

The diminutive derivative of the word *isten* *God* is *istenke*. The final consonant in the second syllable is different in the two words: *n* and *ŋ*. In Hungarian, *ŋ* is not a phoneme, for we cannot imagine two Hungarian words where the difference of *n* and *ŋ* would possess a representative function. Neither does it make any difference with regard to appeal, for *ŋ* has no affective value in Hungarian. Thus *ŋ* is not an emphaticum. But from the point of view of expression, it is by no means indifferent whether we say *n* or *ŋ*. Thus we have to do with a variant; in this particular case it is a combinatory variant, for *ŋ* occurs in Hungarian only before *k* and *g*.

Thus variants are distinguished from emphatica by the absence of one function (appeal), and from phonemes by the absence of two functions (representation and appeal).

Phonemes are sign-elements with three functions; emphatica have only two functions; whereas variants are reduced to one single function.

It is obvious that we cannot imagine more than three functions, for a sign cannot have more than the above three relations. On the other hand, any sign-element must have at least one function, for we cannot imagine a sign outside relations, in "zero-relation".

Consequently, the linguistic study of sign-elements contains three branches: (1) the study of phonemes, (2) the study of emphatica and (3) the study of variants.

13. Prof. B. TRNKA (Prague): *On the phonological development of spirants in English.*

In his well-known paper published in Kuhn's *Zeitschrift* (vol. xxiii) the celebrated Danish philologist KARL VERNER explained the change of Primitive Germanic voiceless spirants *f*, *þ*, *χ* and *s* into the corresponding voiced consonants as due to the position of stress, cf. **fapēr* > **faðēr*, **losanás* > **lozanás*, **fanχanás* > **fanzanás*, as against **mópēr*, **léosan*, **fánχan*. A change phonetically similar to that which took place in Primitive Germanic may be observed in Late Middle English. In a number of words Middle English unvoiced spirants *f*, *þ*, *s* and *ʃ* passed into the corresponding voiced ones in the course of the fifteenth century, e.g. *of* > *ov*, *wip* > *wið*, *pe* > *ðe*, *as* > *az*. It was perhaps the phonetic similarity of both changes which induced Prof. OTTO JESPERSEN to apply Verner's Law to the explanation of the voicing of spirants in Early Modern English. The interesting account given in his *Studier over engelske Casus* (1891) and again in the first volume of his *Modern English Grammar* eighteen years later, seemed to throw a new light on these changes by introducing stress as the active factor of the hitherto unaccountable assimilation. His theory perhaps cannot be disproved from the phonetic point of view, but if we try to verify it in the light of the phonological development of spirants in English, it appears to be rather improbable. In spite of the fact that the Late Middle English change had something to do with stress, we hold that it is entirely different from Verner's Law. Whereas Verner's Law was the neutral-

ization of the voice correlation of spirants after unstressed vowel phonemes, the former change was one of the consequences of the phonologization of Middle English variants *v*, *ð*, and *z*.

Before we try to analyse the development of English spirants from the phonological standpoint, in order to be able to explain our different conception of the Late Middle English change from that of Prof. JESPERSEN, we may be allowed to say that our suspicion as to the validity of Verner's Law in English was aroused first by the three following facts, namely, that (1) the voiceless spirant *f* did not change into *ʒ* as might be expected from the supposed change of *ʃ* into *ʒ* in *Greenwich*, *knowledge*, *ajar*, etc., and from the transition of *s* into *z* in Primitive Germanic, (2) by many exceptions that can hardly be accounted for as due to analogy, e.g. *bodice*, *bellowses* *beləsiz*, *which*, *achieve*, *accept*, *excite*, *concession*, *succeed*, *success*, etc., and (3) the inconclusiveness of Latin or Old French learned words. In most cases we have to do here with the pronunciation of Latin letters and not with the organic changes of spoken sounds. Thus no change really took place in such words as *exist*, *exact*, *examine*, because the letter *x* in the prefix *ex-* before a vowel or *h* was pronounced *gz* in Middle English as it is now in Modern English. Similarly the letter *s* in the Latin or Latinized prefixes *dis-* and *trans-* has always been pronounced *z* before vowels or *h*, e.g. *disaster*, *discern*, *disorder*, *dishonour*, *transact*, *transition*. The voiced pronunciation of *s* in these three Latin prefixes was undoubtedly adopted from that of Old French, where the final *s* was pronounced *z* before vowels in accordance with the rules of the "liaison" (cf. *dix*: *dix heures*). If Modern English has *s* now instead of *z* after a stressed vowel (cf. *'execute*, *'execrate*, *'exercise*, *'disa'gree*, *'transitive*), the change in the pronunciation was just the reverse of that supposed by Prof. JESPERSEN and cannot be explained by Verner's Law.¹ Similarly the words in which the letter *s* stands after the prefixes *de-*, *pre-* and *re-* at the beginning of a stem syllable do not speak in favour of JESPERSEN'S theory, because it was pronounced *z* both in Old French and Middle English (cf. *desert*, *design*, *designate*, *preserve*, *preservation*, *reserve*, *reservation*, *reside*, *residence*). If the letter *s* is pronounced voiceless in some of such words, it is undoubtedly due to the speaker's consciousness of the morphological complexity of words and the distinct meaning of the prefix. After the voiced consonant the initial *s* of the stem syllable was pronounced *s* with the exception of a few words (e.g. *ob'serve*, *'observation*) in which *z* occurs irrespective of the position of stress.

The interchange of *s* and *z* before the endings *-ive*, *-ory*, *-y*, *-ity* is also far from being conclusive. It seems to be very probable that the pronunciation of the letter *s* in the Latin words of this type was the same in Middle English as in Old French, that is, *z* after a vowel and *s* after a consonant (cf. *illus'ive*: *con'versive*, *illus'ory*: *re'spansory*), but later on the unvoiced spirant was generalized, if not protected by analogy. *s* in *-osity* is probably due to analogy with *-ous*, e.g. *generosity* ~ *generous*.

¹ See note 2 on p. 62.

To sum up, we are entitled to say that Latin words should have been left out of Prof. JESPERSEN's list of words in which Verner's Law is in his opinion reflected. As said above, we have to do mostly with the pronunciation of the letters *s* and *x* before vowels in these words, not with the organic transition of one sound into another as in native words. There is no vacillation in the pronunciation of the letter *c* before *e*, *i* and *y* (unless preceded by *s*), although it serves to denote the same sound as the letter *s*, simply because it has always been read *s* in the French pronunciation of Latin.

The ingenious theory of Prof. JESPERSEN may rely therefore (1) on English words used in enclitic or proclitic position, such as *of*, *if*, *with*, *the*, *that*, *those*, *this*, *these*, *then*, *than*, *thou*, *thee*, *is*, *was*, *Mrs.*, etc., and (2) on the ending *-iz* from Middle English *-is*, *-æs*, e.g. *he passes*, *horses*, *horse's*, *horses'*. The velar spirant *χ* does not concern us, and *ʃ* may be omitted in our discussion because it is most improbable that the change of *ʃ* into *ʒ* should have been due to the same cause as that of the other spirants.

Unlike Modern English, Old and Middle English voiced spirants *v*, *ð* and *z* represented the combinatory variants of the phonemes *f*, *þ* and *s*,¹ because they occurred exclusively only between two voiced sounds of the same word. The chief variants of these phonemes were used before and after unvoiced sounds, at the beginning of the stem syllable and at the end of words. Thus we have *wulfes* (Middle English *wolves*), *dēaðes* (*dēðes*), *rīsan* (*rīsen*), *ræsdē*, *læfdē* as against *wulf* (Middle Engl. *wolf*), *dēaþ* (*dēþ*), *rās* (*rōs*), (*ge*)*fyllan*, (*ge*)*þrāwan*, *gesetian*, *answerian* (*answere*), *sciftian* (*shiften*), *wēsten*, *āscian* (*asken*) = *āxian* (*axen*). The voicing of Old and Middle English spirants was a phonetic, not phonological, factor unable to differentiate two words or forms from one another owing to the exclusive positions of the variants. In Middle English both variants of the phonemes *f* and *s* began to appear in the same position in Old French loan-words, e.g. *vīne*, *rēl*, *māson*, *offren*, so that *z* and *v* acquired a phonological value by having become the marked members of the voice correlation. The functional value of these voiced consonants was, however, felt as a characteristic feature of foreign words and both *z* and *v* continued to be the secondary variants of the phonemes *s* and *f* in the phonological structure of Middle English, which coincided in this respect with the other old Germanic languages, except High German.²

¹ Intervocalic *s* was pronounced *s* in Oldest English, cf. **blōdisōjan* > **blēdsian* > *blesian*.

² The loss of *t* in *glisten*, *soften*, etc. and the formation of such words as *deafen* were therefore subsequent to the phonologization of spirants. The clipped word *Miss* (from *mistress*) which stands in proclitic position also came into existence after this phonological mutation. The substitution of the Latin suffix *-ive* for the Romance form of the same suffix *-if* was made possible only by the phonologization of voiced spirants and took root in the language because it prevented the rise of the alternation *f-v* between adjectives and adverbs. Between a voiceless consonant and an unstressed vowel the phoneme *s* was "realized" as unvoiced spirant, e.g. Old English *āxien* (Middle English *axen*), *waxan* (*waxen*). The stressed Latin prefix *ex-* was therefore pronounced *eks-* in Middle English (as against *egz-* in Old French). The Old French pronunciation of *ex-* remained unchanged in Middle English only before a stressed vowel, because this position of *ks* had not existed in native words. Cf. also the pronunciation of *x* at the beginning of Greek-Latin words, e.g. *Xerxes* [*z-* from *gz*].

The definite phonologization of the unvoiced spirants was effected in fifteenth-century English by two changes, (1) the loss of the final *-e*, and (2) the loss of the phonological quantity of consonants. After the former change the voiced spirants *v*, *ð* and *z* appeared in the final position where the unvoiced ones also occurred, so that their voice became phonological (cf. *leaf*: *leave*, *sooth*: *soothe*, *rice*: *rise*). The foreign words in which the only feature of their origin had been the phonological value of the voice of the spirants *z* and *v* lost this feature and were consequently assimilated to the native stock of words from which they differed in the initial position of the marked members of the voice correlation (e.g. *zeal*, *veal*, *vine*). Owing to the loss of the phonological quantity of consonant phonemes, the simple *s* and *f* appeared in the intervocalic position of native, chiefly onomatopoeic, words, so that both onomatopoeic and foreign words lost their phonological peculiarity and were phonologically amalgamated with ordinary native words.

The phonologization of Middle English voiced spirants is an isolated process in the development of Germanic languages, and we may ask what was the aim of this characteristic phonological mutation. Were both changes, the loss of the final *-e* and the phonologization of the unvoiced spirants, in a causal nexus; and if they were, were they the manifestation of a wider structural tendency of the language? Trying to reply to the former question we may see first that the phonologization of the spirants would have been hardly possible, if the final *-e* had not been dropped, but this loss did not involve the necessity of the phonologization of the spirants, because we could imagine quite as well that the voiced final spirants might have become unvoiced after the dropping of *-e*. If the phonologization of voiced spirants *did* take place, we must seek an additional reason for it. Such a one may be the tendency of the language to prevent homophones which would have been dangerous to the linguistic system of English. The increase of the number of English phonemes by *z*, *v* and *ð* must be regarded therefore as a compensation for the loss of the final *-e*. The latter question is difficult to answer. It would be enticing to regard both changes, the loss of the final *-e* and the phonologization of the voiced spirants, as a means for the language to absorb foreign words; but the fact that the loss of the final *-e* and the phonologization of the voiced spirants proceeded from north to south seems to contradict this conclusion. *Perhaps* the tendency of the northern English dialects to absorb the Scandinavian words which were often shorter by *-e* than the corresponding English ones gave the first impulse to the general dropping of the final *-e*, and proceeding southwards it was reinforced by another latent tendency of the language to assimilate the phonological features of Old French words.

To return to our subject. In Middle English, words which often had a proclitic position, such as *of*, *with*, *as*, were "realized" either as voiced or unvoiced spirants according to the initial sound of the following word. In the intervocalic position they were pronounced *v*, *ð* and *z*, e.g. *of all*, *with all*, *as I*, because the glottal stop had disappeared from the language in the first half of the fourteenth century

as we are entitled to conclude from the forms *nadder* (1340, cf. *N.O.D.*) from *an adder*, *noumpire* (1362) from *an umpire*, *ouch* (1375) from Old French *nouche*, etc., which began to occur in English about 1350. When the voiced spirants were phonologized, the variation of *f-v*, *p-ð*, and *s-z* became an alternation dependent on syntagmatic factors. Owing to its isolation in the linguistic structure of English it could not be retained for long in the language and after a vacillation one form of the word was generalized, or the word was split into two semantic units (cf. *with*, *Mrs*, *as*; *if*, *us*; *of*, *off*). In fully stressed words, such as *Mistress*, *less*, *tigress*, etc., in which the unvoiced variants were used at the end of words without regard to the following word, no change could ever take place.¹

What has been said of the change of spirants in their final position also refers to the transition of *p* into *ð* in the definite article, pronouns and pronominal adverbs. Before the phonologization of spirants these words were pronounced either with *p* or *ð* according to the voiceless or voiced sound of the preceding word with which they were closely connected, e.g. *out the*, *at the*: *in the*, *for the*, etc. After the phonologization of the variant *ð* a vacillation in the alternative use of both phonemes took place and later on was discarded by the adoption of the marked member of the voice correlation.

The change of *s* into *z* in the verbal ending *-es* is to be accounted for by another linguistic process. In my opinion it is probably due to the tendency of the language to conform the verbal ending of the present tense *-s*, *-z*, *-is* wholly to that of the weak preterite *-t*, *-d*, *-id*, cf. *laughs*: *laughed*, *loves*: *loved*, but: *wanted*: *faces*. In fifteenth-century English the first two forms of the ending of the present tense corresponded to those of the preterite, and there was a tendency to keep this parallelism in the third. Such monosyllabic forms as *is*, *has*, *says*, *does* which were often in proclitic position may have facilitated the voicing of *-is* by their analogy.

The transition of *s* into *z* was also effected in the nominal use of the ending *-es*, i.e. in the genitive and plural of substantives, because they were felt to be perfectly homophonous with that of the verb.²

To sum up: The similarity between Verner's Law and the Late Middle English change is superficial. As I pointed out above, the former is, from the phonological point of view, the neutralization of the voice correlation of spirants before unstressed vowels and may be paralleled by the neutralization of the same correlation of plosives in interphonemic position in Modern Danish (cf. *slæbe*, *oppe*, *Sten* as against *Pande*: *bande*). The voicing of spirants in English as reflected in *of*, *with*, *as*, etc. is different: it is due to the phonologization of voiced Middle English spirants *v*, *ð* and *z*.

¹ It should be noted that the mark of the voice correlation was neutralized in the same morpheme before another member of the same correlation in all periods of the development of English. This neutralization also refers to the new pairs of correlative phonemes *f-v*, *p-ð* and *s-z*.

² Modern English *riches* [ritʃɪz] from Old French *richesse* was taken for plural (cf. Latin *divitiæ*) and hence we have *-iz* instead of *-is*. On the other hand the forms which were no longer felt to be plurals or genitives retained their *s* unchanged, e.g. *bodice* (as against *bodies*), *truce*, *pence*, *invoice*, *trace*, *quince*, *dice* (as against *dies*), *hence*, *once*, *since*, etc.

TUESDAY, 23 JULY. MORNING.

GENERAL SESSION

Chairman: Prof. DANIEL JONES.

14. Prof. J. VAN GINNEKEN (Nijmegen): *Il y a plusieurs manières de prononcer correctement les phonèmes d'une langue moderne.*

Pour tous ceux qui ont étudié la nouvelle phonologie de Prague, mon titre est d'une évidence simpliste; car il est déjà dûment prouvé, qu'il y a dans nos langues modernes une masse de réalisations phonétiques, qui pour être très différentes, les unes des autres, sont voulues et comprises comme un seul phonème identique. En plus, dans beaucoup de cas on ne peut pas dire, qu'une certaine réalisation phonétique est plus correcte qu'une autre; p. ex. en Néerlandais on peut prononcer un *l* dental et un *r* dental, ou un *l* vélaire et un *r* vélaire, ça ne change rien à la signification d'un mot; et les deux réalisations sont parfaitement correctes. On ne remarque pas même la différence; la moitié de mes compatriotes prononcent le *l* dental et l'autre moitié le *l* vélaire. Et qui des deux a raison? Evidemment toutes les deux.

Je n'ai donc pas pris la parole pour prouver la thèse, qui est le titre de ma Communication; mais pour en chercher la cause plus profonde.

Je vais donc me demander: Mais comment se fait-il que toutes nos langues ont pour plusieurs de leurs phonèmes deux ou trois prononciations différentes? Pourquoi l'éducation ne réussit-elle pas à nous enseigner à tous la même réalisation phonétique? Pourquoi nous contentons-nous de cet à peu près? Pourquoi ne standardisons-nous pas tous les phonèmes de nos langues modernes sur une description claire ou une définition unique de leur articulation?

En faisant ainsi, je sors évidemment de la phonologie; car pour la phonologie tout est éclairci par la distinction entre phonème et réalisation phonétique. Mais comme souvent dans le progrès de la science, presque chaque vérité, découverte par une nouvelle théorie, devient le point d'attaque d'une toute autre théorie. Et il en a été ainsi pour moi au sujet des réalisations phonétiques de la phonologie. Elles m'ont poussé invinciblement vers la biologie ou l'anthropologie phonétique. Et je vais tâcher de vous prouver: que c'est la base d'articulation, propre à la moitié des Néerlandais qui leur permet de prononcer un *l* dental, tandis que la base d'articulation propre à l'autre moitié les pousse à prononcer un *l* uvulaire; ils y sont souvent poussés d'une manière invincible, car ces différences ne sont pas un accident sans conséquences; il y a là un système.

Les Néerlandais qui prononcent un *l* vélaire, le font toujours, pendant leur vie entière, et ce qui est plus intéressant encore, la plupart d'entre eux prononcent aussi un *r* vélaire; et leurs spirantes vélaire *ɣ* et *x* (*ch*) proviennent de la gorge, au lieu de l'arrière partie de la bouche, et toutes leurs voyelles ont fait un pas en arrière. Et c'est pour cela que les Allemands disent que nous Hollandais, nous sommes des "*Rachensprecher*", qui parlent de la gorge; et je crois que pour la grande moitié des Néerlandais ils ont raison.