**Chapter 12**

**SPEECH PERCEPTION**

1. What parallels can you draw between the cocktail party effect, auditory scene analysis, and selective attention?

*Hints and discussion: This question encourages synthesis of information across multiple chapters, and supports a conceptual understanding of the topic. Students should see that hearing one voice against a background of other voices and sounds is an example of auditory scene analysis, and that selective attention is used to direct attention to that event.*

1. The phenomena of coarticulation reveals that formant patterns in the sound waves correspond better to coarticulated phonemes rather that to individual phonemes. Some researchers have even suggested that the coarticulated sound, known as a diphone, is the more appropriate unit of analysis for language than the phoneme. Even in synthetic (computerized) speech, the use of pre-recorded diphones makes for a more intelligible voice than the use of pre-recorded phonemes. Are there reasons to continue emphasizing phonemes as the basic unit of analysis in speech?

*Hints and discussion: This question can help facilitate a discussion on reductionism in speech perception/production research (and in general be used to introduce the concept of reductionism in science).*

1. Eimas and Corbit (1973) showed that a voice onset time of about 35 ms marked the difference between the perception of a /d/ (35ms and less) from a /t/ (over 35ms). However, in their study they employed a constant speaking rate. At a much faster speaking rate, a voice-onset time less than 35ms can be heard as a /t/, while at a much slower speaking rate, a voice-onset time greater than 35ms can be heard as a /d/. How can a theory of speech perception account for this?

*Hints and discussion: This question highlights the difficulty in defining phonemes in terms of simple stimulus qualities and thus the challenges in creating a theory to explain speech perception. Suggest in discussion that the voice-onset time that determines the transition from a voiced to voiceless consonant may not be fixed but instead is determined by the ratio of the voice-onset time to the speaking rate (though this has yet to be shown conclusively).*

1. Do you agree with idea that “speech is special” in the sense that speech perception is fundamentally different from ordinary auditory perception? Explain.

*Hints and discussion: This open-ended question encourages students to think about the general problem of understanding human language.*