

## **Communicative Efficiency in Sign and Speech: A Longitudinal Study**

**Jane S. TSAY**

(National Chung Cheng University, Taiwan)

Bellugi and Fischer (1972) investigated the communicative efficiency of American Sign Language and English in three native bilinguals. They found that the rate of words per second was higher for speech than for sign, yet the rate of propositions per second was the same across the two modalities. Myers, Tsay, and Su (2011) extended these findings to Taiwan Sign Language and Mandarin with 26 deaf and 31 hearing participants (data collected in 2005) with an improved statistical method for analyzing the narrative production. Their results showed that TSL had significantly greater representation efficiency (propositions per syllable) than Mandarin, while both languages were identical in transmission efficiency (propositions per second). This lecture reports a follow-up longitudinal study of the participants from Myers, Tsay, and Su (2011) from an aging perspective. In this current study, participants from the previous study were recruited in 2015-2016. While TSL still had higher representation efficiency than Mandarin, transmission efficiency decreased in both languages, but particularly in Mandarin. These results suggest that grammatical competence (the ability to encode linguistic representations efficiently) may be affected less by aging than performance (the ability to express propositions at an efficient rate), especially in the spoken modality, where muscle movements must be fast and precise.