

included, as /k/ is already uniquely identified from the features given.

$$(11) \left[\begin{array}{l} -\text{syllabic} \\ +\text{consonantal} \\ -\text{sonorant} \\ -\text{voice} \\ -\text{continuant} \\ -\text{anterior} \\ -\text{coronal} \end{array} \right] \rightarrow [+coronal] \text{ / } ____ \text{ front vowel}$$

Ideally, the explanation for the presence of a certain allophone in a certain context should be available in the rule itself. In (11), however, /k/ becomes [+coronal] before a front vowel; but the connection between [coronal] and [front] is obscured by the different descriptions conventionally used for vowels and consonants. We return to vowel features in Chapters 6 and 7.

4.5 Natural classes

The major class features identify several categories of sounds which recur cross-linguistically in different phonological rules. Feature notation can also show why certain sounds behave similarly in similar contexts, within these larger classes. For instance, English /p/, /t/ and /k/ aspirate at the beginnings of words. All three may also be glottally reinforced at the ends of words. All three are unaspirated after /s/; and no other English phoneme has the same range of allophones, in the same environments. In feature terms, although /p/, /t/, /k/ differ in place of articulation, all three are obstruent consonants, and within this class, are [-voice, -nasal, -continuant]. A group of phonemes which show the same behaviour in the same contexts, and which share the same features, constitute a natural class. More formally, a natural class of phonemes can be identified using a smaller number of features than any individual member of that class. As (12) shows, the class of voiceless plosives, /p/, /t/ and /k/, can be defined uniquely using only three features. If we subtract one of the plosives, we need more features, since we must then specify the place of articulation; and the same is true in defining a single plosive unambiguously.

$$(12) \begin{array}{ccc} /p \ t \ k/ & /p \ t/ & /p/ \\ \left[\begin{array}{l} -\text{voice} \\ -\text{nasal} \\ -\text{continuant} \end{array} \right] & \left[\begin{array}{l} -\text{voice} \\ -\text{nasal} \\ -\text{continuant} \\ +\text{anterior} \end{array} \right] & \left[\begin{array}{l} -\text{voice} \\ -\text{nasal} \\ -\text{continuant} \\ +\text{anterior} \\ -\text{coronal} \end{array} \right] \end{array}$$