

Representation of Event Structure in the Manual Modality: Evidence for a Universal Mapping Bias

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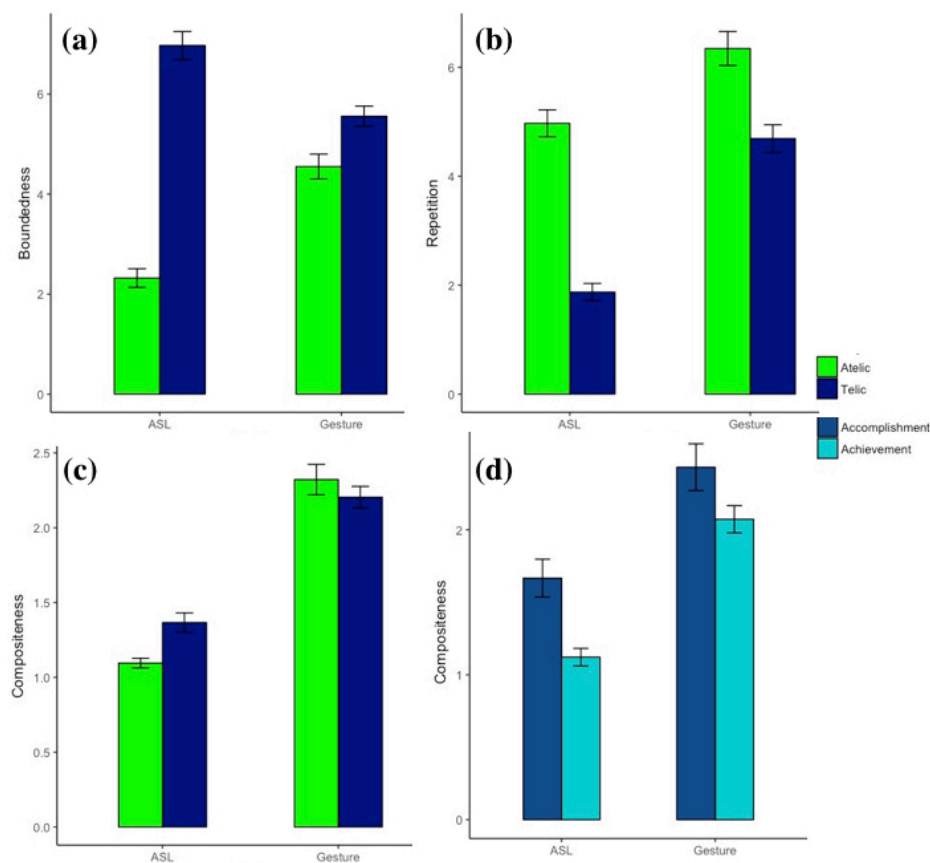
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The verbal predicate systems of signed languages robustly exhibit structured iconicity (cf. Wilbur's (2003) *Event Visibility Hypothesis*; Emmorey 2014). In ASL and other signed languages, for example, telic predicates like DEVOUR and BURP are associated with formational boundary marking whereas atelic predicates like STRETCH and APPLAUD lack such marking (Wilbur & Malaia 2008). Moreover, non-signers display *perceptual* sensitivity to these patterns (Strickland et al. 2015). Iconic mappings of this type may be the consequence of (a) universal communicative pressures that shape information expression in the visual modality and/or (b) grammaticalization of these pressures as language conventionalizes. Here, we investigate this tradeoff in the *production* of both sign language (ASL) and gesture, allowing us to better gauge the relative contribution of universal communicative pressures and grammaticalization. Convergence between sign and gesture suggests that these patterns of event structure representation in the visual modality are based on universal pressures and cognitive biases, while their divergence may be driven by grammaticalization effects.

We constructed a database of sign and gesture verbs using a sign language dictionary (www.spreadthesign.com) and a targeted elicitation task in which non-signers were asked to express the meaning of predicates without using their voice. Verbs in the database were classified for telicity and transitivity using Malaia et al.'s (2009, 2012) English-based classification. The database videos were coded on a 7-point scale for the degree to which the predicate sign contained formational end-marking ('gesture boundary') and repetition, as well as the extent to which a form was perceived as being composed of multiple sequential gesture parts ('compositeness'). Consistent with previous findings, we found robust evidence for telicity marking in sign forms across the ASL lexicon: telic verbs are associated with higher boundary-marking and atelic verbs with increased repetition (a-b). The investigation also revealed a compositeness distinction in ASL: telic verbs have higher compositeness scores than atelic verbs (c). Spontaneously produced gestures of non-signers also show higher boundary scores for telic verbs and higher repetition scores for atelic verbs (a-b). This convergence between sign and gesture suggests a common basis for this mapping, one that appears to be strengthened in language conventionalization, as evidenced by the increased effect in ASL. This likely reflects the fact that emerging sign languages make use of universal biases to mark different categories in the language. This universal mapping may also underlie the apparent similarity across historically unrelated signed languages (see also Wilbur 2010). Unlike ASL, however, gesture does not show any differences for compositeness (c). This divergence may reflect the emergence of morphological structure in marking telicity that arises only under linguistic conventionalization. When telic verbs are classified as achievements and accomplishments, accomplishments have higher compositeness scores than achievements in both ASL and gesture (d), which provides some initial evidence that subcomponents of accomplishment predicates (+ durative and + telic) are mapped onto different components of the form. Finally, though also semantically robust across languages, transitivity was not a significant predictor of any of the features explored here in either ASL or gesture, confirming that these patterns are driven by a selective, structured mapping between form and meaning and not global semantic representations.



References

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