

### **Spatial Cognition and Frames of Reference in Indo-European**

The development of Frames of Reference (FoRs) as coordinate systems in space language has gained increasing attention in current linguistic, neurolinguistic, and psycholinguistic research (Diessel 2013: 687; Kemmerer 2010). Previous studies on typology of spatial expressions have traditionally been based on the universal status of the egocentric or *relative* FoR found in the Indo-European languages, in which the relation between Figure and Ground is specified by the deictic observer's viewpoint (Mühlhäusler 2001). However, there is growing crosslinguistic evidence that many non-Indo-European languages do not make use of such deictic or ternary FoR, but interpret spatial relations by referring to binary non-egocentric *absolute* (geocentric) and *intrinsic* (object-centered) FoRs (Levinson 2003; O'Meara & Pérez Báez 2011). Contrary to the hypothesis according to which children's spatial representations are primarily egocentric, the most recent results on spatial language acquisition similarly suggest that children initially exhibit a strong bias toward *absolute* rather than *relative* FoRs (Shusterman & Li 2016). If one takes a historical perspective, it can be found that spatial cognition in the Indo-European language is different from that found in modern European languages. After investigating the contexts of use of spatial terms of FRONT, BEHIND, LEFT, RIGHT in Vedic Sanskrit and Ancient Greek in a comparative perspective, this paper aims at reconstructing the proto-language spatial FoRs. Specifically, data from the Rigveda and the Homeric poems prove that the egocentric *relative* FoR could not have existed yet in Indo-European, which indeed reveals traces of an *absolute* language. The close association between those spatial terms and *east* and *west* cardinal directions shows a projection of the front-back axis to spatial relations according to the positions of the sun within a geocentric FoR. These findings are also in line with recent studies on the existence of deictically-neutral temporal sequences in Indo-European space-time metaphors (Bartolotta 2018).

#### **References**

- Bartolotta, A. 2018. *Spatio-temporal deixis and cognitive models in early Indo-European*. «Cognitive Linguistics» 29 (1), 1-44.
- Kemmerer, D. 2010. *A neuroscientific perspective on the linguistic encoding of categorical spatial relations*, in Evans, V. & P. Chilton (Eds), *Language, cognition and space*. Equinox, pp. 139-170.
- Levinson, S. C. 2003. *Space in Language and Cognition*. Cambridge University Press.
- Mühlhäusler, P. 2001. *Universals and typology of space*, in Haspelmath M. (Ed.), *Language typology and language universals: An international handbook*. Vol. 20. Walter de Gruyter.
- O'Meara, C. & Pérez Báez, G. 2011. *Spatial frames of reference in Mesoamerican languages*. «Language Sciences» 33, 837-852.
- Shusterman, A. & Li, P. 2016. *Frames of reference in spatial language acquisition*. «Cognitive Psychology» 88, 115-161.