numbers. The sampling is made at a rate that may be of the order of magnitude of tens of thousands of samples per second. The stored digital representation of the spoken utterance may then be fed back to a digital-to-analog (A/D) converter and used to reproduce the spoken utterance.

12 The so-called *feature matrices* of contemporary Generative Phonology is an obvious example. Kenstowicz, *Phonology in Generative Grammar*, Oxford: Basil Blackwell, 1994, Chap. 1 et passim.

speech, not the other way around; speech does not force a definite structure upon grammar!

If, again, we think of grammar as a *model representation* of spoken language, we may take the view that the grammarian is *free* to construct this model in any way he or she may see fit for his or her purposes. I.e. the adequacy or 'truth' of the model can only be measured against the yardstick set by the purpose of the model in some practical application. Hence there is plenty of room for creative invention! To claim that one proposed model is 'truer' than another by pointing to the 'intrinsic structure' of the thing modeled (speech, in our case) does not seem to me to be an altogether non-circular procedure. The grammatical structure does not come about in speech itself. The 'speech signal', i.e., *la chaîne parlée*, in Saussure's terms, may just as well be regarded as a *continuous* flow of sound or of continuous physiological speech movements. And, for certain purposes, such a continuous model may be more justified than the phoneme model.

The ancient Greek-Phoenician script, which was meant to meet the needs of common use in everyday matters, has obviously stood the test of time extremely well. But this script may have to be replaced by some other model in different applications, such as those of scientific linguistics and/or digital-electronic telephony, to mention only two examples.

Another way of putting the same point, is to say that the ancient scribes' discovery of any one of the consonants they included in their script, say the consonant *b*, was *simultaneously* the discovery of the phonetic value [*b*]. I.e. *signifiant* and *signifié* were in this case discovered simultaneously as the two sides of the same coin, and thus both *b* and [*b*], were born at once. In being 'baptized' as *b*, the phonetic value [*b*] received its script identity in the grammar game, just as did the letter *b*¹³.

With Wittgenstein in *Tractatus*¹⁴, we may say that *b* and [*b*] are internally related to each other, which means that we cannot know one without at the same time knowing the other. In the game of alphabetic writing - the grammar game - the sign *b* is a pawn with a (phonetic) action, the articulate speech sound [*b*], which is inseparable from it in this game.

This is the case with the structures of written text and the corresponding grammatical concepts (e. g. that of a *sentence*) much more generally than my examples above might suggest, a fact that usually passes unrecognized in modern linguistic discourse. Word division, i.e., division of the letter string into short segments (substrings) separated in modern writing by so-called 'spaces', and other interpunctuation signs, for instance, were not due to any automatic discovery of some 'intrinsic phonetic segmentation' of natural speech. In fact, no such 'segmentation' can be observed in fluent speech, even by means of modern instrumental-phonetics methods.

13 For a parallel argument, see J. S. Pettersson op. cit. 6.4.2 pp. 122 – 123.

14 L. Wittgenstein, *Tractatus Logico-Philosophicus* 4.123, et seqq.



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