Informational masking for speech-on-speech recognition

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Listening to and understanding speech can be difficult when other people are speaking at the same time. These challenging listening environments often occur when socializing in restaurants, during family holidays, and other types of social get-togethers. The ability to understand speech in these complex listening environments is typically more difficult for listeners with sensorineural hearing loss, often leaving those with significant hearing impairment unable to participate in conversations, or extremely fatigued from the effort required to participate in the conversation.

In our lab, we try to create complex-listening tasks by using a speech-on-speech recognition paradigm where listeners are asked to attend the speech of one talker in the presence of other competing talkers. We are interested in understanding why certain stimuli are more effective with respect to masking than others and how speech-on-speech recognition fits into the already well-established models of informational masking, which suggest that masker uncertainty and target-masker similarity increases informational masking. A main focus of our work has been on the contributions of linguistic meaning to speech-on-speech recognition. Background information on this topic will be presented, as well as data that explore the importance of semantic meaning and syntax within the competing speech that potentially contribute to informational masking.