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Prague School Phonology

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The members of the Cercle Linguistique de Prague (founded in 1926), otherwise known as the 'Prague School,' had an admirably wide range of interest in matters linguistic. They included in their purview diachronic linguistics, language typology, the functions of language, morphology, stylistics, the meaning of grammatical categories, the teaching of languages, and the relationship between spoken and written language; their work in both syntax and semantics was pioneering (see *Prague School Syntax and Semantics*). Yet, unfairly, they are generally most celebrated for their contribution to phonology, the outstanding names being those of N. S. Trubetzkoy (1890–1938) and Roman Jakobson (1896–1982). Jakobson fled from the Nazis in 1939, settling in 1941 in the USA, where he continued to make authoritative and influential contributions not only to phonology but to a large number of other fields of language study, remaining pre-eminent in them until his death. Trubetzkoy, however, died at the comparatively young age of 48 and his work in areas other than phonology has been largely forgotten. The present article deals with the development of those characteristics for which Prague School phonology is best known.

1. Phonology and Phoneme

An international conference on phonology was held in December 1930 in Prague, the proceedings being published the following year as *Travaux du cercle linguistique de Prague IV: Réunion phonologique internationale tenue à Prague (18–21/XII 1930)*. One of the supplements to this volume was a *Projet de terminologie phonologique standardisée* ('Draft of a Standardized Phonological Terminology'). This set out in brief the early Prague School view of phonology and listed topics that came to be developed in the course of the decade. It was cast in the form of over sixty definitions of key terms. (There is not complete unanimity in the *Projet*: it incorporates observations, additions, and objections from various participants; these are ignored here).

'Phonology' is defined as that area of linguistics which deals with phonic phenomena from the point of view of their function. This function is that of distinguishing different words in a given language, marking 'intellectual' (i.e., semantic) differences (as opposed, e.g., to emotional or stylistic differences in pronunciations of the same word). Phonetics, on the other hand, is an ancillary discipline which is not concerned with meaning, but only with the investigation of speech-sounds from various points of view, e.g., physiological or acoustic. ('The distinction between the phonetic and the phonological examination of speech-sounds is fundamental and cannot be emphasized enough,' as Trubetzkoy (1929) put it.)

Differences of meaning are carried by 'phonological oppositions' in a given language and the sum total of such phonological oppositions is the 'phonological system' of that language. 'Phoneme' is defined as a phonological unit which cannot be split into smaller and simpler phonological units, in other words a phoneme is the smallest phonological unit. One example given of a phonemic opposition in French is that of the vowels in *dé* /de/ 'thimble' and *dais* /dɛ/ 'canopy.' These are clearly different words, therefore /e/ and /ɛ/ are different phonemes. (The employment of solidi and square brackets in this article to notate phonemes and realizations respectively is anachronistic, but useful.) The same two sounds appear in Czech but only as optional alternatives: they cannot distinguish words and are therefore not different phonemes.

This functional view of a phoneme, taking as a starting point the oppositions within a language, is at variance with the 'physical' view of a phoneme as being a family of sounds in a language, the view held by Daniel Jones and enunciated by him in a paper ('On Phonemes') published in the volume under discussion. It is also different from the 'psychological' view held by Baudouin de Courtenay (and at an early period by Trubetzkoy) that the phoneme is an ideal sound at which the speaker aims, and different from the approach of many American structuralists which

excluded any consideration of meaning in the identification of phonemes. In part, this *Projet* was stimulated by an earlier proposal for a research plan in phonology made by Jakobson (Jakobson 1928); the latter had been one of the first attempts to classify different types of phonemic opposition.

2. Phonological Systems

Relations among phonological units are also discussed. 'Correlation' is the opposition between the presence or absence of 'a certain phonic feature' which distinguishes several pairs of phonemes in a given language. In Latin, for example, long vowels are phonemically opposed to short vowels; length is here the relevant 'phonic feature' the presence or absence of which distinguishes between the vowels in each pair, and as such is defined as the 'correlation marker.' This type of factor permits the recognition of a structure or patterning within phonemic systems. The 10 Latin vowels /a aː o oː e eː u uː i iː/ are not seen as 10 random unrelated items. On the contrary, they form a system consisting of five 'correlative pairs,' each consisting of two 'correlative phonological units.' Furthermore all five long vowels can be regarded as forming one 'correlative series,' and all five short vowels another. (The recognition of correlation had been one of the contributions to phonology made in Jakobson (1928) where he labeled any opposition which was not a correlation a 'disjunction.').

Phonemes which are characterized by the presence of the relevant phonic feature are regarded as 'marked' (e.g., the Latin long vowels); those characterized by its absence are 'unmarked' (e.g., the Latin short vowels). ('Markedness' was soon to be recognized as an important concept, not only in phonology but in other areas of linguistic investigation.

The term 'archiphoneme' was introduced to mean the element common to two or more correlative phonemes: Latin /a/ and /aː/ have place of articulation in common and differ only in length. They therefore form an archiphoneme. Similarly, Russian /t tʲ d dʲ/ differ only in the features of voice and of palatalization; their place of articulation is regarded as being the same, therefore these four phonemes form an archiphoneme. The archiphonemes in a language, together with any phonemes which do not have correlative partners (such as English /l/), form the system of 'fundamental archiphonemes' of that language. (The word 'archiphoneme' came to be used in a slightly different way in Trubetzkoy (1939); see Sect. 6 below.)

Various types of correlation are enumerated: palatalization versus nonpalatalization, lip-rounding versus lip-spreading, voice versus voicelessness, nasalization versus nonnasalization, and so on.

An attempt is made to establish a typology of vowel systems. There are systems where only one dimension, namely degree of openness, need be taken into account. These are 'linear systems'; the vowels of Adyghe are an example (see Fig. 1).

a
e
ə

Figure 1. Adyghe vowel system

More complex systems require the recognition of two dimensions, frontness versus backness in addition to openness, as in the Latin system displayed in Fig. 2. In this, the phoneme with the greatest degree of

a
o *e*
u *i*

Figure 2. Latin vowel system

openness /a/ is not characterized by either frontness or backness, its only relevant component is in fact openness; the vowels may therefore be arranged in a triangle. Although rounding is a phonetic feature of /o/ and /u/, it is not distinctive phonologically and is therefore not taken into account.

Systems in which the greatest degree of openness preserves the distinction between back and front vowels may be arranged in rectangles, as in the system of literary Slovak shown in Fig. 3.

a *ä*
o *e*
u *i*

Figure 3. Literary Slovak vowel system

Such visual displays are successful only where two dimensions are involved. Vowel systems such as that of Turkish where rounding is an independent (and hence relevant) feature would require a three-dimensional display; that given later in Trubetzkoy (1939) obscures this independence. The problem becomes increasingly great if even more independent relevant features have to be taken into account.

3. Nondistinctive and Distinctive Variations

Nonphonological variations are those which are the necessary consequence of phonological oppositions. For example, in Russian there is opposition between stressed and unstressed vowels, but any difference in length or in pitch in the realization of these vowels is due to the difference of stressing and is nondistinctive. Similarly, variations in the quality of Russian vowel phonemes, depending on whether or not they are

adjacent to palatalized or nonpalatalized consonants, are nonphonological.

There might seem to be a contradiction between the definition of a phoneme as being a unit that cannot be split into smaller phonological units, and the recognition of 'phonic features' that in fact appear to be just such smaller phonological units. What was meant was that the sound realizing a phoneme cannot be further divided as a linear sequence, but it can nevertheless by analyzed into simultaneously occurring relevant components. Trubetzkoy had earlier drawn attention to the absence or presence of voice as distinguishing pairs of German plosives, e.g., in the words *Keil* 'wedge,' *geil* 'lascivious,' *Pein* 'torment,' *Bein* 'leg.' He goes on, 'In one's language-consciousness there exists the equation 'k : g = p : b' and by this very fact each element of the equation can be split into elements phonologically.' In the phoneme /k/, he claims, there are two muscular-acoustic components in the apprehension of sound: velar plosion and voicelessness (Trubetzkoy 1929).

Such simultaneously occurring phonological components became known as 'distinctive features'; the idea that not only phonemes were in opposition but also components of phonemes was a crucial ingredient in Trubetzkoy's approach to phonology, at least from 1929 onwards. (Jakobson was later closely associated with a far-reaching development of distinctive features in generative phonology in the 1950s and 1960s.)

The result was that phonemes came to be regarded as being composed of a number of phonologically significant 'distinctive features,' for example, voice, aspiration, nasality, and place of articulation. Each distinctive feature is seen as standing in opposition to its absence, or to the presence of another distinctive feature, in at least one other phoneme in the language. To take an example from English, /b/ possesses the distinctive feature of voice as opposed to the absence of voice in /p/; /b/ also possesses the distinctive feature of bilabiality as opposed to velarity in /g/. Phonemes can of course have distinctive features in common: both /p/ and /b/ share the distinctive feature of bilabiality.

Phonemes are therefore viewed as having similarities as well as differences, and so they can be grouped. For example, in English /p/, /t/, and /k/ differ in place of articulation, but they share lack of voice and lack of nasality.

Differences between realizations of each phoneme are ignored as being nondistinctive; in the case of English /t/, for example, it is not important from the point of view of phonology that the actual sounds are variously dental or alveolar or postalveolar, aspirated or unaspirated, lip-rounded or lip-spread. Even though the place of articulation is distinctive, dental, alveolar, and postalveolar articulations are subsumed as 'the same' place of articulation which can be called 'front.' 'Frontness' is distinctive because it is neither bilabiality nor velarity, which characterize /p/ and /k/ respectively.

4. The Nature of Phonemic Systems

As a result, the phonemic system of a language was seen to be not a random list but a structure characterized by internal cohesion, certain pairs or groups of phonemes possessing a closer relationship to each other than to phonemes which did not belong to the pair or group. These phonemes could be displayed in patterns that show such relationships. Although there seemed to be a greater interest in displaying patterns of vowels (as has been illustrated above), relationships between consonants may also be brought out in this way, as in Trubetzkoy (1931). English plosives and nasals can be arranged as in Fig. 4. It is noteworthy that these patterns often prove to be symmetrical, as this is.

Trubetzkoy (1931) gives an abbreviated example of a Sanskrit system of plosives. It can be completed and extended to include nasals, as in Fig. 5.

Articulatory features had long been used in phonetics in the description of speech-sounds. The advance made by the Prague School was in applying such a technique to phonology, necessarily entailing idealization or abstraction. One advantage was that not only were relationships between phonemes revealed, but the number of basic phonological elements was reduced. It is striking that while in the above selection from the sound-system of Sanskrit there are 25 phonemes, only eight distinctive features

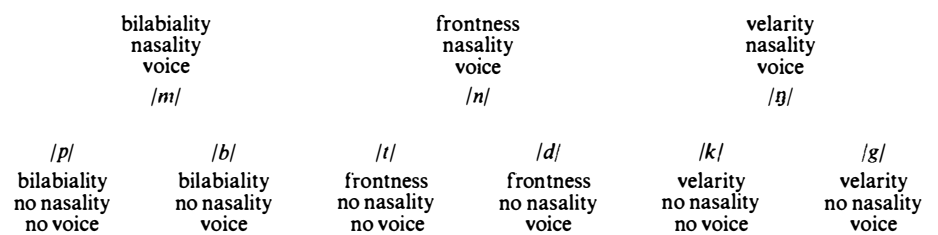

Figure 4. English plosive and nasal system

p ph	*t th*	*c ch*	*ʈ ʈh*	*k kh*
b bɦ	*d dɦ*	*ɟ ɟɦ*	*ɖ ɖɦ*	*g gɦ*
m	*n*	*ɲ*	*ɳ*	*ŋ*

Figure 5. Sanskrit plosive and nasal system

are necessary for their description (bilabiality, dentality, palatality, retroflexion, velarity, voice, aspiration, and nasality).

It should be pointed out that not all systems are completely symmetrical. Systems occur where the symmetry is marred by gaps. Trubetzkoy (1939) draws attention to the fact that some Arabic consonants fall into pairs, one member of which is emphatic (which he equates with 'velarized') and the other nonemphatic. However, not every nonemphatic consonant has an emphatic correlate.

5. *Grundzüge der Phonologie*: Phonemes and Oppositions

During the 1930s Trubetzkoy and Jakobson developed their conception of phonological systems. In 1935 Trubetzkoy published his *Anleitung zu phonologischen Beschreibungen* ('Introduction to Phonological Descriptions') which reiterated his distinction between phonetics and phonology. The former dealt with the description of physical phenomena with no regard for their function, the latter attempted to interpret these phenomena in terms of their language-bearing capabilities. Trubetzkoy set out to enable scholars to produce descriptions of the phonological systems of the languages on which they were conducting research, in contrast to the many previous studies of languages made by phoneticians, primarily interested in the articulatory or instrumental description of speech-sounds.

The material of the *Anleitung* was incorporated into the great work which was to be the summing up of his approach to phonology and which may be seen as *the* classic statement of Prague School phonology, his *Grundzüge der Phonologie* ('Principles of Phonology'), published posthumously in 1939. In it most of the topics dealt with above are expanded and examined in greater depth; in particular much space is devoted to elaborating a typology of vowel systems. Copious examples from natural languages are adduced, the number of languages or language groups cited in the index being 218.

Trubetzkoy adopts the position of the *Projet de terminologie phonologique standardisée* of 1931 that the basis for phonological opposition is the distinction of 'intellectual' meanings. For example, the final consonants of *pat* and *pad* are distinct phonemes in opposition to one another since they serve to distinguish two words; in consequence the opposition of voice versus voicelessness is distinctive in English. On the other hand, while there may be a difference in phonetic quality in some English-speakers' pronunciation of the respective laterals in *peel* and *leap* (velarization versus nonvelarization), it cannot be the basis for any phonological opposition in English: since velarization in such speakers occurs syllable-finally and nonvelarization syllable-initially, velarization can never be contrasted with nonvelarization; in consequence the difference is non-distinctive in English (though it may be distinctive in other languages).

Sounds such as the velarized lateral in *peel* and the nonvelarized lateral in *leap* can never occur in the same phonetic environment in English; such sounds are termed 'nonpermutable.' These particular two sounds differ only in their phonologically nonrelevant characteristics, are members of the same phoneme, and are termed 'variants' of that phoneme. Other sounds, such as the /t/ of *pat* and the /d/ of *pad* are termed 'permutable' since they can occur in the same phonetic environment. Not all permutable sounds, however, need carry distinctive contrasts. For example, the same speaker of English may pronounce the ⟨r⟩ in *tree* as a tap on one occasion and as a fricative on another, but no difference in meaning is involved, hence the sounds are variants of the phoneme /r/.

Trubetzkoy gives the following rules for the identification of phonemes in a language and the assigning of variants to phonemes.

Rule 1: Sounds which are permutable and which can be interchanged without making any difference to the meaning of the word are termed 'optional' variants of one phoneme; examples are the variants of /r/ mentioned above. These correspond to the 'free variants' of American phonemic phonology.

Rule 2: Two sounds which are permutable but which cannot be interchanged without changing the meaning of the words involved (or resulting in something unrecognizable) must be realizations of different phonemes; examples are the /t/ and /d/ of *pat* and *pad*.

Rule 3: Two sounds which are nonpermutable (i.e., which do not occur in the same phonetic environment) and are similar in articulatory or acoustic characteristics are 'combinatory variants' of the same phoneme; examples are the velarized and nonvelarized realizations of /l/ in *peel* and *leap*, which are similar in articulatory terms in that each is a voiced alveolar lateral. These corresponded to the 'allophones' of American phonemic phonology. (In contradistinction, although the initial sound and final sound of *hang* are not permutable, they cannot be considered as variants of the same phoneme for, apart from being produced on a pulmonic egressive airstream mechanism, they have nothing in common, the first being a voiceless vocoid, the second a voiced velar nasal.)

Rule 4: Although two sounds may satisfy the conditions of Rule 3, they cannot be reckoned to be variants of the same phoneme if they can occur in sequence in a position where one of them may occur alone. Trubetzkoy's example is taken from a particular pro-

nunciation of English (presumably Received Pronunciation) where /r/ is realized without friction (i.e., as an approximant) and thus is articulatorily similar to /ə/. Moreover, this pronunciation of English is nonrhotic, i.e., /r/ cannot occur before a consonant and since /ə/ cannot occur before a vowel, the two sounds are nonpermutable. Trubetzkoy avoids having to regard them as variants of the same phoneme by citing the words *profession* /prəˈfɛʃn̩/ (where they occur in sequence) and *perfection* /pəˈfɛkʃn̩/ where one of them occurs alone.

Trubetzkoy goes on to develop a classification of the oppositions that may be found in systems of phonemes, the basis of comparison being the shared features of two phonemes in opposition.

One dimension of this classification is a distinction between 'bilateral' and 'multilateral' oppositions. 'Bilateral oppositions' involve only two terms which share a combination of features that is found in no other phoneme: an example is /t/ and /d/ in German or English, since these are the only two alveolar plosives in these languages. Multilateral are any other oppositions. Bilaterally related phonemes can be held to impart a greater cohesion to the phonemic system than multilateral ones. In any system, the number of multilateral oppositions is greater than that of bilateral ones. Multilateral oppositions are further divided into 'homogeneous; and 'heterogeneous.' Homogeneous multilateral oppositions may be regarded as linked by a chain of bilateral oppositions, e.g., /x/–/ŋ/ in German, for the phonemes in question can be linked by the oppositions /x/–/k/, /k/–/g/, /g/–/ŋ/. On the other hand, /p/–/l/ cannot be so linked and the relationship is termed a heterogeneous multilateral opposition.

A second dimension of classification is that between 'proportional' and 'isolated' oppositions. An opposition is proportional if it is mirrored by an identical opposition between at least one other pair of phonemes. Thus the opposition of /p/–/b/ in German is proportional for it is mirrored by the oppositions /t/–/d/ and /k/–/g/. The relationship between /p/ and /ʃ/, however, is isolated, for there is no other pair related in the same way.

A third dimension of classification is provided by the nature of the distinctive features of the phonemes in opposition. In a 'privative' opposition one of the pair lacks a feature by which the other is 'marked', thus in English /p/ lacks the marked feature of voice which distinguishes /b/. In a 'gradual' opposition the terms are marked by different degrees of the same characteristic, thus the vowels /i/–/e/–/a/ are on a continuum of tongue height. All other oppositions are 'equipollent': the terms involved cannot be regarded as differentiated either by the presence or absence of a feature or by different degrees of the same characteristic, e.g., /f/–/k/ in German. Such oppositions are the most numerous in any system.

6. *Grundzüge der Phonologie*: Neutralization and Archiphoneme

An important development, based on Trubetzkoy (1936), is presented in the *Grundzüge*. This takes over the term 'archiphoneme' and uses it in a slightly more sophisticated way. The type of analysis in terms of distinctive features uncovers further complexity in the interrelationship of phonological system and permitted linear sequences of phonemes: phonological units are seen to enter into different oppositions at different positions in structures. For example, in French the sounds [e] and [ɛ] can be realizations of two different phonemes, /e/ and /ɛ/, as in *allez!* /ale/ 'go!' versus *allait* /alɛ/ 'was going.' However, these contrast only in a final open syllable. Elsewhere the appearance of one sound rather than the other is mechanical, [e] appearing in an open syllable, [ɛ] in a closed, as in *espérer* [ɛspere] 'to hope.' Where no contrast is possible, the opposition is said to be 'neutralized' and the sound that occurs in such a position is said to be a member of an 'archiphoneme.' A convention has arisen of using upper-case letters as a notation for archiphonemes; *espérer* would therefore be analyzed phonologically as /EspEre/.

Four different types of relationship between the sounds realizing the archiphoneme and the sounds realizing the corresponding phonemes in opposition are noted. First, the sound realizing the archiphoneme is not a sound that realizes either of the contrasting phonemes. In English, /p/ and /b/ are in opposition in word-initial position as in *pat* and *bat*, respectively /pat/ and /bat/. However, the opposition is neutralized after /s/, as in *spat* /sPat/; here /P/ is realized by an unaspirated voiceless plosive, which is neither the aspirated voiceless plosive typically used to realize /p/, nor the unaspirated voiced plosive typically used to realize /b/. Second, the sound representing the archiphoneme is identical to the realization of one of the phonemes in opposition, the choice between them depending on the quality of an adjacent phoneme. In Dutch, /f/ and /v/ are in opposition word-initially (*firma* 'firm,' *vier* 'four') but the opposition is neutralized before a plosive; the sound realizing the archiphoneme /F/ then has the same voicing as the plosive: *afkeuren* ['ɑfkø:rə] 'to disapprove of,' *afbellen* ['ɑvbɛlə] 'to ring off.' Third, the choice of realization is made without reference to adjacent phonemes, what he calls 'internally conditioned neutralization.' In the case of 'privative' oppositions (i.e., oppositions between an unmarked member and a marked member of a pair), the choice is that of the unmarked member, thus in German /t/ and /d/ are in opposition intervocalically (*Rates* 'of advice,' *Rades* 'of wheel') but word-finally [t] is the realization of /T/ (*Rat* 'advice,' *Rad* 'wheel,' both [ra:t]). Fourth, the archiphoneme may be realized by two different sounds, depending on the position in the word. In German, /z/ and /s/ are in opposition intervocalically (*reisen* /ˈraɪzən/ 'to travel,' *reißen*

/'raɪsən/ 'to tear') but not word-initially or word-finally; word-initially the archiphoneme /S/ is realized by [z] as in *sang* 'sang' but word-finally by [s] as in *Fuß* 'foot.'

One implication of Trubetzkoy's reasoning is that rather than postulate one phonological system in the analysis of a language, it might be less misleading to draw from a series of systems composed of phonemes in opposition and archiphonemes in opposition, each system being appropriate to a given point in linear structure. This line of thought, undermining the notion of one phonemic system, destroys confidence in the notion of the phoneme itself. This type of argument was raised against the phoneme by J. R. Firth and his colleagues of the 'London School'.

7. *Grundzüge der Phonologie:* Boundary Signals

In view of the last observation, it is instructive to note that Trubetzkoy devotes a section of the *Grundzüge* to 'boundary signals' that mark various kinds of linear structure: for example, in German /h/ always marks the beginning of a morpheme or word. This type of phenomenon was a particular interest of the London School. Clearly, both the Prague School and the London School were aware of the importance of the syntagmatic axis in phonology and its relevance to grammar, and each advanced different methods of solving the associated problems.

Trubetzkoy recognises various classes of such boundary signals. For example, in the Scottish Gaelic of the island of Barra, nasalized vowels are phonemes which stand in opposition to oral vowels and so can be used to distinguish different words. Yet at the same time these nasalized vowels also act as boundary signals delimiting stretches of utterance, for they appear only in initial syllables. Similarly, in Ancient Greek /h/ was both a phoneme and a marker indicating the beginning of a word. These are examples of 'phonemic boundary signals.' On the other hand, certain combinatory variants (which of course cannot distinguish words) can also act as boundary markers. These are 'nonphonemic boundary signals.' Thus in Tamil the presence of aspirated voiceless plosives indicates the beginning of a word since they appear only in that position; word-internally the corresponding member of the phoneme is a voiced plosive or a fricative.

Boundary signals of the above types may be called 'individual boundary signals' since only one phoneme or combinatory variant is involved in each case. In contrast Trubetzkoy recognises 'group boundary signals' consisting of sequences of phonemes in which the first marks the end of some significant unit (morpheme or word) and the second the beginning of another unit. Examples of these are remarkably varied and numerous. Among others Trubetzkoy cites the sequences /θs/ and /zð/ in English as in *tenths* (morpheme boundary) and *as though* (word boundary).

Boundary signals such as the above may be termed 'positive boundary signals' for they actively indicate the beginning or end of some unit. 'Negative boundary signals' on the other hand indicate that either the beginning or the end cannot possibly occur at that point. For example, in English /h/ indicates that the end of a word cannot occur at that point, while /ŋ/ indicates that the beginning of a word cannot occur at that point.

8. The Notion of Function

The type of phonology presented in the *Grundzüge*, and indeed Prague School phonology as a whole (as is indicated in embryo in the *Projet* of 1931), may be described as 'functional' since phonic elements are studied from the point of view of the various functions they fulfil in a particular language.

In the Introduction to Trubetzkoy (1939) the work of the Austrian psychologist and linguist Karl Bühler (1879–1963) is cited with approval, in particular Bühler (1934), as being applicable to the study of phonology. Bühler proposes that the existence of a speaker implies both the existence of a hearer and of a state of affairs about which the speaker speaks. There are thus three aspects to a speech situation and accordingly three different situational functions may be recognized.

The speaker reveals some information about herself or himself, thus fulfilling the 'expressive' function. Some of this information, such as the revelation of one's sex or age, may have nothing to do with phonology for there is no choice, and hence no conventional system of signs, involved. But certain phonological choices may be made in accordance with a system which reveals something of the speaker. For example, it is reported that among speakers of Yukaghir certain sounds are pronounced by adult males as palatal plosives and by marriageable females as affricates. In Tamil certain phonemes are pronounced differently by members of different castes. In European languages social status or geographical provenance may be betrayed by phonological choices. Such choices indicate membership of a particular group.

However, the speaker may also wish to arouse certain feelings in the listener, thus fulfilling the 'appeal' (or 'appellative') function. Here again choices may help to achieve this goal, as in the lengthening of consonants and/or vowels (as in the German exclamation *schschöön*! or English *beauuuuuuutiful*!) to excite enthusiasm, for example. (It may be debated whether this particular choice distinguishes 'intellectual' meanings.)

In speaking about a given state of affairs the speaker fulfils the 'representative' function. Accordingly representative phonology deals with a vast area while the previous two functions are concerned with only a restricted group of facts.

Trubetzkoy recognises further functions which may be regarded as intralinguistic. By far the most important is the 'distinctive' function carried out by phonemes and distinctive features and serving to differentiate units of meaning, as has been explained above. The 'culminative' function enables the listener to split an utterance into a group of words; in languages in which each word is marked by one stressed syllable, the number of stresses corresponds to the number of words. The 'delimitative' function is carried out by the boundary signals mentioned above which mark the limits of words or morphemes.

9. Envoi

While the above are the most celebrated aspects of the *Grundzüge*, they are by no means the sole concerns of this immensely rich book. Other topics dealt with include the statistical investigation of the occurrence of types of phoneme and their functional load, morphophonology, phonology and historical geography, and (in appendices by Roman Jakobson) principles of historical phonology, phonological affinities between languages, and the phonology of child language and its place within general phonology.

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Prague School Syntax and Semantics

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The Prague School of Linguistics, though better known for its research into the domain of phonology, has brought many valuable insights into syntax and semantics as well, especially with its due regard to the character of language as a system of signs (with its specific relation between grammar and semantics) and to the communicative function of language. In formulating these issues as early as the 1930s, the Prague School was well ahead of most of the linguistic trends in the USA (where meaning was excluded from linguistic research for a long time) and in Europe (where, in fact, it had such important adherents as Lucien Tesnière). Even in the early 1990s, the elegance and economical character of dependency syntax, for which formal frameworks were formulated (both for generation and for parsing) in Prague, represents a challenge for the main approaches to theoretical linguistics.

1. The Main Roots of Prague School Syntax and Semantics

1.1 *Sentence and Utterance*

The distinction made between 'sentence,' as a unit of the language system and 'utterance event,' as a unit of discourse, or a verbal 'communicate,' can be traced back to Karcevskij (1931, 1937), with whom 'proposition' denotes a predicative syntagm, while 'phrase' refers to a function of dialogue having two sides: from the point of view of the conceptual layer, 'phrase' is a communicative unit, while from that of the phonic layer, it is an intonational unit.

Closely connected with this issue is the notion of 'sentence pattern' as introduced by Vladimír Skalička (1935, *Satzcliché*) and characterized by him as a sentence structure that is 'normalized' for some language or some part of the sentences of a certain language.