

**The effect of topography on spatial language and cognition:  
Ethnophysiology in Isthmus Zapotec**

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This paper presents an examination of topography as a potential factor influencing reference frame use in language and cognition, as proposed by Li & Gleitman (2002) and Palmer (2015), described by ANON (2011) and Wassmann & Dasen (1998), and quantitatively evaluated by ANON et al (2014, 2015, 2016, ms). ANON et al (2014, 2015, ms.) report topography to be a significant predictor of egocentric and geocentric frame use in discourse and recall memory in a sample of languages within and beyond Mesoamerica.

In this paper, data is presented from three communities of Isthmus Zapotec speakers. Pérez Báez (2011) discusses speakers' use of reference frames in recall and discourse describing two-dimensional stimuli in one Isthmus community. ANON (2016) presents an expanded examination of frame use in discourse in describing three-dimensional stimuli in two communities, and finds that significant variation exists between neighboring communities. Variation also exists in degree of preference for geocentric over egocentric encoding in memory. Frame use variation in discourse is not captured by the course-grained classification in terms of large-scale geomorphic provinces used by ANON et al (2014, 2015, 2016, ms). The current paper therefore explores factors contributing to the differences in frame use observed between communities. Where variation occurs between neighboring communities of speakers that are otherwise similar (e.g. in L1 and L2 use, education, literacy), a finer-grained classification of environmental factors must be explored.

Community-specific practices evolve around salient environmental gradients. An ethnophysiological study conducted by the first author sheds light on such practices. For example, the prevailing North-South winds of one community appear salient for only this community and can be interpreted as influencing that community's increased preference for absolute reference frames in discourse and cognition.

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