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**Speaker size discrimination for acoustically scaled versions of  
whispered words**

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Humans can extract the message from the voices of men, women, and children without being confused by the size information, and they can extract the size information without being confused by the message. This suggests that the auditory system can extract and separate information about vocal tract shape from information about vocal tract length. Smith et al. [J. Acoust. Soc. Am. 117(1), 305-318 (2005)], Ives et al. [J. Acoust. Soc. Am. 118(6), 3816-3822 (2005)], and Aoki et al. [ARO, 31st Midwinter meeting (2008)] performed discrimination experiments with acoustically scaled vowels, syllables, and naturally spoken words, respectively, and demonstrated that the ability to discriminate speaker size extends beyond the normal range of speaker sizes. Smith and Patterson [BSA Cardiff (2005)] demonstrated that performance on the size-discrimination task is only marginally reduced when the vowels are unvoiced. We extended these size-discrimination experiments to whispered versions of naturally spoken, four-mora Japanese words. The just-noticeable-difference for the whispered words was about 6 %, which is roughly the same as that for voiced words. The results show that voicing is not required for effective extraction of the size information. Research supported by JSPS Grant-in-Aid [B18300060] and the UK-MRC [G0500221].