

Language-independent talker-specificity in bilingual speech production

Ann Bradlow
Department of Linguistics
Northwestern University

Current phonetic theories emphasize the integration of linguistic and indexical information. For monolinguals, instance-specific, individual-specific, and group/dialect-specific indexical features are conveyed by phonetic variations of a single language. For bilinguals, language dominance (typically L1 over L2) and structural interactions between the two languages introduce additional sources of variation in the speech encoding of linguistic and indexical information. We probed the relationship between these multiple sources of variation by seeking evidence for talker “trait” characteristics that persist across L1 and L2 in bilingual speech. Using automatically extracted speaking rate measurements (syllables/second) from read and spontaneous speech recordings in the L1 and L2 of bilinguals (n=86, 10 L1s) and in the L1 of English monolinguals (n=27), we examined the relation between talker-specificity and language-specificity as modulated by dominance (L1 vs. L2). We found note-worthy differences in L1 speaking rate across the various languages, and as expected, L2 speaking rates were slower than L1 speaking rates both across groups (monolingual L1 English vs. bilingual L2 English) and within bilinguals across L1 and L2. Critically, L1 speaking rate significantly predicted L2 speaking rate: relatively fast or slow talkers in L1 were also relatively fast or slow in L2, respectively. Similarly, a related study demonstrated that L1 intelligibility predicted L2 intelligibility: relatively high or low intelligibility talkers in L1 were relatively high or low intelligibility talkers in L2, respectively. Together, these results indicate a persistent influence of talker-specific trait characteristics that combine with, rather than are overwhelmed by, language-specific and dominance-dependent influences in bilingual speech.