Is the absence of linguistic space-time mapping correlated with small number systems and the absence of calendric systems? A study of Amazonian languages

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Space-time mapping (or the employment of spatial metaphors for time) has been claimed to be a human linguistic and cognitive universal. However, research on an Amazonian language (sub-branch Tupí Kawahib) challenges the universality of linguistic space-time mapping at the constructional level. This language does not recruit its extensive inventory of terms and constructions for spatial motion and location to express temporal relations. The language also lacks a numerically based calendric system (Silva Sinha et al., 2012). To account for these data, and in opposition to a Universal Space-Time Mapping Hypothesis, Sinha et al. (2011) propose the Mediated Mapping Hypothesis (MMH), which accords causal importance to the numerical and artefact-based construction of time-based (as opposed to event-based) time interval systems. MMH does not challenge the hypothesis that the cognitive foundations of linguistic space-time mapping are universal, but proposes that whether or not space-time mapping is entrenched in linguistic structure is determined by sociocultural factors. Specifically, MMH claims that linguistic space-time mapping is mediated by cultural technologies of number and time reckoning. The hypothesis is that such technologies permit the elaboration of artefacts such as calendar systems, and these in turn constitute a domain of abstract time that "invites" mappings from the spatial domain.

To test this hypothesis, it is necessary to analyze a larger sample of languages. This is the object of the present study, and we also test the further hypothesis that the absence of calendric systems is an areal feature of Amazonian languages, of which many (as is well known) are languages with restricted number systems. Based on questionnaire data obtained from native speakers, we have documented time interval words and numerals in 21 endangered languages in the Rondônia region of North-Western Brazil (some of which can be classified as moribund), belonging to the Tupí, Chapacura and Pano language families, as well as some language isolates. These languages may be assumed to be in historic contact relationships with each other, cross-cutting linguistic phylogenetic relationships and facilitating lexical borrowing. To determine the relative borrowability of the time interval lexicon, we have also obtained for each language Swadesh core lexical word list data, as well as more borrowable core culture word data, based on lexical items from the semantic domains of religion and agriculture Carling et al., in press). We have also obtained questionnaire data on space-time constructional mapping from speakers of six languages. Quantitative and qualitative analysis of these data will be presented, demonstrating that the pattern of data reported by Sinha et al. (2011) cannot be considered an isolated phenomenon or a mere linguistic curiosity, but demands cultural-cognitive and typological linguistic theorization. We shall also address the methodological problems inherent in employing only questionnaire methods for eliciting constructional space-time mappings.

References

