



NewsRelease

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Feeling Your Words

NEW HAVEN — It is not surprising that sensory information from the facial skin and the muscles of the vocal tract affects the sounds of speech as we talk. A recent study by scientists at Haskins Laboratories, a Yale-affiliated research laboratory in New Haven, shows that movement of the facial skin at the side of the mouth also changes the way in which speech sounds are heard. Dr. Takayuki Ito, a senior scientist at Haskins, and colleagues used a robotic device to stretch the facial skin in a way that would normally accompany speech production and they found that this affects the way people hear speech sounds. Their subjects listened to words one at a time that were taken from a computer-produced continuum between the words *head* and *had*. When they stretched the skin upward, words sounded more like *head*. With downward stretch, they sounded more like *had*. A backward stretch had no perceptual effect. The presence of any perceptual change at all depended on the timing of the skin stretch; perceptual changes were only observed when stretch was similar to that which occurs during speech production. The perceptual effects of facial skin stretch indicate the involvement of the *somatosensory system* in the neural processing of speech sounds. This finding contributes in an important way to our understanding of the relationship between speech perception and production. It shows that there is a broad, non-auditory basis for speech perception and that speech perception has important neural links to the mechanisms of speech production.

Details of this study are reported in an article titled “Somatosensory function in speech perception” by Takayuki Ito, Mark Tiede, and David J. Ostry which appeared recently in an issue of the *Proceedings of the National Academy of Sciences* (PNAS) (www.pnas.org). All of these researchers are scientists affiliated with Haskins Laboratories. Tiede is also at the Research Laboratory of Electronics at the Massachusetts Institute of Technology and Ostry is a Professor in the Department of Psychology at McGill University.

Haskins Laboratories was founded in 1935 by the late Dr. Caryl P. Haskins. This independent research institute has been in New Haven, Connecticut since 1970 when it formalized affiliations with Yale University and the University of Connecticut. The Laboratories’ primary research focus is on the science of the spoken and written word.

Haskins Laboratories
THE SCIENCE OF THE SPOKEN AND WRITTEN WORD

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