

Lateralized speech perception in normal-hearing and hearing-impaired listeners and its relationship to temporal processing - DTU Orbit (08/11/2017)

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This study investigated the role of temporal fine structure (TFS) coding in spatially complex, lateralized listening tasks. Speech reception thresholds (SRTs) were measured in young normal-hearing (NH) and two groups of elderly hearing-impaired (HI) listeners in the presence of speech-shaped noise and different interfering talker conditions. The HI subjects had either a mild or moderate hearing loss above 1.5 kHz and reduced audibility was compensated for individually in the speech tests. The target and masker streams were presented as coming from the same or from the opposite side of the head by introducing 0.7-ms interaural time differences (ITD) between the ears. To assess the robustness of TFS coding, frequency discrimination thresholds (FDTs) and interaural phase difference thresholds (IPDTs) were measured at 250 Hz. While SRTs of the NH subjects were clearly better than those of the HI listeners, group differences in binaural benefit due to spatial separation of the maskers from the target remained small. Neither the FDT nor the IPDT tasks showed a clear correlation pattern with the SRTs or with the amount of binaural benefit, respectively. The results suggest that, although HI listeners with normal hearing in the low-frequency range might have elevated SRTs, the binaural benefit they experience due to spatial separation of competing sources can remain similar to that of NH listeners.

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