

Action, metaphor and gesture: A corpus-analytical approach

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We experience the world around us through actions: we reach for something, hold it, or play with it. Meanwhile, we also share our kinesthetic experiences with other people using language and gesture. Due to their fundamental role of actions in human experience, action verbs encompass a rich pool of source domains for linguistic metaphorical extensions (e.g., *grasp/hold/pick up/throw away an idea*). But conceptual metaphors, as shown in many studies, are not only expressed in the spoken modality but also in the manual modality, through gesture (e.g., Calbris 2003, Cienki and Müller 2008, Sweetser 1998). Particularly, claimed as simulated action (Hostetter & Alibali 2008), gesture is capable of visually representing specific source domain information (i.e., embodied aspects) of abstract meaning, which is not expressed in speech (e.g., gesture can show exactly how “limits” can be *pushed*).

The current research aims to investigate how our linguistic and gestural behaviors are potentially motivated by our kinesthetic experiences using a corpus-analytical approach. It examines linguistic semantic/metaphorical extensions of action verbs and their spontaneous co-verbal (referential) gestures within naturally occurring language data. English action verbs collected from the action ontology IMGACT (<http://www.imagact.it/imagact/query/gallery.seam>) (Moneglia et al., 2012) are analyzed in terms of their linguistic patterns: (1) frequency in large corpora (COCA and BNC); (2) semantic complexity; (3) semantic frames (e.g., deterioration/modification of the object).

Based on the linguistic behaviors of action verbs, partial sets of them which tend to be extended to more abstract meanings are examined for their gestural behaviors. Whereas co-verbal gestures depicting concrete actions can be straightforward and specific via iconic representation (e.g., gestures with *pushing* a button on plane), it remains unclear how specific gestures depicting metaphorical meanings usually are (e.g., gestures with *pushing limits* in a political debate). All the gestural data are collected from the Distributed Little Red Hen video database (<https://sites.google.com/site/distributedlittleredhen/home>), which allows for the search of relevant words and phrases through the closed-captioning recorded with over 250,000 American televised programs. Gestural patterns are analyzed in terms of the form features which might be able to capture a wide range of the form variation and modification, for instance, hand shapes, location in space, movement trajectories (Bressem, Ladewig, & Müller 2014).

A pilot study finds that hand action verbs (e.g., *pull, push*) are more frequent and semantically diverse than mouth action verbs (e.g., *chew, swallow*) and those for foot actions (e.g., *kick*). Gestural patterns of 5 manual action verbs (e.g., *pull, push, lift, pick, hold*) show that gestures depicting abstract manual actions are less varied and more recurrent in nature, compared to gestures depicting concrete manual actions. For instance, gestures depicting abstract manual actions are produced with less varied and more lax handshapes. We will discuss how the current

research can provide insight into how what we know about embodied cognition can explain linguistic and gestural patterns related to communication about our kinesthetic experiences.

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