



Speech Intelligibility in Noise: How Does our Auditory System Get Rid of the Noise?

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Abstract

Although speech intelligibility can be significantly impaired by noise, the human auditory system possesses some very refined ways to cope with the presence of noise. In achieving a good level of speech intelligibility the auditory systems has to deal with two main challenges. First of all, the presence of noise will mask certain speech components. Only under strict premises these masked components may be recovered, a process which is known as release from masking. In addition to the masking effect, the auditory system has to deal with an acoustic signal that is a mix of the desired speech signal and the interfering noise sources. The interfering source components, which may be speech as well, should not be mixed with the stream of information of the desired speech source. In this presentation it will be argued that another main challenge for the auditory system is to determine which signal components belong to the desired speech signal and which belong to the interferer. Some recent research into speech intelligibility will be discussed together with demonstrations revealing some of the interesting aspects of speech perception.