

# SYNTAGMATIC VERSUS PARADIGMATIC APPROACH IN PHONOLOGICAL EVOLUTION

Herbert Galton

The University of Kansas  
Lawrence, Kansas, U.S.A.

## Abstract

In der Erklärung historischer Lautentwicklungen ist man letztthin zu sehr von den Beziehungen innerhalb des phonologischen Systems ausgegangen, d.i. der paradigmatischen auf Kosten der syntagmatischen Stellung der Laute. Es ist Zeit, die letztere wieder in ihre Rechte einzusetzen, und zwar in der Form der Silbenstruktur, innerhalb derer die Laute allein ihre Wirklichkeit haben. Dies wird am Germanischen illustriert, wo die Sonorität den gemeinsamen Grundsatz sowohl für die Einteilung der Rede in Silben wie auch für die Entwicklung des Silbenkerns, dem keine Coda folgte, abgab.

Phonetic explanations of sound changes have somewhat gone out of fashion of late. Perhaps this is a natural reaction to the fact that with the advent of structuralism, it was discovered that the speech sounds of a language hang together in a sort of system regulated by a set of internal relations. What more natural than to believe that these relations also preside over the evolution of the systems, thus endowing them with a sort of creative force of their own, working in the direction of a closer integration. It was also obvious that in language, the segmental phonemes would be the likeliest objects of such an approach, since they are farthest removed from the representation of our untidy thoughts on the one hand, and on the other are

subject to the constraints of the vocal organs with their limited number of positions. With the further refinement of technical data, acoustic classes emerged beside the traditional physiological ones, seemingly capable of a much higher degree of abstraction from the actual phonic material (even though nobody has ever heard compactness or diffuseness). The substance seemed to fade beside the network of relations, the unilinear sequence of sounds receded as against the paradigmatic arrangements of the elements.

I may be permitted to point out that in natural science, taxonomy has never, to my knowledge, been credited with a driving force of its own. What it represents is very largely the record of the interaction of its elements - plants struggling against plants, animals struggling against animals, the whole subject to the varying conditions of the environment. Few people still believe that the whole of the natural kingdom rose into being by fiat and then came to fill in the environment. Rather on the contrary, we believe that the environment created the species or at least changed them into what they are now. There never was a stage in which they were not profoundly affected by their environment, which includes every other species of plants and animals as well. Underlying it all is the great will to live (Schopenhauer, though he was unaware of evolution).

Underlying all language is the will to communicate. But as is well known, the other great force in nature, including human, is inertia, which evolution, under the dire threat of necessity, has to overcome. We are well aware that inertia is a powerful force also in the evolution of language, where it constantly has to be overcome by the need to express oneself, and the expression must take place by means of discrete and distinctive elements. Inertia would merge them in one inarticulate primeval cry.

Here we are back to the distinctions which, as we know, can be arranged in a "meaningful" pattern, the parts of which hang together in certain (cor) relations. But all relations in the phonological system bear on sets of phonemes and their realizations; it is not as individual entities, though correlated, that they developed. Exactly as plants and animals, all the way up to man (who became man through the social use of language), developed in a particular habitat, did sounds develop in their natural environment, and this natural environment is the word, or more precisely the syllable within the word, if it has more. All phonemes are abstracted from the positions in which they occur, and it was those which have shaped them, unless we want to go all the way back to Brugmann and assume with him that "der Anlass zur Änderung des Lautes in seiner Eigenart zu suchen ist." We might as well assume that the incentive for the evolution of natural species lay in their specific nature. When we compare stage B of a language with stage A, represented by their phonological systems, we are almost unavoidably subject to an optical illusion, and that is, that the system as such has changed somehow on its own account. Especially if we find so-called fuzzy points at one place, gaps in another, a more systemic relationship in a third, we are bound to credit the system itself with a driving force, forgetful of the fact that all the phonemes are abstracted from the concrete (phonetic) words where they occupy a specific position in the syllable. Such an approach would, therefore, overemphasize the paradigmatic aspect, against which it can be contended that the syntagmatic aspect, allowing for the con-

catenation of sounds in their natural sequence, should be asserted as an equal partner in evolution. Much of this has been worked into the history of linguistics and does not, therefore, amount to a basically novel discovery, but a caveat may seem in place all the same.

Thus, it has been suggested that e.g. the /r/ is articulated with greater care and precision in the Czech language as an apical trill, because there it is held in place, as it were, by two one-dimensional oppositions:  $\begin{matrix} \tilde{r} \\ r \end{matrix} - l$ , opposing it to the fricative /r/ and to the lateral /l/ within the system; on the other hand, the German (or English, for that matter) /r/ is said to have a weaker position in the network of relations, being largely characterized negatively - as a non-lateral liquid, hence a non-nasal resonant, and therefore not an occlusive (1). Yet there are Slavic languages in which the /r/ is in no better a systemic relationship than in German, while in Dutch e.g. the /r/ is regularly pronounced in final position as well as preceding a consonant either in the same or at the onset of the next syllable. Admittedly there are two kinds of /r/ in German taken as a whole, the tongue-tip trill and the uvular variety, but neither of them is slurred in initial position in the word or syllable. On the other hand, in Common Slavic as reflected in Old Church Slavic, the final /r/ did drop out e.g. in the word for the "mother", mati, and this although it occurred in all other cases. Gen.Sg. matere etc. Not only that, but in the place (not only, of course) of the Czech /r/, Slavic had a palatal /r/ which should have helped to keep the /r/ in position everywhere, as a member in a paradigmatic network. Indo-European certainly had the final -r (2). The same final -r was lost in other Slavic kinship terms like \*bhrāter or \*dhughater, obviously because of its final position in the syllable. (If it still is there in the remodeled form of Czech bratr, one cannot help thinking that, ironically, what kept it there alone among all Slavic languages including Slovak was precisely the symbiosis in which the Czech and German languages lived in Bohemia.)

It would, of course, be perfectly true to say that even if the Germanic /r/ is still always there in syllable-initial position, its incidence as a clearly articulated trill has nevertheless been seriously impaired. Yet we surely cannot on the one hand blame the statistical recession of the /r/ in the inventory of some Germanic languages on its allegedly isolated place in the system and on the other proclaim the emergence of /z/ in the phonemic system of English as well as marginally in German loanwords from Romance as being due to an empty slot for it in the system despite its low frequency in the text. Be it not denied that the English /z/ might not have come into existence without the drag-chain (3) of its pre-existing voiceless counterpart /s/, but it exists, after all, only in a few words such as vision, leisure, azure etc. The incidence of a phoneme should, accordingly, not amount to a major criterion in the establishment of a phonological system, any more than that of a grammatical category in the morphological system. A certain tense may be actually quite rare (e.g. in Bulgarian), but nevertheless occupy an important place in the system and endure for many centuries.

We have seen that the weakening or even loss of the /r/ in the two I.-E. language groups discussed seems to be due ultimately to the same cause, i.e. the position in the syllable, and cannot be generalized at all as proceeding from the paradigmatic place in the system. If isolation within the system were a valid criterion, the English /h/ would have been subject to a much wider loss than merely in some Cockney and other dialects. But an /h/ even occasionally comes into existence at the expense of another phoneme much better integrated with the others, in particular /s/; this is what happened in ancient Greek in initial and intervocalic position, it has arisen in some Slavic languages in the place of a well-connected /z/ and we can see it spreading before our eyes in a widely prevalent variety of Latin American Spanish, here again only in certain syllabic positions; in Spanish itself, /h/ arose out of /f/ preserved in Judeo-Spanish (Ladino). Alas, the system does not seem to be working consistently in the direction of its closer integrat-

ion; these features are not entirely absent, but we must never forget that, as de Saussure has pointed out (4), the phonemes are really abstracted from their concrete position in the syllable, and cover an explosive and an implosive species. Only these actually occur in the chain of speech.

If in the Slavic kinship terms referred to above the final /r/ disappeared, then it shared this fate with all other implosive consonants, and the result was a rising wave of sonority, not followed by any coda. The syllables thus created may not correspond to Stetson's chest pulses (5) effectively criticized by Ladefoged (6), but they certainly constituted the best syllabic division, and division is the raison d'être of the syllable much more than any intrinsic nature of its own, hence the difficulty phoneticians have experienced in defining it. With some phenomena, their delimitative function is more important than their substance (if any), of which perhaps the most telling example is the present tense, which, looked at more closely, fades into nothingness except precisely as a dividing line between past and future. Hence also its flexibility (not as a "non-past"!)

We can, therefore, unfortunately, not agree with Martinet that the opening of the Slavic syllable indicates some mysterious "affaiblissement général des articulations implosives" (7), because the reason for such a negative development seems entirely unclear. Rather, it was the positive effect of an effort to mark off the syllables maximally from each other, as is the case in a sequence V/C. If, on the other hand, the same author says, "la syllabe est le segment du discours où l'unité d'intensité trouve le plus naturellement sa place," then it would seem to follow that they were fairly even in intensity and rather dominated by a musical intonation. In Sievers' distinction, they would be Schall- rather than Drucksilben, and with this it is not only the loss of ALL syllable-closing elements (including the second part of diphthongs) which is in agreement, but likewise the treatment of the syllabic nucleus - the vowels themselves. Their treatment was strictly in accordance with their inherent sonority; the closest, /i/ and /u/, became further

reduced to /b/ and /b̥/, being able to keep their timbre only under length, which favored greater sonority; /e/ and /o/ kept their place, though not without some vicissitudes, being of the middle degree of sonority as well as of length, while their long degrees /ē/ and /ō/ increased their aperture to /ā/ and /a/ respectively, the latter in agreement with the original /ā/. Short /ǣ/ and /ǫ/ fell together, i.e. sonority and length went hand in hand. It is as part of the same principle of unimpeded sonority that all I.-E. diphthongs were homogenized, thereby entailing further changes in the phonological system including the consonants, which therefore can be seen to be ultimately due to syntagmatic and not paradigmatic features. The syllable is the natural syntagma of the phoneme. Within it, all major sound changes of Common Slavic that give it such a different appearance from closely related Baltic were contained, while the one or two exceeding the limits of the syllable, like the Third (Baudouin de Courtenay's) Palatalization effected the breach precisely at the point of least resistance involving the least sonorous /i/ and /u/. It was also at these weak points that the syllabic structure of Common Slavic eventually broke down.

The maximal assimilation which prevailed in Common Slavic in the sequence CV (tautosyllabic<sup>(8)</sup>) is the reverse of the principle of the open syllable; hence the recurring palatalizations of the velars with their typically shifting locus (hub); the combinations of consonant + yod establishing new phonemes, the velarization of the /l/ etc. From the very opposition of the sequences CV and VC there evolved in Slavic their most consistent consequences in a truly dialectic harmony. The Common Slavic syllable was maximally homogeneous within, maximally delimited without, and only against this background do the individual changes make any sense.

#### References

- 1) N.S. Trubetzkoy, Grundzüge der Phonologie, *Travaux du cercle linguistique de Prague VII* (1939), p. 14.
- 2) \*māter, cf. O. Szemerényi, Einführung in die vergleichende Sprachwissenschaft <sup>2</sup>, Darmstadt 1980, p. 109; T.V. Gamkrelidze - V.V. Ivanov, Indoeuropejskij jazvk i indoeuropejcy I, Tbilisi 1984, p. 184.
- 3) André Martinet, Économie des changements phonétiques, Berne 1955, p. 59; on the double pressure on each phoneme from context and system cf. p. 25.
- 4) F. de Saussure, Cours de linguistique générale, Paris 1922, P. 79 ff.
- 5) R. H. Stetson, Motor Phonetics <sup>2</sup>, Amsterdam 1951, passim.
- 6) Three Areas of Experimental Phonetics, Oxford University Press 1975, p. 23.
- 7) op. cit., p. 345; for the following cf. pp. 129, 252.
- 8) cf. L.V. Bondarko, Struktura slova i karakteristike fonem, Voprosy Jazykoznanija 1967, 1, p. 33-46.