Investigating the Online Effect of Language on Gesture in Advanced Bilinguals of Two Structurally Different Languages in Comparison to L1 Native Speakers of L2 and Explores Whether Bilinguals Will Follow Target L2 Patterns in Speech and Co-speech

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Abstract : Being a bilingual involves mastery of both speech and gesture patterns in a second language (L2). We know from earlier work in first language (L1) production contexts that speech and co-speech gesture form a tightly integrated system: co-speech gesture mirrors the patterns observed in speech, suggesting an online effect of language on nonverbal representation of events in gesture during the act of speaking (i.e., "thinking for speaking"). Relatively less is known about the online effect of language on gesture in bilinguals speaking structurally different languages. The few existing studies—mostly with small sample sizes—suggests inconclusive findings: some show greater achievement of L2 patterns in gesture with more advanced L2 speech production, while others show preferences for L1 gesture patterns even in advanced bilinguals. In this study, we focus on advanced bilingual speakers of two structurally different languages (Spanish L1 with English L2) in comparison to L1 English speakers. We ask whether bilingual speakers will follow target L2 patterns not only in speech but also in gesture, or alternatively, follow L2 patterns in speech but resort to L1 patterns in gesture. We examined this question by studying speech and gestures produced by 23 advanced adult Spanish (L1)-English (L2) bilinguals (Mage=22; SD=7) and 23 monolingual English speakers (Mage=20; SD=2). Participants were shown 16 animated motion event scenes that included distinct manner and path components (e.g., "run over the bridge"). We recorded and transcribed all participant responses for speech and segmented it into sentence units that included at least one motion verb and its associated arguments. We also coded all gestures that accompanied each sentence unit. We focused on motion event descriptions as it shows strong crosslinguistic differences in the packaging of motion elements in speech and co-speech gesture in first language production contexts. English speakers synthesize manner and path into a single clause or gesture (he runs over the bridge; running fingers forward), while Spanish speakers express each component separately (manner-only: el corre=he is running; circle arms next to body conveying running; path-only: el cruza el puente=he crosses the bridge; trace finger forward conveying trajectory). We tallied all responses by group and packaging type, separately for speech and co-speech gesture. Our preliminary results (n=4/group) showed that productions in English L1 and Spanish L1 differed, with greater preference for conflated packaging in L1 English and separated packaging in L1 Spanish—a pattern that was also largely evident in co-speech gesture. Bilinguals' production in L2 English, however, followed the patterns of the target language in speech—with greater preference for conflated packaging—but not in gesture. Bilinguals used separated and conflated strategies in gesture in roughly similar rates in their L2 English, showing an effect of both L1 and L2 on co-speech gesture. Our results suggest that online production of L2 language has more limited effects on L2 gestures and that mastery of native-like patterns in L2 gesture might take longer than native-like L2 speech patterns.

Keywords : bilingualism, cross-linguistic variation, gesture, second language acquisition, thinking for speaking hypothesis