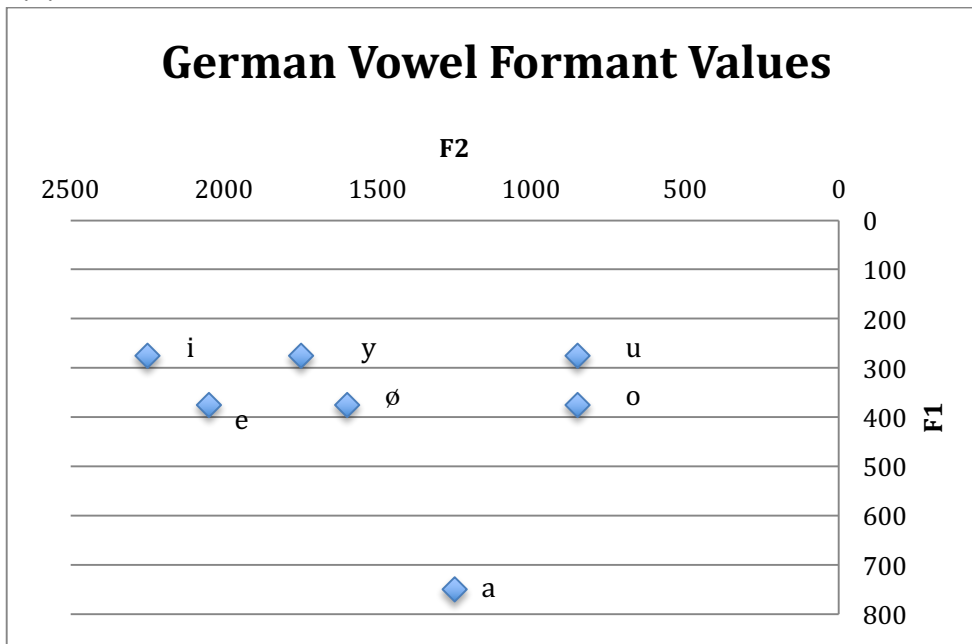


Chapter 2

2.1. Although pitch and loudness are not distinctive in German, they do play a role in expressing a speaker's attitude and also in how the listener interprets what is being said. If a caregiver produced the German word <jetzt> with falling intonation, it would express finality. That is, it would mean that the speaker is not open to discussing the issue further and that something should happen right away. <jetzt> spoken with rising intonation would indicate that the caregiver is asking a question and expects a response. For example, it could mean something like "Will you do this now?" When spoken more loudly, either with rising or falling intonation, the speaker indicates that he or she expects the child to pay attention to what is being said.

2.2.



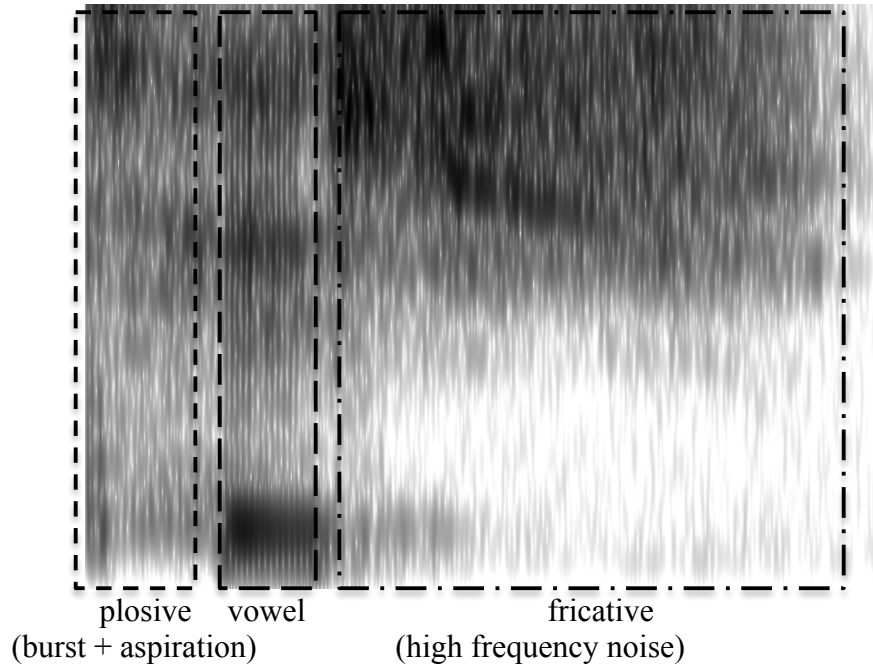
The vowels as charted in acoustic space correspond to their locations in the vowel chart provided in figure 1.4.

2.3. It is important to remember that vowel formants are quite variable. The values differ according to the gender of a given speaker, his or her first language, and even his or her first language dialect. Moreover, when an individual speaker produces a segment more than once, the formant values differ with each production.

2.4. The consonants [d], [k], [s] and [ʃ] have various sources of vibration having to do primarily with place of articulation. The tongue and the parts of the vocal tract it nears or contacts when these consonants are produced are sources of vibration. In [d] and [s] the relevant location in the vocal tract is the alveolar ridge, in [ʃ] it is the roof of the mouth between the alveolar ridge and the hard palate, and in [k] it is the velum. The vowels look different from the consonants because they repeat regularly (they are periodic), and they do not involve obstruction of the vocal tract as they are produced.

2.5. The consonants [d], [k], [s] and [ʃ] in figure 2.2 are obstruents. As the name implies, the airstream is obstructed as they are produced. This obstruction is visible in the waveform for the plosives in particular, [d] and [t], when the airstream is completely blocked during the closure prior to their release (observable in the relatively flat line before the release). The sonorants, which include the vowels and [m], have regularly repeating waveforms with relatively stable amplitudes at their centers. The formant structure that is associated with sonorants can only be seen on a spectrogram like in the bottom half of figure 2.2.

2.6.



2.7.

