

Interpersonal influences on gesture production: Evidence for gesture form convergence across speakers in dyadic interaction

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### ABSTRACT

When we speak, we move our hands. That is, hand movements that we call gestures emerge during formulation of thoughts while attempting to encode them in socially constituted codes of words and sentences. The intrinsic relationship between the two expressive modalities has led researchers to believe that the two modes of thinking (imagistic thinking and categorical linguistic thinking manifested in gesture and speech respectively) comprise a single unit of thought, an “intrapsychological” unit within a speaker’s mind.

Gestures are, however, social as well as private. In my thesis, I analyzed video-recordings of cartoon narrations by English- and Japanese-speaking dyads to explore social or “interpsychological” aspect of gesture production by focusing on how the gestures used by different speakers can show similarity of form.

The first study used mirror image stimuli to investigate the relative strengths of speaker’s underlying images and interpersonal gesture coordination in motion trajectory gestures. In one group of dyads (controls), both members of the dyad watched the same stimulus clips. In the experimental group of dyads, each speaker watched a stimulus clips

that was a mirror image of the clip watched by the other speaker. The frequency of shifts in gestures' orientation revealed that although underlying image has overall stronger influence than coordination, speakers tend to avoid apparent conflicts in trajectory's orientation when they produced coreferential and overlapping gestures.

In the second study, to isolate the effect of interpersonal coordination from convergence due to speech, I controlled the dyads' visual access to each other's gestures by placing a blind between speakers. A within-dyad analysis on the rate of same handshapes used by both speakers when narrating with and without a blind revealed a robust effect of mutual visibility.

Finally, in the third study, I investigated gesture coordination in relation to linguistic context. Detailed analysis on shift in speech during what I call "gestural mimicry" demonstrated that gesture coordination is not mechanistic imitation. I also argued that speakers collaborate on constructing their talk both imagistically through gestures as well as linguistically through speech, thereby achieving co-participation in both expressive modalities.