The effect of aging on Mandarin speech recognition in multi-talker babble

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Abstract:

Elderly people usually experience greater difficulty in recognizing speech in background noise than young people. The current study assessed the effects of age on informational masking of babbles on Mandarin sentence recognition as a function of the number of talkers in babble. The speech recognition thresholds of elderly and young listeners were measured in the presence of noise with adaptive procedures. The background noises included five babbles with different numbers of talkers and their corresponding babble-modulated noises. All participants volunteered to take part in the study and were paid for their participation. It was found that the elderly people had significantly higher speech recognition thresholds in noise than young people, but the aging effect was the most pronounced in one-talker babble with the same or different gender. The amount of informational masking was significantly different between older and younger adults in one-talker babbles, but not for multi-talker babbles. Results indicated that young adults were better at paying selective attention to target sentences in noise, while the elderly experienced the most difficulty in suppressing non-target

information due to the linguistic information in one-talker babble compared to multi-talker babbles. Younger adults had the best ability to use temporal fluctuations in one-talker babble with large temporal dips compared with other multi-talker babbles. This study was funded by Shanghai Planning Office of Philosophy and Social Science Grants 2017BYY016, awarded to Wang and the major Program of National Social Science Foundation of China (No. 18ZDA293), awarded to Ding.

Presentation type: Either Poster or Podium

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