# CHAPTER THIRTEEN

Some Phonological Processes in German

The phonemes of German and English which we have discussed so far have been treated as *segments* of speech, and for that reason they are conventionally referred to as *segmental phonemes*, reflecting the fact that they are the building-blocks of words and larger units like phrases and sentences. Both the way we have been treating them and the name *segmental phoneme* are somewhat misleading, however, for they imply that speech itself is somehow segmented, i.e. that when pronouncing a word like *Kiel* we first pronounce the /k/, then the /i/, then the /l/. This is, of course, not the case. The speech signal when we pronounce *Kiel* is an unbroken continuum, and each sound fades into the next. In fact, each sound is also formed (articulated) in anticipation of the next sound(s), so that there is an overlapping in the articulations of the sounds in the word. We have already seen how the allophone of /k/ used in *Kiel* is a palatal sound as opposed to the much more velarised allophone of /k/ in *kahl*. Both allophones anticipate the articulation of the following vowel. /i/ is a high front vowel, and the articulation of /k/ before /i/ is moved forward accordingly. /ɑ/ is a low, relatively back vowel, and the articulation point of /k/ before /ɑ/ is correspondingly further back. The allophone of /k/ in *Kuh* is spoken with rounded lips in anticipation of the lip rounding of /u/.

A diagram like the following[1] shows more realistically what happens in the articulation of a word like *Kiel*. The segmental phonemes are written across the top. The lines represent the articulation of the three phonemes, with the high point of the line representing that part of the articulatory

/k   i   l/

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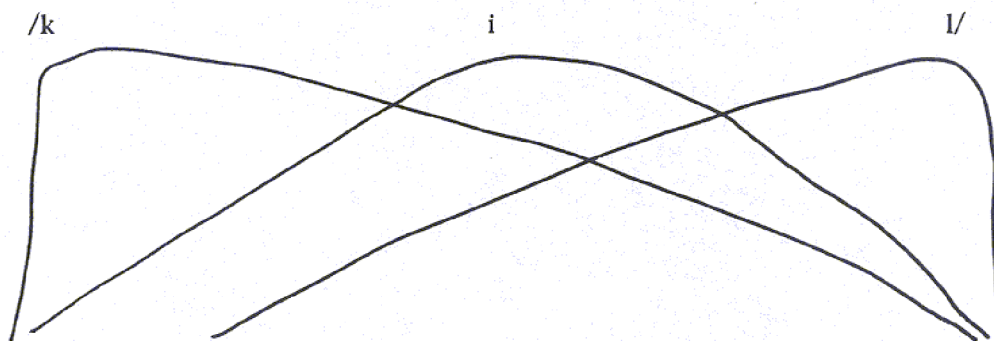
[1]Moulton (1966:36).

process which concentrates on the phoneme in question, while the overlapping parts of the lines represent the effect that the phonemes have on the articulation of the other phonemes around them. In *Kiel, kahl, Kuh* the articulation of the various allophones of /k/ anticipates the articulation of the following vowel. With the articulation of the allophones of /x/ we have the opposite case. [ç], a palatal fricative, is articulated further forward than [x], a velar fricative. [ç] is used after front vowels, [x] after back vowels. Here the place of articulation of the vowel affects the place of articulation of the following consonant.

This type of effect of one sound on the other sounds around it is known as *assimilation*. *Assimilation* means "becoming like". The allophone of /k/ used in *Kiel* assimilates in its articulation to the palatal articulation of the following /i/. The allophone of /k/ used in *Kuh* assimilates in its articulation to the lip rounding of /u/. The startlingly different allophones of /x/ are a result of assimilation. [ç] assimilates to the palatal articulation of front vowels. [x] assimilates to the velar articulation of preceding back vowels.

Perhaps the clearest instance of assimilation is the pronunciation of /h/. /h/ is, as we know, defective in its distribution. It occurs only initially before vowels and medially before *stressed* vowels. Stand in front of the mirror and set your mouth to pronounce the initial /h/ of the following words: *Hiebe*, *heben*, *haben*, *hoben*, *Huber*, *hüben*, *Höhle*. Then set your mouth to pronounce the vowels /i/, /e/, /ɑ/, /o/, /u/, /y/, /ø/. The mouth positions should be identical for both sets. /h/ in German (and English) is phonetically just aspiration before a vowel, meaning that you set your mouth to pronounce the vowel and then put a puff of breath before it.

German has a consonant combination /pf/ which occurs in all possible positions in words, i.e. initially, medially and finally. Let us take *Apfel* as an example. There are three possible ways of pronouncing this combination. The /p/ may be bilabial and the /f/ may be labio-dental, or both may be bilabial, or both may be labio-dental. The first would be used in extremely careful, precise speech, but in everyday informal speech one of the latter two alternatives would be used. The same is true of the pronunciation of English words like *Upfield*.

Historically assimilation accounts for many of the sound changes which languages undergo. In the history of German the umlauted vowels resulted from the partial assimilation of back vowels to a following high front vowel (/i/ or /ɪ/). In most cases the following /i,ɪ/ eventually either disappeared or became /ə/, but this process can still be seen before *-lich*, e.g. *rot, rötlich*. What happened here is that a back vowel /o/ changed into a front vowel /ø/ before a following high front vowel. The new front vowel, however, retained the vowel height, lip rounding and tenseness of the original /o/. Another pair is *gut, gütlich*, and the process is identical. /y/ has the tenseness, lip rounding and tongue height of /u/ but the frontness of /ɪ/. *Hass, hässlich* shows even greater assimilation of the first vowel to /ɪ/. /ɛ/ of *hässlich* is, like /a/ of *Hass*, unround and lax, but it is a mid vowel whereas /a/ is low. /ɪ/ is, of course, high. The /a/ of *Hass* assimilated (partially) to the following /ɪ/ in height as well as in frontness.

There is one very common type of assimilation which shows up in verb forms in German. A verb like *leben* can be pronounced ['leːbən] with a clearly articulated schwa and [n], or it can be pronounced without a clearly articulated [ə], in which case the nasal consonant /n/ becomes the syllable nucleus, i.e. it becomes syllabic. We will indicate syllabicity of a consonant by putting a short vertical line under it, e.g. [n̩].

When a word-final nasal consonant is syllabic, it assimilates to the place of articulation of the preceding consonant. Thus:

/'lebən/ = = > ['le:bm̩],   /'hupən/ = = > ['hu:pm̩]
/'laɪdən/ = = > ['laɪdn̩],   /'raɪtən/ = = > ['ʀaɪtn̩]
/'zɑgən/ = = > ['zɑ:gŋ̩],   /'hakən/ = = > ['hakŋ̩].

This process takes place in English as well. In German it also happens when the final consonant of the verb stem is a nasal /m,n,ŋ/, which usually does not happen in English. The result is a combination of a non-syllabic nasal followed by a syllabic nasal with identical place of articulation. Thus:

/'ʃvɪmən/ = = > ['ʃvɪmm̩]
/'nɛnən/ = = > ['nɛnn̩]
/'hɛŋən/ = = > ['hɛŋŋ̩].

This process of assimilation is not restricted to verb forms. The German noun *Haken* "hook" is phonetically either ['hɑ:kən] or ['hɑ:kŋ̩]. Harking back to chapters 1 and 7, it might be worthwhile at this point to contrast description with prescription. *Siebs 1961* has the following to say about these assimilations (p. 43):

> Besonders verwahrlost wirkt die ... Beeinflussung der häufigen Nebensilbe *-en* durch einen vorangehenden labialen oder palatalen Konsonanten, so daß statt des ən ein m̩ bzw. ŋ zu hören ist. Etwa: *Lippen* als 'lɪpm̩, *geben* als 'ge:bm̩, *schlafen* als 'ʃlɑ:fm̩, *nehmen* als 'ne:mm̩ oder gar 'ne:m̩, *sagen* als 'zɑ:gŋ̩, *recken* als 'rɛkŋ̩. Solche Angleichung kann z.B. bei *Abendbrot* über 'ɑ:bm̩tbro:t zu 'ɑ:bm̩bro:t und schließlich 'ɑ:mbro:t führen. Ebenso häßlich ist die undeutliche Aussprache zweier benachbarter *-en*: *geschnittenen* (gə'ʃnɪtənən) als gə'ʃnɪtn̩n̩.

Moulton (1962:106) has this to say about the preceding statement: "The *Siebs* calls this type of pronunciation "verwahrlost" and "häßlich"; but the very vehemence of these adjectives is good evidence that millions of Germans normally talk this way."

Concluding Remarks

You have now been introduced to the International Phonetic Alphabet, the phonetics of German speech sounds and the phonemic system of German. This has entailed a distinction between abstract units (phonemes) and their concrete realisations (actual spoken sounds).

Now that the *phonemes* of German have been dealt with we will proceed to larger units composed of phonemes, namely words and sentences. We will see in each case that there is a distinction between abstract, underlying forms and concrete, surface forms.