Grounding abstract concepts in action

A broad range of abstract concepts has physical roots. Changes, States, Causes, Purposes and many other concepts are usually comprehended via concrete domains, related to bodily experiences and the sensory-motor system (Lakoff and Johnson 1980; Gallese and Lakoff 2005; Pulvermüller 2005). Action verbs play a central role in the building of metaphorical conceptual structures. The very variety of events and derived action schemas produces diverse modulations in the extension of the verbs primary meaning (i.e. marked variation), each one of them focuses on a specific property of the predicate semantic core.

The research draws attention to 20 high-frequency Italian general action verbs and their figurative uses within the IMAGACT framework (www.imagact.it; Moneglia 2014; Panunzi et al. 2014), and specifically on force dynamic verbs (e.g. 'push', 'pull', 'drag'):

1) *Fabio spinge il figlio all'indipendenza*
   'Fabio pushes his child toward independence'
2) *Fabio spinge sui temi sociali*
   'Fabio pushes his social agenda'
3) *Fabio spinge avanti la ditta*
   'Fabio drives his company forward'

The IMAGACT multilingual ontology uses prototypical scenes (1,010 scenes in total) to identify the action categories referred to by general action verbs. Within this resource, the corpus-based annotation of marked uses consisted of four main steps: a) classification with respect to the type of figurative use (metaphors, metonymies, idioms; Brown 2014); b) extraction of the inherent image schemas and focal properties of the predicate; c) link between the figurative type and the scenes in the verb semantic variation; d) for each type, association of one conceptual metaphor in Lakoff's tagset (Lakoff et al. 1991).

The research outcomes show how the metaphorical projection of a wide array of embodied concepts is enabled by means of action schemas and semantic properties that are active in the basic/concrete meaning of an action verb.

References

Brown, S. W. 2014. From visual prototype of action to metaphors extending the IMAGACT ontology of action to secondary meanings (ISO-10). In H. Bunt (Ed.), *Proceedings 10th Joint ISO - ACL SIGSEM, Workshop on Interoperable Semantic Annotation, Reykjavic, Iceland, 26 May 2014* (53-56).

Gallese, V., & Lakoff, G. 2005. "The Brain's concepts: the role of the Sensory-motor system in conceptual knowledge". Cognitive Neuropsychology, 22 (3/4), 455-79.

Lakoff, G., Espenson, J., & Schwartz, A. 1991. *Master Metaphor List* (2nd ed.). Technical report, University of California at Berkeley.

Lakoff, G., & Johnson, M. 1980. *Metaphors we live by*. Chicago & London: The University of Chicago Press.

Moneglia, M. 2014. The Semantic variation of action verbs in multilingual spontaneous speech corpora. In T. Raso & H. Mello (Eds.), *Spoken Corpora and Linguistics Studies* (152-190). Amsterdam: John Benjamins.

Panunzi, A., De Felice, I., Gregori, L., Jacoviello, S., Monachini, M., Moneglia, M., & Quochi, V. 2014. Translating action verbs using a dictionary of images: the IMAGACT ontology. In A. Abel, C. Vettori, & N. Ralli (Eds.), *Proceedings of the XVI EURALEX International Congress: The user in focus* (1163-1170). Bolzano: EURAC research.

Pulvermüller, F. 2005. Brain mechanisms linking language and action. Nature Reviews Neuroscience, 6, 576–582.