

Título:

Object to path in Mesoamerica: Semantic composition of locative and motion descriptions in Yucatec Maya and Juchitán Zapotec

(1) nombre:

Gabriela Pérez Báez

Jürgen Bohnemeyer

(2) dirección:

426 13<sup>th</sup> Street, Apt. 3D  
Brooklyn, NY 11215  
EUA

627 Baldy Hall  
Buffalo, NY 14260  
EUA

(3) afiliación académica

University at Buffalo, State University of New York

(4) teléfono

(718) 781-3926

(716) 645-2177 x727

(5) correo electrónico

gp22@buffalo.edu

jb77@buffalo.edu

(6) estatus académico

Candidata a doctorado en lingüística

Assistant Professor

**Object to path in Mesoamerica**  
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**1. Introduction**

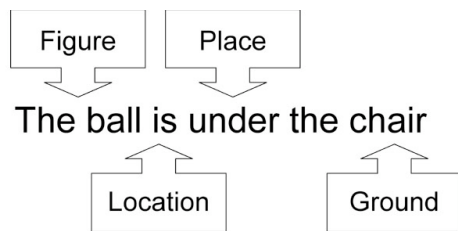
In this article we compare the semantic composition of locative and motion event descriptions in two genetically unrelated and typologically distinct Mesoamerican languages: Yucatec Maya (Yucateco) and Juchitán Zapotec (Juchiteco). Our analysis is based on data collected in the field with a variety of non-verbal stimuli. The data we present show that locative and path (or location change) information is encoded only in the verb in these languages, and not in the Ground phrase. Yucateco and Juchiteco thus represent a more radical type of verb-framing (Talmy 2000) than has been attested to date. In Yucateco, the Ground phrase expresses a PLACE function in the sense of Jackendoff (1983), while in Juchiteco it expresses object part information only, i.e., a THING function.

Yucateco (YUC) belongs to the Yucatecan branch of the Mayan family of languages spoken in the Yucatan Peninsula by some 700,000 people (1990 census via Ethnologue). The Yucateco data was collected from five men and one woman between the ages of 27 and 56, all being Yucateco-Spanish bilinguals. This data is compared with data from Juchiteco, an Otomanguan language of the Zapotec family spoken in the Tehuantepec Isthmus in the state of Oaxaca by some 85,000 people (1990 census via Ethnologue). The data was provided by 4 women and 2 men ages 40 to 65, all Juchiteco-Spanish bilinguals.

The analysis we present here utilizes the notions of “Figure” and “Ground” defined in Talmy (2000:184) as follows:

"The Figure is a moving or conceptually movable entity whose site, path, or orientation is conceived as a variable the particular value of which is the relevant issue... The Ground is a reference entity, one that has a stationary setting relative to a reference frame, with respect to which the Figure's site, path, or orientation is characterized."

In order to locate a Figure with respect to a Ground two conceptual prerequisites are present: (a) to define a place with respect to the Ground; and (b) to express that the place is where the Figure is located. As diagrammed in Figure (1), the copula *be* is used to predicate of the Figure the state of being at that particular place.



**Figure 1.** *Locative predication*

In Jackendoff's (1983, 2002) framework these two specifications are encoded by separate conceptual functions: (a) a PLACE function mapping the Ground object into the PLACE projected from it, expressed by locative relators; and (b) a LOCATIVE function mapping the place into a locative state, expressed by a locative predicate. The notation for such a function mapping in the locative description (state) *The ball is under the chair* is in (1).

(1) [<sub>State</sub> BE ([<sub>Thing</sub> BALL], ([<sub>Place</sub> UNDER ([<sub>Thing</sub> CHAIR])))]

It is useful for a number of reasons to distinguish LOCATIVE or PATH functions from PLACE functions. As we show below, there are typological differences in the encoding of these two functions crosslinguistically (cf. also Lehmann 1992; Nikitina in press). Also, one and the same PLACE function combines with different LOCATIVE and PATH functions. The ambiguity of (2) illustrates this: the place under the chair may be interpreted either as the goal or the “route” of the motion path in (2).

- (2) a. The ball **went** under the chair  
 b. [EventGO ([ThingBALL], ([PathTO ([PlaceUNDER ([ThingCHAIR])])])])]  
 [EventGO ([ThingBALL], ([PathVIA ([PlaceUNDER ([ThingCHAIR])])])])]

Talmy’s (1985, 2000) typology of lexicalization patterns in motion event coding classifies languages into two categories: (a) satellite (S)-framed languages such as English, in which path is encoded outside the main verb root, as in the English sentence in (3); and (b) verb (V)-framed languages, in which path is encoded in the main verb root, as in the Spanish example in (4).

- (3) The ball rolled out of the box  
 (4) *La pelota salió de la caja*  
 the ball exited from the box  
 ‘The ball exited from the box’

However, on closer inspection, the V-framed languages studied closely to date, such as Spanish, Turkish, and Japanese, emerge as encoding path in the Ground phrase as well as in the verb root. Section 2 of this paper presents an overview of S-framed and V-framed

languages, comparing in particular Indo-European languages to Yucateco and Juchiteco. We show that these two languages encode path exclusively in the main verb root and thus constitute a case of strict or “radical” V-framing.

## 2. Path-neutral Ground phrases

We define the Ground phrase as the argument or oblique that dominates the Ground-denoting nominal in locative and motion event descriptions. In Indo-European S-framed and V-framed languages alike, the Ground phrase encodes LOCATIVE and PATH functions, as shown in (5) and (6). In the English example, the preposition distinguishes LOCATIVE, GOAL, and SOURCE functions. In the Spanish example, LOCATIVE and GOAL functions are conflated in the same preposition *en*; but the SOURCE function is distinguished by the use of the preposition *de*, showing that the Ground phrase in the V-framed Spanish, too, encodes PATH functions.

<b>S-framed: English</b>				
(5)	a.	<b>LOCATIVE</b>	The cart is	in the box
	b.	<b>SOURCE</b>	The cart went	into the box
	c.	<b>GOAL</b>	The cart went	out of the box
				<b>GROUND PHRASE</b>

<b>V-framed: Spanish</b>				
(6)	a.	<b>LOCATIVE</b>	El carro estaba	en la caja
	b.	<b>SOURCE</b>	El carro entró	en la caja
	c.	<b>GOAL</b>	El carro salió	de la caja
				<b>GROUND PHRASE</b>

In contrast, as (7) shows, Yucateco Ground phrases are path-neutral and encode merely PLACE functions (Bohnenmeyer & Stolz 2006; Bohnemeyer in press). In the translation

of the above examples into Yucateco, one can use either the specific preposition *ich* ‘in’ or the generic preposition *ti*’, depending on how specific one wishes to be. In either case, the same expression would be used to express location, source, and goal. Thus the form of the Ground phrase does not reflect the PATH function at all, and the latter is encoded exclusively in the verb.<sup>1</sup>

- |   |   |
|---|---|
| <p>(7) a. <b>LOCATIVE</b><br/>         Le=kàaro=o’ ti’=yàan<br/>         DET=cart=DETPREP=EXIST(B3SG)<br/>         ‘The cart, it is in the box’</p> <p>b. <b>SOURCE</b><br/>         Le=kàaro=o’ h-òok<br/>         DET=cart=D2 PRV-enter(B3SG)<br/>         ‘The cart, it entered (lit. in) the box’</p> <p>c. <b>GOAL</b><br/>         Le=kàaro=o’ h-hóok’<br/>         DET=cart=D2 PRV-exit(B3SG)<br/>         ‘The cart, it exited [lit. in] the box’</p> | <p>ich / ti’ le=kàaha=o’<br/>         in / PREPDET=box=D2</p> <p>ich / ti’ le=kàaha=o’<br/>         in / PREPDET=box=D2</p> <p>ich / ti’ le=kàaha=o’<br/>         in / PREPDET=box=D2</p> |
|---|---|
- GROUND PHRASE**

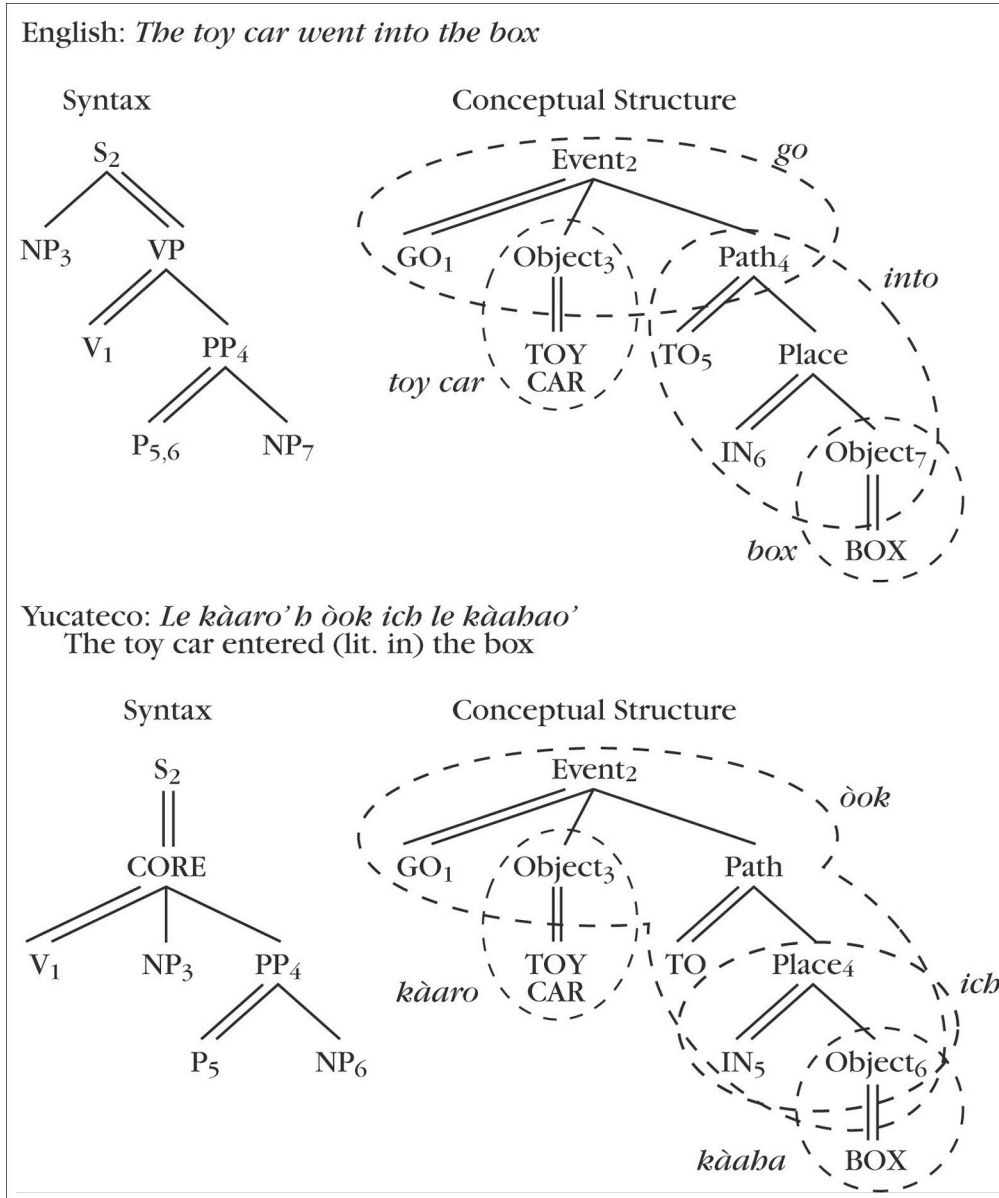
A comparison of the semantic composition in motion descriptions between Yucateco and English is shown in Figure 2 by means of the notation proposed in Jackendoff 2002.

Double lines in the syntactic representation symbolize the projection of phrases from their heads, and in the semantic representation, the determination of ontological types by conceptual functions. This convention reflects the assumption that at the syntax-semantics interface, conceptual functions are typically expressed by phrasal heads.

Dotted lines in the semantic representation encircle lexical conceptual structures and

<sup>1</sup> Bohnemeyer in press a, b argue that strictly speaking, the verb in Yucateco motion event descriptions does not encode PATH functions either, but rather change of location. But the distinction between path semantics and location change semantics is not relevant to the purposes of this article, and we ignore it here.

represent the semantic contributions by lexical items. Indices establish the mapping between individual constituents of conceptual and syntactic structure.



**Figure 2.** *Semantic composition in English and Yucateco motion descriptions (example)*

In the English example, the GOAL function is encoded by the path-specific preposition *into* and not by the verb *go*. The preposition *into* also encodes the fact that the goal is a container and the PLACE function singles out the inside of the container. In Yucateco,

the path -specific verb *òok* ‘to enter’ encodes both the fact that the Ground is a goal and that the place projected from the Ground is a contained space. The preposition *ich* ‘in’ repeats the place information, but is path-neutral.

This schematic comparison makes it visually evident that Yucateco is a “radically” V-framed language, meaning that it does not encode path outside the verb at all. Path-neutral Ground phrases as they occur in Yucateco appear to be quite widespread in Mesoamerican languages independently of language families, and may constitute an areal feature. Evidence of path-neutral Ground phrases can also be found, e.g., in MacLaury 1989 on Ayoquesco Zapotec, Levy 1992 on Papantla Totonac, Grinevald 2006 and in press on Jakaltek/Popti’, and O’Connor 2004 on Lowland Oaxaca Chontal.

### **3. Meronyms in spatial descriptions**

Juchiteco, like Yucateco, exhibits path/location-neutrality in Ground phrases (Pérez-Báez in press). Ground phrases in Juchiteco are headed by “meronyms”, unlike in other languages whose Ground phrases are headed by prepositions. Thus, prior to the discussion in Section 4 about the properties of Ground phrases in Juchiteco, we present here an overview of the role of meronyms in spatial descriptions.

Meronyms are relational nouns that refer to a part of an object when possessed by a nominal that refers to that object. Mesoamerican languages exhibit highly productive terminologies for object parts and, at least in some languages, spatial regions projected from them, i.e., PLACE functions. Depending on the language, some meronyms may



have abstract geometrical meanings such as ‘edge’, ‘center’, or ‘interstice’. An example of this is Yucateco *óok’ol*, an abstract relational noun which denotes the top of the Ground object and the region above it, but which is not used in core arguments of action sentences at all. When the tabletop as object part is to be referred to by a verb argument, *táan* ‘forehead’, ‘front’ or the compound *táan+yóok’ol* is used. Yet, *óokol* can be identified as a noun, rather than as a preposition, because it is marked for possession by the 3<sup>rd</sup>-person proclitic *y=*. In (8), *óok’ol* is possessed by the Ground denoting nominal *mesa* ‘table’; it refers to the table’s top, expressing a PLACE function that includes the top surface and the space above it.

(8) *Le=lùuch=o’ ti’ yàan y=óok’ol le=mesa=o’*  
 DEF=cup=D2 there EXIST(B3SG)A3=top DET=table=D2  
 ‘The cup, it’s there on the table’

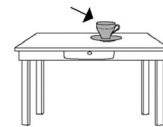


Figure 3. *BowPed item 1 (Bowerman & Pederson 1993)*

In addition to a set of abstract meronyms such as *óokol*, Yucateco has concrete meronyms. For these concrete meronyms to head a Ground phrase, they must combine with the generic preposition *ti’*, as shown in (9). *Ti’* is semantically largely empty. In purely syntactic terms, it serves as a kind of default preposition for the formation of obliques and adverbials from its complements. We argue that it expresses, in locative and motion description, the shift in semantic type – the mapping from THING to PLACE function – and in non-spatial contexts some metaphorical equivalent. On this analysis, the fact that meronyms such as *pàach* ‘back’ in (9) require *ti’* to form Ground phrases suggests that they do not by themselves express PLACE functions. The most frequent

Yucateco meronyms are listed in Table 1, divided into a subset of concrete nouns and a subset of abstract nouns.

(9) Te'1 kul-ukbal u=pèek'-il **tu=pàach** le=nah=o'  
 there sit-DIS(B3) A3=dog-REL PREP:A3=back DET=house=D2  
 'There the dog is sitting outside the house'

Figure 4. BowPed item 6 (Bowerman & Pederson 1993)

**Table 1.** *The most frequent relational spatial nouns in Yucateco Ground phrases*

semantic type	construction	relational noun
Place	[SetA <sub>i</sub> -N <sub>rel</sub> NP <sub>i</sub> ] <sub>NP</sub>	<i>àanal</i> 'under'; <i>iknal</i> 'at'; <i>óok'ol</i> 'on/over'
Object (part)	[ <i>ti</i> ' [SetA <sub>i</sub> -N <sub>rel</sub> NP <sub>i</sub> ]] <sub>PP</sub> or [N <sub>rel</sub> (-il) <i>ti</i> ' NP] <sub>PP</sub>	<i>chúumuk</i> 'center'; <i>háal</i> 'edge'; <i>nak</i> 'belly'; <i>(ba')pàach</i> 'back/outside'; <i>(ak)táan</i> 'front'; <i>tséel</i> 'side'; <i>ts'u</i> 'core'; <i>xno'h</i> 'right'; <i>xts'i'k</i> 'left'; <i>xùul</i> 'end'; <i>yáam</i> 'interstice'

Independently of the existence of abstract meronyms such as Yucateco *óokol*, most if not all MA languages also have meronyms derived from body part terms as described in Bohmeyer & Stolz 2006, Brugman 1983, Brugman & Macaulay 1986, de León & Levinson 1992, Friedrich 1970, Hollenbach 1988, Levinson 1994, Levy 1992 and MacLaury 1989. Such is the case of Juchiteco. The most frequent body part-derived meronyms in Juchiteco are listed in Table 2. The role of these and all meronyms used in the linguistic representation of space in Juchiteco is discussed in Section 4, as it is found to be of particular relevance to understanding path/location-neutrality in this language.

**Table 2.** *The most frequent meronyms in Juchiteco Ground phrases*

JCH	English gloss	JCH	English gloss
ike	head	lu	face, eyes
kwe7	side	ndaani	stomach, gut, belly, abdomen
zha7(na)	buttocks, anus	deche	back

#### 4. Object-(part-)denoting Ground phrases

Path/location-neutrality in Juchiteco is illustrated in (10), where the same meronym, *ndaani* ‘stomach’, is used in locative as well as path description.

(10) a. **LOCATIVE**

Nuu\* ti^=mansa\*na  
 EXIST INDEF=apple  
 ‘There is an apple inside a bowl’

b. **SOURCE**

B.y.uu Ana  
 CMP:MDP:enter Ana  
 ‘Ana went inside the house’

c. **GOAL**

Zaa kwee\*=ka\*=be\* ba^7duka\*  
 allow PROG:extract=PL=3child DEM  
 ‘Let them extract the child out of her  
 (by c-section)’

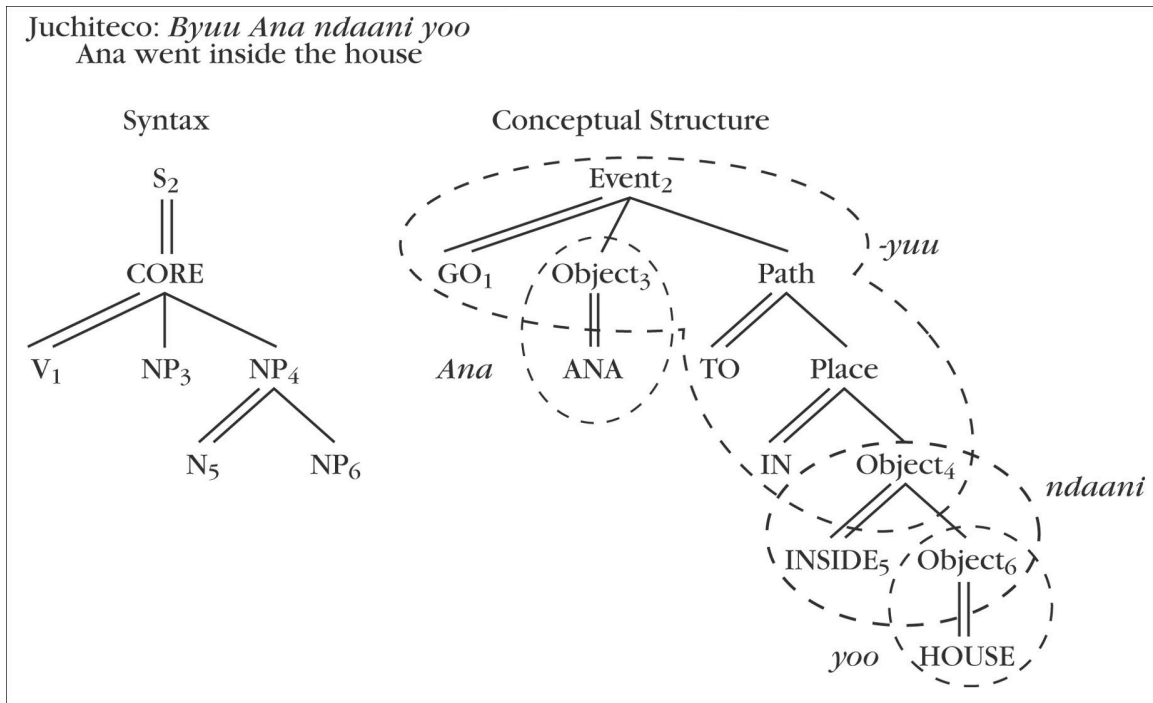
ndaani	ti=bladu!7
stomach	INDEF=dish

ndaani	yoo
stomach	house

nda^ani=be*
stomach=3

**GROUND PHRASE**

But Juchiteco, and other Zapotecan languages, may be going one step further than Yucateco (and other Mayan languages). Juchiteco Ground phrases appear to be noun phrases that encode object parts while it is the verb that encodes both the mapping from PLACE into PATH function and that from OBJECT into PLACE. Figure 4 shows that the verb encodes the PATH function as well as the PLACE function, and that all the meronym *ndaani* ‘stomach’ contributes is the denotation of a part of the Ground object.



**Figure 4.** *Semantic composition in Juchiteco motion event descriptions*

We draw from several pieces of evidence to support the analysis illustrated in Figure 4.

First, spatial relators in Ground phrases are meronyms. There are no adpositions in Juchiteco, not even a generic one as in Yucateco.<sup>2</sup> More importantly, all the meronyms that head Ground phrases also head argument noun phrases in action sentences.

Therefore, all of them at least *can* denote objects or object parts. In (11a) *ike* ‘head’ is the head of the Ground phrase, while in (11b) it is a core argument of the verb ‘to hurt’.

<sup>2</sup> MacLaury (1989: 120), writing about meronyms derived from body part terms that are used in locative and motion descriptions in Ayoquesco Zapotec, states that they “are not prepositions, because there is no justification for setting them apart from their primary classification as nouns. Unlike English prepositions, they are identical in form to the nouns applied to body organs, their use in syntax is optional, they only add specificity to other locative expressions, they do not complicate syntax, they do not denote direction, and they do not mark grammatical relations as do case markers.” All of these criteria apply to Juchiteco meronyms derived from body part terms as well, with the same result in each case, with the possible exception of optionality. There are no instances of ground phrases not headed by meronyms in our corpus; whether meronyms can be omitted from ground phrases under certain conditions remains to be tested.

- (11) a. Lii\*bi beji\*ga [ike ti=ba\*ra]<sub>Ground phrase</sub>  
 tied balloon head INDEF=stick  
 ‘The balloon is tied to a stick’

- b. Ka-yu!uba ike!7  
 PROG-hurt head:1  
 ‘My head hurts’

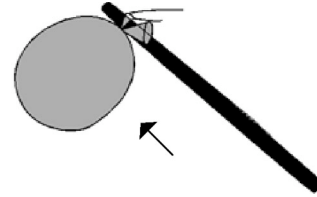


Figure 5. BowPed item 20 (Bowerman & Pederson 1993)

- (12) Nuu\* ti^=(g)a^ni!w bi-kwini na\*7  
 EXIST INDEF=ring finger hand  
 ‘There is a ring on the finger’

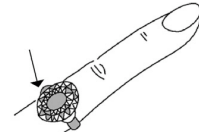


Figure 6. BowPed item 10 (Bowerman & Pederson 1993)

Furthermore, in Juchiteco, the search domain of the PLACE function projected from the selected part may be surprisingly vague, suggesting that it is not in fact (lexically) encoded. In (13 a, b) the same meronym is used to describe two different spatial relations. If the PLACE function were encoded in the meronym, we would expect different meronyms to be used in the description of these relations. In the case of (13a, b), *ike* does not encode a spatial relation but a THING – the uppermost part of the house; the computation of the contextually appropriate PLACE function is left to inferences.

- (13) a. Dxi!7ba=be\* i^ke yoo  
 mounted=3 head house  
 ‘He’s on top of the house’



Figure 6. BowPed item 34 (Bowerman & Pederson 1993)

- b. Bi^dxi\*=gi^ dxi!7ba ike yoo  
 spider mounted head house  
 ‘The spider is on the ceiling’

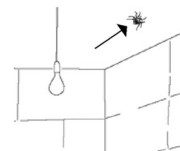


Figure 7. BowPed item 7 (Bowerman & Pederson 1993)

The role of BP-derived meronyms as THING-denoting is especially evident from the vagueness of examples such as (14) which can be understood to mean that the Figure, the belt, is around the woman’s abdomen or that it is inside her stomach as if she had swallowed it.

- (14) nuu\* +ti^ sinin-do!rr ndaani +be\*  
 exist +a belt stomach +3  
 ‘She has a belt around her belly  
 OR  
 ‘She has a belt in(side) her belly



Figure 8. *BowPed* item 42 (Bowerman & Pederson 1993)

The linguistic representation of the spatial relation in Figure 8 can be made specific to convey that the belt is around and not inside the Ground, by replacing the existential *nuu\** with the dispositional *zhi!7* “tight” as shown in (15).

- (15) zhi!7 sinin-do!rr ndaani +be\*  
 tight belt stomach +3  
 ‘The belt is tight on her’

However, *ndaani* does not lexicalize the meaning of the English preposition “around”. Consider Figure 9 which elicited from speakers a variety of meronyms for the same spatial relation as in (15) but not *ndaani*. Again this points to a system of Ground phrases headed by meronyms which only select a part of the Ground. Meronyms in Juchiteco do not encode PLACE functions, which are a matter of inference in this language.

- (16) ti7xi/kwe7/ladi giiri nuu\* ku^rrba\*ta  
hip/flank/skin candle exist tie  
'There is a tie around the candle'

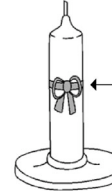


Figure 9. *BowPed item 4 (Bowerman & Pederson 1993)*

## 5. Conclusions and implications

Based on the data presented, we have shown that Yucateco and Juchiteco Ground phrases are path-neutral, and that locative and path information is exclusively encoded in the verb in these languages, unlike in better-studied languages of the V-framed types. Yucateco b b and Juchiteco Ground phrases differ in their semantic type in that Yucateco Ground phrases denote places while Juchiteco Ground phrases denote object parts only, leaving the place projected from these parts to pragmatic inferences. In line with this semantic difference, we consider Juchiteco Ground phrases to be noun phrases typically headed by a body-part term sorry, Yucateco Ground phrases are headed either by a preposition or by an “abstract”, i.e., place-denoting, relational noun. This contrast suggests that syntax is highly sensitive to the place-object distinction.

Data presented here and in works by other authors cited in this paper suggest that path-neutrality and productive use of relational nouns may be areal features characterizing the Ground phrase in many Mesoamerican languages. The evidence from Juchiteco and Yucateco suggests that these features are realized in at least two distinct language types. A clarification of the synchronic and diachronic relationships between these two types may thus hold important insights into the dynamics of Mesoamerican as a language area.

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