

Socially-situated speech processing: The roles of emotion, social biases and social meanings

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Existing phonetic and psycholinguistic research of speech comprehension and production focuses on the processing of linguistic units (e.g., phonemes, syllables words, sentences) and the effects of linguistic factors (e.g., word frequency, grammaticality) and world knowledge (e.g., predictability, plausibility). However, in real-life communicative contexts, the processing of linguistic information is often intertwined with non-linguistic factors such as emotions, attitudes and social biases. In this talk, I will discuss some of our recent work on socially situated speech processing, with a focus on Chinese languages.

The first study examined the role of emotionality in bilingual spoken word processing among Cantonese-Mandarin bilinguals. Using pupillometry, we measured participants' physiological responses as they listened to affective and neutral words that are cognates in their L1 (Cantonese) and L2 (Mandarin). The results showed stronger emotional effects on pupil dilations for L1 pronunciations than L2 pronunciations, suggesting that emotionality is deeply embedded in spoken forms, likely through immersive experiences with a speaker's native language. The second study explored social meanings conveyed through voice features, focusing on Mandarin listeners' perception of creaky voice (vocal fry) versus modal voice. Our findings revealed complex social meanings of creaky voice that seem to be culture- and language-specific. The third study investigates how gender-based social stereotypes interact with spoken sentence processing. Unlike past research that reported robust ERP responses (e.g., N400, P600) to stereotype violations, we found no consistent effects across the board. However, subtle N400 effects emerged in listeners with more conservative gender ideologies and higher empathy, particularly when the talker's voice was more typical of their gender. These findings underscore the intricate relationship between listeners' cognitive traits, personal attitudes, and their online processing of gendered speech.

Together, these studies demonstrate the profound influence of social, emotional and attitudinal factors on spoken language processing and call for further research into the socially situated nature of speech communication.

Reading:

Yao, Y., Connell, K., & Politzer-Ahles, S. (2023). Hearing emotion in two languages: A pupillometry study of Cantonese–Mandarin bilinguals' perception of affective cognates in L1 and L2. *Bilingualism: Language and Cognition*, 26(4), 795-808.