

When gestures do or do not follow language-specific patterns of motion expression in speech: Evidence from Chinese, English, and Turkish

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Adults show systematic cross-linguistic differences in how they package and order components of a motion event in speech (Talmy, 2000). These differences influence the organization of semantic elements in gesture, but only when gestures are produced with speech (co-speech gesture), not without speech (silent gesture). For example, adult speakers of different languages show a binary split in packaging and ordering semantic components of events when describing them in speech with co-speech gesture. English speakers typically use conflated gestures, synthesizing manner and path into a single gesture (e.g., wiggle fingers forward to convey running forward); Turkish speakers use separated gestures, producing one gesture for manner (e.g., wiggle finger in the same location to convey running) and another for path (move finger forward to convey forward movement). The two languages also differ in the ordering of semantic components in speech, with motion situated either at the end (Figure-Ground-MOTION, Turkish) or in the middle (Figure-MOTION-Ground, English) of an event description. These differences dissipate, however, when speakers describe motion scenes exclusively in gesture without speaking (i.e., silent gesture)—with speakers of both languages using the conflated strategy and Figure-Ground-MOTION ordering in silent gesture (Özçalışkan et al., 2016). In this study, we focused on Mandarin Chinese, a language that does not follow the binary split in its expression of motion in speech (Paul et al., 2022), and asked whether adult Chinese speakers would follow the language-specific patterns in co-speech but not silent gesture, thus showing a pattern akin to Turkish and English adult speakers in describing motion. If observed, this finding will provide further support for ‘thinking for speaking’ account (Slobin, 1996), which states that language influences thought, but only during online speech production.

We examined this question by studying speech, co-speech, and silent gestures produced 20 adult native Chinese speakers ($M_{\text{age}} = 19.55$ [SD = 1.36]), in comparison to 20 adult English ($M_{\text{age}} = 18.95$ [SD = 1.10]) and 20 adult Turkish ($M_{\text{age}} = 20.8$ [SD = 1.76]) native speakers. Each participant was interviewed individually by a native speaker of their language; they first watched and then described 16 animated motion events with salient manner and path components (e.g., crawl across carpet, run into house)—one at a time—in a structured interview format in two different ways: once with speech while also using their hands (i.e., co-speech gesture condition), and once without speech using only their hands (i.e., silent gesture condition). All responses were transcribed and coded by native speakers and analyzed with two-way mixed ANOVAS.

Our results showed an effect of language on gesture when it was produced with speech—speech and co-speech gestures produced by Chinese speakers differed from speech and co-speech gestures produced by Turkish and English speakers. However, we found no effect of language on gesture when it was produced without speech: silent gestures produced by Chinese speakers were identical in how motion elements were packaged and ordered to silent gestures produced by English or Turkish speakers. Our results provide support for the “thinking-for-speaking” account, namely that language influences thought only during online, but not offline, production of speech.

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