

## Sumu-Mayangna meronyms: Mapping volumes and projecting facets

This paper proposes a profile for Sumu-Mayangna (Nicaragua: Misumalpan) meronyms that includes their salient conceptual features, mapping mechanism, structural realization, and usage in the context of spatial frame of reference expressions. This study draws upon data gathered from Drawings, an elicitation task, as well as Novel Objects I and II, which are referential communication tasks designed to help identify meronyms and their usage in spatial frame of reference (FoR) contexts (Bohnenmeyer 2008). It is argued that Sumu-Mayangna meronymy productivity is sufficiently robust semantically and structurally to participate in Bohnemeyer's meronymy hypothesis (2008), which proposes that the presence of a productive meronymy system should discourage relative spatial FoR usage.

The Sumu-Mayangna meronym mapping mechanism is subject to a shape-analytical algorithm, in line with the system proposed by Levinson for Tzeltal Maya (1994) with the possible exception of facet-identifying meronyms. Facet meronyms and meronyms that participate in identifying facet regions in Sumu-Mayangna are mapped using an algorithm that is sensitive to the gravitational vector. Additionally, the mapping algorithm was not observed to include metaphoricity, and parts could be named non-uniquely, though this was not the norm. The following types of geometric and volumetric features are salient to the Sumu-Mayangna meronym-mapping algorithm: volume, protuberance, facet, column, edge/border, and negative space. Particular meronyms can overlap with each other in terms of the shape and volume information they encode, as seen in Table 1. These geometrically salient features are of interest because while Campbell and colleagues (1986) identify semantic calques common to the Mesoamerican (MA) Sprachbund, a subset of Sumu-Mayangna meronyms were found to correlate with these MA semantic calques: *kal*, *kung*, *minik*, and *ting* (Eggleston, Benedicto, and Mayangna Yulbarangyang Balna 2008; Eggleston 2012). As a further note on meronym-mapping, most participants chose to orient the ground objects in Novel Objects I at some point during the task, though rarely did they interpret the object, with the exception of one pair, as seen in (1), however orientation was not observed to supersede shape-based sensitivity in terms of its importance (except in the case of facet meronyms, again).

The structural realization of Sumu-Mayangna meronyms is characterized by a set of nominal lexemes that can occur alone, as well as in lexical compounding and syntagmatic contexts, where they conform to the dominant head-final structure of the language, as seen in Table 2 with *nangtak*. Further, a subset of these meronyms undergoes derivational change to form body-part based relational nouns, as seen in Table 3 with *muhnit*, or 'in front of'. Sumu-Mayangna meronyms can also denote location and participate in spatial expressions (2)-(3).

Sumu-Mayangna was not observed to prefer the relative FoR, however its usage is observed in all referential communication tasks (Eggleston 2012). For the Churches II task, the spatial FoR usage preferences are rounded as follows: intrinsic 27%, relative 15%, direct 13%, landmark 13%, vertical 6%, and absolute 3%, with topological expressions at 22%. Further, meronym usage in the context of relative FoR types is possible, as seen in (3). In sum, though the Sumu-Mayangna meronym system is unique and distinct from MA-type meronymies, it is lexically and morphologically productive across various domains of use. Given that the relative FoR is present though not preferred in Sumu-Mayangna, these results seem to support, or at least do not undermine, the Bohnemeyer meronymy hypothesis.

Table 1. Some properties of the Sumu-Mayangna meronymy algorithm

Volume	Protuberance / Extension	Facet	Column	Border	Negative Space
bâ mak/makpa sapan tapan tun	bikis basan kal nangtak sut ting	dang minittang munh pirin sait sar tâ	baril pan	an kung sipintang / lawani	rahrah sulinh tinapas

- (1) mâtis bin kapat ki  
'It is like a little mouse'  
(1T7\_JR\_01:21-01:22)

Table 2. Morphological and lexical realizations of *nangtak*

Nominal	Construct State	Syntagmatic Compound	Lexical Compound
nangtak	nangnitak	nangtak pana / nangtak panan nangtak minit nangtak sibiln nangtak sut tân nangtak / tang nangtak	tângnantak

Table 3. Morphological and lexical realization of facet meronym *munh*

Nominal	Construct State	Relational Noun	Syntagmatic Compound	Lexical Compound
munh	muhni	muhnit	sautima munh	∅

- (2) **munh** duwi, arait, ma kilwa saitni yakat kidika, pahaun bin birtah  
'it has a front-facet, alright, toward the side the sun descends stick the little pink one.'  
(Ch1-2\_AM 00:04:56-00:05:01)
- (3) **kaln bin** aslah karak yalahna sak ki, ramh awas yah ...ting tingdau saitni yakat  
'the little lower extension that is sitting there, it's not to the right, toward the left hand side'  
(Ch2-3\_JR 00:4:37-00:04:42)

#### REFERENCES

- Bohnmeyer, J. (2008). Elicitation task: frames of reference in discourse – the Ball and Chair pictures. In: Pérez Báez, G. (Ed.), *MesoSpace: Spatial language and cognition in Mesoamerica – 2008 Field Manual*. Manuscript, University at Buffalo – SUNY (<http://www.acsu.buffalo.edu/~jb77/MesoSpaceManual2008.pdf>).
- Campbell, L., Kauffman T., & Smith-Stark, T. C. (1986). Meso-America as a linguistic area. *Language* 62(3), 530-570.
- Eggleston, A. G. (2012). *Spatial reference in Sumu-Mayangna, Nicaraguan Spanish, and Barcelona Spanish*. West Lafayette, Indiana: Purdue University Dissertation.
- Eggleston, A., Benedicto, E., & Mayangna Yulbarangyang Balna. "The Sumu-Mayangna Meronymy System." XI Encuentro Internacional de Lingüística en el Noroeste. Hermosillo, Sonora, Mexico. November 17 – 20, 2010.
- Levinson, S. C. (1994). Vision, shape, and linguistic description: Tzeltal body-part terminology and object description. In: Levinson, S. C., Haviland, J. B. (Eds.), *Space in Mayan languages*. Special issue of *Linguistics*, 32 (4), 791-856.