
**Abstract**

The intelligibility of consonants remains high (roughly 90% correct) for untrained human listeners when speech energy in the mid-frequencies (800 to 4 kHz) is filtered out of random CVC nonsense syllables using sharp high-pass and low-pass filters. These results suggest that humans are using a process for speech recognition that is fundamentally different from the types of template matching performed in modern hidden Markov model speech recognition systems. Such recognizers are extremely sensitive to channel variability, filtering, and noise and require careful preprocessing and microphone placement to provide acceptable performance. Humans are able to achieve extremely accurate consonant recognition accuracy with almost no training under this highly unnatural condition using high-frequency speech cues that are normally not provided at the input to speech recognizers.