

Chapter 5: *Phonological structure: The Phoneme and its allophones. Segmental specification: Distinctive Features in various phono-logical theories*

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5.2. Allophones. Complementary distribution and free variation

Phonemes are then theoretical constructs, classes of sounds the members of which display obvious phonetic similarities the differences among the respective members being never contrastive or functional. As soon as, in a given linguistic context, this difference becomes functional and represents the basis on which a semantic contrast is achieved, it ceases to be *allophonic* and becomes *phonemic*, in other words the respective sounds are members of distinct classes (phonemes).

It should be noticed that allophonic differences or variations can be of different kinds. If they result from the occurrence of the phoneme in different environments or contexts (we will call this the *distribution* of the respective phoneme) we will talk about *distributional variation* and we will say that the allophones are in *complementary distribution*. The word “complementary” actually refers to the fact that the contexts in which the allophones of a phoneme appear can never be the same and they cover the whole range of possible environments in which the sound can occur (for an analogous situation think of complementary angles in geometry). In other words, in a given context X only a certain allophone will occur, while in another context Y, another allophone is expected to occur and X and Y are the only contexts in which the allophones can occur. It follows from this that the occurrence of *allophones* is always *predictable* since in a certain context we can only expect one and only one realization of the phoneme. In our particular example, in the context of *pill* – the voiceless plosive /p/ is followed by a stressed vowel and is in syllable-initial position – we can safely say that the aspirated allophone [p^h] will come up. If, on the other hand, p is not syllable-initial and is preceded by s as in *spill*, we can safely predict that the unaspirated variant of p will occur. The occurrence of different *phonemes* is, on the contrary, totally *unpredictable* since it is the very fundamental characteristic of phonemes that they are contrasted in one and the same

context. There is no way in which we can predict therefore that in the context *-il* we will have *pill, nil, chill, fill, gill, Jill, sill, kill, mill, hill, dill* or *till* (the list can continue). Any two words – such as *pill* and *bill*, mentioned above, or *kill* and *hill*, etc. – that help us discover which sounds have a contrastive value in a given language are said to form a *minimal pair*. The following criteria must be met by the two words in order that they form a minimal pair: they should have the same number of sounds, and these sounds should be identical, with the only exception of the contrasting sound that should be distributed in the same context in both words; the words must also have different meanings.

If variation is not associated with positioning, and is rather unpredictable, without being phonemic however, we talk about *free variation* or *random variation*. One type of random variation that we encounter is when we compare different realizations of one and the same phoneme by various speakers or in the speech of one and the same person in different situations. It differs from the preceding type because it is context-free and it differs from phonemic variation because it is not contrastive. To give an example, if a person pronounces the word *rock* as either [rɒk] or [rɒk^h], then we talk about free variation. We can have a different type of free variation when we deal with realizations of different phonemes in the same context without a change of meaning. E.g.: /i:/ and /e/ in the respective pronunciations of *economics*: /i:kənɒmiks/ vs. /ekənɒmiks/; or /e/ and /eɪ/ in the respective pronunciations of *again* /əgeɪn/ vs. /əgeɪn/.

With this we have actually highlighted the basic strategy through which we can bring out the contrast between two different phonemic entities: in one and the same context we *replace* or *substitute* one element for another and analyze the effect this has on the meaning of the entire sequence. The method is predictably called *substitution* (another term often used is *commutation*) and it represents the main strategy through which structuralist grammarians emphasized difference in language. Having established this, we can refine our discussion of the Saussurian sign. What the Swiss linguist called *le signifiant* is actually a *string of phonemes* and not of sounds, inextricably linked to a certain notion or concept. So we can say that at the level of the *signifiant* languages perform a truly remarkable thing. Instead of selecting an acoustic image (to use the Saussurian term) for each and every concept in the system – [p] for *cat*, [b] for *mouse*, etc – they actually combine a limited set of phonemes and obtain a sufficiently large number of *signifiants* for all the concepts in the language. By exploiting the combinatorial possibilities of elements – and anyone having elementary mathematical knowledge will be aware that these are enormous – languages manage to be extremely economical. Imagine what terrible effort would be needed to learn thousands of different sounds that would symbolize the concepts of a language! If this is performed at the level of speech, the same tendency can be noticed in the evolution of writing: from various primitive symbolic representations human writing developed to systems representing the syllables of words, while the alphabetic writing tends to a representation of the phonemes of the language. I used the word “tends” because even in the spelling systems that come closest to a one-to-one representation of the phonemes such a thing is not achieved. (In Romanian, for instance, the phoneme /k/ can be rendered by either the letter **c** or by **ch** if

distributed before a front vowel, or even by **q** in the conservative spelling of certain Latin words: e.g. *requiem*. The letter **c**, on the other hand, will get an affricate reading if followed immediately by one of the two front vowels). The IPA alphabet is such an alphabet, but it is not used to spell the words of any language. (See chapter 2 above).