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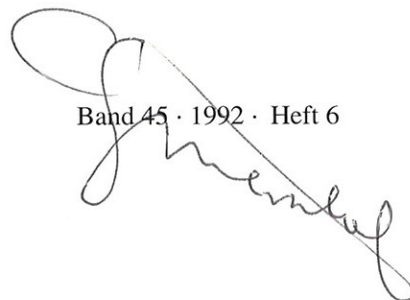


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Special Issue: Spatial Description in Mesoamerican Languages

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LOURDES DE LEÓN & STEPHEN C. LEVINSON (Nijmegen)

Introduction

Spatial Description in Mesoamerican Languages

How should one do comparative linguistic research? One answer, the kind provided by linguistic typology, is to take some grammatical metalanguage (e.g. of grammatical relations like Subject, Object) and then investigate patterns (like word order patterns holding between Verbs, Subjects and Objects) in a representative sample of the world's languages. Such a method, as its practitioners are well aware, is fraught with peril: how do we in advance construct a grammatical metalanguage of universal application? How can we know that Subject (however defined) in Tamil is the same kind of thing as Subject in Basque (worse: we know it cannot be, since every grammatical entity is partially defined in terms of its role within the unique language system)? What could be a representative sample of languages in an historically contingent, increasingly interdependent set of languages that happen to have survived what the twentieth century has done to their speakers?

There is another type of answer, practiced by anthropologists and area specialists. They take some locally prominent theme (like caste in the Indian subcontinent, or ergativity in Australian languages) and pursue all the variations across a culture area, hoping thereby to winnow out the essential underlying tune from all the distracting chaff of varied versions. Later, one can go on to compare underlying themes from different culture areas. Anyone with structuralist leanings, who thinks that single traits cannot be understood outside of the system they belong in, should be sympathetic to this second sort of approach, unfashionable though it is in comparative linguistics.

This collection is inspired by the second kind of approach, although not perhaps avoiding all the vices of the first. For Mesoamerica seems to form one of the very tightest examples of a *linguistic area*, in the sense popularized by EMENEAU 1956, i.e. a geographical area where many distinct linguistic stocks are represented, but where these are to some extent fused into a larger linguistic and cultural entity by features and subsystems that have spread across the various stocks. In an important study, CAMPBELL, KAUFMANN & SMITH-STARK (1986) isolate five features that bundle at the borders of the area, do not extend beyond, and are sufficiently distinctive to require an explanation in terms of diffusion:

- (a) nominal possession (of the type 'his-dog the man');
- (b) relational nouns;
- (c) vigesimal number system;
- (d) non-verb-final word order;
- (e) several widespread semantic calques.

The authors fail to note, though, that disregarding (c) and (d), the other features are closely related, and indeed closely related to yet other features that they discount on the grounds of possible independent invention. The underlying theme is predominantly spatial. Possession plays a syntactically wide role, binding constituents together, and semantically generalizes to relation in general; hence relational nouns are nouns that specialize the kind of relation expressed – quite largely to kinds of locative relation. These locative constructions (of the sort 'its-under the table') are in turn closely related to locatives derived from body parts (of the sort 'its-ear the table'), which the authors felt could possibly be explained other than by diffusion. However, the widespread semantic calques turn out to be largely those same body parts and their extensions, whereby bark is the 'back' of a tree, knee is 'head' of the leg, door is 'mouth' of the house, edge is also 'mouth', which play a crucial role in locative description.

So out of a study of isolated traits, isoglosses of all kinds from phonological to grammatical, emerges a set that bundle at the boundaries of Mesoamerica, and which seem to exhibit a single

immanent theme: a preoccupation with space and shape. That theme has been noted many times before, for example in the essays *Shape categories in grammar* by FRIEDRICH (1970) or *Space as a Mam grammatical theme* by ENGLAND (1978) or as one of the themes in GOSSEN'S (1986) *Mesoamerican ideas as a foundation for a regional synthesis*. Grammar, semantics, ritual, myth, cosmology, and the organization of interaction conspire to make the theme a dominant element in Mesoamerican ideas.

In the study of human cognition, spatial conception has played a special role.¹ KANT argued eloquently for its centrality in human cognition, and in current thinking in the Cognitive Sciences the presumption is that there is a universal framework of spatial ideas, which serves to organize many other aspects of human cognition.² It has been presumed for example that all children are innately endowed with notions of containment and support, and then merely find, as it were, the local labels for them; and that the notions of front/back, left/right, up/down derived from planes through the human body provide universal modes of conception and description. But the picture emerging from indigenous Mesoamerican ideas challenges this sort of generalization in fundamental ways.

These papers tap into this rich seam of indigenous ideas about space. They are each in their own way a modest sampling of this seam from a particular perspective and from the vantage point of a particular language. Body part terms and their spatial exploitations are the focus of three papers. PAULETTE LEVY describes how body part terms are incorporated into Totonac verbs. Such incorporation is noted by CAMPBELL et al. (1986: 551) as an areal feature, but it is not entirely distinctive of Mesoamerica as it is neither fully extensive over, nor fully restricted to, that area. LEVY'S account can be read as an interesting parallel to FRIEDRICH'S (1969) well-known account of Tarascan body part incorporation (Totonac and Tarascan appear to be genetically unrelated, indeed respectively near and actual isolates). ANNETTE VEERMAN-LEICHSENRING'S paper examines body part incorporation into verbs in yet another genetically unrelated language, Popoloca. Here, though, the process is more limited and more lexified, and hints at a deep time depth for the forces of areal convergence. That in turn raises conjectures about whether Mesoamerica owes its cultural and linguistic convergence to particular periods of imperial expansion rather than to continuous mercantile intercourse.

On the basis of data from Colonial sources, modern narratives and conversational material, LOURDES DE LEÓN explores the patterns of grammaticalization into locatives of a set of body part terms in Tzotzil. Her paper introduces a new kind of data into the theory and description of grammaticalization, and raises general questions about the development of locatives in the Mayan languages. Her paper ties up closely with CHRISTEL GOLDAP'S paper on locative relators in Yucatec Mayan. GOLDAP presents an analysis that distinguishes five classes of locatives on morphological and semantic grounds. The Yucatec data portrays a locative system which seems to lie on the same trajectory of grammaticalization of body parts as sketched by DE LEÓN for Tzotzil, but to have proceeded considerably further along the same path.

The Mayan languages exhibit another feature that may well be typical across the entire linguistic area. This is the prominence of the verb in spatial description, including especially locative description. CHRISTIAN LEHMANN'S paper describes this feature of Yucatec within a useful typological framework for comparing languages in this regard. For example, in English *John went to the station*, the preposition *to* encodes both (motion) 'towards' and 'into the proximity of'; in Yucatec the first element of meaning is lexically absorbed into the verb, with the consequence that there are no 'reduced relatives' (of the sort 'The bowl on the table'). JOHN HAVILAND'S paper focuses on Tzotzil roots that play a crucial role in locative predicates, corresponding to the class that Mayanists call *positionals*. In Tzotzil this class is problematic to identify purely on formal or semantic grounds; HAVILAND explores the combinatorial properties of such roots with derivational morphemes, and shows that a relatively clear class can then be isolated on formal grounds. The semantics of this class cohere around the concept of an articulated object in various specific positions, suggesting the human body as prototype. This suggests an interesting conceptual linkage between the body part terms and the positional roots.

Finally, PENELOPE BROWN & STEPHEN C. LEVINSON look at a startling linguistic and conceptual gap in Tenejapan Tzeltal: the absence of any way of describing objects as to the left or right in the visual field. Space is not so egocentrically conceived: in Tzeltal the spatial relation holding be-

¹ See e.g. CLARK 1973, MILLER & JOHNSON-LAIRD 1976, and review in LEVINSON (in press).

² LEVINSON (in press) reviews evidence from a range of language families against the received view in Cognitive Science.

tween objects does not depend on the speaker's location or point of view. Perhaps this de-emphasis of the primacy of the speaker or egocentric viewer of a scene is also an area-wide theme; certainly, accounts of deixis in other Mayan languages point to a sociocentric rather than egocentric fixing of deictic reference (HANKS 1991).

These papers merely sample a small range of Mesoamerican languages for their treatment of space in different areas of the grammar and lexicon. They indicate that there is indeed a rich theme here to be explored, but they remind us how much basic descriptive work there still is to do. That work would be especially valuable because of the fundamental importance spatial conception has in human experience, the rich development of the theme in the Mesoamerican languages, and the pressing need for better comparative material in the linguistic and cognitive sciences. We hope that readers may be spurred by the very incompleteness of this collection to contribute to this growing research.

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PAULETTE LEVY (México)

Body Part Prefixes in Papantla Totonac¹

Summary

The purpose of this article is to show the ubiquitous presence of a set of prefixes denoting body-parts in all types of Totonac words. Although the use of these prefixes constitutes basically a word formation mechanism, it is suggested that such a productive process has other concomitant functions.

Papantla Totonac (PT) is spoken by approximately 80,000 people in the area around the town of Papantla, in the northern part of the state of Veracruz, Mexico. It is a member of the Totonacan family that consists, according to SIL intelligibility studies², of eight varieties of Totonac (with a total of 270,000 speakers) and three Tepehua dialects (with a total of 10,000 speakers). Totonacan is spoken in the area where the borders of the states of Veracruz, Puebla, and Hidalgo meet, and goes from the Sierra Madre (Sierra Norte de Puebla) to the coast of the Gulf of Mexico. Totonacs are peasant agriculturalists, cultivating subsistence crops – maize, beans, squash, and peppers –, coffee in the medium altitude areas, and citrus groves and bananas in the lowlands. Vanilla, in spite of many vicissitudes, is still a very important cash crop in the Papantla area.

The purpose of this paper is to show the extent to which a set of prefixes, basically denoting body parts, but also including elements which are geometrical or configurational in nature, appears in the formation of all kinds of Totonac words. Although the process is at its most productive in the realm of verb formation, these elements seem to be everywhere in Totonac. They enter into the derivation of a large number of verbs: impressionistically, about 85 % of verbal roots can combine with one or more of these elements to form a composite verbal base. They form part of many nouns, either by the simple affixation of *-n* NR, or as part of compound and derived nouns. Some of them function as numeral classifiers. They are present in adjectives and in certain types of adverbs. They form relational nouns which enter into the Mesoamerican genitive construction with a locative meaning. It should be clear from this list that body-part prefixes are an important factor in word formation, and therefore interesting from the point of view of the structuring of the Totonac lexicon. Although

¹ A first version of this paper was delivered during the Workshop on Space in Amerindian Languages at the Cognitive Anthropology Research Group, Max Planck Institute for Psycholinguistics, Nijmegen, Holland, on Dec. 3, 1991. This version owes a lot to TOM SMITH-STARK's red pen: thanks so much. Whenever I did not heed its advice, it was at my own peril.

Transcription follows a version of the practical orthography in which *x* = /š/, *ch* = /č/, *c* = /p/, *lh* = /l/, *£* = /tl/, *j* = /h/, *V*' = laryngealized vowel, *V*: = long vowel; when the accent falls on a syllable other than the antepenult, it is indicated by an acute accent over the accented vowel. Abbreviations are: AVR = adverbializer; CL = classifier; COM = commitative; CPL = completive aspect; DET = determiner; IND.OBJ = indefinite object; INGR = ingressive; ITS = intensive; *n.* = noun; NP = noun phrase; NR = nominalizer; PF = perfective aspect; PL = plural; PRG = progressive; RFL = reflexive; *sb* = somebody; *sth* = something; TRR = transitivizer; *ve* = stative verb; *vi* = intransitive verb; *vt* = transitive verb.

² GRIMES (1988: 31)

I will only briefly outline it in this paper, I hope to show also that such ubiquitous elements serve many other purposes in the functioning of the Totonac language, such as the tracking of reference, the individuation of noun phrases, and the establishment of textual cohesion. I offer this descriptive statement of the distribution of these elements hoping to show that their study is interesting both from the point of view of our understanding of how Totonac functions and from the point of view of an inquiry into how spatial notions of shape and configuration enter into the organization of human grammars.

The Totonac body part prefixes are elements like:

- (1) *ak-*, *aq-* 'head; top'
aq- 'ear'
paqa- 'arm'
aqxpaqa- 'shoulder'
laka-, *laqa-* 'face, flat surface'
kilh-, *qalh-* 'mouth, border'
pix- 'neck'
tan- 'buttocks'
aqlhtampix- 'nape'
qi:- 'the back'
tanqi:- 'the corner formed by a wall and the floor, from the inside of a house'

Some are clearly noun roots, functioning as independent nouns with the suffix *-ni/-ni*, a mark of nounhood in this case but a nominalizer in several other contexts:

- (2) *aqán* n. 'ear'
paqán n. 'arm'
aqxpaqán n. 'shoulder'
lakán n. 'face' **laqán*
kilhni n. 'mouth' **qalhni*
pixni n. 'neck'
aqlhtampixni n. 'nape'
qi:n n. 'back'
tanqi:n n. 'the corner formed by a wall and the floor, from the inside of the house'

Others are clearly prefixes, either related to nouns (3a.), or not (3b. with geometrical meaning, 3d. with corporeal meaning); 3c. are prefixes that have sound-symbolically related nouns:

- (3) a. *aq-* *aqxa:* *qa* n. 'head'
 b. *ti:-* 'straight line'
pu:- 'inside'
 c. *ak-* 'head'
laqa- 'face, (large) flat surface'
maqa- 'hand'
qalh- 'mouth'
 d. *tan-* 'buttocks'

Both the elements in (2) and in (3) belong to the same substitution class, which makes it impossible to decide if processes like verb base formation are to be classified as compounding or derivation. Arbitrarily, I will call them prefixes and therefore imply that it is a process of derivation that I am dealing with, although the clear nominal origin of most of these elements must be borne in mind.

The set of body part prefixes consists of 25 to 50 elements. There are two reasons for the difficulty in arriving at a precise number. On the one hand, there is the phenomenon of phonetic symbolism. On the other, there is the fact that many of these elements combine among themselves to form complex prefixes.

Phonetic symbolism can be widely recognized in the Totonac lexicon, although synchronically it is not a productive means of new word formation.³ Many doublets or triplets of morphemes or words are related through an alternation in one of three series of consonants: the fricatives /s, x, lh/,

³ A list of 112 such sets is given in LEVY 1987: 115–127.

the affricates /c, ch, £/, or the velar stops /k, q/. Sometimes there is a concomitant change in meaning in the areas of dimension or endearment, but sometimes no apparent change in meaning can be detected:

- (4) /s, x, lh/:
swilʃh
xwilʃh 'he wrings it'
lhwilʃh
- /k, q/:
xkuta 'he unties it'
xquta 'he unties it (something larger)'
- laka-* 'face, small surface'
laqa- 'face, larger surface'
- /c, ch, £/:
ciliki
chiliki 'coarse'
£iliki
- cha'*: 'shape of a cilinder'
ca': 'id., of something smaller'
£a': 'id., of something larger'

As the reader may have realized from some of these examples and the examples in (1), several body part elements enter into such sets. In some cases, a difference in meaning is present; for instance, both *laka-* and *laqa-* may refer to flat surfaces, but the first one is used for smaller ones, like pages in a book, while the second one is used for larger surfaces, like fields. However, in other cases, the distribution of one form of a set vs. the other seems to depend on consonant harmony with the base; still in other cases, the bases themselves seem to have two forms, and show consonantal harmony with the prefixes they take:

- (5) *qalh-qf'*: mouth-uncovered '(it is) uncovered'
kilh-kt': mouth-uncovered '(it is) uncovered'

Sometimes, however, there appear to be minimal pairs like:

- (6) *kilh-nú:* mouth-inside.horizontal '(it is) assembled'
qalh-nú: mouth-inside.horizontal '(it is) assembled (of a bone)'

The second difficulty in deciding how many elements we are dealing with stems from the fact that many of these prefixes combine, in combinations of up to four morphemes, to form complex prefixes. Some of these combinations appear in nominals, some others in verbal bases, and more study is necessary to determine to what extent they are rule-governed, and to what extent they are lexicalized.

Semantically, most elements in this class are clearly related to body parts, but a few seem to be more geometrical in nature, like *ti:*- 'straight line' or configurational, like *pu:*- 'inside'. A few combinations are formed by elements originally referring to body parts, but their combined meaning is applicable only to objects, *tanqi:*- 'the inside angle, where the wall meets the floor' being a case in point.

Verbal Bases

The formation of verbal bases is probably the part of Totonac where the use of body part prefixes, because of its productivity and extension, is most noticeable. In fact, the appearance of body part prefixes in other lexical categories is, to a great extent, due to deverbal derivation.

It is important to point out that what can be seen as verb base formation is a process

that ranges from absolutely lexicalized cases in which the meaning is not compositional at all, and where there are other indications of lexicalization, for example, the violation of relative position classes, the fact that the head of the word appears only in this combination, etc., to uses that could be considered object incorporation, and therefore falling more within the scope of syntax than within that of word formation. To exemplify, consider the case of *aqā-* 'ear'. This prefix has the expected range of meanings: human and animal ears; parts of objects that protrude from a larger mass, but are attached to it, like branches, eaves of houses; the functions of the ear: hearing, understanding; and even the shape of an ear when projected on a horizontal plane, as in *aqā-pu' :lá* (ear-he.goes.first) with the meaning of 'to overtake'. The following examples show different degrees of lexicalization of words with *aqā-* 'ear':

- (7) *aqān/laqāpina* (*an/pina* 'go') vi 'he listens carefully, he pays attention'
aqāwa:nán (*wa:n* ? 'he.does.it', *-nan* IND.OBJ) vi 'he listens; he understands'
aqānú: (*-nu:* 'inside, horizontal') ve 'he has it on his own ear'; ve 'sth hangs'
aqānu:nán (*-nu:* 'inside, horizontal', *-nan* IND.OBJ) vi 'he wears earrings' (i.e. when the object is not made explicit, the prototypical one is presupposed)
aqāpixtí: (*pix-* 'neck', *-ta* 'downwards' *-i:* TRR) vt 'he hugs him'
aqātá (*-ta* 'downwards') ve 'it is bent downwards'
aqātanú: (*ta-* INGR, *-nu:* 'inside, horizontal': 'he goes in') vt 'he understands it, what he heard stays with him; sth enters his ear'
aqāxtú (*-xtú* 'outside, horizontal') ve 'it overhangs'
aqāca'ngá: (*ca'ngá:* ?) vi 'he gets tired'
ma:qāwaní: (*ma:-* TRR, *wan* 'it becomes', *-i:* TRR) vt 'he scatters it; he divulges it'
aqātu'yún (*tu'y-un* two-PL) vi 'he worries, he gets alarmed; he feels remorse; he feels doubts'.

The following examples, on the other hand, are clear cases of object incorporation:

- (8) *aqā-pa'qlh-ní:t xa:lu*
 ear-break -PF jug
 'he broke the jug's ear'

that can alternate with the less frequent:

pa'qlh-ní:t ix -aqá-n xa:lu
 break -PF its-ear-NR jug

and in general, cases like:

aqā-sta'j-ma kí'wi
 ear-drip -PRG tree
 'The tree's branches are dripping'

aqā-cha'q-í: kin-kam
 ear-wash -TRR my-kid
 'I wash my kid's ears'

Body part prefixes combine with verbal roots of any valence: positionals, statives, intransitives, transitives. The resulting meaning cannot be computed mechanically, for example, the body part does not necessarily refer to the subject of intransitives or the object of transitives. In fact, the relationships that are established between prefix and verbal root are manifold. The prefix can certainly refer to the object: either the place in the object where the action of the verb takes place, or the object itself, according to the interpretation one gives it:

- (9) *laqa-kuxtú* vt
face-he.cleans.it
'he cleans the ground (before sowing)'
laka-akxila vt
face-he.sees.it
'he looks sb in the face; he looks at sb's face; he looks at a page, etc.'

Sometimes the body part prefix implies the form of the object, or of the object that is the result of the action of the verb:

- (10) *cha':-smilí* vt
leg -he.rolls.it
'he rolls it' (of something like tobacco leaves to make a cigar)
qi:-smilí vt
back-he.rolls.it
'he rolls it' (of something like a sack)
pa:-smilí vt
belly-he.rolls.it
'he rolls it' (of something like paper)
maka-smili-kán vr
hand-he.rolls.it-RFL
'he rolls his sleeves'

Sometimes the prefix refers to the part of the body with which the action is performed, where the action takes place:

- (11) *ak-sí'pán* vi
head-it.hurts
'he has a headache'
laqa-chiya: -nán vi
eye-he.gets.rabid.over.it-IND.OBJ
'he has hallucinations'
laka-ca' :lá vt
face-he.runs.from.it
'he passes him by' (i.e. "his look flees away")
ak-ka'cí vt
head-he.knows.it
'he has a hunch; he is forewarned'
vi
'he is good a thinking, he knows how to think; his head is clear'
kit-s-tá'lá vt
mouth-X-he.hits.him
'he insults him, he mistreats him with words'
qalh-qama:nán vi
mouth-he.plays
'he jokes'

Sometimes the relationship between prefix and verbal root is "modal", i.e. the action prototypically performed with the body part is performed at the same time that the action of the main verb:

- (12) *laq-mín / laq-ta'na* vt
eye-he.comes
'he comes to see him; he comes to visit'

<i>laka-mín / laka-ta'na</i>	vi
face-he.comes	
'he looks this way'	
<i>maka-mín / maka-ta'na</i>	vt
hand-he.comes	
'he throws (it) this way'	
<i>kilh-mín / kilh-ta'na</i>	vi
mouth-he.comes	
'he does not mind his own business; he calls, from there to here'	
<i>kilh-puwán</i>	vi
mouth-he.thinks	
'he is shy about talking'	

The purpose of this admittedly very rough presentation of the semantic links of the body part prefixes and the verbs to which they are added is simply to point out the complexity of the relationship. In order to clarify what is going on, it will be necessary to employ a semantic analysis that, besides taking into account changes in valence, allows the use of concepts like construal, figure-ground, point of view, subjectivity-objectivity, etc.

Nouns

Body part prefixes are present in nouns referring to body parts, in genitive noun phrases with locative meaning, in compound nouns and, above all, in many nouns derived from verbs with complex bases.

In nouns referring to body parts:

- (13) *laká-n* (face-NR) 'face'
laka-pú:-n (face-center-NR) 'forehead'
laka-stapu (face-bean) 'eyes'
laka-lukut (face-bone) 'cheekbone'
laka-li:wa (face-flesh) 'cheeks'
laqa-s-tam-pá:-n (face-X-[under-belly = waist]-NR) 'the area that surrounds the eyes'
laqastampa:-chi'xit (surrounding the eyes-hair) 'eyebrows'
laqastampa:-xu:wa (surrounding the eyes-hide) 'eyelids'
laqastampa:-cu'sut (surrounding the eyes-?) 'lashes'
laqa-lh-tam-pú:-n (face-?-under-center'NR) 'sole of the foot'

In relational NP's:

- (14) *ix-lakán chi'ki* (its-face house) 'in front of the house'
ki-laka-tí:-n (my-face-straight.line-NR) 'in front of me'

In other nouns, either compound or deverbal:

- (15) *laka-kilh-tí:-n* (face-mouth-straight.line-NR) 'the outer patio of a house'
laka-pú:-n (face-middle-NR) 'slope of a hill'
laka-pu'klhmi (eye-cloud) 'cataract'
laka-kuyu (face-armadillo) 'armadillo-face fish'

- ix-ta':-laka-stuk* (his-COM-face-stuck) 'his equal'
 (cf. *lakastuka ve* 'stuck with both faces touching each other'
laka-cuku-t (face-it.begins-NR) 'sb's place of origin'
laqa-xta'j-at (eye-it.drips-NR) 'tears')

Numeral classifiers

Totonac numerals are bound roots that require a numeral classifier prefix to become independent words.

- (16) *ti:pa:-tu'y* (varieties-two) 'two-varieties'
pu:-túm músico (a set-one) 'one music band'
cha':-túm músico (human-one) 'one musician'
pa:-tu'y min-kuxi' (measure of capacity-two your-corn) 'two sacks of corn'

ASCHMANN'S dictionary gives 35 such numeral classifiers. Many are easily relatable to body part prefixes, from their form and from their meaning:

- (17) *aq-* 'ear'; to count trees, or anything that has branches, eaves, etc.
qalh- 'mouth', to count bites, gulps, or hollow things with an opening, like beehives
pix- 'neck', to count things that are tied up
mak- 'skin' to count thin, flat objects
laka-, laqa- 'face', used to count surfaces: sowing grounds, cornfields, etc.
ak- 'head', to count lengths

Some have the same form as a body part prefix but a meaning that is specialized for the numeral classifier function, making one wonder if it is not really a case of homophones:

- (18) *maq-* [*mak-, maq-* 'skin'], is used to count times, repetitions
aq- [*ak-, aq-* 'head'], the general classifier
pu:- [*pu:-* 'interior'], sets
pu:qalh- [*pu:-* interior, *qalh-* 'mouth'], plants, bushes
tu:- [*tu:-* 'leg'], not very deep containers, etc.

And yet others seem not to be related to body part prefixes at all:

- (19) *cha':-* people
pu'n- sacks, huacales and metates
tampus- flower bunches
muc- banana plants
qi:pa'k- banana bunches
laq- money, counted by pares de reales

Adjectives

Dimension adjectives combine almost freely with body part prefixes to form more specific adjectives, as can be seen from the following examples:

- (20) *lanka'* 'big'
ti:-lanka' 'wide (something in a continuous line, like a road)'
paq-lanka' 'wide, as a board'
pu:-lanka' 'wide, from the inside'

tu:-lanka' 'thick'
 cha':-lanka' 'thick, a cylindrical object' (e.g. a log, leg)
 paj-lanka' 'broad (the space between two parallel things)'
 pa:-lanka' 'big, as a bundle, package'
 kilh-lanka' 'big in the opening'
 qi:-lanka' 'fat, bulky'

-cú: 'small'
 ak-cú: 'small, short'
 pu:lak-cú: 'small in the inside'
 qi:-cú: 'thin (person)'
 tu:-cú: 'low, a place where one walks'
 kilhtu:-cú: 'narrow, from border to border'
 qalhtu:-cú: 'low, like a wall, table'
 ti:-cú: 'narrow and long, like a road'
 pa:-cú: 'small, bundle'
 paj-cú: 'narrow (the space between two parallel things)'

lhma:n 'long'
 cha':-lhma:n 'long and round'
 pu:-lhma:n 'deep'
 qalhpú:-lhma:n 'with a broad border, like a ravine, a well'
 kilhtu:pu:-lhma:n 'deep, like a container'
 lakapu:-lhma:n, laqapu:-lhma:n 'steep'

Adverbs

Sporadically, body part prefixes can be affixed to what can be considered morphological (i.e. underived) adverbs:

- (21) *laqa-maqat* (face-far) 'a very far away place'
laqa-smalanqá'n (face-late.in.the.day) 'very late in the afternoon'
ak-xni (head-when) 'when',

but it is in derived elements with an adverbial function that one finds an abundance of body part prefixes. Such derivations are from numerals and from verbs, especially from stative verbs.

A large group of words that have adverbial function are formed with a numeral classifier, -x- (optional), and the number 'one', sometimes 'two', and sometimes an indefinite quantifier:

- (22) *ak-x-túm* (head?-one) 'equally; identically; together'

akxtúm kaka:ma:xki'wí lakcú:kamán saqsi'ná
 equally we.shall.give.them little kids sweets
 'We shall distribute the candies equally among the kids'

ni: akxtúm tachilh
 not together they.arrived
 'They did not arrive together'

akxtúm ka:ta':wí lakcú:kamán
 together you.sit.IMP little kids
 'Sit close to the kids!'

The list of elements thus formed is quite long. Some examples:

- (23) *laka-ti:-túm* (face-straight-one) 'correctly, seriously'
laka-x-túm (face-?-one) 'imparcially; face to face'
qí:stí:-s-túm (shin-?-one) 'all over the hill'
laq-x-túm (surface-?-one) 'together in a single place'
makxtúm 'together'
li:makxtúm 'as a group'
li:túm 'in the same manner'
maqúm 'once'
pu:túm 'as a group'
ti:xtúm 'in a single line', etc.

Totonac has a very frequent construction in which a verb is preceded by an element that modifies it adverbially; this element is very frequently of verbal origin and it is derived either by the loss of the verb's final vowel (24a), or by a change of accent and sometimes final -j (24b). Very often the adverb so derived comes from a verb with a body part prefix, as in 24b, but this is not necessarily always the case (24a):

- (24) a. *ta'nks* 'straight, directly' (cf. *ma:tanksá* 'to straighten')
ta'nks ma: tija
 straight lies road
 'It is a straight road.'
ta'nks kakiwani
 straight you.tell.it.to.me
 'Talk to me in a straight way.'
- b. *laka-yá:wa -j*
 face-he.stands.it.up-AVR
 'with its head upwards' (cf. *talakaya:wá vi.* 'sb. looks upwards')
 'It is standing with its face upwards'
lakayá:waj an
 face.upwards he.goes
 'He is walking with his face upwards'

Since this is another case of deverbal derivation, we are dealing with a potentially very large class. It is not a gerundive construction though, at least in the sense that the derivation is not universal for the class of verbs, but lexically determined. The elements derived by the second process, change of accent, are all derived from stative verbs formed by a body part prefix and a positional root. Some further examples:

- (25) a. *laka-ta -j*
 face-downwards-AVR
 'sideways; looking downwards'
lakataj yá:
 looking.downwards it.stands
 'It is standing sideways; it is standing looking downwards'
lakataj wilf:
 sideway he.sits.it
 'He puts it sideways'
lakataj an
 sideways it.goes
 'It goes sideways'

- b. *aq-spi'ta-j*
head-turn-AVR
'upside down'
aqspi'taj chi'pani:ta' milibro,
upside.down you.hold your.book
ni: la qalhtawaqa'ya
not possible you.read.it
'You have the book upside down, you won't be able to read like that.'
- c. *laqa-chu:wa-j lhtatá*
face?-AVR he.sleeps
'He has insomnia'
talakaski ní nalhtatá,
it.is.necessary.for him he.will.sleep
porque laqachu'waj lhtataní:t
because he.has.had.insomnia
'It's necessary that he sleep well because he has had insomnia'
- d. *laqa-pa:-ci':q*
face-belly-hidden
'secretly, quietly'
laqapa:ci':q kiwanilh
secretly he.told.me
'He told me that secretly'

As can be seen from the examples, this type of positional element with adverbial function co-occurs almost freely with the four stative verbs, and the intransitive and transitive verbs derived from them: *ya*: 'standing' (*ta:yá vi* 'he stands up'; *ya:wá vt* 'he stands it up'), *wi*: 'sitting' (*tawilá vi* 'he sits'; *wilí: vt* 'he puts it down in a sitting position'), *ma*: 'lying' (*tamá: vi* 'he lies down'; *tra'mí: vt* 'he lays it down'), *waka*' 'hanging' (*tawaká' vi* 'he puts himself in a hanging position'; *ma:waká' vt* 'he puts something in a hanging position'). It is used frequently with verbs of motion, to indicate "shapes" of motion. But it co-occurs also with other types of verbs. This construction is found widely in idioms.

Syntagmatic Effects

It seems reasonable to expect that a mechanism as pervasive as the use of body-part prefixes has more than one function in the language. Of course, its most salient function is that of word formation; but this type of semantic organization has certain interesting syntagmatic effects that have to do with cohesion in the text and with semantic specificity.

If we observe the phenomenon, this time not from a paradigmatic point of view but syntagmatically in text, one of the by-products of this type of morpho-semantic organization, at least in certain types of constructions, is that certain semantic cohesion results. This is especially important in a language like Totonac, in view of the fact that Totonac has very few resources to mark syntactic dependence: there are few prepositions and no case-marking on nouns, i.e. nothing marked on the dependent elements of a NP;⁴ there

⁴ See NICHOLS (1986) on the difference between head-marking and dependent-marking languages. In her terms, Totonac would be an extreme type of head-marking language.

seems to be practically no subordination; there are practically no auxiliaries, etc. So, for example, in the case of constructions of object incorporation into verbs (26) or body part incorporation into adjectives (27), even though there is no marking on the noun phrase indicating a syntactic relationship between verb and noun or adjective and noun, semantically the relationship is quite transparent. Although in examples (26) and (27) both the a. and the b. constructions are possible, the incorporated ones are more frequent. Because of the existence, in these cases, of both constructions, it may even be possible to treat the following examples as a certain type of syntactic phenomenon:

- (26) a. *aqá-pá'qlh-ní:t xa:lu*
ear-break -PF jug
'he broke the jug's ear'
- b. *pá'qlh -ní:t ix -aqá-n xa:lu*
break -PF its-ear-NR jug
- (27) a. *snu:n pix -lanka' xti:la:n*
very neck-big hen
'the hen's neck is very big'
- b. *snu:n lanka' ix-pix-ni xti:la:n*
very big its-neck-NR hen

Body part incorporation into the verb, when no alternative construction is possible, results in semantic cohesion and specificity (i. e., it is Juan's head, Juan's body, on the one hand, and hitting on the head vs. hitting on the body, on the other):

- (28) *ak -pajmí: Juan*
head-he.hit.him Juan
'he hit Juan (with a stick) on the head'
- mak -pajmí: Juan*
body-he.hit.him J.
'he hit J. (with a stick) all over'

In a sense, this type of "cohesion" is similar to what happens in Spanish with sentences like *levantó la mano* 'he raised the (his) hand', or examples of what has been analyzed as "possessor ascension": *Le lloran los ojos* (to.him they cry the eyes) 'His eyes are watering'.

Because of the specificity of the body part prefixes, their use in verbs without an overt NP object, and therefore marked with the suffix for indefinite objects, produces semantic effects of prototypicality:

- (29) *maqá-nú: ix -a'ni:lu*
hand-inside.horiz his-ring
'He has his ring on'
- maqá-nu: -nán*
hand-inside.horiz-IND.OBJ
'He wears rings'
- pix-nú: 'on the neck'*
píx-nu:-nán 'She wears a necklace/necklaces'
- aqá-nú: 'on the ear'*
aqá-nu:-nán 'She wears earrings'

On the other hand, the fact that prefixes of this type specify generic nouns is well described (in SEILER 1986, for example) for numeral classifiers:

- (30) *cha':-tú'y musico*
CL:human-two musicians
'Two musicians'
- pu:-tú'y musico*
CL:sets-two musicians
'Two music bands'
- ti:pa:-tú'y musico*
CL:varieties-two musicians
'Two types of musicians'.

An analogous effect is sometimes produced by the use of body-part prefixes with verbs:

- (31) *laq-sqá: ix-ki'wi*
ITS-chop his-wood (wood=pieces of wood)
'He chops the wood'
- pa:sqá: ix-ki'wi*
belly-chop his-wood (wood=splinters)
'He cleans the splinters'.

Also well documented is the use of numeral classifiers to make more specific the tracking of reference in a text.

Textual material will have to be analyzed in Totonac to try to investigate if the use of body part prefixes elsewhere in the grammar accomplishes a similar function.

Of course, the most salient consequence of the appearance of body part prefixes is that it restricts the kinds of NP's that can function as arguments of the verbs. In many cases they are so specific, that they practically obviate the need for an NP, unless some additional information is given (something similar to what happens in English or Spanish with verbs with cognate objects). Although several examples of this have been given above, some others are:

- (32) *ka': 'he cuts it'*
- tan-ka':*
buttocks-cut
'he cuts it by its lower part (he fells a tree)'
- pa:-ká':*
belly-cut
'He opens up a trail'
- laqa-ká':*
face-cut
'He cleans the ground for sowing'
- lak-ká':*
ITS-cut
'He cuts it in many pieces'

Or with an NP object:

- (33) *cha':-smilí xa-'a:xku:t*
leg -he.rolls.it DET=tobacco
'he made a cigar'
- qi: -smilí kuxtalh*
back-he.rolls.it sack
'he rolled up the sack'

smili -*lh*

he.rolls.it-CPL

'he rolled up his petate or his blanket (i.e. if not specified, the prototypical object is implied)'

All these semantic effects occur, obviously, in many languages. Verbs like *nail* or *blink* have very specific semantic selection. Verbs like *shred*, *slice*, *chop* give precise information on the shape of the resulting object. Transitive verbs like *eat* imply an edible object when employed in their absolute use. What is specific about Totonac is that all of this is codified morphologically, hence it is more productive, more transparent and more a general principle of the organization of the vocabulary, rather than an isolated peculiarity of a certain lexical item or of a very differentiated semantic field. Totonac affords an interesting case to revisit the topic of shape in grammar.

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Seated and Settled: Tzotzil Verbs of the Body¹

1. Prelude: Prayers of the body

The curer, an ancient woman with striking white hair and sparse, jutting teeth, tells me to turn around in my chair. My aching back now faces toward her. Lifting the *incensario* and blowing on its glowing charcoal so that the *copal* smoke wafts across me, she begins to pray, invoking saints and ancestral deities on my behalf.

{1}²

- | | |
|---|---|
| ... | |
| 16 k'el-be -k -on tal //
look-BEN-PL-1A DIR (coming)
<i>Watch over him for me</i> | 20 lilij -em la //
fall_apart-PF QUOT
<i>It seems to have fallen apart</i> |
| 17 il -be -k -on tal
see-BEN-PL-1A DIR (coming)
<i>Look after him for me.</i> | 21 kokoj -em la
fall_off-PF QUOT
<i>It seems to have fallen to pieces</i> |
| 18 ti y -ut s -pat -e //
ART (remote) 3E-inside 3E-back -CL
<i>The inside of his back</i> | 22 tz'ul ti y -ok -e //
slip ART (remote) 3E-foot, leg-CL
<i>His leg has slipped</i> |
| 19 ti y -ut xokon-e
ART (remote) 3E-inside side -CL
<i>The inside of his side.</i> | 23 tz'ul ti s -k'ob -e
slip ART (remote) 3E-arm, hand-CL
<i>His hand has slipped.</i> |

In the paired couplets of Tzotzil ritual language, combining body-parts, plant metaphors, and other bodily images, she describes my ailment – a strained back caused by hauling timber. It is located inside my body (“inside his back // inside his side”); I have suffered a strain (“fallen apart // fallen of” – as leaves off a tree); and my “leg” // my “hand” have “slipped”.

Now, with a further, more subtle, coporal image, she summons God to my aid:

{2}

- | | |
|--|--|
| ... | |
| 25 va'an a -ba tal -uk tot //
stand 2E-self DIR (coming) -SUBJ father
<i>Stand yourself erect here, father</i> | 26 tek'an a -ba tal -uk k -ajval
step 2E-self DIR (coming) -SUBJ 1E-lord
<i>Stand yourself firm here, my Lord.</i> |

¹ This essay is drawn partly from a paper presented at the workshop, “The Conceptualization of Space in Mesoamerican Languages,” organized by LOURDES DE LEÓN, at the Cognitive Anthropology Research Group at the Max Planck Institute for Psycholinguistics, Nijmegen, December 3, 1991. I am indebted to JOHN LUCY for comments, and to BALTHASAR BICKEL for both terminological and substantive suggestions.

² Curing ceremony recorded Nabenchauk, Chiapas, Mexico, 11 January 1991

Her paired imperative implores the deity, "father, my Lord", to step forward and take responsibility for her patient. The verbal root *va* 'standing erect' combines with the transitivizing suffix *-an* and a 2nd person reflexive pronoun, lit. 'stand yourself up'. The root *tek* 'standing firm, rooted (as of a tree)' undergoes similar morphological treatment, to yield 'stand yourself firmly'.

The scene shifts. A wedding party has arrived at the groom's house, fresh from the church. Elegant in a heavy black woolen robe, the wedding godfather greets the ritual advisor of the groom's family at the doorway. Bowing to each other, the two men break into simultaneous prayer.

{3}³

1 r;	tal	a	-chotan un //		4 l	-a	-nich'nab-e
	come (AUX)	2E-seat	CL //			Art-2E-child	-CL
			<i>You have come to seat</i>				<i>Your offspring (has come out).</i>
2	tal	a	-vutz'an un		5 ta	j	-chotan-tik //
	come (AUX)	2E-bend	CL			ICP 1E-seat	-PL //
			<i>You have come to settle</i>				<i>We shall seat</i>
3 w;	i	-0	-lok' xa	talel	l	-av	-alab -e //
	CP-3A-exit		already coming (DIR)	ART-2E-child-CL //	6 ta	j	-vutz'an-tik
			<i>Your child has come out</i>				ICP 1E-bend -PL
							<i>We shall settle them.</i>

As the bride and groom are about to embark on their married life, the elders prepare to install them formally in the house where this life will begin. Entry consists, again in the symbols of paired corporal imagery, of seating the groom on a chair and his bride on the ground by his side: seated and settled. The root *chot* 'seated' combines with the same transitivizer *-an* we met earlier, to produce *chotan* 'seat, cause to be sitting.' The root *vutz* 'bend down' is similarly rendered causative, thus 'bend (someone or something) down' – a reference to the conventional way a Zinacantec woman should sit, with knees bent, on the ground.

Two final vignettes. A repentant drunkard kneels before the image of a saint, begging for forgiveness.

{4}⁴

k'usi y-epal	'un, j-tot,		patal-on	yulel,
what 3E-amount CL	1E-father		prostrate-1A arriving (DIR)	
	<i>For how long, My Father</i>			<i>do I arrive, bowing low</i>
k'usi y-epal	'un, k-ajval,		ta	yo
what 3E-amount CL	1E-lord		PREP humble ART-2E-side-PL	
	<i>for how long, My Lord</i>			<i>beside Thee</i>
kejel-on	yulel,		ta	yo
kneeling-1A arriving (DIR)			PREP humble ART-2E-front-PL	
	<i>do I arrive, kneeling</i>			<i>before Thee?</i>

The man characterizes his presence before the Saints in terms of his position. From the root *kej* 'kneeling' he produces a stative adjective, *kejel* 'in a kneeling position,' inflected for first person with the absolutive suffix *-on*; thus, 'I am kneeling'. Similarly, from the root *pat* 'prostrate, lying or leaning forward on one's belly or arms'⁵ he derives *patal-on* 'I am prostrate.'

Another patient, upon finishing a major curing ceremony, prays as he retires to his bed for an obligatory three days of confinement.

³ Wedding greetings recorded in Nabenchauk, April 26, 1981.

⁴ From LAUGHLIN (1980), p. 253, with his translation.

⁵ LAUGHLIN (1975) lists the lexical form *pat* meaning 'back' – see fragment 1, line 18 – under this same root, following the apparent logic that when one is in a *patal* position one displays one's back. On formal grounds it is equally if not more plausible to posit two homonymous roots of the form *pat*, one Nominal with the meaning 'back' or the appropriate part-term, and the other Positional, denoting something prostrate or leaning forward.

{5}⁶

ch- i- puch'i, ch- i- ta'i.
 ICP-1A-lie_down ICP-1A-stretch_out
I lie down, I lie immobile.

The patient's ceremonial declaration again involves two roots which can denote bodily positions. The first, *puch'*, means 'lying down,' said of something like a human being or an animal that has distinct three-dimensionality (i. e., is not simply long and straight). The second root, *ta'*, means 'stretched out, sagging slightly,' said of something long, arranged horizontally, and also suggesting immobility. Both roots combine with the intransitivizing/inchoative suffix *-i*; thus, *chipuch'i* 'I come into a lying position.'

2. Conflation and confusion

The lexicon has often been taken to be the repository of confusion and anarchy in language, the land of the list, where almost anything goes. Still worse, when words are ripped from their ordinary homes and imported into the arcane world of ritual, their meanings, however tractable they may be in everyday life, may be expected to fly off into uncontrollable tropes. In the quoted instances of Tzotzil prayer, from Zinacantán, I have singled out eight verbal roots which start out, apparently, referring to bodily positions – standing, sitting, kneeling, and lying – and come to signify caring responsibility, domestic tranquility, abject humility, and confinement through illness.

Of course, the randomness of the lexicon is overrated. Syntax and lexical semantics alike have demonstrated "that the relationship between the meanings of verbs and their syntactic behavior is governed by quite general principles" (LEVIN 1991: 224)⁷ – at least in English.⁸ Trying to extend such principles to other languages, where the syntactic diagnostics are often radically different and the semantic classes justifiable only with caution, is both a dangerous and a worthwhile enterprise.⁹ Partitioning the lexicon requires the strictest attention to details of formal types (often cryptotypes) and their interactions with semantic types. Clues about semantic relationships may also derive as much from (socio)linguistic oddities – the Dyribal mother-in-law language (DIXON 1972), for example, or, in the present case, the semantic pairings of near synonyms in Tzotzil ritual couplets – as from demonstrable but anarchic lexical relations. The lamination of **different** partitionings of the lexicon, some based on grammatical reflexes, others on conventionalized associations of meaning, others on less orderly semantic intuitions, will presumably result in the desired tension and change in lexical systems that characterizes all languages.

The present essay is a small piece of an ongoing effort to describe the structure of the Tzotzil lexicon. Tzotzil, like its sister Mayan languages, has a large class of verbal roots, traditionally called "Positionals," formally defined by their distinctive stemforming possibilities. A subclass of these roots, including the eight we have met, have in addition what appear to be truly positional **meanings**. They denote characteristic arrangements of

⁶ From LAUGHLIN (1975).

⁷ See references therein; also, e. g., DIXON (1991).

⁸ LEVIN (1989) presents an extensive compilation of interdependencies between various patterns of verbal diathesis and candidate semantic classes of English verbs.

⁹ See for example CROFT (1990).

complex anatomies, typically bodies, often in relation to specific sorts of reference objects or Grounds.¹⁰

Their corresponding function in locative expressions (**locating** a Figure with respect to a Ground) has drawn recent attention.¹¹ However, the apparent locative specificity of a lexical stem derived from a Positional root seems merely to be a special result of a more general process by which a certain pragmatic effect is extracted from the full semantic portmanteau, the prototypical scene which the root conjures. The ritual uses of Positional roots, cited in the prayers, illustrate a different but parallel process of extraction.

In this paper I shall concentrate on the incorporation of body imagery into the semantic portmanteaux of a subset of Tzotzil Positional roots. Indeed, bodies – of both humans and plants¹² – find their ways into a good many Tzotzil lexical roots. The body parts¹³ are lexicalized, of course, and themselves figure in complex descriptions of parts and regions of other objects (DE LEÓN, this volume). They also appear in a variety of fixed compound expressions, such as *pak'-chikin*, literally 'patch ear,' i.e. 'deaf.' However, there are also roots with **conflated** body parts (TALMY 1985), like English *kick* with a conflated foot as instrument, or which select body parts as arguments, like English *addled* (said only of eggs and brains, as QUINE's formulation has it). Thus, for example, the verb *kuch* 'carry' implies that the object is carried on one's back, with or without a tumpline. This contrasts with a verb like *pet* 'embrace, carry' which requires that the object be held in front of the body in the hands and arms. (See Figure 1.) Similarly, the transitive verbs *mutz'* and *vik'* mean 'close' and 'open', but they can be used only (and always) for closing and opening the eyes.

If the body is a universally available prototypical model (or domain) not only for parts/wholes and shapes (FRIEDRICH 1970, 1971) but also for actions (as well, perhaps, as for actors and minds), then its lexical ramifications should go further. Why shouldn't languages lexicalize the characteristic stances, motions, and (social) uses of the body?¹⁴ The

¹⁰ The Tzotzil verbs in this notional group thus correspond roughly to two interrelated classes in LEVIN (1989), namely class 32.10 "Verbs of spatial configuration" (a subclass of class 32, "Verbs of existence and location"), and class 35 "Verbs of assuming a position." In the latter group, LEVIN lists as English examples: bend, crouch, flop, kneel, lean, lie, perch, plop, rise, sit, slouch, slump, sprawl, squat, stand, stoop, straddle, ... in the sense of "to assume the spatial configuration specific to the verb" (LEVIN 1989: 119). Verbs from corresponding subclasses in languages ranging from Dutch to Guugu Yimidjirr (HAVILAND 1979c) typically provide etymons for words which serve copular functions. See BICKEL (1992) for a slightly different case.

¹¹ See SMITH-STARK (1981), LEVINSON (1991), BROWN (1992).

¹² See LAUGHLIN and BREEDLOVE (in press) for examples of the application of plant "body parts" to human bodies, as well as the more familiar reverse extension. LAUGHLIN (1988c) paints a characteristically sparkling word picture of the anatomies of a number of Zinacantec creatures, via Tzotzil roots.

¹³ LEVINSON (1992) proposes that the corresponding Tzeltal words represent not **body** parts, but just canonical **parts**, assigned – on analogy with the theory of vision – at an early stage in assessing the identity and rough geometry of any object. On such an account, the apparent primacy of the specific bodily reading is an accidental consequence of the prototypical availability of the body as a salient segmentable whole.

¹⁴ And of course they do. English categories in LEVIN's 1989 report include such members as drink, eat, graze, chew, gnaw, gobble, devour ("Ingesting verbs" in several subtypes), belch, blush, burp, cough, flush, hiccup, breathe, cough, drool, exhale, perspire, etc. ("Verbs of bodily processes"), blink, shrug ("Verbs of gestures/signs involving body parts"), bow, curtsy, salute ("Verbs describing signs made with the whole body"), sleep, doze, snooze ("Verbs of types of sleeping"), and so on. The classic study of Tzeltal eating verbs (BERLIN 1967), which select for

Tzotzil carrying verbs cited clearly show lexical attention to how Tzotzil speakers **use** their bodies, and how those bodies interact with objects in the world – facts that a child will presumably learn concurrently with (perhaps before) learning the (body)parts themselves.¹⁵

The notional positional core of formally Positional roots in Tzotzil seems to encode salient, canonical “positions” of complex anatomies, of which the human body seems exemplary. After looking at some of the relevant formal facts, I will turn to precisely this notionally defined subset.

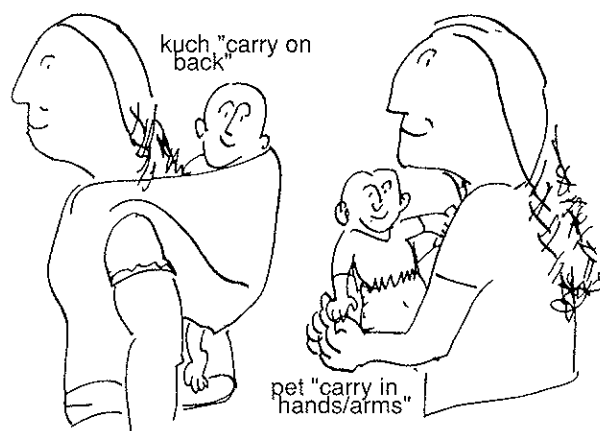


Figure 1:
Two ways to “carry” something

3. Positional morphology

Positional roots may be formally distinguished from other Tzotzil roots by their derivational possibilities. Here is the rough procedure.

First, we define as predicates those words which bear absolutive inflection. Of these, ‘stative’ predicates do not accept aspectual inflection, whereas ‘verbal’ predicates are obligatory marked with one of four ‘aspects’ – ‘completive,’ ‘incompletive,’ ‘resultative,’ and ‘neutral’ (HAVILAND 1981). ‘Transitive’ verbs bear both ergative and absolutive inflection; ‘intransitive’ verbs only absolutive.

Now to classify a root one looks to see what sort of predicate stem, if any, can be produced from it. If the bare root can serve as a transitive verb stem, call it a T(ransitive) root. Such a bare T root will almost always yield a (perhaps, somewhat defective) unaccusative intransitive verb stem as well.¹⁶ If a root is not, by this criterion, Transitive, but it does yield a bare intransitive verb stem, then call it I(ntransitive). I roots typically also produce transitive causative stems by suffixing *-es*. A(djective) and, indeed, N(oun) roots, otherwise ignored here, produce stative stems directly.

both the consistency and the place in Tzeltal cuisine of the food ingested, shows how the semantics of even such persuasively universal bodily actions as eating can be complicated in language or culture specific ways.

¹⁵ LAUGHLIN (1975) glosses the verb *tz'it* as “clean with second joint of forefinger/inside of gourd or bowl” – something I only learned to **do** in order to clean my bowl after drinking *atole* in Zinacantán.

¹⁶ See AISSÉN (1987).

resulting classes, so that certain concepts can be predicted to be realized by certain classes of roots. The derivational pattern appears to provide a schematic semantic template for certain sorts of predication.

Stem type	Transitive	Intrans	Stative
Root type:			
A,N	various	various	-0
T	-0	-0	-oj
I	-es	-0	-em
P	(-an)	(-i)	-VI
P _T	-0/-an	-i	-VI
P _I	-an	-0/-i	-VI
P+T	-0/-an	-0/-i	-VI

Figure 2:
Root types and diagnostics

4. Complex anatomies

To arrive at what I call "true positionals," I begin with the subset of roots which display more or less pure Positional morphology (with neither transitive nor intransitive verbal features). These P roots can be subdivided on the basis of both further morphological patterns, and also following the logic of the underlying predicates.

Some P roots denote logically one-place predicates, usually having to do with shape or substance. Others are two-place relational predicates, frequently involving the collocation of a figure with a ground. Still others presuppose a more complex set of conditions on their logical arguments. Of these last, what I have been calling "true" positionals relate a figural argument to some further ground; but they specify as well a fuller overall configuration or anatomy for the figure, typically, a whole body whose parts must be appropriately arranged. Thus, a root like *chot* 'seated' can only be predicated of an entity which is placed in a certain relationship to a supporting ground, and which has the appropriate anatomy (in Tzeltal, a certain sort of 'bottom'¹⁸) to allow it to sit. Quite unsurprisingly, a canonical figure here turns out to be, indeed, the human body. Applying such a notional criterion to partition out a subclass of P roots that specify the configuration or arrangement of complex whole's segmentable parts yields a group of some 50 "positional Positional roots", listed and further grouped in the Appendix.¹⁹

¹⁸ LEVINSON (1992) proposes, indeed, that the same principles (however they are to be characterized) which allow Tzeltal speakers to assign parts to complex wholes also allow the assignment of positional labels (via Positional roots which in Tzeltal are similar to neighboring Tzotzil) to the dispositions of those wholes.

¹⁹ Numbers following roots in the Appendix and throughout the text follow the root numbering system, to denote putative homonyms, in LAUGHLIN (1975).

One can find limited formal evidence for the legitimacy of such a subclass of roots. For example there is a derived nominal form with the suffix *-l-eb(al)*²⁰ characteristic of P roots whose meaning relates to the positions of complex anatomies. Example {9} shows some sample nominals of this sort, drawn from LAUGHLIN (1975), beginning with words that correspond to the eight roots we met in the introductory prayers, and continuing with a few more "sitting" roots.

{9}

vaʔebal, object that person stands on,
place where one stands to get a good view

tekʔlebal, Ritual speech, shaman praying;
shrine

chotlebal, seat

vutzʔlebal, Ritual speech; place where one kneels

kejlebal, kneeling place, sitting place of woman
fold straw mat/

patleb, nest of setting hen

taʔebal, Ritual speech, shaman referring to
patients bed; place where one lies face up.

juchʔlebal, seat /where woman sits constantly,
doing nothing/

juʔebal, place where drunk sits

lubleb, place where hen habitually lays her eggs

luchleb, perch

puchʔlebal, place where one sleeps

naklebal, mat where woman sits

The suffix *-l-eb(al)* denotes, on a P root *X*, a "place where one customarily *Xs*, or where one frequently is in position *X*." Based on such a nominal is a further derived transitive stem, using the additional usitative suffix *-in*, and meaning "use as something to *X* on." Thus, the verb *chotlebin* means "sit on, use as something to sit on". Though LAUGHLIN (1975) does not accord this word its own entry, he gives examples like the following, again with roots we have already met.

{10}

puchʔlebin, lie on

kejlebin, kneel on

patlebin, lie face down on

vaʔlebin, stand with forepaws on person (dog), stand on object to
improve one's view

Tzotzil morphology thus apparently accords at least some special treatment to a subclass of roots whose meanings involve body positions.

LAUGHLIN's dictionary shows a total of only three dozen or so *-l-eb(al)* forms, and even fewer verbs in *-lebin*, though other coinages are clearly possible. Nominal forms in *-l-eb(al)* are also possible with roots from other than the pure P class when they allow a stative adjective in *-Vl*. (I will ignore such non-P forms here.) Thus the formal criteria in question represent an **intersection** between independent formal classes: on the one hand, root type, and on the other a derivational possibility that crosscuts several root types, but that also partitions each into those roots that permit the derivation and those that do not. Further collocational or selectional restrictions on forms derived from these "body position" roots remain to be investigated in detail – a project that will require a skilled native Tzotzil lexicographer.²¹

²⁰ The suffix is transparently derived from the stative adjective form in *-Vl* plus a more general locative/temporal nominalizer *-Vb(Vl)*. The extra *-al* suffix has to do with possession classes, not relevant to the present discussion.

²¹ LAUGHLIN's current project, a writer/theatre group called *Sna Itz'ibajom* 'House of the Writer', is likely to produce such a scholar given time and adequate resources.

5. Partitioning verbs of the body

All competent speakers of Tzotzil must be able to manage the complex semantics and morphology of these positional roots. Indeed, a large part of fluent and idiomatic speech in Zinacantán is tied to the selection of just the **right** word to capture the nuances of position for even the most prosaic objects, let alone socially charged objects like human bodies. Limiting myself to a subset of the Tzotzil roots for "sitting", I will explore two devices for specifying such nuances.

The first device involves comparing the formal possibilities for derivation for different groups of roots and their concomitant logical or expressive potentials. As described, a P root ideally produces three diagnostic stem forms. However, the "sitting" roots display both defective and augmented patterns. There is a sequence from most morphologically restricted to most developed.

The **minimal** possibility for a P root is to permit only the stative adjective form in *-VI* with no full verb stems (in my notation, **Pa**). This morphological limitation suggests that the denoted position is by nature unconscious, or involuntary. It admits neither a causative transitive verb in *-an* which would denote an action which produces the positions as a result, nor an intransitive in *-i* which would suggest a transition into the position involving some sort of control or intention, as when something moves by its own agency. The root *koyl* has just such a limited morphological profile, allowing only adjectival forms (along with non-diagnostic affective verb forms). It denotes a sitting position, with one's legs drawn up – the way a dog normally "sits," or perhaps a child sitting up in a tree. A woman sitting this way would be immodestly exposed (and, indeed, the root can also be used to describe a house with its frame exposed, e.g., a wattle and daub construction which has not yet been packed with mud). The morphological limitations of the root suggest appropriately the **unintentional** nature of such a position.

Next, some P roots exhibit only the stative adjective and the causative, with no inchoative (**Pan**). The position here is morphologically represented as a potential result of external action. For example, the root *ju'l* occurs as an adjective meaning 'seated on ground and unable to stand' (as of a drunk). It also produces a causative stem with *-an* which, significantly, only occurs as a reflexive. This is what a drunk person might do to himself: sit down on the ground and refuse to stand up again.²²

The full set of three diagnostic forms (**Pain**) allows the expression of a range of involvement by an agent: the root can denote neutral position only (**a** form); or it can portray the position as a result of an external cause (**n** form), or as a result of self agency (**i** form). A good "sitting" root of this type is *tzunl*. As an adjective it means 'sitting still, or huddled, or at home.' It suggests the image of an elderly or sick person sitting by the door, or perhaps a rabbit crouched down hiding. As a causative, it can be appropriately used by a wedding godfather as he describes how he will install a bride and groom in their new house. (The imagery of the couplet *chotol* 'seated' // *vutz'ul* 'on bended knee' emphasizes the stability of both bride and groom's commitment to their new marriage. The root *tzun* in such a context emphasizes that the new couple will **stay at home**, that is, center

²² The root *ju'l* is the single case in the group of sitting roots considered here that might arguably be assigned instead to the T rather than the P category. The root produces a transitive stem which means 'mash (with one's hand)' – typically used with something soft which releases a juice (medicinal herbs, a hot chile, even a bug you squash on your leg); the imagery of the positional use is thus reminiscent of the imagery in the American expression "smashed (i.e., very drunk)."

their activities around it.) By a metonymic trope, the transitive stem can also be used to describe, in deprecatory terms, **building** one's house – thereby emphasizing its smallness, its suitability as a mere shelter, and so on. Finally, the intransitive stem *tzuni-* can mean both 'sit' and 'reside, stay at home,' again with a slightly deprecatory tone.²³

Some P roots also have augmented morphological possibilities. For example, a limited number of roots allow a further intransitive stem form with the suffix *-Vj* (notated **Aj**). The common meaning of such forms, given a P root *X*, is something like "characteristic human movement in or involving position *X*". The stem **kejuj-** (from the root *kej* 'kneeling') means to "genuflect" – something one does **while kneeling**. From the root *xok* 'seated on one's haunches, crouching' comes the verb *xok'ij-* 'to duck walk, to move around squatting.' From the root *tzub2* 'crouched low, immobile' can be produced a verb *tzubij-* which means 'crawl' or 'move in a crouch,' as when something tries to squeeze under a low barrier.

Additional derived verb stems are also possible on some P roots. Verb stems formed with the suffix *-[k'lp']Vj*²⁴ (notated **V**) frequently suggest sudden or unforeseen motion or change of position into or out of position *X*. Verb stems with *-tzVj* (also notated **V**) denote other special positional transformations, often metaphorical. The unmarked sitting root, *chot*, produces a stem *chotp'ij* 'sit down unexpectedly, fall on one's bottom.' The intransitive stem *chottzaj-* denotes gradually slipping into a seated position, suggesting perhaps a stiff old man who takes a long time to ease himself onto a low Zinacantec chair. The verb *kejtzaj-*, from *kej* 'kneeling,' can mean 'fall to one's knees.' It can also be used to describe a corn plant that, broken by wind, grows crooked, first horizontally and then gradually upright again, as if on bended knee.

There is one last formal complication. Many P roots allow a few forms (notated **T**) otherwise characteristic only of Transitive roots. Since by fiat I have limited the present discussion to roots which basically conform without complication to the P pattern, the intrusion of such additional stem formations with the roots under consideration is limited. In each case, however, the exceptional stem forms suggest an evolution of the meaning of the root. For example, the root *luch1* produces a full set of positional forms with the basic meaning 'perched' – a notion that combines two elements: first, that the Figure is seated or otherwise supported on an elevated Ground; and second, that the Figure is smallish and unattached, that it figures as a mere protrusion against the Ground. Although there is no unaffixed transitive stem, exceptionally the root does allow a derived intransitive stem with the suffix *-van*, which is ordinarily only suffixed to a transitive stem *Y* to mean 'Y persons.' *Luchvan-* means 'toss someone into the air' (for example, a bucking horse or a bull), or 'carry someone perched,'²⁵ thus exploiting the full image of the positional configuration implied by the root, but extending it to an action which affects its (human) Patient.

The root *len* 'sitting chubbily or stubbornly immobile' provides a different sort of

²³ In a story about a Chamula man who was given only a tiny piece of land for his house, one of LAUGHLIN'S (1977) storytellers remarks *itzuni ti prove kulo'tik une* 'our poor Chamula settled down to live (there)'.
²⁴ There is a catalytic element *k'* or *p'* attached to the root, followed by a *-Vj* suffix for an intransitive stem or a *-Vn* suffix for an intransitive stem. The vowel *V* here disharmonizes with the root vowel on the dimension front/back.

²⁵ In retelling a scene from a children's book in which a deer lifts a boy up and carries him on its antlers, a Tzotzil speaker uses the phrase *chluchvan myeyle* 'he lifts him up, perched'.

example. In addition to the normal P root forms, the root also allows a ditransitive stem *-lenbe*, where the ditransitivizing suffix *-be* implies the involvement of a third Beneficiary argument (in addition to Agent and Patient) in the action. Predicating the adjective *lenel* of something means that it is sitting directly on the ground, not budging; it may be a drunk man, or an intransigent, crying child. The ditransitive verb *-lenbe* means to give something to someone so as to cause him to be *lenel*, thus too much food or liquor, or perhaps a beating. Thus,

{II}

i- j- len- be utel
 CP-IE-seated_immobile-BEN scolding
I scolded him (and left him dumbfounded, seated on the ground).

Figure 3 illustrates how the different morphological profiles of P roots match up against schematic templates of action available in the stem forms for each sub-type.

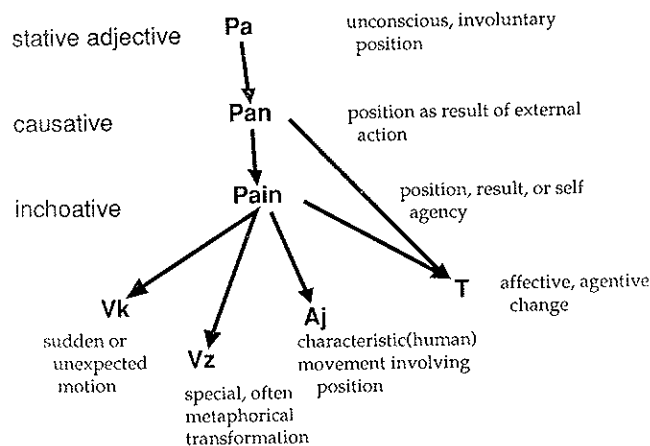


Figure 3: Morphological profiles and schematic position

Notional partitions

The listing in the Appendix suggests a second sort of possible partitioning of roots on the basis of notional semantic criteria. Semantic analyses take their character from the primitives they allow themselves, ranging from componential features to pseudo-natural metalanguages. One reason to pay special attention, in the analysis of Tzotzil verb roots, to those roots that denote configurations of the (human) body is that the body, in a partial sense, provides its own metalanguage. If the central problem of morphological coding of denotata in language is providing a digital partition of an analogue domain – breaking the variegated stream of experience into discrete items – the body provides several partial templates. It has a natural articulation, both kinetically and functionally, so that body parts segment at conceptual “joints” which are neither entirely predetermined by anatomy nor yet completely free. So, too, with the postures and attitudes of the body: human bodies are not rubber and wire models. They normally assume positions that are not only

physically possible, but natural, balanced, commodious, and socially useful. Given what human beings do with their bodies it is not surprising, following this logic, to find discrete postures like sitting, standing, and lying as lexicalized linguistic units.

Culturally variable assignment of meaning to these postures further limits their range, and colors their attribution. Thus, for example, the pairing of P roots in Zinacantec ritual couplets suggest that a least four canonical positions have specific symbolic associations: verticality (*vaʔ*) and firm rootedness (*tek'*) with responsibility; proneness (*puch'*) and being stretched out in a somewhat sagging way (*ta'*) with illness and confinement; a kneeling (*kej*) or prostrate (*pat*) position with humility and contrition; and being firmly seated on a base (*chot*) or on bended knee (*vutz'*) with social stability.

The elaboration through P roots of such a semantic domain thus gives a particularly tractable point of entry into the lexical style of a language like Tzotzil. Consider again the rough domain of sitting in the Appendix. (Standing and lying receive similar treatment.) I have assigned roots in each category to subgroups on the basis of semantic dimensions that combine anatomical specificities with apparent Zinacantec preoccupations, both conceptual and social.²⁶

There are first roots which are primarily distinguished by the specific (body)part involved in supporting the body in a given position: supported on the "bottom" (*chot*), on the "knees" (*kej*), or on the "haunches" (*xok'*). If something has a "bottom" (in Tzotzil, *x-chak* 'its bottom'), and it rests stably on it, it can be said to be *chotol*. This is true not only of humans but also, for example, of bowls, cups, pots, and even of *metates* or grinding stones. The end of a *metate* a which one sits to grind on it is its *-chak* "bottom." When the stone is stored against at wall, supported on its "bottom" end, the *metate* can also said to be *chotol*. (See Figure 4 which also illustrates some other possible positional descriptors.)

Second, there is a surprisingly large class of roots which emphasize the (im)mobility of

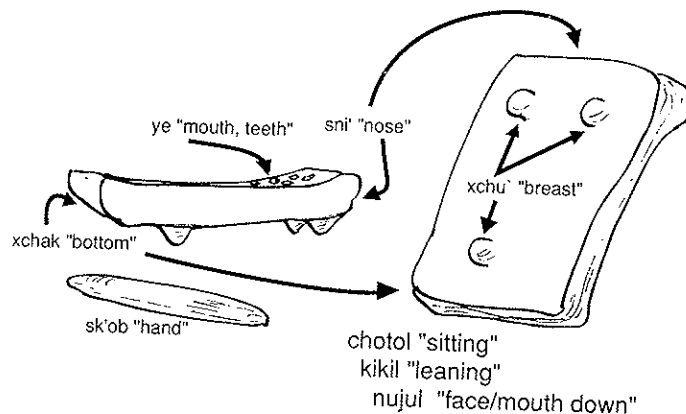


Figure 4: A "seated" grinding stone

²⁶ Notice that the structure of the ritual couplets exploits markedness relations. The first element of each pair is the semantically unmarked member, the root which denotes a more or less standard position, at least potentially unmarked for non-positional connotations. The second element is relatively more highly marked, either by virtue of denoting a more unusual position or by specifying additional features or dimensions of meaning beyond pure position. Thus, *chotol* 'seated' is contrasted with *vutz'ul* 'seated with bent knee'; *va'al* 'standing' is juxtaposed with *tek'el* 'standing firmly planted.'

the body so positioned, whether from weakness (*ju'1*), fear (*tzub2*), infirmity or drunkenness (*juch'2*).

Third, several roots emphasize oddities or marked deviations from standard positions: leaving one's legs immodestly exposed (*koy1*), or sticking out in odd ways (*tiv, petz*), or otherwise sitting incorrectly (*len, lub2*).

Fourth, roots may set special conditions not only on the anatomy of a Figure, but also on the Ground or reference domain against which the Figure and its parts are arranged. It may be a raised supporting surface (*lep*), or a precarious one (*luch1*), or perhaps a permanent "sitting" place, i.e., a place one resides (*nak*).

Finally, in addition to the roots which mark overall configurations of anatomies and grounds, other roots in this semantic class seem to depend especially on the disposition of specific anatomical parts: "bottoms" that protrude (*but*), "limbs" that dangle or bend (*chox, ke'3*), "heads" lowered or thrown back (*nij, net*), and so on. Indeed, many roots conventionally combine with specific body part words to form fixed compounds, usually derogatory: *yech xivet yat ta ti' k'ok* 'literally, his penis is just squatting by the fire, i.e., he's lazy as a stick.' Other positional Positionals record departures from the canonical orientation of complex structured wholes: "bellies" or other protrusions or inner surfaces exposed (*jav2*), "mouths" or other cavities faced downwards (*nuj, tz'uk1*), and so on. There is no room for a full meal here, but the direction in which the Tzotzil lexicon has specialized should begin to be obvious from this initial appetizer.

6. Coda: The conflated body

The Tzotzil verbal lexicon displays a certain virtuosic preoccupation with the body. There are, of course, body part expressions which figure in everything from locatives (DE LEÓN 1991b, this volume) to non-corporeal metaphors of human propensity and psychological state (HAVILAND n.d.). However, in numerical terms, the primary symptom is the very large set of verbal roots, more than one hundred in number, which appear to involve confluations of the body: its parts, its positions, its typical attitudes. Without elaborating its details, let me sketch a hypothetical process underlying such conflation.

If we begin with the body, probably the human body, nature itself provides certain templates for how it might be partitioned into the digital counters of linguistic code. I have argued that there are at least two sorts of interrelated template: the articulated parts of the body, and the overall configurations of its anatomy we might call bodily postures. In both cases there is also a pervasive and inescapable social anatomy: the uses and values attached to parts and postures. Parts, once digitized into lexical forms, can themselves be further abstracted, in ways now familiar from both the literature on grammaticalization (SVOROU 1986, HEINE 1989, BOWDEN 1991) and from other processes of semantic extension or contraction (FRIEDRICH 1969, 1970), to denote abstract shape, relative position, generalized geometric relations, and also abstract function. Something similar, I suggest, can be observed with postures. These too, if encoded in lexical form, are available for semantic migration, once again in several directions. In Tzotzil one observes that lexicalized bodily postures are also generalized positions, that is, part/whole relations and configurations not limited to bodies of a single type. By means of such relations one can also lexicalize shape and orientation. By a different route, one can extend these lexical elements to the states and actions of the bodies that adopt such positions, and from there to (social) character and propensity. I illustrate the conceptual anatomy here in Figure 5.

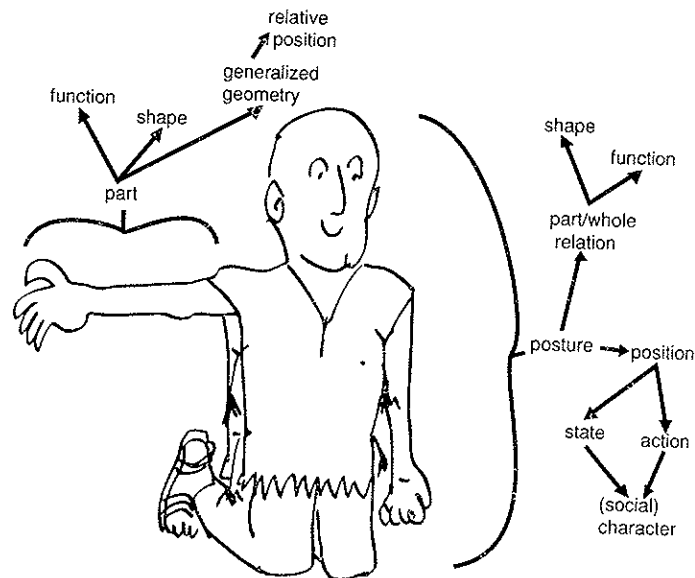


Figure 5: Lexical conflation of the body

The pattern of corporal incorporation into Tzotzil roots is clearly not fixed and immutable. The evidence from Colonial Tzotzil (LAUGHLIN 1988), from other Tzotzil dialects, and, indeed, from neighboring Tzeltal (BERLIN 1968, BROWN 1992) suggests that both positional meanings and the encoding roots shift and swap from one Chiapas community to the next. For the root *chot* 'seated on the "bottom"' in modern Zinacantec Tzotzil, the Colonial friars list "crouched" as a gloss. Modern Tenejapa Tzeltal uses the same root to mean "canonical standing position for inanimate objects" (BROWN 1992b) or "upright legged objects" (BERLIN 1968). Considerable work remains to be done, even on the tiny lexical domain introduced here, to understand the systematic principles involved.

Moreover, delimiting the possible positional denotata of forms derived from these roots is merely the preliminary to serious work on situated meaning, whose pursuit takes us straight back to ethnography. I began with prayer, so let me end with politeness, exhortation, and scolding.

When a guest comes to a Zinacantec house, he is invariably invited to sit. "*Chotlan*, sit down," cries the host, proffering a chair and inviting his guest to relax. A self deprecating way for a Zinacantec to characterize what he is up to, in this society where life is work, is to say *li' tzunul ta jkux ko'on* 'Here I sit (idly) resting my heart.' Consider, finally what the wedding godfather says in exhortation to the new bride, once he has seated her in the house where she will live.

{12}²⁷

57 mu-ja^c-uk xa li chotol ch-a-kom ta na-c
 NEG-it is-SBJ already ART seated ICP-2A-stay prep house-CL
You won't just stay seated at home.

²⁷ Godfather's exhortation, Nabenchauk, April 26, 1981.

- 58 mu-ja^c-uk xa li^c xa x-a-k'el elav
NEG-it is-SBJ already here already ASP-2E-watch spectacle
You won't just sit idly observing things
- 59 =yech xa nox x-a-k'atin-e
thus already only ASP-2E-warm self-CL
you won't just warm yourself for nothing.
- 60 bal ti chabchab ch-ba a-kuch-ik tal
sufficient ART (remote) two-two ICP-go (AUX) 2E-carry-PL coming
It is sufficient that you haul back two (pieces of firewood) whenever. ...
- 61 = k'u ora x-a-xokob -ik-e
what hour ASP-2A-be free-PL-CL
...you have some spare time.
- 62 yu'nox
because only
because
- 63 s-talel ti ta j-kuch-tik si'e
3E-coming that ICP 1E-carry-1PL firewood-CL
it is normal for us to carry firewood.
- 64 s-talel ti ja' ch-i-ve^c-otik o ti
3E-coming that ! ICP-1A -eat-1PL REL ART (remote)
It is normal that we eat from our little...
- 65 = x-0-elan k-unen- kostumbretik vo'otik
NT-3A-seem 1E-small-customs we
... customs, that we have.
- 66 mu-ja^c-uk yech chk k'u cha'al jkaxlan-etik
NEG-it is-SBJ thus like what way ladino-PL
It is not like the Ladinos.
- 67 ja'xa ta j-chan-tik jun xa k-o'on chotol-otik
! already ICP 1E-learn-1PL one already 1E-heart seated-1PL
that we can learn to be happy just sitting around.

The godfather has seated the bride, but she is **not** to remain seated. She must arise early, carry the firewood by which she warms herself and cooks for her husband. She must follow Zinacantec customs: unlike the non-Indian Spanish speaking *ladinos*, comments the godfather with high Positional irony, **we** could never learn to be content just *chotol* 'seated.'

The root *chot* starts out denoting the position in which one arranges a body – one's own, or that of one's grinding stone – to sit resting on its "bottom". In the ritual language of the wedding, the root *chot* and its couplet mate *vutz'* evoke the very image of domestic stability. Here, by contrast, the seated position evoked by the root smacks of idleness. Such an expressive range, characteristic of *chot* and more than one hundred sixty other verb roots of bodily positions, shows the complex relation between action, social life, and the body crystallized in the Tzotzil lexicon.

Abbreviations in glosses

1	1st person	ICP	incompletive aspect
2	2nd person	iv	intransitive verb stem
3	3rd person	NEG	negative
A	absolutive cross-index	NT	neutral aspect

aj	adjective stem	PF	perfect/resultative suffix
ART	article	PL	plural
AUX	auxiliary	PREP	generalized preposition
av	"affective" verb stem	PT	particle
BEN	benefactive, ditransitive suffix	QUOT	quotative (evidential) clitic
CL	clitic	REL	generalized relator clitic
CP	completive aspect	SBJ	subjunctive affix
DIR	directional clitic	SUBJ	subjunctive suffix
E	ergative/possessive prefix	tv	transitive verb stem

Appendix: Zinacantec Tzotzil P roots with "positional meanings"

The following list contains roots with clear P(ositional) type morphological profiles, which in stative adjective form (with a *-Vl* suffix) mean "complex anatomy in such and such position." The root numbering system follows LAUGHLIN (1975), and the glosses are drawn both from LAUGHLIN and from my own fieldwork. Note that many roots which fall into these notional categories do not appear here because they do not fall unambiguously into the P class on formal grounds. Assignment to notional subcategories is partly arbitrary. For the verbs in the first section, "sitting," I also show the derivational root profile (in boldface), using the notation described in the text.

Sitting

1. Supporting anatomy

- chot* [**Pain V**], seated, sitting on "bottom"
jetz [**Pain V**], cross-legged, sitting with legs tucked under, flat to the ground
kej [**Pain Aj V**], kneeling
xok' [**Pain Aj V**], sitting on one's haunches, "hunkered"

2. mobility or immobility

- tzub2* [**Pain Aj V**], crouching (cat, rabbit, person), immobile
tzun1 [**Pain**], sitting huddled, idle
ju'1 [**T Pain**], seated on ground and unable to stand, sitting idly or feebly
juch'2 [**T II Pain V**], sitting unwilling to stand

3. Peculiarities of position

- koy1* [**Pa**], sitting close to ground with legs spread apart, up
tiv [**Pain**], squatting (person), crouching (cat, rabbit), standing with bent limbs sticking upwards
lub 2 [**Pain**], setting (hen), crouched (cat, rabbit, person), low to the ground, flattened
len [**T Pain**], seated with "bottom" on the ground
petz [**T Pain V**], sitting cross-legged or with legs tucked under, anchored or rooted to the ground

4. Special configuration of "Ground"

- lep* [**T Pain**], seated on something elevated above the ground
luch1 [**T Pain V**], perched, protuberant (blister), on something elevated
nak [**T Pain V**], residing, dwelling, at home, seated permanently

Standing

1. Supporting anatomy

- vaʕ*, standing (people, pot), standing vertically, bipedally?
kot, standing (animal, furniture, machine, car, arch), on all fours, with horizontal 'back' upwards

2. mobility or immobility*vech*, standing (scarecrow, person), standing unsteadily*vich2*, solitary (hair, corn plant, tree), defoliated3. Peculiarities of position*lot'*, huddled with arms pressed to body (person), crouched*xik'2*, standing erect (person, hair, penis), with stiff limbs*kuj*, bent over4. Special configuration of "Ground"*noch'*, clinging to vertical surface*nux*, standing close to surface (insect, snail, lizard), floating, swimming*tek'*, standing (plant, tree, vine, grass, etc.), planted firmly**Lying**1. Supporting anatomy*puch'*, lying down (person, mammal, tree trunk)*metz*, lying down longish (wood, sugarcane, knife, scissors, pencil)2. mobility or immobility*tutz'*, lying (corpse during wake, dog lying on stomach), prostrate (like ogn snake)*vub*, lying on side (fat pig, drunk), fat and unable to get up3. Peculiarities of position*ech*, lying on back (drunk) or side, unable to get up*pat*, sitting bowed over, lying face down, setting (hen),*ta'1*, lying stretched out, immobile /face up, on side/**Specific (body) part**1. "bottom"*but*, squatting or lying with rear sticking out, lying on*tob2*, lying on side (cow, drunk, pot, water jug),2. Legs, lower limbs*chav*, standing on long legs (crab, daddy longlegs, harp),*chex*, lying on ground (leafy branches), lying (palm frond),*chox*, dangling (legs)*ke'3*, with one leg bent at knee (person, mule)*li'*, standing on tip of hoof or with heel of one foot3. "head"*chim*, with bowed head*chin1*, sitting /in sun/, standing with lowered head (cow),*lut'*, crouched with head bowed (person, cat, rabbit),*net*, tilted (head of person with tumpline who turns to),*nij*, with head bowed, obedient (girl), lowered (eyelids)*te'ij*, drooping listlessly /sick/, bending over thinking4. "belly" etc.*ven*, standing with protruding tummy (child, puppy)

Orientation1. Relevant to inherent or normal orientation

- jav2*, face up, on one's back, interior surface exposed
tz'eʃ, on one's side, leaning (sitting person), cocking
nuj, face down (drunk), upside down (pot), right side up, interior surface or opening face down
tz'uk1, upside down, with head down (fallen drunk)

2. Relative to Ground

- k'at1*, lying across, hanging over, crosswise
kik2, leaning against (standing person, tree, firewood), non vertical

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Body Part Terms Occurring in Popolocan Verbs

Summary

The present discussion is concerned with body part terms included in Popolocan verbs and more particularly in verbs of the Popoloca dialect of Los Reyes Metzontla. Morphological and lexical characteristics of body part nouns, together with the verbs in which some of them appear more or less obviously, will be treated after some introductory notes about location, internal and external relationships, number of speakers and main characteristics of the Metzontla dialect. Metzontla Popoloca forms are taken from VEERMAN-LEICHSENING (1991), Atzingo Popoloca from KALSTROM/ BARTHOLOMEW (1991), Coyotepec Popoloca from BARRERA/DAKIN (1978), Otlaltepec Popoloca from WILLIAMS/PIERSON (1950), Tlacoyalco Popoloca from STARK (1978), Ocotlán Chocho from MOCK (1977), Natívitas Chocho from ESCALANTE (1973), Ixcateco from FERNÁNDEZ DE MIRANDA (1961), and Chiquihuitlán Mazateco from JAMIESON (1978). Statements will be based on semantic, morphological and comparative evidence.

Los Reyes Metzontla is a small village in the south of Puebla State in central Mexico with about 1200 inhabitants who earn their living mainly from pottery. The village is situated some 10 kilometers from the main road that connects Huajuapán de León with Tehuacán, the commercial and administrative center of the region. The soil of the arable land belonging to the village is extremely dry, and supplements of maize and other food products have to be bought or obtained through barter on nearby marketplaces, especially at Tehuacán. A great deal of the adult male population migrates temporarily, sometimes accompanied by their families, to work in the coffee and sugarcane harvest in Morelia or in other, more remote states.

The Popolocan languages, which comprise Popoloca, Chocho, the nearly extinct Ixcateco, and the more remote related Mazateco, form part of the Otomanguean language stock. The territory of the Popolocan language family occupies the south of Puebla State and the northern part of Oaxaca State. Popoloca is spoken in the south-western part of Puebla in three geographically distinct regions in the vicinity of Tehuacán. Traditionally investigators of the Summer Institute of Linguistics distinguish three main dialects: (1) a northern variant, spoken in the villages of San Marco Tlacoyalco and San Luis Temalacayuca to the north of Tehuacán, (2) a western variant, spoken in several villages to the west of Tehuacán of which San Felipe Otlaltepec, Almolonga, San Antonio Huejonapan and Santa Inés Ahuatempan have a greater number of Popoloca speakers than San Vicente Coyotepec and Natívitas Cuautempan, and (3) an eastern variant spoken in the villages of San Juan Atzingo and Los Reyes Metzontla south-west of Tehuacán. The grouping together of the dialects of the latter two villages seems somewhat arbitrary in view of fundamental differences in their phonemic and morphological structures and the low degree of mutual intelligibility.

Based on census data from 1970, the total number of Popoloca speakers in these years

was 7.280. Based on my own data, gathered in the late 1970s and published in VEERMAN-LEICHSENTRING (1984), the total number of Popoloca speakers is approximately 10.000.

The Popolocan languages are tonal. The Metzontla dialect distinguishes three tones which have a lexical, grammatical and pragmatic function. The morphology of the Metzontla dialect is of a mixed analytic-synthetic type. A great part of the morpheme inventory consists of monosyllabic roots that may be juxtaposed in derivatives but that more frequently undergo complicated processes, including substitution of tones, consonants and vowels, affixation and cliticization, and the alternation of allomorphs.

The morphological structure of the verb is complicated. There are two major classes based on the expression in the verb of the subject (the S-verbs) or subject and object (the SO-verbs). These classes are sub-classified according to flexional type and/or reference limitations, i.e., verbs belonging to a specific sub-class of SO-verbs obligatory express a third person object only. Other sub-class verbs obligatory express only third person subject, and some verbs have only one person form, viz. that of third person object together with third person subject.

The nominal morphology is relatively simple in comparison with the verbal morphology. There are three noun classes, A, B, and C, distinguished by flexional type, albeit that phonemic structure plays a role in the division between A and B class nouns (high vs. low final tone) and semantic categorization (alienable vs. inalienable) in the division between A and B class nouns vs. C class nouns. A small number of nouns have one or two irregular possessive forms.

In Metzontla Popoloca body part nouns form an exclusive and consequently closed morphological class, the so-called class C. Body part nouns that belong to the other morphological classes, A or B, are mostly of compounded or derived origin or they are not exclusively used for reference to the human body, as for example *tā* 'cheek, side', *tūtūrē* 'foot, leg, paw', *ndū* 'flesh'. The third person form of these class C nouns coincides with the form that is used when no possessor is mentioned. As this form always ends in a vowel with mid tone, we might conclude that the mid tone corresponds to the third person marker in the class C nouns and that these nouns obligatorily express a possessor. Apart from some phonologically conditioned exceptions, the body part nouns in class C end in a nasal vowel. This suggests the presence or the residue of a particular morpheme in these nouns. We may summarize that the nouns in class C are characterized by an exclusive type of flexion, by final nasality and inherent possessed forms. Two examples of inflected class C nouns are:

		<u>1st person</u>	<u>2nd person</u>	<u>3rd person</u>
<i>šūtū</i>	'nose'	<i>šūtūqʔ</i>	<i>šūtūq̄</i>	<i>šūtū</i>
<i>čākū</i>	'face, eye'	<i>čākūqʔ</i>	<i>čākūq̄</i>	<i>čākū</i>

The other nouns belonging to class C are: *čhàagū* 'leg', *čqā* 'arm, shoulder', *nèxē* 'tongue', *ndàkū* 'rib, chest', *ndànènū* 'tooth, molar tooth', *ndàthē*, 'forehead', *rzuā* 'mouth', *tār-ñ* 'buttocks', *tùčʔī* 'knee', *tùsī* 'neck', *tùtùsī* 'nape of the neck'.

Five body part nouns have irregular person forms:

		<u>1st person</u>	<u>2nd person</u>	<u>3rd person</u>
<i>khā</i>	'head'	<i>khāʔà ~ xāʔà</i>	<i>khá</i>	<i>khā</i>
<i>thā</i>	'hand'	<i>tháná</i>	<i>thá ~ nʒíā</i>	<i>thā</i>
<i>cʔē</i>	'belly'	<i>ceʔ</i>	<i>cé</i>	<i>cʔē</i>
<i>ndaʔchū</i>	'ear'	<i>ndaʔchúná</i>	<i>ndaʔchùnā</i>	<i>ndaʔchū</i>
<i>ngū</i>	'stomach, liver'	<i>ngūwaʔ</i>	<i>ngūwā</i>	<i>ngū</i>

As in the class C nouns, the third person form of these nouns has a mid tone on the final vowel and is identical to the absolute form. However, only two of the irregular nouns have a final vowel that is nasal: *ndaʔchū* and *ngū*. Final nasality is absent without any overt conditioning factor in the other three nouns: *khā*, *thā* and *ceʔ*. Other flexional characteristics of the C-class in this small group of irregular body part nouns are the high tone in monosyllabic or the high plus mid tones in disyllabic second person forms as well as final glottal stop in two of the first person forms: *ceʔ* and *ngāwaʔ*. In the case of *khāʔa* we may presume metathesis of the glottal stop, which allows us to reconstruct another first person form ending in ʔ: **khāaʔ*.

In general, body part nouns are not used as prepositions or adverbs, as frequently happens in other Otomanguean languages. An exception is the use of the body part noun *čqā* 'arm, shoulder' in adverbial phrases that express a personal and spatial relation:

- nū čqāʔ čhīnā* 'on the side of my right arm, on my right side'
nū čqā čhīnā 'on the side of your right arm, on your right side'
nū čqā čhīnā 'on the side of his/her right arm, on his/her right side'.

Another exception is perhaps the adverb *čīnū* 'very close', a fused form composed of *čīnā* 'close' and the restrictive marker *-ú*, which might be related to the class B noun *čīnū* 'navel'.

Body part nouns occur freely in compounds, where they may have an extended or metaphorical meaning, and in hybrid forms. Examples are

- ngūtū* 'the stone of a fruit' – *ngū* 'interior' + *tū* 'fruit'
kodothā 'elbow' – the Spanish noun *codo* 'elbow' + *thā* 'hand'.

In general, the inclusion of nouns in verbs is a very limited phenomenon, and only three nouns referring to body parts are attested in such configurations, viz. the irregular nouns *ngū* 'stomach, liver' and *thā* 'hand', and the class C noun *čākū* 'face, eye'.¹

The noun *ngū* occurs in three Metzontla Popoloca verbs denoting mental processes:

- thīngū* 'to want, to love'
šāšīngū 'to remember'
íīteegū 'to believe'²

Furthermore, with the identical extended meaning of a mental process, *ngū* figures in *túnīngū*, 'to become angry' and *črēnīngū* 'to make angry'. Both verbs are derived from the adjective *nīngū* 'angry', composed of *nī* 'ill, bad' and *ngū* 'interior'. The adjective *nīngū* may function as a verb without prefixation in the meaning 'to be angry'. In the Popoloca dialect of Otlaltepec the verbs *tīnduēngon* 'to confess' and *šaxīngon* 'to regret' are used. Both verbs incorporate the cognate *-ngon*. In his 1912 vocabulary of the Metzontla dialect, DE LEÓN mentions *thēngó* 'to appreciate', with a final syllable *-ngó* which probably corresponds to the actual noun *ngū*.

The fact that the irregular flexion of the noun *ngū* is maintained in the person forms of above verbs constitutes morphological evidence that the segment *ngū* in these verbs corresponds to the noun *ngū*. Compare the inflected forms of the verb *thīngū* 'to want' with those of the body part noun *ngū*:

¹ The noun *nēxē* 'tongue', which shows formal and semantic affinity with the verb *nē* 'to eat' and the derived verbs *nēʔē* 'to bite', *nēthā* 'to chew' and *nēndʔū* 'to suck' will be left out of consideration here.

² In this verb the prenasal element of *ng* is lost under the influence of the preceding long vowel.

thīngāwa? 'I want' *thīngāwā* 'you want' *thīngū* 'he wants'³
ngāwa? 'my stomach' *ngāwā* 'your stomach' *ngū* 'his stomach'.

We may conclude that the verbs ending in *ngū* and having inflected forms of the *-u* > *-awa* type are derived from the body part noun *ngū* 'stomach, liver', and that in these verbs *ngū* has the extended meaning of 'interior, mental'.

Based on the first and second person forms³ of the noun *ngū* in Metzontla Popoloca, *ngāwa?* and *ngāwā* respectively, and on the cognates in other Popoloca dialects, *ncaon* (Atzingo), *ngāū* (Coyotepec), *ngʔoʔ* (Otlaltepec) and *ŋao*² (Tlacoyalco), it is possible to reconstruct a root **ngāūn*. On the basis of this root form, the third person forms ending in *-u* can be explained by means of a vowel reduction *-aun* > *-un* > *-ū*. A similar vowel reduction characterizes the third person forms of some other nouns and verbs:

		1st pers.	2nd pers.	3rd pers.	reconstructed root
'skirt'	<i>kākzū</i>	<i>kākzàwà</i>	<i>kākzàwā</i>	<i>kākzū</i>	* <i>kākzau</i>
'maize-field'	<i>nū</i>	<i>nùkzàwà</i>	<i>nùkzàwā</i>	<i>nùkzū</i>	* <i>nùkzau</i>
'to grind'	<i>tʔú</i>	<i>tʔàwà</i>	<i>tʔàwā</i>	<i>tʔú</i>	* <i>tʔau</i>
'to talk w. someone'	<i>thū</i>	<i>thàwà</i>	<i>thàwā</i>	<i>thū</i>	* <i>thau</i> ⁴ .

In the following verbs an *au*-cluster is maintained in positive forms:

čʔəkzū 'to fill',
thiā-tzū '(the sun) is setting'.

However, in negative forms marked with *-ʔā*, the *au*-cluster becomes reduced:

thiā-tzūʔā '(the sun) is not setting'.

In two nouns the *au*-cluster, in one case interrupted by glottal stop (*aʔu*), is maintained in the absolute, second and third person forms, whereas the first person form shows the *au* > *u* reduction:

		1st pers.	2nd pers.	3rd pers.
'older brother'	<i>sáʔū</i>	<i>sʔúná</i>	<i>sàwzà</i>	<i>sàwzé</i>
'older sister'	<i>xáú</i>	<i>xúná ~ xàúná</i>	<i>xàwá</i>	<i>xàwé</i> .

The alternative form *xàúná* suggests that the *au* > *u* reduction is not an entirely completed evolution.

The body part noun *čàkū* 'face, eye' occurs in a tonally modified form in the verb *tú-čàkū* 'to hurry, to haste'. The prefix *tú-* is a frequently used verbalizer with the semantic value of 'to get, to become'. The literal meaning of the verb will therefore be something like 'to face' or 'to be confronted by'. The second syllable of the noun *-kū* occurs in three Metzontla verbs:

<i>tʔkū</i>	'to see'	(<i>tʔ</i> 'to take')
<i>tʔāyàkū</i>	'to look after'	(<i>tʔāyá</i> 'to raise')
<i>níngākū</i>	'to hate'	(<i>ní</i> 'ill, mad' + <i>ngā</i> unknown element).

³ The *w*-segment in the ending of the first and second person forms is due to the consonantal realisation of the vowel *u* in intervocalic position: *-au* + the declinational vowel *a* = *-aua* > *-awa*.

⁴ The tones of the root endings are not reconstructed.

In the Metzontla dialect the root **kū* is not used as a free form with the meaning 'face' like in other dialects: *cu*'² (Coyotepec), *ku*^m (Otlaltepec), or in Chocho: *kū* (Chocho of Natívitas). In Ixcateco and Mazateco the root is prefixed by a palatalized consonant which may be related to the *čā*- element in Metzontla Popoloca: *šku*² 'face' (Ixcateco), *šku*⁴ 'face' (Mazateco of Chiquihuitlán).

The verbs containing *-kū* or *čākū* inflect according to different verbal classes, and only the endings of the second person forms coincide with those of the corresponding body part noun. Compare the forms of *tīkū*, with the forms of *čākū*:

	<u>3rd pers.</u>	<u>1st pers.</u>	<u>2nd pers.</u>
'to see'	<i>tīkū</i>	<i>tīkuá</i>	<i>tīkuā</i>
'face, eye'	<i>čākū</i>	<i>čākuá</i>	<i>čākuā</i>

In other dialects, a similar element *tī-*, *tī-* or *dī-* is prefixed to form the verb 'to see': *tī²cu*'² (Popoloca of Coyotepec), *tiku*^m (Popoloca of Otlaltepec), *dīkū* (Chocho of Ocotlán), *tī²šku*² (Ixcateco). Evidence that the segment *-kū* is indeed related to the nominal root **kū* 'face, eye' or 'view' is of a semantic nature: the three verbs express a visual action (to see, to look after) or may be interpreted as having some visual implication (to hate). A convincing morphological indication, as in the case of *ngū*, is not found, however.

The third body part term that appears in a number of verbs is *thā* 'hand'. This noun has regular possessive forms according to the nominal flexion class A and an alternative irregular form for the second person:

	<u>1st pers.</u>	<u>2nd pers.</u>	<u>3rd pers.</u>
<i>thā</i> 'hand'	<i>tháná</i>	<i>thá ~ nžīā</i>	<i>thā</i> .

The prenasalized consonant in the alternative irregular second person form is possibly an old morpheme of the second person, which we also find in *ndē* the irregular second person form of the verb *nē* 'to eat' and in the plural clitics of the second person *ndá* and honorific *síndá*.

We can only guess as to why the irregular form *nžīā* is preserved alongside *thá*. Data are lacking that can prove or make it plausible that the form has a special lexical status. The Ixcateco dictionary of FERNÁNDEZ DE MIRANDA (1961) lists a root *nží/-* alongside *īthā*² 'hand', although without further explanation about lexical or distributional differences.

In Metzontla Popoloca, *thā* with a low or mid tone occurs in the final position of the four following verbs:

	<u>3rd pers.</u>	<u>1st pers.</u>	<u>2nd pers.</u>
'to find'	<i>títhā</i>	<i>tīthá</i>	<i>tīthā</i>
'to set foot on'	<i>ngáthā</i>	<i>ngáthá</i>	<i>ngáthā</i>
'to reach, to suffice'	<i>tīkāthā</i>	<i>tīkāthā-nā</i>	<i>tīkāthā</i>
'to open'	<i>tākāthēžē</i>	<i>tākāthāžā</i>	<i>tākāthēžē</i>

(stem: *tākāthā*-).

Reference to manual action is not evident in any of the verbs. However, the relation with the noun *thā* 'hand, arm' seems obvious when we look at the cognates of *thā* 'hand' and *títhā* 'to find' in other Popoloca dialects and languages.

	'hand'	'to find'
Popoloca of Metzontla	<i>thā</i>	<i>íthā</i>
of Coyotepec	<i>tja</i> ²	<i>wi³tja</i> ²
Chocho of Natívitas	<i>řha</i> ²	<i>bi¹řha</i> ²
of Ocotlán	<i>rxā</i>	<i>diřxā</i>
Ixcateco	<i>řha</i> ²	<i>bi²řha</i> ²

In Popoloca an initial *t-* or *th-* of a verbal element changes to *k-* or *kh-* after most prefixes or prefixal elements (*tákhē* 'to shine', *čřē-kákhē* 'to make light'), whereas an initial *t-* or *th-* of a nominal element will normally not undergo any such mutation in compound verbs (*thúá* 'clean', *čřē-thúá* 'to clean'). The presence of the consonant *th* in the Popoloca verbs *íthā* and *wi³tja*² seems to corroborate our hypothesis that the element is of nominal origin⁵.

An element *thā*, with a low tone, occurs as the first syllable in a number of mostly disyllabic verbs. In all second person forms this element has a mid tone instead of the regular high one.

	3rd pers.	1st pers.	2nd pers.
'to earn'	<i>tháčā</i>	<i>tháčā</i>	<i>tháčā</i>
'to make tortillas, to wear shoes'	<i>thàngā</i>	<i>thángā</i>	<i>thàngā</i>
'to ask'	<i>thànžā</i>	<i>thánžā</i>	<i>thànžā</i>
'to ask a question'	<i>thànžāngí</i>	<i>thánžāngiá</i>	<i>thànžāngiá</i>
'to beat, to slap'	<i>thàsē</i>	<i>thásē</i>	<i>thàsē</i>
'to hit'	<i>thátē</i>	<i>thátē</i>	<i>thátē</i>
'to begin'	<i>thàngíšā</i>	<i>thángíšā</i>	<i>thàngíšā</i>

Apart from *thànžāngí* 'to ask a question', which is a verb derived from *thànžā* 'to ask' by means of *ngí*, above verbs share the semantic value of manual action⁶, which may point to a historical relation with the body part noun *thā*. However, all these verbs show time reference by regular consonant substitution, e.g., *tháčā* 'he earns', *xuáčā* 'he earned', *sáčā* 'he will earn'. This reveals that the syllable *thā-* functions as a verbal element or forms part of a verbal root, at least in the modern form of the language.

There is another indication that the initial element *thā-* in the above verbs might have had a morphemic status in an earlier phase of the language. To indicate aspect and/or mood, most Metzontla Popoloca verbs use a prefix or some prefix-like element which often has an undefinable semantic value. An enumeration of these elements shows the lack of *tha* and *thu* forms:

<i>ta-</i> / <i>tʰa-</i>	various values	—
<i>te-</i> / <i>tʰe-</i>	causative	<i>the-</i> durative
<i>ti-</i>	impersonal, approximative	<i>thi-</i> progressive
<i>tú-</i> / <i>tʰu-</i>	ingressive and other values.	—

The sequence *thu-* is found in only one verb, *thūā* 'to embrace' but occurs frequently in nominal forms. This seems to indicate that the element has a predominantly nominal

⁵ The symbols *tj* in the transcription of the Coyotepec verbs, correspond to the symbols *th* used in the Metzontla verbs.

⁶ As wearing shoes was an innovation for the Popolocas, the second meaning of the verb *thàngā* is probably a derived one, associated with the noise aspect or with the desired flat shape aspect of making tortillas.

value or that it is associated with nominal forms, which may prevent a verbal application. The sequence *tha* does occur in the initial position of several verbs and should satisfactorily fit into the afore-mentioned system of prefixes and prefixal verbal elements. However, in the verbs where it does occur, it can normally not be omitted or substituted in the way the other prefixes and prefixal elements can. This might be due to a full integration of the form into the verb.

In other Popoloca dialects a similar element occurs in the initial position of a series of comparable verbs:

'to earn'	<i>tjächā</i>	(Otlaltepec)
'to ask'	<i>tjānza</i>	(Otlaltepec)
	<i>ta¹nnza²</i>	(Coyotepec)
'to beat'	<i>tja¹ca¹</i>	(Coyotepec)
'to begin'	<i>taxi^m</i>	(Otlaltepec)

An unambiguous reflex of initial *tha-* in Chocho or Mazateco verbs is not found. However, an initial element *ba²-* in Ixcateco verbs is most probably related to the element *tha-* in Metzontla Popoloca verbs: *ba²čca²* 'to earn', *ba²řha³* 'to beat with the hand', *ba²nři²a²* 'to ask'. This suggests a closer genetic relationship between Popoloca and Ixcatec than between Popoloca and Chocho, as is generally held on the basis of lexicostatistic calculations.

In summary, body part nouns contained in verbs are limited to three basic body terms⁷, and these are subject to a logical, coherent semantic ordering. They occur in the final position of verbs that express mental processes (*ngũ*), visual activities (**kũ*) or manual activities (*tha*). In final position the body part noun may maintain some of its nominal characteristics, such as the type of flexion in the case of *ngũ*, and consistency of *th-* initial in the case of *thā*. There are indications that the noun *thā* occurs in initial position in some verbs, with occasional concomitant tonal peculiarities. In this position *tha-* was possibly a verbal prefix derived from the body part noun in an older phase of the language, when Popoloca and Ixcateco still formed a linguistic unity. This hypothesis suggests the need for a reassessment of the historical relationship between the Popolocan languages on the basis of results obtained by comparative analysis of morpho-syntactic phenomena.

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⁷ Basic in the sense of not further analysable.

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Body Parts and Location in Tzotzil: Ongoing Grammaticalization¹

1. Introduction

This paper focuses on the micro-diachronic emergence of locative terms from a subset of body part terms in Tzotzil.²

Semantic and morpho-syntactic changes undergone in the nominal construction where body part terms occur suggest that there is an ongoing grammaticalization process. The terms *ba* 'face', *ti* 'mouth', *pat* 'back', 'bark' 'shell', *chak* 'buttock', *ni* 'nose' are examined in detail on the basis of a varied corpus of occurrences. The analysis is based on a reasonably large body of data from a colonial and a modern Tzotzil dictionary, (LAUGHLIN, 1975; 1988), narratives LAUGHLIN (1977), natural conversation (HAVILAND, n.d.), and interactive spatial tasks performed with about 30 children and 25 adults of Nabenchauk, Chiapas.³ From this data, the interactive material from spatial tasks is taken as the indicator of the production, comprehension of the locative use of the subset of locative body parts in question.⁴

2. Body part terms and location in Mesoamerican languages

Many Mesoamerican languages lack prepositions and instead they use relational nouns and/or locatives apparently derived from animal and human body parts. This feature has been attested in a large number of languages of the area, namely Mayan, Mixe-Zoquean, Totonac, Tlapanec, Otomanguean, Tarascan and Nahuatl.⁵

When comparing genetically related languages such as Zapotec, Mixtec and Trique of the Otomanguean family, we find similar patterns of grammaticalization of specific body parts, such as the generalized use of the term "stomach" to denote 'in, inside'. However, what attracts our attention, since these three languages belong to the same subgroup of the family, is that they some show major differences in the extensions of body part terms as locatives.

In Zapotec, for example, extensions of body parts are apparently based only on the human model in its canonical vertical positions. According to MACLAUREY in this language "the highest part of an object is its head, its back and its belly are vertical, its lower front is always a foot and never a hand. Such extension occurs even on objects that lack inherent orientation, for example, a sphere and a cube. The front of any featureless object conventionally faces the speaker". (MACLAUREY 1989:

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² Tzotzil is a Mayan language spoken by around 250,000 people in Southern Mexico. Data for this work comes from the dialect of Zinacantán, Chiapas.

³ I am grateful to JOHN HAVILAND for sharing a large body of data and his computational expertise to handle it.

⁴ For details about the tasks see DE LEÓN 1991a, 1992a.

⁵ For specific works on body parts in Mesoamerican languages see BRUGMAN 1984; BRUGMAN and MACLAUREY 1986 (Mixtec); FRIEDRICH 1969 (Tarascan); HOLLENBACH 1990 (Trique); LEVINSON 1992 (Tzeltal); LUCY (n.d.) (Yucatec); MAC LAUREY 1989 (Zapotec); STROSS 1976 (Tzeltal).

Stage	Conceptual domain
0 Body part of X	OBJECT
I Subpart of X, spatially defined	OBJECT, SPACE
II Space as part of and adjacent to X	SPACE/OBJECT
III Space adjacent to X	SPACE

The three authors agree that the model for the transfer applied in the grammaticalization of body parts into locatives is the human body in its upright position, or what has been called by CLARK (1973) "the canonical encounter model". This model takes the human body as the center of the projection of the up/down, front/back and left/right coordinates. It has been observed that in some African languages an animal model may be used to attribute body parts to inanimate objects (HEINE and NOSKE 1988). BOWDEN has reported for Oceanic languages that the house is also taken as a deictic center and a lexical source in the production of locatives (1991: 106).

The grammaticalization model designed by these authors is useful, in general terms, when applied to Tzotzil. It should be clear however, that the grammaticalization model outlined is based on comparative diachronic data. In this paper, I follow a micro-diachronic process on the basis of synchronic data and reference to a Colonial source. I thus take the model of grammaticalization very broadly for the purpose of my analysis.

A set of Tzotzil body part terms seem to follow a process of morphological reduction and semantic generalization from body part to locative relation, similar to what is described in the grammaticalization model. The grammaticalization process shows also some features which are specific to Tzotzil. For instance, grammaticalized terms are reduplicated to denote a general locative relation in their co-occurrence with motion verbs. Another specific feature to Tzotzil, is that the human body is not taken as the center for the projection of coordinates front/back and left/right. Body part assignment is centered on the object, and consequently locative extensions are also object centered. Tzeltal–Tzotzil closest neighbour–shows a similar pattern of preferred non-ego centric representation of space (See BROWN and LEVINSON in this volume; LEVINSON, 1991).

4. Morpho-syntax and semantics of Tzotzil body part terms

In this section, I outline the morpho-syntactic features and the semantics of the set of Tzotzil body part terms.

4.1 Morphology of absolutive and possessed body part terms

Tzotzil body part terms together with relational nouns, kinship terms, and terms for clothing belong to the class of "inalienably" possessed nouns. Most of these nouns take an obligatory *-VI* nominal suffix when unpossessed which does not occur with possessive prefixes (*jolol* 'head'; *s-jol* 'its head'). The form with the suffix *-VI* is referred to as "absolutive" and indicates indeterminate possession (HAVILAND, 1981: 68).

There is also a set of body part terms that belong to a separate noun subclass. This set is different from the above set in that the forms take a *-VI* nominal suffix **only** when possessed. (e.g. *ch'ich* 'blood', *s-ch'ichel* 'his/her blood').

In this section, I am concerned with those body part terms that belong to the first subset described. They are included in Table 1.

Table 1: Tzotzil body part terms.

1. <i>ba(il)</i>	'top, forehead'
2. <i>ti(il)</i>	'lips, edge'
3. <i>pat(il)</i>	'back, bark, shell'
4. <i>ni(il)</i>	'nose'
5. <i>chak(il)</i>	'buttocks'
6. <i>chikin(il)</i>	'ear'
7. <i>`ok(ol)</i>	'leg, foot'
8. <i>nuk(il)</i>	'neck'
9. <i>ch'ut(il)</i>	'belly'
10. <i>k'ob(ol)</i>	'arm'
11. <i>sat(il)</i>	'eye, face'
12. <i>chu(il)</i>	'breast'
13. <i>mixik(il)</i>	'navel'
14. <i>ne(il)</i>	'tail'
15. <i>`akan(il)</i>	'foreleg, leg'
16. <i>'isim(il)</i>	'beard, moustache, roots'
17. <i>`o'on(il)</i>	'heart'

As we may notice the set includes mostly human body parts, which are used also for animals. The exceptions are one animal body part *ne* "tail" and the term for "root" and "moustache" which is used both for humans and plants.⁸

The use of absolutive forms is very restricted. They may denote "generic" meaning such as:

- (1) *ta k'obol* 'by hand'
ta `ok`ol 'by foot' (HAVILAND, 1980: 68)

They may also indicate an extended or changed meaning from the root's meaning such as:

- (2) *jol* 'head' > *jolol* 'head, hair'
ch'ut 'stomach' > *ch'util* 'stomach disease'

The body part roots that occur in the possessive construction designate subparts of an animate or inanimate object. They occur in the following possessive construction:

- (3) Prefix_i + Head + (Possessor)_i

where the possessor is cross-indexed by the possessive pronoun. Note that this construction says that the "possessive relation" is marked in two ways: (i) word order (part-whole) and (ii) the agreement prefix.

⁸ See B. BERLIN, D. BREEDLOVE and P. RAVEN (1974) for the ethnosemantics of plant classification in Tzeltal. See HUNN (1977) also for an ethnosemantic study of Tzeltal folk zoology, LAUGHLIN (in press) notices that in Tzotzil human body part terms are attributed to plants and that plant terms are also attributed to the human body.

See examples:

- (4) *s-jol krixchano* 'the head of the man'
3E-head man
- (5) *x-chikin koral* 'the corner of the corral'
3E-ear corral
- (6) *x-ch'ut p'in* 'the belly of the pot'
3E-belly pot

Some of the terms in Table 1 are used in combination with other body parts to denote subparts of the human and animal body—generally on the basis of **shape**.

Thus we have

- | | | |
|---------------------|-----------------------------|---------------|
| (7) <i>s-ba y-e</i> | (the front of the mouth of) | 'front teeth' |
| <i>ti`ba</i> | (the lip of the face) | 'forehead' |
| <i>x-chak y-ok</i> | (the buttock of the foot) | 'heel' |
| <i>s-ni` s-k'o</i> | (the nose of the hand) | 'finger' |
| <i>s-ni` y-ok</i> | (the nose of the foot) | 'toe' |
| <i>s-ni` x-ch'u</i> | (the nose of the breast) | 'nipple' |
| <i>s-pat s-jol</i> | (the back of the head) | 'nape' |

4.2 Nominal possession and grammaticalization

The third person prefix of possessed body part words is dropped in some contexts. For example, there are compound forms of the form X of Y where X bears no third person possessive prefix.

- (8) (i) *ti` be* 'entrance to a road'
mouth road
- (ii) *ti` k'ok'* 'fireside'
mouth fire
- (iii) *jol na* 'roof, attic'
head house
- (iv) *ti` na* 'door'
mouth house
- (v) *ba na* 'above the house'
face house
- (vi) *pat na* 'yard, behind the house'
back house

In his grammar, HAVILAND treats these constructions as "quasi possessive frozen compounds" (HAVILAND 1981: 46) similar to "hilltop, rooftop, hillside, doorway" and indicates that the body part terms cannot be used to derive similar compounds such as *ti` na* 'at the side of the house'. However, the purpose of this paper is to show that the so called frozen expressions are not an isolated phenomenon of frozen lexical composition but are undergoing a process of grammaticalization into locatives. This point is reflected in the fact that these expressions can be definitized. In this vein, HAVILAND indicates that "the frozen relation of the compound unit" is lost when adding an article to the second element of a compound, since the possessive prefix is then required. Contrast

- (9) *te ta jol na li Xun e*
LOC PREP head house ART John CL
'John is on the roof of the house'

- (10) *ch'abal to s-jol li na e*
 none still 3E-head ART house CL
 'The house does not have a roof yet'

The compound is broken also when indicating the person of the possessor as in:

- (11) *te ta s-jol j- na li Xune*
 LOC PREP 3E-head IE-house ART Xun
 'John is at the roof of my house'
- (12) *'ali tz'i' e te ta s-ti' a-na*
 hmm dog CI LOC PREP 3E-mouth 2E-house
 'The dog is at the entrance of your house'
 (HAVILAND, 1981: 64)

The use of the article and the possessive pronoun with the possessor in the possessive construction indicates that, the expressions *ti' na* 'doorway', *jol na* 'roof', *ba na* 'above the house', *pat na* 'outside the house' are not really frozen. The possessive or a definite article in the possessor convey definite reference, and in this case the body part term is cross-indexed with the possessor.

The two parts of the composite expression with the body part terms indicate a spatial relation of a part with a whole, where the part can be a subpart ('roof') or a projected region (*ba* 'over', *pat* 'behind') in a Figure/Ground relation. When definite reference is not expressed the body part in the locative expression denotes a general spatial relation and does not require the possessive prefix.⁹

Thus, we find the terms *ti'* 'mouth', *ba* 'face, forehead', *pat* 'back, bark, shell' in locative expressions with the general preposition *ta*. These terms can occur in this context with and without the possessive prefix denoting adjacent or projected regions of a Ground in relation to a Figure. By 'adjacent' I mean that the Figure touches the part of the Ground. By 'projected' I mean that the part of the Ground is projected as a region from which to locate the Figure. See examples:

- (13)
- | | | | |
|---------------------------|----------------------|--------------------------|----------------------------|
| (i) <i>ta pat na</i> | 'outside the house' | (v) <i>ta ba vo'</i> | 'over the water' |
| PREP back, bark house | | PREP face water | |
| (ii) <i>ta pat korral</i> | 'outside the corral' | (vi) <i>ta ba k'ok'</i> | 'over the fire' |
| PREP back, bark corral | | PREP face fire | |
| (iii) <i>ta ba na</i> | 'over the house' | (vii) <i>ta ti' na</i> | 'at the door of the house' |
| PREP face house | | PREP mouth house | |
| (iv) <i>ta ba mexa</i> | 'over the table' | (viii) <i>ta ti' mar</i> | 'at the shore of the sea' |
| PREP face table | | PREP mouth sea | |

4.4 Morphological and semantic shift

The terms *ba* 'face, forehead', *ti'* 'mouth' and *pat* 'back, bark, shell' in the locative construction with the general preposition *ta* denote a **locative relation** between a Figure and a Ground. In a parallel way, the terms *ni'* 'nose', *chak* 'buttock', *chikin* 'ear, corner',

⁹ With some specific body part terms the use or the absence of the prefix in the nominal construction may indicate two kinds of locative relation (cf. sections 5 and Appendix 1, Section 2).

xokon 'flank', *yok* 'leg' have extended their meaning to denote the same kind of locative relation.

In a series of spatial tasks, I induced interactive spatial descriptions among children of different ages and adults.¹⁰ In one of the tasks a parent had to instruct a child how to place a Figure (a Duplo doll) in relation to different kinds of Grounds (car, animals, tree, containers, a corral, a ring). When describing the location of a doll in relation to a car we had descriptions such as the following.

The parent started with the following command:

- (14) *ak'-o li krixchano* 'put the man'
give-IMP ART man

And then indicated specific placements through specific body parts:

- (15) *ta ni` karro* 'at the nose of the car'
ta chak karro 'at the buttock of the car'
ta xokon karro 'at the side of the car'

Here the parts of the car are used as projected regions from a Ground from which to locate the Figure in question. The constructions follow the pattern of nominal possession (noun + noun) but there is no use of the possessive prefix that goes with the nominal phrase where body part terms occur. In a similar way 20 children of different ages produced locative descriptions of the same kind, using body parts as projected regions.¹¹

The use of the terms *ni`* 'nose' and *chak* 'buttock' as locatives in this specific construction is an innovation in Tzotzil and is not reported in previous work on the language (LAUGHLIN 1975; HAVILAND 1981). The locative construction preposition + (noun) (noun) follows a pattern similar to the one outlined for *ba* 'face', *ti`* 'mouth' and *pat* 'back', 'bark'. However, I shall show in the final section that the three terms are more advanced in the grammaticalization continuum that ranges from denoting parts of objects to projected regions.

The grammaticalization of Tzotzil body part terms involves:

- (1) semantic shift of the body part term from denoting:

- (o) body part of object
- (i) subpart of object
- (ii) space adjacent to object (Figure touches the Ground)
- (iii) space projected as a region or search domain of a Ground.

- (2) loss or split in the use of the possessive prefix in the regular possessive construction used for body parts.

Thus, in Tzotzil, both semantic shift outlined in (1) and the morphological change outlined in (2) seem to follow the grammaticalization model for body part terms into locatives developed by SVOROU (1986: 522); HEINE and NOSKE (1988: 24) and HEINE (1991).

Table 2 shows the set of body parts, with and without possessive prefix and their corresponding semantic shifts.

¹⁰ Descriptions of methods used for spatial description in Tzotzil are discussed in DE LEÓN (1991a); DE LEÓN (1992a).

¹¹ Work with children was done at the primary school of Nabenchauk. I acknowledge enthusiastic collaboration from the staff and the children of the school.

Table 2: Grammaticalization from body part to locative

TERM	SUBPART	ADJACENT. REGION	PROJ. REGION	LOCATIVE MEANING
<i>ba</i> 'forehead'	s-ba	s-ba/ba ba	ba bail ba	on front over
<i>pat</i> 'back' 'shell'	s-pat s-pat, pat	s-pat/pat pat	s-pat pat	behind* outside behind**
<i>ti`</i> 'lip'	s-ti`/ti`	ti`	ti`	edge
<i>ni`</i> 'nose'	s-ni`	ni`	ni`	front (animal)
<i>chak</i> 'buttock'	x-chak	x-chak	chak	back (animal) bottom
<i>xokon</i> 'flank'	x-xokon	x-xokon	x-xokon	side outside
<i>chikin</i> 'ear'	x-chikin	x-chikin	chikin	corner
<i>y-ok</i> ¹² 'leg'	y-ok	y-ok	y-ok	foot bottom

* asymmetric Ground

** environmental landmark

4.5 Complex locative construction

The grammaticalized locative terms *ba* 'on, over' and *pat* 'behind', 'outside' may co-occur with other locative body part terms in a complex locative construction denoting "projected region of a projected region".

(16) *tey ta ba ti` k'ok`:*
Loc PREP over mouth fire
'it is over the edge of the fire'

(17) *ta ba jol vitz*
PREP over head mountain
'it is over the top of the mountain'

(18) (T71) *ta pat s-pat ti ch'en*
PREP back 3E-back ART cave
'it is outside behind the cave'

¹² The possessive prefix for vowel initial terms is not dropped.

The term *pat* 'back, bark, shell' has gone farther in the grammaticalization process from 'behind', 'outside' to the locative *pana* 'outside the house'. This locative, that has the shape of a simple noun, and results from the following process:

- (19) *s-pat na > pat-na > pana*
 3E-back, bark house > back, bark house > outside the house
 'outside the house'

Interestingly enough the form *pana* has entered into the cycle of possessive construction again, being reanalysed as a simple noun. Thus in

- (20) (Tx 82 Ck: 310)
sibtasvan -uk ta s-pana ta s-xokon na s-na
 frighten_people-SBJ PREP 3E-outside PREP 3E-side house 3E-house
 'she would arrive bumping about, scaring people outside the house, next to the house [of her comadre]'

the reduced expression *pana* 'outside of the house' in its possessed form *s-pana* refers to 'the back of the house', in contrast to *ta xokon na* that means 'at the side of the house'.

4.6 Root Reduplication

More evidence of the semantic bleaching of the terms is shown in the locative use of a reduplicated form of a body part word in a possessive construction without the possessive prefix. This construction denotes a projected region from a body part. It occurs with motion verbs. Thus we have:

- (20) *ta ni`ni`* (PREP + nose + nose): region projected by tip-shaped Ground
l-i `ech' ta ni` ni` te`tik y-ilel.
 CP 1A pass Prep nose nose forest 3E-see
 'I seemed to pass over the tree tops (in dream)' (LAUGHLIN 1975)
- (22) *ta baba* (PREP + face + face): along the top of, over
jelav-em ech'el ta ba ba vitz
 pass-CP pass (DIR) PREP face face mountain
 'It passed along the mountain' (LAUGHLIN 1975)
- (23) *ta patpat* (PREP + back + back): region projected from behind a house or fence (LAUGHLIN 1975).¹³

4.7 Observations about the grammaticalized set of body part terms

Table 3 presents a general overview of the grammaticalized body part terms:

Table 3: Tzotzil locative body parts

TERM	BODY PART	LOCATIVE MEANING
<i>ba</i>	'forehead'	'on top of'
<i>ni`</i>	'nose'	'in front of' (animal)
<i>ti`</i>	'mouth'	'edge, rim'
<i>pat</i>	'back'	'outside'
<i>chac</i>	'buttock'	'behind' (asymmetric)
<i>xokon</i>	'flank'	'behind' (animal)
<i>yok</i>	'leg, handle'	'side'
<i>chikin</i>	'ear'	'region around leg'
		'region around comer'

¹³ The body part *ch'ut* 'stomach' appears in its reduplicated form in the example *ta ch'ut chu'ut ch'en* 'along the middle of the cliff' to denote middle region (LAUGHLIN 1980: 61). I thank JOHN HAVILAND for bringing this example to my attention.

(i) the term for "forehead, face" (*ba*) is no longer used to denote "face" as a body part. It is used to denote support or region on a vertical line, much like *on* and *over* in English.

(ii) the term *ni* 'nose' denotes frontal region of objects with a horizontal front/back asymmetry such as animals and vehicles but there is no general term to denote frontal region derived from a body part.¹⁴

(iii) the term *pat* 'back, shell, rind' in its unpossessed form denotes 'outside'. It denotes 'behind' or perhaps 'outside of the field of vision' when used in reference to environmental landmarks such as mountains (*ta Pat Vitz* 'behind the mountain') caves, water-holes, or towns.

(iv) In its possessed form, the construction *s-pat* denotes the back part and region of object with intrinsic front/back asymmetry, humans, houses, chairs, radios, cages, etc. In general, when the Figure is occluded behind a symmetric object, speakers prefer to decenter their locative description and anchor it geographically. The term *chak* 'buttock' denotes a region projected behind from an object such as an animal or a vehicle. Thus, it applies to a narrower range of referents than *spat* 'at the back'.

Thus, overall, in Tzotzil, location is object centered and locatives are specific to the specific features of objects. Only the terms *ni* 'nose' and *chak* 'back' denote opposites in a line with objects with a horizontal front/back asymmetry. *Pat* 'back' is more general than *chak* 'buttock', but its use is mostly restricted to denote back region of object with front/back asymmetry. In Tzotzil, there is no general term for frontal region applied as a locative. Furthermore, in this language the deictic projection of the front/back axis occurs only with environmental landmarks.

4.8 Semantics

Tzotzil presents a picture which is not completely consistent with the claim that the human and animal body is taken as a model for the attribution of body parts to inanimate objects (HEINE and NOSKE 1988, HEINE 1991; MACLAUREY 1989, BOWDEN, 1991).¹⁵

In Tzotzil, several dimensions interact in conceiving the anatomy of an object.¹⁶ The general dimensions used to assign body parts to three dimensional objects are canonical position and the vertical or horizontal orientation of the main axis. However, in the absence of a canonical position and a main axis, body parts are applied on the basis of geometry, basically shape but function too.¹⁷

Briefly, body parts:

(i) are attributed as a **structured anatomy** with all its oppositions when the object has a canonical position and inherent orientation defined by the existence of a main vertical or horizontal axis. In this case the human and animal model is used to attribute parts to inanimate objects.

¹⁴ There is a relational noun *y-elav* which denotes frontal part of objects with a front/back axis. It means 'visible face'. Synchronically, it does not show any connection with body parts.

¹⁵ See LEVINSON (1992) for an account of the theory of vision and body parts in Tzeltal. He rejects analogy to human and animal models in the attribution of body parts and applies the principles of the theory of vision.

¹⁶ For more details see DE LEÓN (1991c.)

¹⁷ In DE LEÓN (1991a) I give more examples of how Tzotziles attribute body parts to familiar and unfamiliar objects in interactive spatial tasks.

(ii) are attributed as a **partial anatomy** on the basis of shape and/or function to objects that have neither a canonical position and an intrinsic vertical or horizontal axis. Thus vegetables and fruits with tips such as a lemon, have a nose, some have a neck (squashes), or some have a belly (orange). Longish parts such as handles are generally called 'leg' (*yok*). Similarly, symmetrical objects like boxes, blocks, bricks, corrales, containers, stacks of things, have parts attributed on a partial basis. So boxes have edges (lips), corners (ears), and sides (flanks). Corrales have sides (flanks) and corners (ears).

The extensions of some body part terms into locatives is based on the structured anatomy model based on the human or the animal body. Thus the body part term *ba* 'face' when used as a locative denotes an upper region on a vertical line. The term *pat* 'back' denotes the region projected from behind an object with a main vertical axis. The terms *ni* 'nose', *chak* 'buttock', are used as locatives with objects that have a main asymmetric horizontal axis. However the terms *ti* 'mouth' or *chikin* 'ear' are used as locatives on the basis of their shape.

5. A view of the grammaticalization of *ba*¹⁸

In this section, I present examples of the grammaticalization of the term *ba* 'face, forehead', focussing on its semantic shift from subpart of object to spatial relation. The data is presented in the following way: first, we present definitions for each term based on (i) Colonial Tzotzil (LAUGHLIN 1988); (ii) Modern Tzotzil (LAUGHLIN 1975); (iii) a tentative locative gloss designed by the present author. The tentative gloss indicates in parenthesis if the term is used with or without the possessive prefix in the nominal construction (+/-prefix + noun of noun). The second part of the data consists of specific examples showing each stage in the semantic and morphological shift.

5.1 *ba* 'face, forehead'

The most grammaticalized term of the set of body part terms. In modern Tzotzil it means 'face, forehead' only in ritual language. The compound term *ti`ba* has replaced it to mean the body part term 'face, forehead'. In modern Tzotzil its denotation is basically locative. It denotes (i) frontal adjacent region of some objects (ii) spatial relation on a vertical axis with contact and without contact. Here we observe a split in the use of the possessive prefix: *s-ba/ba* means 'on' and *ba* means 'over' (c.f. 4.2). The absolutive form *bail* means frontal region of asymmetric object.¹⁹

5.1.1 Definitions

Colonial: The absolutive form *bail* is translated in the Colonial dictionary as 'face, visage'.

The term *ba* in Colonial sources is documented as a preposition 'on', 'over' ('encima',

¹⁸ Examples illustrating the grammaticalization of the terms *ti*, *ni`chak*, *pat* are included in Appendix 1. The terms *xokon* 'flank', *chikin* 'ear', *yok* 'leg' are also used as locatives. Data for these terms is not included in this paper.

¹⁹ The reflexive in Tzotzil seems to be derived from the body part term *ba* 'face'. Although this is a possible line of grammaticalization, I will not discuss it in this paper.

'sobre' in Spanish). It is not possible to tell from the glosses given in this source whether there is a distinction between 'on' and 'over' indicated by the dropping of the possessive prefix as is the case for Modern Tzotzil. Most of the examples in the Colonial dictionary don't include the possessive prefix.

Modern: LAUGHLIN (1975) provides the definitions 'face, top, over, head of table'. This range of meanings include body part, adjacent region, projected region. As part of the same definition he mentions the non locative meanings 'first, prominent, eldest'.

Tentative locative gloss: The following locative gloss for the term *ba* is suggested on the basis of the range of locative meanings shown in its occurrence in the different sorts of textual and conversational sources.

- (i) frontal subpart (+/-prefix + noun of noun)
- (ii) contact on surface on a vertical line ('on') (+/-prefix + noun of noun)
- (iii) projected region from a surface on a vertical line ('over'), (-prefix + noun of noun)

5.1.2 Body part to projected region

The following examples illustrate the range of denotations of the term *ba* from body part to projected region.

- (i) Body part "visage" (archaic) (LAUGHLIN, 1975). All examples with *ba* as a body part come from ritual language.
anichimal ba
anichimal sat
 'Thy beautiful visage, thy beautiful face'

The following examples show the use of *ba* in relation to 'front' subpart:

- (ii) Front subpart of body part
s-ba y-e: 'his front teeth'
 3E-face 3E-mouth
- (iii) Frontal subpart (LAUGHLIN, 1975)
ba be 'in front of (on path)'

Example (iv) shows the use of *ba* to denote a projected region from a frontal subpart of an object:

- (iv) Frontal region:
ba mexa 'tabletop, head of table (ritual meal)'
 face table

Example (v) shows the use of *ba* to denote "top subpart" of any object. Here we can observe that the term has acquired a general meaning denoting the top subpart of any object.

- (v) Top subpart: (LAUGHLIN, 1975)
 - (a) *ba ch'en* 'top of cliff, cave, or ravine'
 face cliff
 - (b) *ba te`* 'treetop (lying on ground)'
 face tree
 - (c) *ba mok* 'fence, on side where land is highest'
 face fence

Example (vi) illustrates the use of *ba* to denote adjacent region. Notice here that the nominal construction includes the possessive prefix.

(vi) Top adjacent region (surface) (LAUGHLIN 1988)

- (a) *s-ba balamil* 'the surface of the earth'
 3E-face earth
- (b) *kajal i-0-k'ot ti ta s-*
 mounted CP-3A-arrive ART (remote) PREP 3E
ba s-tem ta s -ba
 face, top 3E-bed PREP 3E-face, top
ti y- ajnil`uk un-e
 ART (remote) 3E-wife also CL -CL
 'He landed on top of his bed, on top of his wife too'

The last set of examples (vii) and (viii) illustrate the use of *ba* to denote a region projected from the topmost part of an object. Notice here that the nominal construction does not carry the possessive prefix.

(vii) Top projected region: (LAUGHLIN 1975)

- a) *ba k'ok'* 'storage place over fire, smoke pole'
 face fire
- b) *tey ba nab, ta ba vo'*
 loc face lake PREP face water
 'it is over the lake, over the water'

(viii) Root reduplication: region projected from surface on a vertical line.
ta baba (prep + face + face): 'along the top of, over' (lake, mountain)

The following example shows other spatial denotation of the term *ba*:

- (ix) First, main, prominent: referred to ritual celebrations
ba k'el-k'exel: New Years Day

Overall, the term *ba* presents synchronically a range of denotations that show semantic generalization from the body part 'face' into the locatives 'front', 'over' and 'on'. There are two morphological representations. The prefix is not dropped to denote adjacent region; the prefix is dropped to denote projected region. Thus, the morphology of the possessive nominal construction shows a split in the grammaticalization.

6. Conclusions

Tzotzil data on body part terms present a picture of ongoing change following some predictable tendencies. In Tzeltal – closest neighbour to Tzotzil – BROWN claims that "body parts cannot be extended to indicate a region beyond the borders of the body (Brown, 1991: 32; LEVINSON, 1991; PRIMER: 14). This point suggests that in terms of the grammaticalization tendencies in the Tzeltalan family Tzotzil goes further in the grammaticalization of body part terms. In Yucatec, by contrast – as shown by GOLDAP in this volume – some body part terms have grammaticalized into locatives, constituting a separate class with a preposition-like behaviour.

One basic difference between Tzotzil and other languages deriving locatives from body parts is that in Tzotzil there is no "perspectival" attribution of body parts. The extension of body parts into locatives is centered in the objects themselves.

Tzotzil body part words have a range of uses synchronically from concrete sub-parts of a complex anatomy to varieties of seemingly more abstract meanings including shape and projected region. The anatomical model applied varies with the geometric properties of the object. And the most "abstract" meanings are the ones that typically occur with the abbreviated morphosyntactic form (where a possessive prefix can be omitted). The variation in actual form reflects the transitional and partial nature of what is hypothesized to be an ongoing grammaticalization process.

APPENDIX 1

This section includes the body part terms *ti`* 'mouth', *pat* 'back', *ni`* 'nose' and *chak* 'buttock' and examples about their grammaticalization.

The data is presented in the following way: first, we present definitions for each term based on (i) Colonial Tzotzil (LAUGHLIN 1988); (ii) Modern Tzotzil (LAUGHLIN 1975); (iii) a tentative locative gloss designed by the present author. The tentative gloss indicates in parenthesis if the term is used with or without the possessive prefix in the nominal construction (+/-prefix + noun of noun). The second part of the data consists of specific examples showing each stage in the semantic and morphological shift.

1. *ti`* 'mouth, lip'

It denotes 'mouth' or 'lip' as a body part term both for animate and inanimate objects.

It is bleached to denote projected region from an edge or margin (fireplace, town, forest, road). The absolute form *ti`il* is also used to denote projected region. Grammaticalization into locative is reflected in the definitions and examples given in the Colonial dictionary.

1.1 Definitions

Colonial: *ti`il*, 'edge, rim border, entrance, outskirts.'

Modern: 'edge of cliff, ravine, river, forest, market, town, shore of ocean'.

ti`il: 'edge, rim, border, entrance'

Tentative locative gloss:

(i) subpart: lip, rim (+ prefix + noun of noun)

(ii) adjacent region: border, edge (-prefix + noun of noun)

(iii) projected region: edge, shore, outskirts, surrounding area, along, around (-prefix + noun of noun).

1.2 Body part to projected region

Colonial

(i) Body part

a) *ti` bail* 'forehead'

lip front

b) *ti` ba* 'shinbone'

lip front

(ii) Part/Adjacent Region (LAUGHLIN 1975)

a) *ti`il* 'edge, end (board, table), lip'

b) *ti` Ho`* 'bank or edge of any body of water'

lip water

c) *ti` na* 'beach, seacoast, door, porch'

lip house

d) *ti` nana tik* 'outskirts, town gate'

lip house house PL

e) *ti` nanatikil* 'suburb'

Modern

- i) Body part *ti`il* 'lips' (archaic) (ritual speech)
- ii) Subpart of body part:
- | | |
|-----------------------------------|---------|
| a) <i>ti` o`onil</i>
lip heart | 'chest' |
| b) <i>ti` chak</i>
lip ass | 'anus' |
- iii) Subpart:
- | | |
|------------------------------------|----------------------|
| a) <i>s-ti` nuti</i>
3E-lip net | 'rim of bag' |
| b) <i>ti` be</i>
lip road | 'gate' |
| c) <i>ti` koral</i>
lip corral | 'entrance to corral' |
| d) <i>ti` na</i>
lip house | 'door' |
- iv) Projected region
- | | |
|---|---------------------------|
| a) <i>ti` k'ok'</i>
lip fire | 'fireside' |
| b) <i>ti` vo`</i>
lip water | 'edge of well' |
| c) <i>ti` nab/ti` mar</i>
lip lake/lip sea | 'shore' |
| d) <i>ti`il be</i> | 'at the side of the road' |
| e) <i>ti` na</i>
lip house | 'front yard' |
- v) Root reduplication
- | | |
|-------------------|------------------------------------|
| <i>ti`ti`</i> | 'along or around projected region' |
| <i>ti`ilti`il</i> | 'along edge of, on outskirts of' |
| | 'along edge of (road, tile)' |

2. *pat* 'back, bark, shell'

Denotes 'back' as a body part of animates and some inanimate objects with a front/back asymmetry. Denotes also 'shell', 'bark of trees', 'rind of fruits'. In Colonial sources it is also translated as 'behind'. In Modern Tzotzil the possessive construction *ta s-pat* means 'behind' an object with a front/back asymmetry. The construction *ta-pat* means projected region from any side of an object with no front/back asymmetry. It also means 'outside'. It is used deictically with environmental landmarks.

2.1 Definitions

Colonial: 'back, bark, behind, buttocks, peel, rind, scab, shell, skin (onion, snake)'.
Modern: 'back (house, chair, person, hand, arm, leg, fiddle, guitar), flat side (machete), shell (egg), far side (griddle, pot), far end (harp), rind (fruit), bark (tree), pod (bean), shell (snail, turtle), armor (armadillo), empty nest (wasp)'.

Tentative locative gloss:

- (i) outside subpart of symmetric objects (bark, shells, peel, rind) (+/-prefix + noun of noun)
 (ii) subpart and projected region of objects with back part – person, chair, house. Figure occluded by symmetric Ground (+ prefix + noun of noun)
 (iii) 'back' projected region assigned deictically to environmental landmarks (-prefix + noun of noun)
 (iv) exterior region around enclosure object with no asymmetry such as a ring, corral, cage, 'outside' (-prefix + noun of noun).

2.2 From body part to projected region

Colonial

- i) Body part: 'back, bark, buttocks, peel, rind, scab, shell, skin'.
 ii) Subpart of body part
s-pat chikinil 'fleshy back of the neck'
 3E-back ear
 iii) Subpart
ti` pat na 'back door'
 lip back house
s-pat Hun 'back of a book'
 3E-back paper

Modern

- iv) Body part: back
 v) Subpart of body part
s-pat jol 'back of head'
 3E-back head
 vi) Subpart: 'flat side of machete, bark, rind'
 vii) Projected region: 'behind' (front/back asymmetry)
 a) *pat mak ti` na* 'behind the door'
 back close lip house
 b) *s-pat na* 'behind the house'
 3E-back house
 viii) Projected region: 'outside' (house) (symmetric object)
 a) *ta pat koral* 'behind the corral'
 PREP back corral
 b) *pana* 'outside the house'
 ix) Root reduplication: 'adjacent'/outside region
patpat 'behind house or fence'
 (LAUGHLIN, 1975)

3. *ni`* 'nose, tip'

This word is used in a possessive construction in Colonial and Modern Tzotzil to denote 'nose'. It also has a general meaning to refer to pointed small protrusion in inanimate objects. It forms compound body part terms such as *sni` xchu`* 'nipple' ('nose of breast'). In Modern Tzotzil it has extended its meaning to a locative denoting the region projected from the front of an animal or vehicle. In this case it occurs without the possessive prefix. This usage follows the grammaticalization pattern of *ba, ti`* and *pat*.

3.1 Definitions

Colonial 'nose, beak, end, point, sprout'.

Modern: 'nose, clitoris, tip, top (tree), peak (mountain), beak (turtle, bird), point (pencil, knife, machete), muzzle (animal), scroll (fiddle)'.

Tentative locative gloss:

- (i) body part: nose; small part shaped as a small protrusion ('tip, peak, beak') (+ prefix + noun of noun).
 (ii) frontal region projected from the body part 'nose' (-prefix + noun of noun).

3.2 From body part to projected region

Colonial:i) Body part:

- a) *ni`il* 'nose'
 b) *s-ni` mut* 'beak, bill'
 3E-nose bird

ii) Subpart:

- ni`* 'end, point, short, sprout'
s -ni` ton 'pointed end of a rock'
 3E-nose stone

Modern:iii) Body part:

- s-ni` ka`:* 'the nose of the horse'
 3E-nose horse

iv) Subpart of body part:

- a) *s-ni` y-o`onil* 'tip of sternum'
 3E-nose 3E-heart
 b) *s-ni` y-ok* 'toe'
 3E-nose 3E-foot
 c) *s-ni` k'ob* 'finger'
 3E-nose hand

v) Projected region:

- a) *vo'on -e mak ni` ka` `un*
 I -Cl cover nose horse CL
 'I was in front of the horses'
 b) *ak' -o li krixchano ta ni` karro*
 give-IMP ART person PREP nose truck
 'Put the horse in front of the car'

- vi) Root reduplication: "projected region from tip-shaped object".

4. *chak* 'buttocks, bottom, behind'

Both in Colonial and Modern Tzotzil *chak* refers to a body part of humans, animals and inanimate objects with a horizontal front/back asymmetry such as vehicles. It is also used to refer to the bottom part of objects that have a base, and vertical asymmetry (pots, containers, vegetables). As a body part it is used in a possessive construction. In Modern Tzotzil it is used as a locative in a non-possessed construction to denote projected region behind an animal and a vehicle.

4.1 Definitions

Colonial: 'buttock, hindpart, bottom, deep hole, end point'

Modern: 'rump, buttocks, bottom (bottle, pot, violin, guitar, well, river, burden), stump (uprooted), heel (foot, sandal), back (fence), butt (rifle), seat (pants), crown (hat), end (harp), near end (rows of work), far end (flute), lower end (plot of land).'

Tentative locative gloss:

- (i) body part 'buttock' (+ prefix + noun of noun)
 (ii) projected region behind objects with front/back horizontal asymmetry (- prefix + noun of noun)
 (iii) lower subregion of area (plot of land, earth), (- prefix + noun of noun)

4.2 From body part to projected region

Colonial

- i) Body part: 'buttocks'
 ii) Body subpart: 'heel'
x-chak y-okil
 3D-ass 3E-foot

Modern:

- iii) Body subpart: 'buttock, hindpart' (LAUGHLIN, 1975)
cha` p`ej nan limon, s-nup-oj s-ba x-chak
 two NC (round) maybe lemon, 3E-meet-PF3E-face 3E-buttock
 'two, lemons maybe, with their buttocks touching each other'
- iv) Subpart of body part: 'heel'
x-chak y-ok
 3E-ass 3E-foot
- v) Subpart of inanimate object:
- a) x-chak mok 'lower part of fence'
 3E-ass fence
- b) x-chak vex 'back part of pants'
 3E-ass pants
- c) x-chak pixol 'crown of hat'
 3E-ass hat
- vi) Low region: "lower part of land" (x-chak chobtik)
i -j -chuk te ta chib te` xi ta `olon ta x-chak
 CP-1E-tie_up there Prep two tree, wood thus PREP below PREP 3E-bottom
chob -tik
 cornfield-PL
 'I tied it to the two trees at the lower part of the cornfield'
- vii) the bottom of the earth: (chak balamil)
mu xa k'u xi x -0 -lok' la lek `un batz'i ta chak balamil
 NEG already what thus ASP-3A -exit QUOT good CL really PREP bottom earth
xa ech'el
 already away(DIR)
 'There was no way to get out. He was at the very bottom of the world now'. (T 109)
- viii) Projected region: behind (ta *chak*) (behind of animal, vehicles) (used with and without prefix)
- a) *ak' -o li krichano ta chak karro*
 give-IMP ART person PREP bottom truck
 'put the man at the buttock/back of the car'
- b) *ak' -o li pato-e ta x -chak s -chitom*
 give-IMP ART duck-CL PREP 3E-bottom 3E-pig
 'Put the duck at the buttock/back of the pig'

APPENDIX 2

Glosses

(Glosses are based on HAVILAND'S grammatical analysis for Tzotzil.)

E stands for ergative, and A for absolutive; thus 2E means "second person ergative." In my glosses, I have not shown 3A (3rd person absolutive) affixes, which are always realized as zero. Other abbreviations in glosses include: 1PIE first person plural exclusive; 1PII first person plural inclusive; ART article; ASP neutral aspect; AUX auxiliary verb; BEN benefactive ditransitivizing suffix; CJ conjunction; CL clitic; CP completive aspect; DE demonstrative; DIM diminutive; DIR

directional; EL deverbal suffix; ICP incompletive aspect; IMP imperative; NAME personal or place name; NC numeral classifier; NEG negative particle; PASS passive; PL 2nd and 3rd person plural; PREP preposition; PT particle; Q question sentential proclitic; QUOT evidential "2nd-position" clitic; REL relational particle; STAT stative (perfect) aspect; SUBJ subjunctive.

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'Left' and 'Right' in Tenejapa: Investigating a Linguistic and Conceptual Gap.¹

1. Linguistic and conceptual gaps and linguistic relativity

The idea that linguistic categories, differing across languages, might reveal something about distinctive conceptual categories, was of course widely entertained before the tide of rationalism associated with the rise of the Cognitive Sciences in the 1960s. But the Cognitive Sciences have given us the working presumption that conceptual structure is universal, and that linguistic differences reveal only complex differential mappings from the same conceptual structure to various linguistic categories. Recently there have been signs that the tide is turning: there is a growing insistence on linguistic difference and its possible conceptual implications (see e.g. BOWERMAN 1991, SLOBIN 1991, GUMPERZ & LEVINSON 1991, LUCY 1992 a, b). But the 'new relativists' are cautious, and they have to prove their case against the prevailing working presumption.

What kind of a case is required? What would it take to convince us that *they* (the "natives") really do not think as *we* (the ethnographers) do? Suppose they lack a word for 'blue', and talk happily about how 'grue' the sky and grass are. We are now inured to that: we have learnt to accept that lurking under 'grue' is good old green and blue (BERLIN & KAY 1969). Suppose they lack a word for 'canines' (covering assorted dogs, foxes and wolves): well, it can often be shown that a linguistic taxonomy constructs an unnamed category of that sort (BERLIN 1968). And we expect most peoples to lack a term that means just 'father' (as opposed to all his brothers), even though the extended father category must be defined in terms of father and his brothers (LOUNSBURY 1969). No, linguistic gaps are not the sort of thing that shake our belief in the psychic unity of mankind.

What about a linguistic gap associated with a demonstrable conceptual gap? Suppose the natives have nothing corresponding to our concept of *sonata* or *logarithm* – we will hardly be shocked; these concepts are mere icing on the cognitive cake. So what would it take to shock us?

One kind of candidate would be a gap corresponding to the conceptual underpinnings of our entire web of beliefs. Something like the absence of beliefs about causality, or failure to believe in the irreversibility of time, or different views of the basic parameters of space. Take space: KANT argued forcefully that notions of space are conceptual bedrock – for they are what make the acquisition of other concepts possible. He argued that we conceive of regions of space as three dimensions projected out from our bodies along the orthogonal planes **above/below**, **before/behind**, and **right/left**.

"In physical space, on account of its three dimensions, we can conceive three planes which intersect one another at right angles. Since through the senses we know what is outside us only in so far as it stands in relation to ourselves, it is not surprising that we find in the relationship of these intersecting planes to our body the first ground from which to derive the concept of regions in space ...

One of these vertical planes divides the body into two outwardly similar parts and supplies the ground for the distinction between **right** and **left**; the other, which is perpendicular to it, makes it possible for us to have the concept **before** and **behind**." (1991: 28–9 [1768]).²

¹ This paper is a brief summary of some of the material and only some of the theoretical issues raised in greater detail in LEVINSON & BROWN 1992; it was first presented at the Workshop on Space in Amerindian Languages, organized by the Cognitive Anthropology Research Group, Max Planck Institute for Psycholinguistics, Nijmegen, in December 1991.

² All KANT quotations are from the translation in VAN CLEVE & FREDERICK (1991).

This view is deeply embedded not only in Western philosophy but also in psychology (CLARK 1973) and linguistics (FILLMORE 1971): the natural human conception of space is egocentric and relative, and we must strive to make "a psychological characterization of "egocentric" perceptual space in terms of coordinates established by the vertical ... and by reference to anatomical properties – front and back, bilateral symmetry – of the perceiver" (MILLER & JOHNSON-LAIRD 1976: 58). Of course, scientific theories of space may be rather different: but the philosopher, psychologist and linguist must understand the intuitive base-line of our natural ways of thinking about space:

"Ordinary languages are designed to deal with relativistic space; with space relative to objects that occupy it. Relativistic space provides three orthogonal coordinates, just as Newtonian space does, but *no fixed units of angle or distance* are involved". MILLER & JOHNSON-LAIRD 1976: 380 (our italics).

So perhaps the absence of one of these spatial parameters or coordinates in a natural language and culture might indeed be shocking. This paper reports on such a conceptual and linguistic gap among a Mayan group. It is not however a condescending "deficit theory": indeed that is not the point at all. The point is rather that natural languages and cultures can construct a coherent concept of space on different lines from those we take for granted. And that is what just might give pause for thought.

2. Right and left in spatial conception and description

As far as is known, the tendency to right-handedness is universal among mankind. Judging from tool-use, even early hominids seem to have been predominantly right-handed. A regular asymmetry of this kind is not shared by the apes, or indeed other animals, and it may be supposed to be related to hemisphere lateralization. However, the actual genetic processes controlling handedness are probably indirect, and in any case remain controversial.³

The asymmetry of handedness is a slight physiological cue which makes it possible to identify one's own leading hand. On the distinction between the strong, skilled hand and the weaker, clumsier one may be hung a number of further distinctions. First, we may designate the hands differentially on a community-wide basis, identifying the one that the majority find the stronger as e.g. the right one. Second, we may learn to perform activities or responses with only one designated hand (as in shaking hands, or making the sign of the cross). Often symbolically devalued or unclean activities may be restricted to the left hand. We may also learn to extend the notion of right hand to right side of our bodies. Third, we may learn to identify other peoples' left and right hands. Fourth, and most importantly, we may project our bilateral asymmetry onto the outside world, so that not only do we have a left and a right side, but so does the structure of the space around us (as in the earlier quotation from KANT). This makes possible a range of distinctions: (a) we may think of things as passing in front of us from our left to our right side, (b) we may think of static arrays as organized from left to right (or vice versa), as with words on a page, (c) we may distinguish otherwise identical shapes that are inverted around the vertical axis (mirror-image objects or enantiomorphs), recognizing a d to be distinct from a b, or a left shoe from a right shoe. Fifth, we may go on to make the mental rotation required to think of left and right regions not only from an egocentric point of view but also from the perspective of our interlocutors. And so on.

³ Useful summaries of the enormous volume of research on all these issues can be found in CORBALLIS & BEALE 1976, CORBALLIS 1991.

This is a complex conceptual and behavioural superstructure on a slender physiological basis (as HERTZ (1909) pointed out over eighty years ago). How natural or inevitable is this assemblage? It is interesting to note that even animals lacking handedness can make some systematic left-right response differentiations. But few animals can distinguish enantiomorphs, and humans have to be trained (e.g. many children have lengthy problems with *b* vs. *d*). It takes Western children many years to learn the range of extensions of our terms **left** and **right**, as PIAGET (1928) discovered: they are often not able to identify their own left/right hands till 5 or 6 years of age, they take another three years or so to be able to make the mental rotation to identify another's left/right, and another two or three years to project abstract left/right regions into the visual field. Indeed the cross-cultural prevalence of much of this assemblage, HERTZ argued, owes more to sociological and symbolic utility than to conceptual necessity.

In any discussion of left/right differentiation, it is essential to bear in mind the many kinds of analytical distinctions summarized in Table 1. Thus armed, we may proceed to discuss the various kinds of labelled distinctions and the conceptual gap associated with 'left' and 'right' in Tenejapa.

Table 1: Analytical distinctions in the study of Left/Right discrimination and response⁴

- | | |
|---|---|
| <p>1. Mirror-image discrimination</p> <p>1.1 Perception of enantiomorphs (e.g. seeing a 45 degree diagonal as distinct from its mirror-image)</p> <p>1.2 Memory of those percepts</p> <p>1.3 Discrimination (e.g. of pairs) vs. Identification (e.g. of 1)</p> <p>1.4 Labelling/coding of asymmetries: consistently (e.g. calling your left your 'right') correctly (calling your left hand your 'left')</p> <p>2. Left-Right Response Differentiation</p> <p>2.1 stimuli types</p> <p>2.1.1 With systematic cues (e.g. turn left on red)</p> <p>2.1.2 With iconic cues (arrows, T junction)</p> <p>2.1.3 with arbitrary stimulus (e.g. salute when you see a Colonel)</p> <p>2.1.4 with 'left'/'right' linguistic labels as stimuli (see 3.)</p> <p>2.2 response types</p> <p>2.2.1 own body parts (e.g. raise left hand)</p> <p>2.2.2 motion (e.g. go to the left)</p> <p>2.2.3 location (e.g. push button to the left)</p> <p>2.2.4 linguistic label (say "left") – see 3.</p> | <p>3. Linguistic system of 'left/right' labels and its use</p> <p>3.1. body part labels</p> <p>3.1.1 ego's parts (Piaget's stage 1)</p> <p>3.1.2 alter's parts (Piaget's stage 2)</p> <p>(a) in side-by-side position,</p> <p>(b) in 'confrontation' position,</p> <p>(c) in 'single file' position</p> <p>3.1.3 object parts</p> <p>(a) intrinsic ("the left of the cow/desk")</p> <p>(b) non-intrinsic ("the left of the table"??)</p> <p>3.2 as labels for spatial regions</p> <p>3.2.1 regions on ego's sides</p> <p>3.2.2 regions on alter's sides</p> <p>3.2.3 regions projected from oriented objects (e.g. "to the left of the cow")</p> <p>3.3 as deictic angles projected on the relationship between two objects (PIAGET'S stage 3)</p> <p>(e.g. "the cat is to the left of the tree" where ego imposes a 'left side' on the tree)</p> |
|---|---|

3. Left and right in Tenejapa.

Tenejapa is a municipio in Chiapas Mexico, in which live perhaps 15,000 Mayan Indians who speak the language Tzeltal; they form a distinct ethnic unit, although there are many other ethnic groups that speak various varieties of the same language. Tenejapan

⁴ Some of these distinctions are drawn from CORBALLIS & BEALE 1976, *passim*.

conceptions of space are currently under investigation, using a mixture of traditional ethnographic and linguistic techniques and informal experimentation (BROWN 1991; LEVINSON 1991a, b; BROWN & LEVINSON 1991).

Tenejapans have compound names for the left hand and the right hand, and also a term for hand/arm in general. But they do not generalize the distinction to spatial regions – there is no linguistic expression glossing as ‘to the left’ or ‘on the left hand’ or the like. And there is no elaborate system of value associations with the left and the right – indeed, none at all to our knowledge.

Here we lay out what we know about Tenejapan concepts of ‘left’ and ‘right’, in so far as they have such concepts. We should note that our research has focussed on the systems that effectively replace those concepts, so that we have failed to pay enough attention to exactly what there was as residue. But first some ethnographic background.

3.1 Ethnographic background

Until 1951, when the National Indian Institute arrived in the local town, the Indians of Tenejapa were insulated from the influences of metropolitan Mexico by an apartheid system that forbade them to be in town after dark, or to walk on the sidewalks in the day.⁵ Under such conditions, Tenejapans were illiterate, largely monolingual, and few ventured into town. Today, the situation is under rapid change, with roads under construction, electrification, influence of religious reformers, and effective schooling in Spanish. Tenejapan women, and also men over forty or so in the remoter areas, are still likely to be effectively monolingual, and to have grown up in a world constructed along traditional lines.

Traditional houses have a square floor plan, with one door (no windows) centrally placed. The door itself opens neither to the left nor the right, being split into two vertical half-doors, both opening inwards. (Modern houses are mostly rectangular but normally retain the split-doors located centrally in the longer side.) By virtue of the location of the fire, which might be a little off-centre, or of the bench for food preparation formed by lashing a board to stakes, there may be a side of the house clearly allocated to the household women, and another to the men and visitors. But there seems to be no pattern in the assignment: either area may be to the left or right of the entrance. In short, domestic architecture encourages a symmetry, or if needs be, an arbitrary allocation of space. Nor is orientation of any ritual significance – houses can face in any direction and, unlike in some other Highland Chiapas cultures, there are no obligatory directions for sleeping (e.g. in the opposite direction to that in which the dead are laid to rest).⁶ When people die, they were traditionally buried under the floor of the house in a vertical crouching position; now they tend to be laid out lengthwise but in any direction. In general, symmetry pervades material culture; for example, traditional vessels do not have one handle, but either none, two, or sometimes three equally placed around the top.

Other aspects of daily life tend to show the same pattern of symmetrical design or arbitrary asymmetry. In traditional weaving patterns, symmetry is enforced by mirror-image reflection around a vertical line, and dress is in general symmetrical, bags being

⁵ LAUGHLIN, 1984: 21.

⁶ The preferred direction, informants said, was head ‘uphill’, but they noted they themselves often deviated.

slung on the back by a tump-line over the forehead, or indifferently over left or right shoulder.⁷ Babies are slung on the back in a shawl tied over one shoulder, but which shoulder seems to be a matter of convenience.⁸ Body posture tends again to be neat and symmetrical (slouching or leaning not being typical), as indeed do gestures, generally not expansive, which are often double-handed. Men, though, in ritual or civil office may greet each other by touching limply their right hands.

In the ritual system, cardinal point orientation does not seem to play any important symbolic role as far as we know. Although major Christian churches are oriented East (the church in Tenejapa centre having been built by Spanish monks), individual household or community shrines may face in other directions. Since houses have no favoured orientation, and household shrines are placed inside opposite the door, it follows that the orientation of the shrine follows the orientation of the building, which is a matter of convenience. Ritual processions may go both clockwise and anticlockwise around a town or focal area, and although in major festivals a specified route is always followed, there is no particular reason to believe that there is any attention paid to clockwiseness.⁹

HERTZ (1909) suggested a universal symbolic association of 'right' and rectitude, strength and purity, counterposed to 'left' and turpitude, weakness and filth (see NEEDHAM 1973 for even stronger universal claims). But in Tenejapa there is no such HERTZian symbolic system of oppositions associated with right and left. The word for 'correct', 'real' is *batz'il*, for 'straight' is *tojol*, unrelated to *wa'el* 'right hand/arm' (unlike in neighbouring Zinacantan); the word for 'bad' is *chopol*, for 'dirty' *papas*, unrelated to *xin* 'left', and so on. The body of officials we would call the President's 'right-hand men' are called *yok sk'ab kunerol* 'the president's legs and arms'. And so on.

3.2 Concepts of left and right

We come now to consider the perceptual, conceptual and linguistic aspects of left/right differentiation in Tenejapa. In Tenejapan Tzeltal there are words for left-hand and right-hand; BERLIN et al. (1990) give the following entries:

⁷ On weaving and dress see BRANSTETTER 1974.

⁸ It may be that a given woman always tends to do it on the same shoulder. Similarly, women pleat their skirts and wrap belts many times around themselves, but although a given woman always does it in the same direction, the direction (towards the left or right) varies across individuals, possibly correlating with handedness. Films we have taken of festivals indicate that male office-holders tend to wear their ceremonial white net bag on the right hip and grasp their ceremonial staffs, unsurprisingly, in the right hand.

⁹ That is, Tenejapans – including ritual experts – do not articulate any rationale for the direction of a given ritual circuit in terms of clockwiseness or handedness; its direction is 'simply the way we've always done it'. In fact there does seem to be a tendency for such circuits to go counterclockwise: ROSTAS (1986) notes that in the fiesta for San Tziako, a major festival in Tenejapa centre, the route followed by the procession through the town is always the same, a counterclockwise circuit, and in some fiestas a small counterclockwise circuit is also conducted inside the church before returning the saints to their places. In the prayer for restoring someone's lost 'soul', the curer searches from municipio to municipio, circling in a counterclockwise direction around Tenejapa. But 'counterclockwise' is our description of a route which they do not conceive of in these terms. And some ritual circuits differ: in a minor local festival we have watched a perambulation of the sacred image which started out counterclockwise, but then retraced its steps clockwise.

- xin*, Noun, 'left-hand side'
xin k'ab(al), Nominal Compound, left hand
wa'el, Noun, 'right-hand side'
wa'el k'ab(al), Nominal Compound, 'right hand'

However, our informants do not accept that these terms designate the left (or correspondingly the right) side of the body. Their explications are somewhat complex. Although *xin* and *wa'el* are clearly nominals, they normally occur in collocation with just two body part terms, *-k'ab* 'arm/hand' and *-akan* 'leg/foot' of either humans or animals (the front legs of quadrupeds are designated 'arms').¹⁰ Now such body-part terms are inalienably possessed, requiring a possessive prefix, but in the collocation with *xin* or *wa'el* the possessive marker is prefixed to the latter, indicating that *a'-xin-k'ab* ('your-left-hand') is a nominal compound. Most people we asked did not accept the generalization of *xin* and *wa'el* to other body parts; but a few would accept the extension to 'ear', 'eye', 'breast'. In sum, *xin k'ab* 'left arm/hand' and *xin-akan* 'left foot/leg' are complex body-part terms but Tenejapans deny that the body is split between left and right halves.

If one turns for comparison to the better-studied neighbouring language Tzotzil, one finds only a word for left-hand (LAUGHLIN 1975):

- tz'et2* Nld 'left hand'
ta jtz'et 'with my left hand'
ta jtz'et k'obtik 'on the left hand side, to the left'

the right-hand being designated as the 'true' or 'correct' hand *batz'il k'obtik*, revealing already a value judgement at least not overt, and perhaps not present, in Tenejapan Tzeltal.¹¹

The use of the Tenejapan terms *xin* and *wa'el* may be elucidated by comparison to PIAGET'S three stages for the acquisition of *left* and *right* in English (or *droite* and *gauche* in French), which are as follows. At first, prior to any proper acquisition of the concepts, there is only confusion. In the first stage of actual acquisition, there is correct naming of the child's own left- and right-hands and other body parts. In the second, the child learns to make the rotation required to name the body-parts of a confronting interlocutor. In the third stage, the relation between two inanimate objects can be specified by taking into account another relation, namely how the reference object lies with respect to ego's left and right (as in *The orange is to the left of the bowl*).

¹⁰ Like many languages, Tzeltal has a single term for upper limb (including hand) and another for lower limb (including foot). See STROSS (1976) for the details of Tzeltal anatomical terminology.

¹¹ BERLIN et al. (1990) list a separate adjectival root *xin 2* (distinct from the noun root *xin 1*) with negative connotations: *xin 2* A root, aj, 'stinking'; *xinal*, A, aj, 'stinking' (attributive form); *xinal (il)*, A, n 3, 'stench'. But Tzeltal informants do not seem to make any connection between this adjective and the noun *xin* for left hand. An explanation for the source of *xin* as 'greasy' comes from the related language Tzotzil, which, although lacking the noun *xin* 'left-hand' (or cognates) has the same adjectival root, *xin* 'rancid, smelly, of body odour, acid flavour given to food by metal pot' (LAUGHLIN 1975). HAVILAND (p.c.) thinks this may be of recent origin, a corruption of *señora* (to *xinora* and hence to *xin*), the Indians making associations between fateating and the city-dwelling Ladinos. Certainly no Tenejapan informants offered us any association of this sort with 'left hand'. It should, however, be noted that recent missionary activity has drawn the attention of converts to biblical references to 'the right hand of God' and the weakness of the left hand.

Tenejapan usage of the terms *xin* and *wa'el* is very infrequent; there are hardly any practical issues where the terms are essential, as we shall see. Nevertheless, Tenejapans have perhaps only a little more than the usual difficulty specifying which hand is their own left or right (PIAGET's stage 1). They are noticeably hesitant, but perfectly able, to do the mental transfer required in assigning 'left' and 'right' to the hands of a facing interlocutor (stage 2). But there simply is no usage corresponding to PIAGET's stage 3. The reason is that the terms are not terms for regions; hence in the usage that PIAGET labels stages 1 and 2, there is also no usage corresponding to 'to the left', whether this is ego-centric ('to my left') or altercentric ('to your left'). The terms *xin k'ab* and *wa'el k'ab* are basically body-part expressions – they name human or animal parts. And although Tzeltal makes extensive use of body-part terms for spatial description, these also primarily denote actual parts of things, rather than projected regions from named facets.

It follows of course that Tzeltal fails to make the KANTIAN cleavages of space along the three planes of the human body. Unlike in English or German, there is no entire system of orientation extended from ego's body.¹²

KANT argued (1991 [1768]) that 'left' and 'right' are not dispensable notions. One might think that one could instead resort to maps or cardinal points or mirror-image objects like left vs. right shoes or concepts of clockwise vs. anticlockwise rotation. But in fact these devices and concepts in turn rely on, or are interdefinable with, 'left' and 'right'. Following KANT's reasoning, one might search for such other notions in Tenejapa, like clockwise/anticlockwise, or a sequence of cardinal points read clockwise from say North. Equally, one might have distinct labelled enantiomorphs that appear as reflections about the vertical axis, like / vs. \ or [vs.], which would serve the same purpose.

First then 'cardinal points': in Tenejapan Tzeltal there is a system of 'uphill'/ 'downhill' orientation that is fundamental to the spatial system. We have described this in detail elsewhere (BROWN & LEVINSON 1991). Suffice it to say here that this system is based on the overall inclination of the terrain of Tenejapa from high South to low North, so that although 'uphill' (*ta ajk'ol*) (and correspondingly, 'downhill' (*ta alan*) has primary reference to the actual inclination of the land, which may or may not be tilted up to the South, the terms may be used on the flat to refer to cardinal orientations, or prototypical 'uphill' direction. This system then replaces our use of left/right in many contexts: when there are two objects oriented such that one is to the South of the other, it can be referred to as the 'uphill' object. Unlike PIAGET's stage 3 use of 'left' and 'right', the position and orientation of the speaker is completely irrelevant to this usage.¹³

Now curiously, this system of North/South alignment is not complemented by a similar differentiation of the orthogonal. There is a named orthogonal (*ta jejch*), but the term is indifferent as to whether it refers to East or West; what it really means is 'transverse to the incline'. So there is a three-way distinction: uphill (related to South), downhill (related to North), transverse (related to East/West). Significantly, then, it makes no difference whether one rotates clockwise or anticlockwise from 'uphill' – either way, one comes first to 'transverse' then to 'downhill'. The system is also reflected in corresponding

¹² DE LEÓN (this volume; and 1992) makes an analogous observation for Tzotzil, which she argues lacks the cleavage of space along the front/back axis of the body.

¹³ There is another usage, described in BROWN & LEVINSON 1991, which **does** take into account the orientation of the speaker; in this special and restricted use, 'uphill' means 'further from speaker'. See discussion below.

motion verbs with a verb meaning 'to go up, ascend' (*mo*), a verb meaning 'to go down, descend' (*ko*), and another meaning 'to go across, to traverse' (*jelaw*).

There is some evidence that speakers think of life as all uphill, i.e. the canonical situation is viewed as walking uphill. When wishing to talk of the facets of an object which lacks intrinsic facets of this sort, the 'flanks' (*xujk*) may be assigned to the sides that lie on the transverse line, across the uphill/downhill axis. When the system gives rise to temporal metaphors, the future lies uphill. The ceremonial center of Tenejapa lies 'uphill' from much of the rest of the municipio. Most telling, there is a restricted special deictic use of the 'uphill', 'downhill' opposition, in which the term 'uphill' can be applied to one of two objects within my reach – in this case it refers to the one further away from me (i.e., 'higher' is arrived at later if one is walking uphill). If this supposition of canonical direction is correct, then there is a correspondence between the lack of a left/right differentiation for any spatial descriptive use and the absence of any East-West orthogonal to the North-South line.

How could any peoples ignore the rising and setting of the sun, with all its natural symbolism? Of course the Tenejapans don't. They refer to the relevant directions as the 'coming out of the sun' *slok'ib k'aal*, and the 'spilling of the sun' *smalib k'aal*, but this is an independent axis, not thought of as orthogonal to 'uphill'/'downhill' (nor indeed would it be geometrically related, since the one system is tied to a fixed terrain, and the other to the movement of the sun across the edges of the mountains from solstice to solstice). Tenejapans use many other geographic landmarks as points of fixed reference in order to make up for the absence of 'left' and 'right': they utilize the locations of other villages, mountains, named features like cliffs, etc., so that one can refer, e.g. to a particular branch of a tree as the one pointing out towards the Red Cliffs. The possibility of reference to East and West belongs to this system and not to the 'uphill/downhill' system with its well-developed grammar of location and motion description.

What about enantiomorphs, especially left-right reflections about a vertical axis? As already mentioned, the culture provides little in the way of paired objects of this sort, with the exception of shoes which are still only worn, especially by women, on special occasions, and have never been made locally. Our evidence, for what it is worth, suggests that the perception and conception of left-right asymmetries is in line with the linguistic resources of the language, i.e. such asymmetries are not salient, and are not easily described in systematic terms. We conducted a number of informal experiments and structured elicitation sessions, described in detail elsewhere (LEVINSON 1991b, BROWN 1991). All in all, our informants performed on at least eleven tasks where left/right discriminations were at issue. (It should be noted however that many of these tasks were devised not for the purpose of elucidating Tzeltal concepts of 'left' and 'right' but for exploring the indigenous alternatives.) With that caveat in mind, the reader will find these tasks sketched in Table 2.

Task 1 was a set of interactive 'space games' (see DE LEÓN 1991a; BROWN 1991) played by Tzeltal speakers, one a Director who describes, one by one, a set of photographs so that the other, the Matcher, can distinguish the photo being described from the others in the set. Among these were pairs where, for example, (i) a model man was either to the left or right of another model man; or a dog was lying down either to the left or right of a standing one; (ii) a bag of corn was either to the left or the right of a pot; a cylindrical shape of corn dough was either to the left or right of a cube.

Under these conditions (where both images were visible and had to be contrastively

Table 2: *Some relevant tasks given to Tenejapan informants*

- Task 1: Matcher to choose a photo, from a set laid out in front of him, as described by Director who has the identical set; each set containing **inter alia**
- left-right inversions of inanimate objects
result: failure to distinguish, no left/right labels
 - left-right inversions of model people and animals
result: failure to distinguish OR left/right use from point of view of models (informants either back-to-back or same orientation separated by screen)
- Task 2: Director to describe an arrangement (made by the investigator) of familiar objects or animal and human models set out in each square of a 4×4 matrix, so that Matcher can reconstruct the arrangement in each square of his matrix. (Informants back-to-back or in side-by-side positions, screened off.) Arrangements of objects include:
- left-right inversions of objects in 2 of the squares
 - asymmetric arrangements in the left/right visual field in some of the squares
results: left/right never used (even with model persons); instead uphill/downhill, body-part and deictic systems
- Task 3: Matcher to put an artist's maquette or 'wooden man' into position described by Director looking at stimulus photos of particular arrangements of the same maquette (Director can see and verbally correct Matcher):
- includes need to lift left arm, raise right leg, etc.
results: descriptions avoid the 'left/right' terms wherever possible, substituting 'uphill/downhill', 'towards sunset', etc. Where a 'left'/'right' term is used, it refers strictly to hand or leg body parts and is usually corroborated with an absolute direction description ('towards uphill, sunset' etc.).
- Task 4: Informant describes location of one of two identical inanimate objects arranged on large plane surface; one object has been characterized as having special associations and must be kept track of. The objects are arranged in various positions, including cases where each lies to the left/right in the informants' visual field.
results: no use of 'left/right' terms; instead use of three systems (deictic proximal/distal, body part segmentation of the plane surface, 'uphill/downhill' system). Where these are all collectively neutralized, informants are at a loss for any description.
- Task 5: Director instructs blind-folded Finder where to go to find objects distributed on large level patio
results:
- (a) English trial: 'turn left, forward, right' etc.
 - (b) Tzeltal: no left/right, 'turn uphill (i.e. South), downhill (i.e. North), ascend, descend, straight ahead'
- Task 6: Commentator gives running commentary on movements of model car (plus driver, passengers) through model landscape
results: no use of left/right; instead 'ascend', 'descend', 'uphill' etc.
- Task 7: Informant draws 'map' on ground with running commentary on how to reach each place
results: no left/right
- Task 8: Two informants role-play request for route-directions
results: no left/right; instead 'ascend, descend, traverse, turn away, turn towards, uphill, downhill' etc.
- Task 9: Sorting enantiomorphs (left/right inversions in photographs)
results: informants could sort photos into pairs of left/right inversion vs. identical pairs vs. singletons; ie. they could perceive the differences in this context
- Task 10: Describing abstract enantiomorphs (e.g. diagonal lines, oblongs, rectangles)
results: no left/right; informants distinguished them in terms of orientation of the parts of figures with respect to one another, or in terms of absolute co-ordinates (e.g. pointing towards sunset)
- Task 11: Labelling human and animal body parts and divisions of the body
results: informants labelled e.g. 'hand/arm', 'foot/leg', but never volunteered 'left' or 'right' designations

described in order to be identified by the Matcher), often identical descriptions were used for both enantiomorphic pairs. For example:

<1> (corn in net bag on left, corn in basket on right)

x; ay xan yan te chepel sok chojak'
EXIST again another ART sitting CONJ netbag
'There's another one with a net bag sitting

sok pachal moch tey a
CONJ sitting basket there DEIC
and a basket sitting there.'

p; ja' bal te cha'-ch'ix tek'-ajtik te ixim-e?
it-is Q ART 2-NC+sticklike standing-PL ART corn-CL
'Is it the one with the two ears of corn standing up?'

x; ja' nax bi, s-jun-ej ta chepl-ej te chojak'
it-is just TAG 3E-accompany-VN PREP sitting-VN ART netbag
'That's it, in its (netbag-like) sitting the netbag's accompaniment

sok jun moch
CONJ one basket
(is) with one basket.'

<2> (corn in net bag on right, corn in basket on left)

x; ja' nanix jich xan te yan-e,
it-is really thus again ART other-CL
'The other one is really the same,

s-jun-ej ta chepl-ej sok te moch-e
its accompaniment in (netbag-like-) sitting (is) with the basket.'

In effect, informants simply failed to recognize the difference, or at least failed to realize its pertinence to the task. Where the objects to be related were animate in kind (model people or animals), two of our informants resorted to left-right descriptions from the point of view of the people or animals in the photos. So where a model man had at his (intrinsic) left hand a model women, the following description was used:

<3> *ay j-tul winik sok j-tul antz*
EXIST one-NC man CONJ one-NC woman
'There's one man plus one woman,

tek'el ta, ta s-wa'el k'ab te antz te winike
standing PREP PREP 3E-right hand ART woman ART man
the man is standing at the woman's right hand.'

which distinguished it from the description of its enantiomorph:

<4> *ay j-tul winik sok j-tul antz,*
EXIST one-NC man CONJ one-NC woman
'There's one man plus one woman,

tek'el ta, ta xin k'ab te winik-e.
standing PREP PREP left hand ART man-CL
the man is standing at her left hand.'

In the case of some of the photographs, the two models were almost touching – so that *taxin k'ab* 'at the left hand/arm' implied contiguity. In some cases, the figures were at some remove – roughly the same distance as the breadth of the model figure itself. The *taxin k'ab* expression could still be used to refer to the separated figure. This might be held to indicate that 'left' and 'right' here do have regional extensions after all. We do not

believe this to be the correct interpretation. All body part terms in Tzeltal allow some latitude in contiguity, although the extent of this varies with each term; but in no cases are we really dealing with projective as opposed to topological notions, to use the Piagetian terminology. None of the body-part expressions are used to assign planes that cut up space, or divide the whole visual field. Instead they denote just body parts, which in collocation with the preposition *ta* designate positions of adjacency to the body part; and just like English *at* they allow a certain latitude (often very small) of interpretation (cf. *John is waiting at the station* which is a correct description even if he is outside it).

Now this system of 'left/right' description from the point of view of animate entities could not be generalized to the inanimate objects in the photos, because that would require a convention of sidedness for such objects that simply does not exist. (In English the sidedness is projected from the point of view of the speaker's visual field, giving us a true projective use of 'left/right' as in *the cat to the left of the tree*). Here the pairs were given identical or near-identical description and successful matching was a matter of chance. After one game we confronted some informants with two such paired photos of left-right inversions of inanimate objects and asked them what difference they could see. They claimed them to be identical, *pajal*, 'the same'. When pressed, they replied by finding tiny details of asymmetry either in the arrangement of the objects or the finish of the photograph. In some way, in the context of this task at least (in contrast to Task 9, described below), the asymmetry of left/right reflection was 'invisible' or irrelevant to the informants. The differentiation of paired animals or people in photographs were the only cases where left/right terms were used for identification.

Another type of task (Task 4) involved differentiation of two identical three-dimensional objects where these fell in a left/right relation in the visual field. A pair of identical bottles on a table, or a pair of benches on a patio, were never distinguished by reference to their left/right place in the visual field: instead they were located by reference to one of three strategies. Where they lay along the absolute 'uphill'/'downhill' axis mentioned above, this was used to distinguish them ('It's the one *ta ajk'ol*, uphillwards' for example). Where the pair lay on the transverse to the uphill/downhill axis, even though the two sides of this transverse are labelled identically, *ta jejch*, the two objects could be distinguished using deictic descriptions. Thirdly, where the objects lay near a labelled part of the reference area, use was made of another aspect of Tzeltal spatial description, the segmentation of objects into 'body-parts' (see BROWN 1991); then one bench could be said to be at the 'ear' (i.e. corner) or at the 'lips' (ie. side edge) of the patio, or to be at its 'top' (*sba*) or 'bottom edge' (*yejtal*) – these terms being in turn related to the 'uphill'/'downhill' dimension. All these systems break down if the objects are perfectly arranged on a diagonal to the uphill/downhill line, at the middle of the table or patio (where no body part differentiations are possible), and the speaker is himself orthogonal to that diagonal so that the two objects are equidistant from him). In these circumstances, speakers were at a loss – any right/left terms applicable to objects in the visual field would have rescued them, but none are available. Figures 1 to 4 present diagrammatic illustrations of these three possibilities and the fourth, unsolvable one.¹⁴

¹⁴ In fact the fourth is not in principle unsolvable by an ingenious Tzeltal-speaker: a geographic landmark can be used to provide an axis (speaker-landmark) in principle in any direction 360° around the speaker. (See DE LEÓN 1992 for the analogous system in Tzotzil.) That this solution was not actually used in this context is possibly due to the lack of salient landmarks in the relevant direction.

Two other tasks cited in Table 2 deserve special mention. One, Task 3, involved one informant instructing another to put an artist's 'wooden man' with flexible joints into certain positions – e.g. raising an arm or a leg, bending it to a certain angle, etc. What was striking here was that terms for 'left' and 'right' would have been extremely useful, and for this task – naming body-parts – they are of course available. They were nevertheless used just three times (note the similar result from Task 11). Instead, absolute directions in terms of 'uphill'/'downhill' (quasi-cardinal points), 'towards the sunset', 'towards the big banana tree', etc. were used to distinguish the two hands or legs. For example, in <6> the Director uses right and left to distinguish the two hands, but in <5>, <7> and <8> he uses alternatives:

<5> (woodman.doc: 1)

D; *toj tek'el. x-bich-oj s-k'ab*
straight standing. ASP-stick+up-STAT 3E-arm
'He is standing straight up. His arm is extended.'

M; *ta toyol?*
PREP up+high
'Vertically upwards?'

D; *jm'm. jich k'atal x-bich-oj bel ta, ta Turuwit.*
No. thus crossways ASP-extend-STAT DIR (go) PREP PREP NAME
'No. It (the arm) has extended out crossways away towards Turuwit mountain.'

k'atal x-bich-oj bel ta Turuwit,
crossways ASP-extend-STAT DIR (go) PREP NAME,
It is extended crossways towards Turuwit,

koel y-ak'-oj te j-ch'ix s-k'ab
Dir (descending) 3E-give-STAT ART one-NCsticklike 3E-arm
(and) one arm (ie, the other one) is placed downwards.'

<6> (woodman.doc: 2)

D; *jm. ta x-cheb-al, ja' nanix jich.*
hm PREP 3E-two-NOM it+is really thus
'Hm. Secondly, it's like this.'

koel y-ak'-oj te s-wa'el k'ab,
DIR (descend) 3E-give-STAT ART 3E-right hand
His right hand is placed downwards.

k'atal y-ak'-oj bel ta mali k'al te xin k'ab-e
crossways 3E-give-STAT DIR (go) PREP fall sun ART left hand-CL
his left arm is going outwards crossways towards the sunset.'

<7> (woodman.doc: 3)

D; *x-bech-oj me te j-ch'ix s-k'ab ta ajk'ol.*
ASP-bend-STAT PT ART one-NCsticklike 3E-arm PREP uphill
'He has bent one arm uphillwards.'

bechel tebuk, teb nax.
bent a+bit a+bit just
A bit bent, just a bit.'

<8> (woodman.doc: 5)

D; *jich. ma ba lom mali k'al ay s-jol.*
thus. NEG very falling sun EXIST 3E-head
'That's it. His head isn't very much towards the sunset.'

jich nax ay koel ta s-tojol tz'ajal ch'en.
 thus just EXIST DIR (descend) PREP 3E-front red cliff
 It's just downwards in front of Red Cliffs.

peru te j-ch'ix y-akan, ma ba s-ta-oj lumilal.
 but ART one-NCsticklike 3E-leg, NEG 3E-meet-STAT ground
 But one of his legs doesn't touch the ground.'

M; *ja' bal ta alan?*
 it-is Q PREP downhill
 'The downhillwards one?'

D; *ja'.*
 it+is
 'That's it.'

From inspection of the dialogue, it seems that one reason for the avoidance of 'left/right' terms is an uncertainty that they will be correctly interpreted: when they were used by the Director, the Matcher tended to ask for confirmation in 'absolute' terms. This is reminiscent of the following anecdote published as a short note in "Science", 1931: there was an American boy who was noted to have an outstanding sense of absolute direction; investigation showed that the source of this unusual development was that his mother frequently confused left with right, and so had substituted cardinal points, as in "Get me the brush on the north side of the dresser".¹⁵ Where one or more parties is unsure of the application of 'left' vs. 'right', it will pay to abandon it as a routine mode of reference. And this seems to be the case in Tenejapa.

This may also illumine another task we would like to describe in more detail (Task 5). This involved a game of 'blindman's bluff' where a Director had to manoeuvre a blindfolded Finder by verbal instructions over a large flat expanse. Our 10-year-old son did this for us in English by the device of indicating rotation in terms of left/right ('turn a little to the left, a bit more' and so on). Our Tenejapan informants did not do this. Clearly rotation of the body is not usually so described. Instead they took the absolute, non-body-centered perspective, and directed the Finder to move 'uphill', 'downhill', 'traverse', even though the search area was dead flat and the Finder blindfolded. For example:

<9> (games8.doc)

a; *jich ya x-walk'o-at xan ala teb-uk*
 thus ICP ASP-turn-2A again DIM a+bit-CL
 'Just turn again a little bit more.'

x; *jich mene*
 thus DEIC
 'Like that?'

a; *ben-an bel tz'in*
 walk-IMP DIR (go) PT
 'Walk away, then'

x; *jm*
 'OK'

a; *tey nax a mene*
 there just DEIC DEIC
 'Just there.'

¹⁵ DESILVA (1931). Thanks to EVE DANZIGER for drawing the reference to our attention.

- x; *jm*
'OK'
- a; *jitz'-an koel ala tebuk. jitz'-an*
slide-IMP DIR (descend) DIM a+bit slide-IMP
'Slide over descending (ie. downhillwards) a little bit. Slide over.'
- x; *jm*
'OK'
- a; *jm. tey a'-le-ix a mene*
hm there 2E-search+for-CMP DEIC DEIC
'Hm. Look for it there.'
- .
- a; *ben-an xan bel tey a mene, toi x-a'-walk'o bel*
walk-IMP again DIR (go) there DEIC straight ASP-2E-turn DIR (go)
'Walk away again there. Turn away straight.'
- x; *mm*
'Hm.'
- a; *toj. ajk'ol.*
straight uphill
'Straight. Uphill.'
- x; *ajk'ol*
'Uphill?'
- a; *jm, ajk'ol. lek ay tey a mene. le'-a tey a mene.*
hm uphill good EXIST there DEIC search+for-IMP there DEIC
'Hm, uphill. there that's good. Look for it there.'

The assumption was that the developed absolute sense of direction in terms of canonical 'uphill' (South) etc. would be sufficient to overcome the handicap of blindfolding. And so indeed it was.

In summary, Tenejapans make no essential use of 'left' and 'right' terms in daily life. There are such terms, referring strictly to body-parts. But there is evidence that Tenejapans are slow and uncertain in their processing of these terms, further undermining their limited utility.

If we refer back to Table 1, we may briefly indicate where we have positive evidence of the nature of Tenejapan left/right discrimination. Our informants gave us equivocal evidence about the perception of left/right reflection enantiomorphs (point 1.0 in Table 1): the very same informant could in some sense 'see' the difference (e.g. specifying a model man as to the left hand of a model women in a photo), and yet on another occasion fail to 'see' the difference (e.g. asserting that left/right reflections of inanimate objects in a pair of photos were identical). This behaviour is of course in line with the linguistic resources, which permit left/right terms only for animate entities. Confronted, informants were quite adamant that there was no difference between the left/right inversions of inanimate objects in photos, and this ratiocinative opinion was also reflected in the failure to give differential descriptions in Tasks 1 and 2. On this evidence alone one might infer that the linguistic gap actually determines a partial perceptual gap. Later tests however (Task 9) made it clear that when informants were asked to sort photos into identical pairs vs. mirror-image pairs without other distractions, they could certainly do this. Although denied a simple linguistic formulation of the systematic character of e.g. left-

inversions, they described the difference between mirror-image pairs as *sjeloj sbaik*, "they have exchanged themselves".¹⁶

With regard to left/right response differentiation, Tenejapans of course (like virtually all vertebrates!) can no doubt give consistent responses on one side or the other of the body. But it is possible that stimuli may not be conceived of as in the left/right half of the visual field, for example; they may immediately be 'coded' in terms of absolute directions. Where the stimuli are terms for left/right body parts, there is definite if unsystematic evidence that informants are slow and uncertain in their interpretation of these terms, and they also had difficulty in identifying photographs of a single hand as being the 'left' or 'right' hand of the person.

As for the linguistic system of labels itself (Table 1, point 3.0), the Tzeltal terms are restricted to those of type 3.1, not being used to label regions as in 3.2 (with the exception of some very limited topological 'stretching'), and not being projectable on the relation between two inanimate entities as in 3.3. Tenejapans thus have available linguistic resources a bit like those attained by English children in PIAGET'S stage 1 and 2, except that these have no regional extensions from ego's or alter's location; but they lack the system that PIAGET thought so significant in the development of Western children, where the terms become truly projective (PIAGET'S stage 3). We hasten to add that we use the PIAGET classification merely as a typology of systems, without any attribution of retarded development; that would be an impossible charge, since Tenejapans master their absolute system of projective space probably as early as age 4 or 5, when European children cannot even systematically label their own left and right.¹⁷ That is the beauty of a system divorced from left and right: an absolute system of directions has a conceptual elegance, with only one drawback, but a substantial one: the need for a developed sense of direction, and the constant demand for a mental 'dead-reckoning' conducted in the mental 'background'.¹⁸

4. Conclusions

Tenejapan Tzeltal exhibits a linguistic gap: there are no linguistic expressions that designate regions (as in English *to my left*) or describe the visual field (as in *to the left of the tree*) on the basis of a plane bisecting the body into a left and right side. There are expressions for left and right hands, but these are not generalized to form a division of space. There is a lot of evidence that this corresponds to a conceptual gap: this is simply not the way Tenejapans think about space. When tasks are devised in which concepts of left and right would provide a simple solution, other notions are employed, even when the

¹⁶ These were photographs with two objects portrayed in each photograph, but with a left/right reversal of the objects in the corresponding member of the pair. For these sorts of paired objects the description "they have exchanged themselves" is applicable, as the two objects in one photograph have 'exchanged' their positions in the other. The root *jel* here gives rise also to notions of counterpart, namesake, etc.

¹⁷ Here we illegitimately extrapolate from findings by LOURDES DE LEÓN (1991b) on the acquisition of spatial competence in Tzotzil children. Tenejapan children's absolute directional system needs to be checked. The youngest subjects in our tasks were about 9, and used the absolute system flawlessly.

¹⁸ For some remarks on the processing demands, see LEVINSON 1991b: 20ff.

relevant linguistic distinctions could be made in Tzeltal (e.g. describing the position of one's limbs, or describing rotation of one's body). Even perceptual saliency of left/right inversions seems muted; informants can distinguish these when that is the sole focus of a task, but do not routinely do so when they are embedded in other tasks with other distracting stimuli. This is in line with the culture, which puts little weight on bilateral asymmetries.

Instead of using the left/right distinction to construct a division of space, Tenejapans utilize a number of other systems. They use an absolute, 'cardinal direction' system, supplemented by reference to other geographic or landmark directions. Or they use a generative segmentation of objects and places into analogic body-parts or other kinds of parts, and describe locations in these terms. Or they use a rich system of positional adjectives to describe the exact disposition of things. These systems work conjointly to specify locations with precision and elegance. The overall system is not primarily egocentric, and it makes no essential reference to planes through the human body.

Thus Tenejapans do not give route directions of the sort 'take the second turning to the left'; they do not ask one another to move or turn to the right; they do not direct another's attention to the left or right of a landmark in the visual field. Instead they use alternative conceptualizations with their corresponding linguistic expressions.

KANT, one supposes, might have been shocked to find missing what he took to be conceptual bedrock. Psychologists and linguists who have followed his lead, and have in this respect at least adopted the working presumption of a universal conceptual framework, should be surprised. Anthropologists too, following HERTZ and NEEDHAM, have predicted a universal binary opposition between left and right upon which symbolic values are systematically hung. We may thank Tzeltal for reminding us of the older view that languages may reveal startling differences in conceptualization of the world.

Figure 1: How to describe things in visual field without "left" & "right"

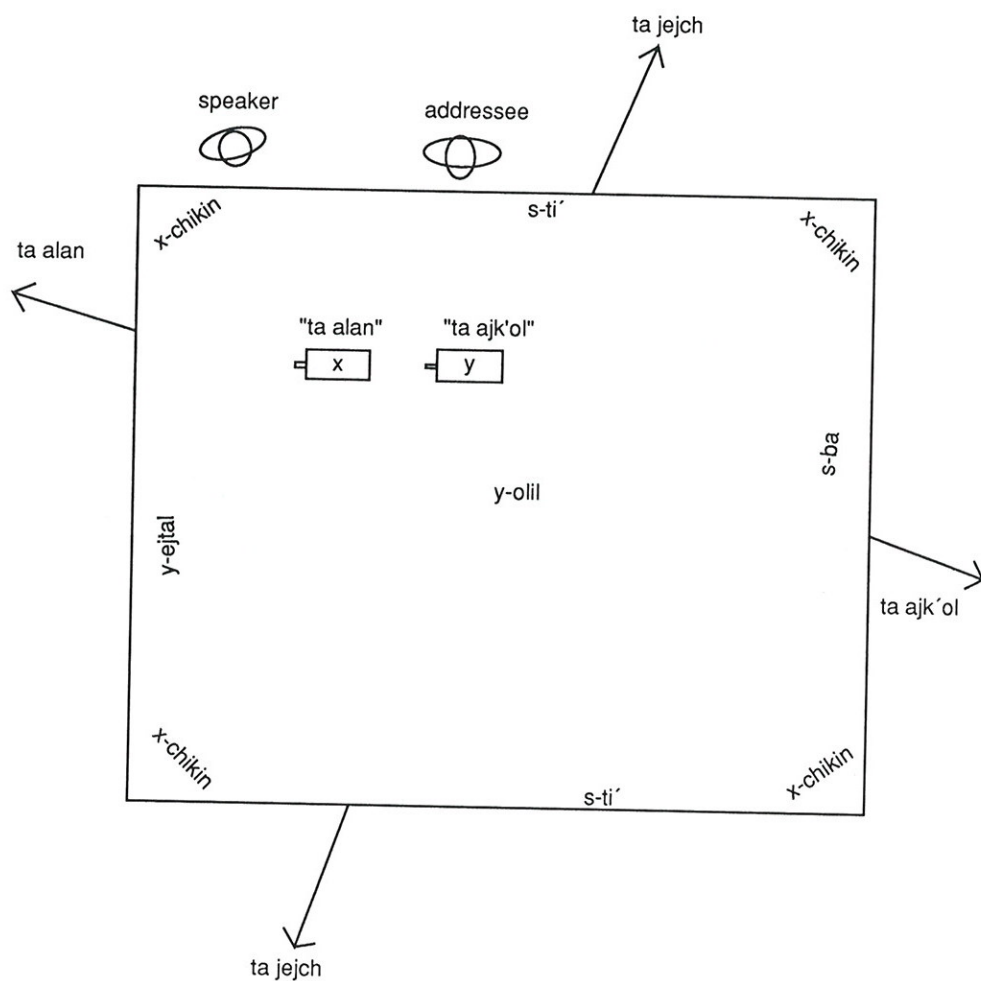


Figure 2: How to describe things in visual field without "left" & "right"

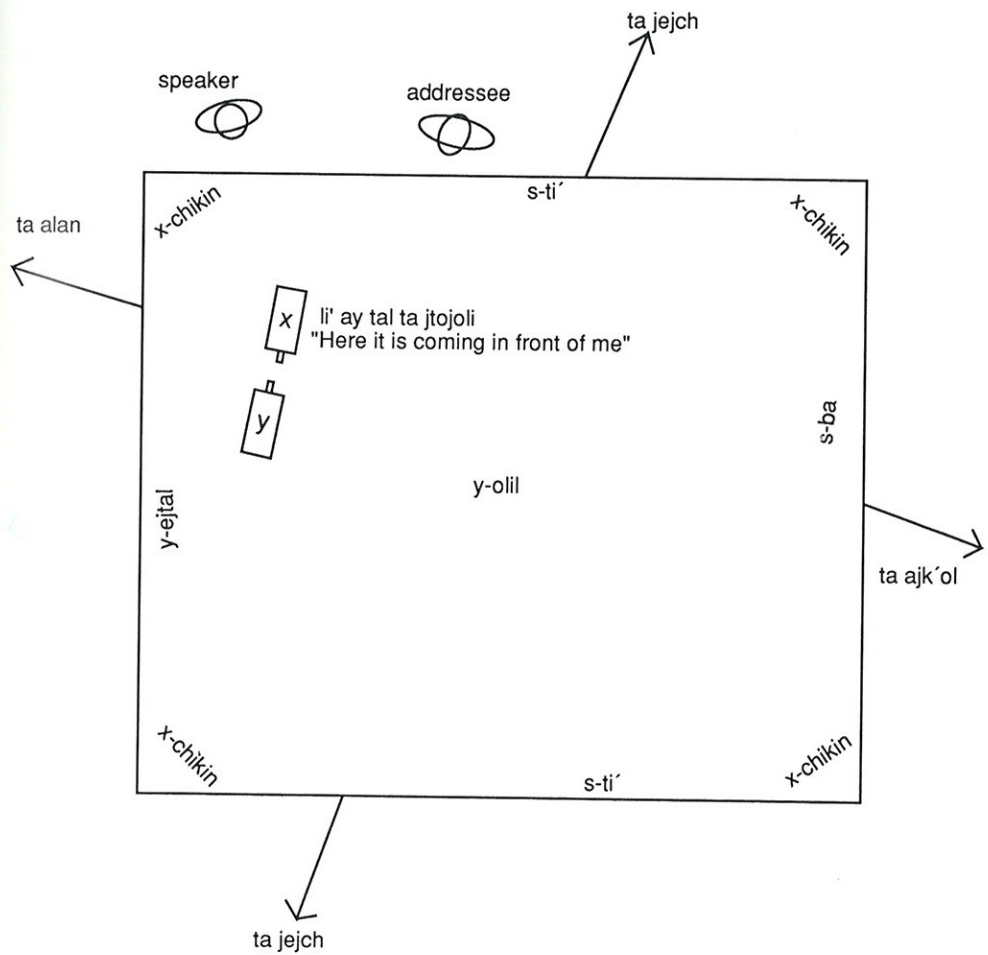


Figure 3: How to describe things in visual field without "left" & "right"

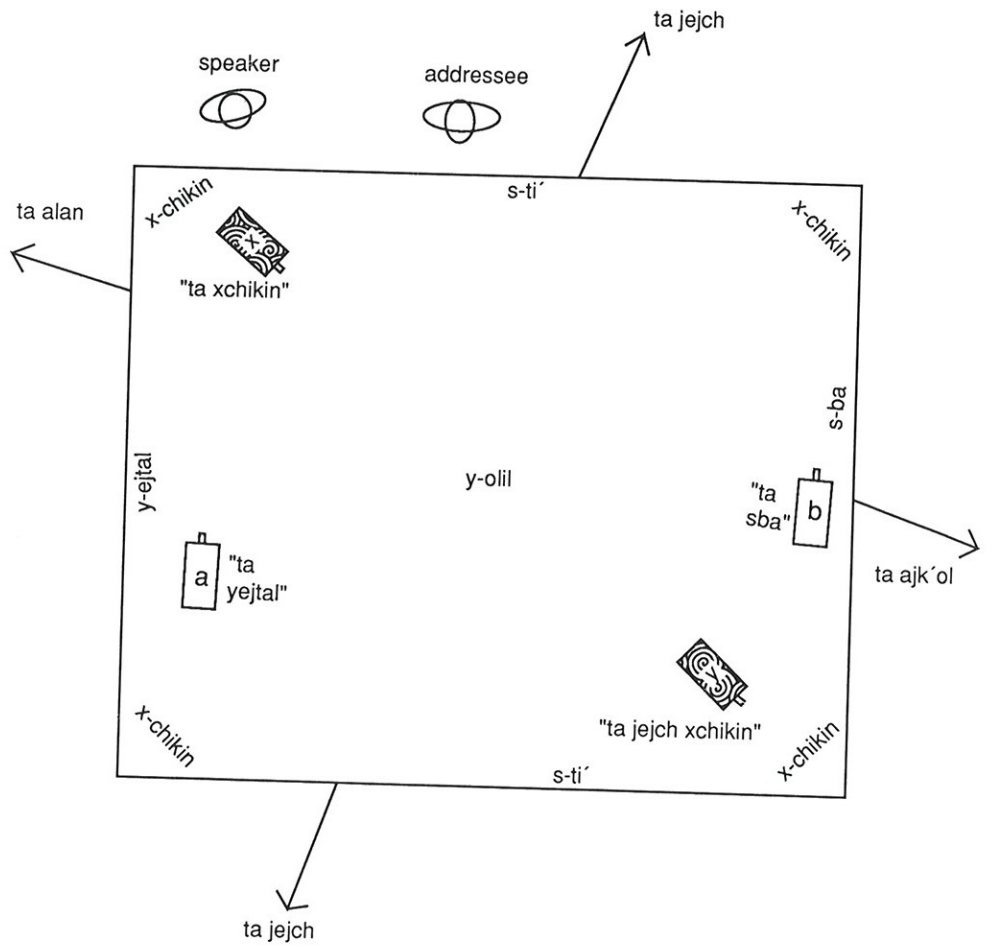
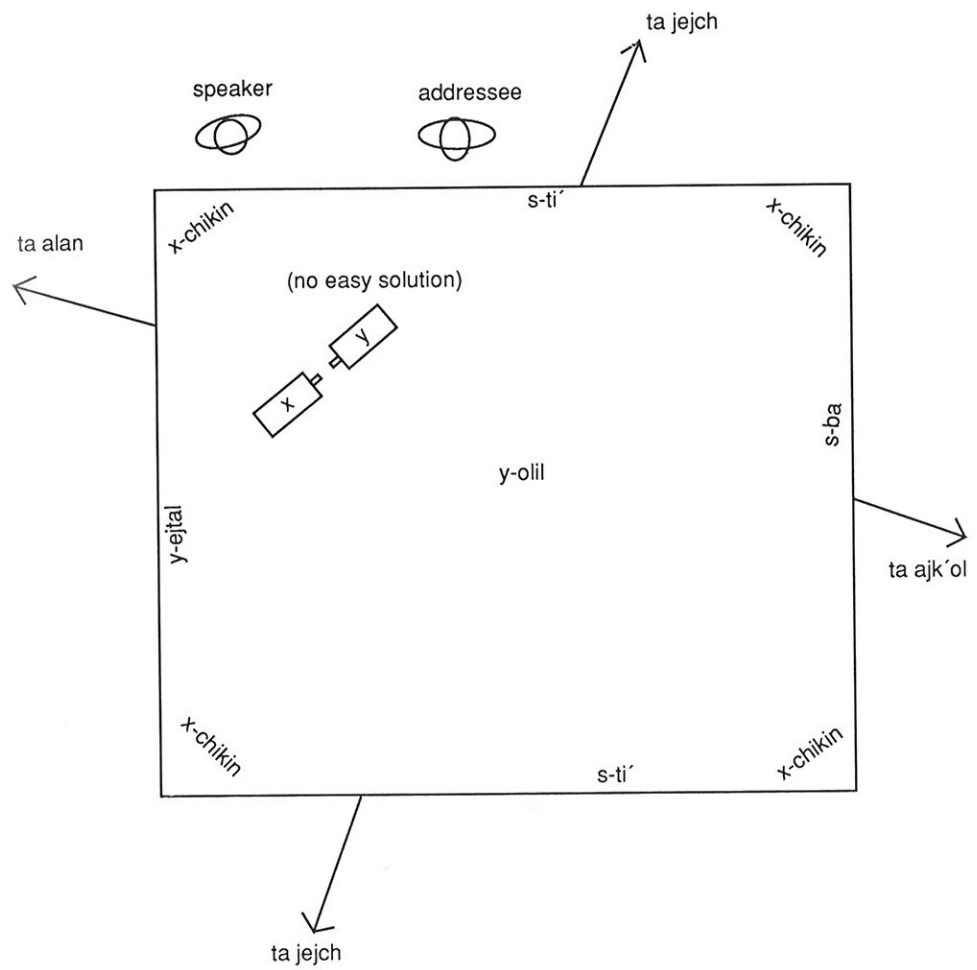


Figure 4: How to describe things in visual field without "left" & "right"



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Morphology and Semantics of Yucatec Space Relators

Summary

The paper investigates at first the morphology of Yucatec space relators. It gives a survey on their structure as far as it can be analyzed and distinguishes five morphological classes of space relators according to the way they form prepositions and the dependency relations they pass into. The second part examines the semantics of a few selected space relators, their markedness relations and other restrictions of their use. Some cases are presented where there is no simple one-to-one relation of the space relation and its expression.

The last section deals with the phenomenon of neutralization, which means the underspecification of some space relations. The morphologically and semantically very simple preposition *ti'* takes the place of a more specific preposition. Finally, the conditions under which neutralization can take place are examined.

1. Morphology

1.1. Introduction

Let us call the relationship between a trajector and a landmark a **space relation**. If no spatial part of the landmark is specified, we call this a **general space relation**; in case a spatial part of the landmark is specified, we call it a **specific space relation**.

Expressions which establish a space relation are called **space relators**. In Yucatec, space relators are either prepositions or semantically constituent elements of prepositions which show quite a degree of variation according to their complexity and origin.

A prepositional phrase in Yucatec Maya consists of a **simple** or **complex preposition** as well as its complement. The complement may be solely a possessive clitic or, in addition to that, a noun phrase. A preposition is simple if it is monomorphemic and cannot be morphologically analyzed furthermore. A preposition is complex if it consists of more than one morpheme and if its structure can be morphologically or syntactically analyzed. Most often one element of a complex preposition is the simple preposition *ti'*¹, another a relational noun or an adverb which is semantically constituent of the complex preposition.²

1.2. The simple preposition *ti'*

The preposition *ti'* is all-prevailing in Yucatec Mayan space descriptions. It is one of the scarce simple prepositions and the only one that has also some grammatical functions: it marks verbal complements such as recipient or addressee. The local meaning of *ti'* is the

¹ The orthographical conventions follow those presented in BARRERA VÁSQUEZ et al. (1980), with the addition of tones.

² As for the terminology, c.f. GOLDAP (1991): 29f.

most general and desemanticized one: it merely establishes a relation, in the case under consideration a space relation between two referents without implying any further information about spatial parts or other properties of trajector or landmark. Because of its emptiness of meaning and its function of establishing a space relation which is relevant here *ti'* is called a **localizer** (LOC in the morphemic translation).

1.3. Yucatec body part words and spatial part words

In many languages, designations of body parts (of humans or animals) are an important source of designations of spatial parts. To a certain extent, this metaphorical technique is employed in Yucatec as well. The relevant terms are given in Table 1 (T1).³

Table 1
Yucatec body part words as sources of spatial part words

	body part	spatial part
<i>táan</i>	forehead	front
<i>páäch</i>	back	back
<i>ich</i>	eye	interior
<i>líi</i>	buttocks	bottom, underground
<i>nak'</i>	belly	side
<i>ts'u'</i>	marrow	interior

If only because of the larger number of spatial part words in Table 2 (T2), a list of Yucatec space relations and space relators, we see that not every spatial part word in Yucatec originates in a body part word. To our knowledge such words as *óok'ol* 'upper surface' or *chúumuk* 'middle' do not designate a body part, and it is probable they have never done so.

Note, however, that the relationship between the body part word and the spatial part word is not in itself grammaticalization, but metaphorical extension.

Grammaticalization means, roughly, the continuous and in most cases unidirectional submission of language signs to grammatical rules. As a spatial part word is not automatically more subject to grammatical rules than a body part word, it holds that T1. does not exemplify grammaticalization whereas T2. does. The grammaticalization of a preposition begins (diachronically and synchronically) when a spatial part word enters into a complex preposition. I follow LEHMANN (1982) in distinguishing paradigmatic and syntagmatic parameters of grammaticalization. To name only those which will be most important in the argumentation in ch. 1.4., grammaticalization is indicated by a gradual loss of phonological and semantic substance (also known as *erosion* and *semantic bleaching*), integration into a small paradigm, increasing obligatoriness and increasing bondedness of the language sign (see LEHMANN (1982): 120f. for a discussion of the terms). The spatial part words in T2. are at least slightly grammaticalized because they all, because of their semantic and morphological properties as space relators, can enter into more or less complex prepositions.

³ I owe much of the following material to CHRISTIAN LEHMANN, c.f. LEHMANN (1990): 15f.

T2. contains a list of space relators designating spatial parts of the landmark and the space relations that are defined by them. As opposed to another Mayan language, Tzeltal, spatial properties of trajectors play only a minor role in defining space relations in Yucatec Maya.

If there is more than one expression of a space relation, the supposedly unmarked one is given first (as far as our knowledge of markedness relations of Yucatec space relators permits this).

The notion of markedness in the context of spatial relations and their expressions means the following: Given that a spatial relation has got more than one expression and that these expressions are not interchangeable, one of them may show at least one additional semantic feature apart from the semantic feature which allows us to assign it to a certain spatial relation. The more semantic features an expression has, the more marked it is: the less semantic features it has, the less marked it is. For exemplification, see ch. 2.2. where we claim that there is a markedness relation between the expressions of a relation of inclusion.

Table 2
Space relations and Yucatec space relators

space relation	space relator	translation
proximate	<i>iknal</i>	at, with
interior	<i>ich</i>	in
	<i>ichil</i>	inside
	<i>ts'u'</i>	within
exterior	<i>(ba')pàach</i>	outside
anterior	<i>táan(il)</i>	in front of,
		on this side of
	<i>ak táan</i>	opposite
posterior	<i>pàach(il)</i>	behind,
(+ ulterior)		on that side of
superior/contact	<i>óok'ol</i>	on, over, above
inferior	<i>àanal</i>	under, below, beneath
lateral	<i>tséel</i>	beside
	<i>nak'</i>	at the side of
circumferential	<i>ba'pàach</i>	around
medial	<i>táan chúumuk</i>	between, among
marginal	<i>hàal</i>	at the edge of

Some of these space relators are compound, like *ak táan*, *ba'pàach* and *táan chúumuk*. The preposed elements *ak* and *ba'* are synchronically meaningless.⁴ *táan chúumuk*, however, can easily be analyzed as *táan* 'front' plus *chúumuk* 'middle'.

Except for *ich*, *ichil* and (at least occasionally with some of our informants) *pàach*, all space relators designating spatial parts cannot function as a preposition on their own. This means that they must be combined with the simple preposition *ti'* to form a complex preposition (in the sense introduced in ch. 1.1.).

⁴ *ba'* can be traced back to Colonial Maya *bak'* 'surroundings'.

1.4. Morphological classes of space relators

We can distinguish several classes of Yucatec space relators according to the way they form prepositions. The internal and external dependency structures of the prepositions, their degree of complexity and the amount of phonological substance are, besides other criteria, indicative of their degree of grammaticalization: The more reduced the phonological substance, the dependency structure and the complexity degree of a preposition is, the more grammaticalized is the space relator.

We will present the classes of space relators according to their increasing degree of grammaticalization, i.e. we will start with the least grammaticalized class.

Class 1 consists of relational nouns (i.e. nouns that must be possessed). These are *ba' pàach*, *hàal*, *nak'*, *tséel* and *ts'u'*. As semantically constituent elements, the space relators are complements of the localizer *ti'*. They take as a possessor complement at least a possessive clitic referencing the landmark. The possessive clitic fuses with *ti'* as in E1a. There may be an additional noun phrase especially if the landmark is a third person referent, as in E1b.

E1a. *t-in tséel*
LOC-POSS.1.SG side
'beside me'

E1b. *t-u ts'u' (le sòopah-o')*
LOC-POSS.3 within DEF soup-D2(*le*)
'in it (the soup)'

A model of the internal dependency relations of a complex preposition of this type is given in E2. As for the notational conventions, I follow LEHMANN (1985): Slashes behind a morpheme symbolize a governing slot, slashes in front of a morpheme symbolize a modifying slot. The dependency arrows point to the dependent element.

E2. 

This means that within a preposition with a class 1 space relator, *ti'* provides a modifying slot which enables the whole construction to be dependent on, namely to modify another element, usually a verb.⁵

Class 2 consists of the relational nouns *iknal*, *ók'ol*, *àanal* and *pàach*. They are integrated into a complex preposition exactly like class 1 space relators if the landmark is a speech act participant, i.e. if the landmark is referenced only by the possessive clitics of first or second persons.

E3. *t-in w-iknal*
LOC-POSS.1.SG 0-at
'with me'

But if the landmark is referenced by the third person possessive clitic and maybe an additional noun phrase, the construction is condensed: most often *ti'* as well as the third per-

⁵ At the moment it seems that in Yucatec Maya localization by means of space relations can only take place within a predication, which means that constructions as in E1. or E2. cannot be used as an attribute. At least we have found no evidence yet. For a discussion of this topic, c.f. GOLDAP (1992: forthcoming).

son possessive clitic *u* are deleted. (The deletion of *u* does not take place in possessive phrases.) The space relator, semantically constituent element of a complex preposition formerly, takes over the relational function of a preposition by itself.

- E4. *káa t-u múuch-ah-o'b y-iknal le mèsah-e'*
 CONJ PAST-SBJ. 3 gather-TR.PAST-3. PL 0-at DEF table-D 3 (*le*)
 'And he gathered them at the table.' (JH 117)

A picture of the dependency relations is given in E5.

- E5. *y- / iknal / (le mèsah-e')*⁶

If we compare this dependency structure to E2., we find that the dependency relations within the preposition are reduced: the slot that governed the relational noun is dropped together with *ti'*. The space relator itself acquires a modifying slot that is provided by *ti'* in case that the complex preposition is not condensed.

Class 3 is constituted by adverbs, namely by genuine adverbs such as *táan chúumuk* and *ak táan*, or by adverbs derived from relational nouns, such as *táanil* or *pàachil*. The *il*-suffix derives adverbs from nouns or verbs (cf. *yan-il* 'being located'). One of our informants used *ak táan-il* as well. The class 3 space relators can form adverbials by themselves, without any complement. The deictic center is then understood to be the landmark.

- E6. *táanil ak táan/ pàachil yàan*
 front opposite behind EXIST
 'It is in front/opposite/behind.'

If the landmark is to be named explicitly, it has to be the complement of a preposition. For that reason the localizer *ti'* is added which takes the noun phrase referencing the landmark as its complement.

- E7. *pàachil ti' wakax yáan le piìnoh-o'*
 behind LOC cow EXIST DEF pine.tree-D2(*le*)
 'The pine tree is behind the cow.' (FC)

The dependency relations within this deadverbial type of preposition are given in E8:

- E8. */ /pàachil / ti' / /wakax*

If the landmark is a speech act participant, it has to be referenced by a free personal pronoun. As *ti'* is already an element of the personal pronoun⁷, it usually does not appear here once more.

⁶ Things are a bit complicated by the fact the semi-vowel *y* – which appears only in front of vowel – initial stems may mark a third person possessor or subject on its own. On the other hand, informants strongly refuse to combine the space relator solely with *y-*, without any lexical complement following. This reasoning should vindicate why the meaning of *y-* is given as 0 in the morphemic translation. Nevertheless we admit that the Yucatec semi-vowels in this positions cause some descriptive problems. For a discussion c.f. GOLDAP (1991): 25f.

⁷ *tèech* for example, the second person singular pronoun, may be analyzed as *ti'* plus the second person singular absolutive suffix *-ech*.

Free personal pronouns are used here because possessive clitics appear only in genitive constructions, i.e. with nouns, and not with adverbs.

- E9. *tánil tèech*
front PRON.2.SG
'in front of you' (FC)

As for *pàach*, there seems to be free variation between the denominal and the deadverbial form of the preposition.

- E10a. *t-u pàach/ pàachil ti' l' iglèesyah yàan*
LOC-POSS.3 back behind LOC church EXIST
'It is behind/in back of the church.' (FC)

Some of our informants even use *pàach* as a simple preposition which would mean that this space relator is (synchronically and diachronically) making its way into class 4.

- E10b. *pàach iglèesyah yàan*
back church EXIST
'It is behind the church.' (FC)

Class 4 is constituted by *ich* and *ichil*. They are, apart from *ti'* itself, the only bare prepositions in Yucatec Maya (which means that they don't need to be combined with *ti'* to form a preposition). They show a low degree of complexity. If we take a closer look at *ichil*, we find that it can be correctly classified as a class 4 space relator: In many contexts, *ichil* functions as a preposition exactly like *ich*. But it shows a characteristic of class 3 space relators, nevertheless: it can be used as an adverb (which is not true for *ich*):

- E11. *ya'b ha' yàan ichil*
many water EXIST inside
'There is much water inside.' (FC)

The element *-il* in *ichil* is still identifiable as the adverbializing suffix, but contrary to class 3 space relators, *ichil* when functioning as a preposition does not need *ti'* to provide the governing slot and take the complement, as we see in E 12.:

- E12. *k-u ts' o' -ts' o' p-kint-a' l' ichil le sòopah-o'*
IMPF-SBJ.3 RED-stuck-FACT-PASS.IMPF inside DEF soup-D2(*le*)
'It (the chicken foot) is stuck into the soup.' (AC 48)

The prepositional use of *ichil* may be explained as **renovation by reinforcement**. The scarce and unusual monomorphemic form of *ich* suggests that this preposition is highly grammaticalized. Grammaticalization means not only morphological, but also semantic reduction: a highly grammaticalized element has got fewer semantic features than a weakly grammaticalized one. This phenomenon is also called the semantic bleaching of grammaticalized elements. Reinforcement of prepositions is not too uncommon in the world's languages, c.f. LEHMANN (1982): 23f. for some fine examples from French. In order to reinforce its function of expressing a space relation of inclusion, an adverb is derived from *ich*. We think it is very probable that this adverbial space relator once needed *ti'* as well to provide the governing slot of the preposition. *ti'* got lost, and the more complex form *ichil* has lost its initial emphasis and functions as a bare preposition exactly like its derivational base *ich*.

Class 5 is constituted by a single space relator, *ti'*. It is the preposition with the far highest frequency and can be located at one extreme end of the grammaticalization scale. This view is supported by the facts that

- a) it is the only preposition which enters into complex prepositions and
- b) it has grammatical functions beside its localizing function, mentioned earlier in ch. 1.2.

Table 3 sums up the different classes of Yucatec Mayan space relators. The classes are presented roughly according to their increasing degree of grammaticalization although there is some uncertainty if the adverbial space relators (class 3) are placed correctly on the scale. The least grammaticalized class of space relators, class 1, is less closed than the other classes: any relational noun designating a spatial part can enter it. This is the reason why the list that is given here is by no means complete. The class 1 elements listed here are those with the highest frequency and/or those which have paradigmatic relations with higher grammaticalized space relators.

Table 3
Morphological classes of space relators in Yucatec

Class	Construction	Space relators
1	<i>ti'</i> -POSS _ (NP)	<i>ba'pàach</i> <i>nak'</i> <i>tséel</i> <i>ts'u'</i>
2	<i>ti'</i> -POSS.1/2 _ (y)- _ (NP)	<i>àanal</i> <i>iknal</i> <i>óok'ol</i> (<i>pàach</i>)
3	_ <i>ti'</i> NP	<i>ak táan</i> <i>táan chúumuk</i> <i>pàachil</i> <i>táanil</i>
4	_ NP	<i>ich</i> <i>ichil</i>
5	_ NP	<i>ti'</i>

From this survey it can be seen that Yucatec Maya is rather ordinary as far as the formation of prepositions is concerned: prepositions are derived from relational nouns directly or via adverbs. But in Yucatec, the lexical base of most of the prepositions (the space relator) is still clearly identifiable. If we take a synchronic viewpoint, we can distinguish different stages of grammaticalization if we compare the variation of the formation of prepositions between different speakers or even within an idelect, as in the case of *pàach* (c. f. E10).

2. Semantics

2.1. General

As for the semantics of Yucatec space relators, it is not possible, of course, to give a satisfying survey here. There will be a necessary restriction to highlighting those cases where there is obviously not a simple one-to-one relation between a space relation and its

expression. This can mean that there is a markedness relation between different expressions of a space relation (in the sense introduced in ch. 1.3.) or that there are use restrictions which are determined by other factors. The rough meaning of Yucatec space relators has been given in T2., anyhow.

2.2. Space relations and the interaction of their expressions

A space relation of proximity is invariantly expressed by *iknal* in Yucatec Maya (see ch. 2.3. for the one exception to this statement). This is true for any kind of trajector or landmark. The landmark may be inanimate (c.f. E4.) or animate:

- E13. *chéen ka' túul-o'n y-iknal màamah*
 just two CLASS.AN-ABS.1.PL 0-at mother
 'Only the two of us (still) live with Mother.' (FC)

A space relation of total or partial inclusion in a containerlike landmark can be expressed by *ichil* or *ich*:

- E14. *le ch'o'-e' ti' yàan ich u hòol-e'*
 DEF mouse-D3(*le*) there EXIST in POSS.3 hole-D3 (*ti'*)
 'The mouse is there in its hole.' (RMC)

As we can find no clear (semantic or syntactic) regularities in the distribution of *ich* and *ichil* (in its prepositional use), we assume at the moment that these two prepositions are in free variation. Further research has to be done on this problem. Total or partial inclusion in a medium can be expressed by the same space relators.

- E15. *le bàak-e' t-yàan ichil le bak'-o'*
 DEF bone-D3(*le*) there-EXIST inside DEF meat-D2(*le*)
 'The bone is inside the flesh.' (FC)

We talk of media not only if there is a (at least for the human eye) sufficiently homogenous mass which surrounds the trajector, as in E15. Even accumulations of otherwise clearly identifiable entities such as humans, beans etc. may be conceptualized as media. Processes of the organization of perception come into effect here which enable us to conceptualize a homogenous mass. They work according to the gestalt principle of closure of discontinuities between the different entities. In E16., the people are clearly conceptualized as a kind of surrounding medium with respect to which the trajector is located.

- E16. *hach ichil ya'bk'ach máak-o'b yanil pèedroh*
 really inside many person-PL being.located Peter
 'Peter is among many people.' (FC)

At the moment the evidence implies that *ts'u'* is used in a much more restricted way: it expresses only total inclusion in a medium.

- E17. *le tunich-o' t-u ts'u' le bu'l yàan-o'*
 DEF stone-D2(*le*) LOC-POSS.3 within DEF beans EXIST-D2(*le*)
 'The stone is among the beans.' (FC)

If *ts'u* expresses only complete inclusion in a medium whereas *ich* and *ichil* express complete and partial inclusion in a medium as well as in a container, this means that *ts'u* is marked in a double respect compared to *ich* and *ichil*. *ts'u* has got at least two additional semantic features, its meaning is more specific.

A space relation of superiority and/or a relation of contact can be expressed by *óok'ol*. E18. gives an example of superiority with contact, E19. of superiority without contact:

E18. *le lèek-o' t-yàan y-óok'ol le x-tàasche'-o'*
 DEF gourd-D2(*le*) there-EXIST 0-on DEF FEM-shelf-D2(*le*)
 'The gourd is on the shelf.' (FC)

E19. *le ch'òom-o' túun xiknal y-óok'ol iglèesyah*
 DEF vulture-D2(*le*) PROG:SBJ.3 fly 0-on church
 'The vulture is flying above the church.' (FC)

This means that *óok'ol* does not only define a certain part of the landmark (its upper surface), as in E18., but also a region projected away from the landmark in a certain direction determined by the spatial part of the landmark. The projection of regions surrounding the landmark distinguishes Yucatec Maya from Tzeltal, for example (LEVINSON (1991): 35), where no such projection takes place, i.e. a body part word can function as a space relator only if the trajector is contiguous with or at least very close to the landmark. Space relators do not define regions in Tzeltal, but they certainly do so in Yucatec Maya. Tzotzil, on the other hand, does project regions from the spatial parts of the landmark (c.f. DE LEÓN, this volume). As for Yucatec *óok'ol*, its use can be described with help of the model of prototype semantics: all cases of the use of *óok'ol* are determined by the disjunction of two conditions. This type was called the CLIMB-prototype by FILLMORE (after a typical exponent in English):

"The category is identified in terms of a disjunction of mutually compatible conditions, and the best examples are those in which all members of the disjunction are present." (FILLMORE (1982): 32)

In the case of *óok'ol*, these two requirements are that of superiority and that of contact. One of the requirements may be unfulfilled, but not both. The best cases are those in which both requirements are fulfilled. This hypothesis will be supported by the data on neutralization in ch. 2.3.

Let's turn to **dimensional space relations** now. Leaving mathematics aside, it will be sufficient for the moment to claim that dimensional space relations are dependent on the observer's position. Dimensional space relations are defined by such notions as orientation and position whereas **topological space relations** such as proximity and inclusion are defined by such notions as nearness, contact, and separateness. The observer's position is irrelevant here.⁸

The dimensional relation of anteriority ("trajector at the front side of of the landmark") is expressed by *táan* if the landmark has got an intrinsic front. This means

- a. that the landmark is either an animate being whose front is defined by the arrangement of its perceptual apparatus, direction of progression etc. or an entity with a structure at least faintly similar to an animate being, a car for example (c.f. E20.),

⁸ The spatial relation of superiority is a borderline case here because its best cases are those where the dimensional feature of superiority is combined with the topological feature of contact.

b. or that the landmark is an entity which humans most often use or approach from a certain direction, like desks, blackboards, certain types of houses, or crosses, as in E21. (c.f. FILLMORE (1975): 20f. for these criteria)

E20. *le xibpàal-o' t-yàan táanil t-e káamyonèetah-o'*
 DEF boy-D2(*le*) there-EXIST front LOC-DEF van-D2(*le*)
 'The boy is in front of the van.' (FC)

E21. *hwàan-e' táan ti' le krìus yàan-o'*
 John-TOP front LOC DEF cross EXIST-D2(*le*)
 'John is in front of the cross.' (RMC)

If the landmark has no intrinsic front, however, and there is a relation of cteriority ("trajector between the observer and the landmark"), the informants use *iknal*. This means that they employ a much more general expression (that of a neighbourhood or proximity relation), a topological instead of a dimensional preposition.

E22. *le àabal-o' t-yàan y-iknal le pìinoh-o'*
 DEF plum tree-D2(*le*) there-EXIST 0-at DEF pine tree-D2(*le*)
 'The plum-tree is in front of the pine tree.' (FC)

At the moment, there is no evidence that *táan* also expresses relations of cteriority, their landmarks having no intrinsic fronts.

As for the space relation of posteriority ("trajector at the back side of the landmark"), the situation is not so clear. This relation is expressed invariantly by *pàach* (in one of its possible prepositional constructions) if the landmark has got an intrinsic front (and, on that account, an intrinsic back as well).

E23. *pàachil ti' wakax yàan le pìinoh-o'*
 behind LOC cow EXIST DEF pine tree-D2(*le*)
 'The pine tree is behind the cow.' (FC)

If we examine a space relation of ulteriority ("trajector on the other side of the landmark") the landmarks of which have no intrinsic front or back sides, we find that there is a certain variation between different speakers of Yucatec. Some of them use *pàach* to express a relation of ulteriority, others clearly prefer *iknal* or *tséel* 'side' in that case. E24. presents the alternatives.

E24. *le àabal-o' t-yàan pàachil t-e'*
 DEF plum.tree-D2(*le*) there-EXIST behind LOC-DEF
t-u tséel le/ y-iknal le/ pìinoh-o'
 LOC-POSS.3 side DEF 0-at DEF pine tree-D2(*le*)
 'The plum-tree is behind the pine tree.' (FC)

At the moment we do not have a striking idea why *táan* and *pàach* are treated differently in respect of their potential of expressing relations of cteriority or ulteriority in case that the landmark has no intrinsic front, i.e. if the trajector must be located deictically anyway.

A space relation of laterality ("trajector at the side of the landmark") is expressed by *tséel*. This holds if the landmark has an intrinsic front, back, and sides, but also if the landmark has none of these spatial parts at all, which means that the trajector must be located deictically.

- E25. *le kàax-o' t-yàan t-u tséel sòoy*
 DEF chicken-D2(*le*) there-EXIST LOC-POSS.3 side chicken coop
 'The chicken is beside the chicken-coop.' (FC)

But *tséel* is used as well to express a relation of anteriority if the landmark has got no intrinsic front and back (c.f. E24.). This indicates that those sides of the landmark are conceptualized as *tséel* which are not front or back sides. The sides are defined by a purely negative criterion, namely the absence of the characteristics of intrinsic front or back sides. This means that virtually every perceived side of a horizontally unoriented object, a tree for instance, is *tséel*, whereas cars or chicken-coops have only two *tséelo'b*, the sides that do not fulfil the criteria of front and back sides.

A space relation of interlocation is expressed by (*táan*) *chúumuk*. Interlocation implies that the landmark is complex, i.e. that it consists of at least two individual entities.

- E26. *t-yàan táan chúumuk ti' ya'bk'ach máak*
 there-EXIST between LOC many person
 'He is among many people.' (FC)

Note the missing plural suffix on the noun phrase. It is redundant because the plurality of the referent is already expressed by the quantifier and because interlocation implies a complex landmark.⁹

But this is not the case in E16. If we compare it to E26., we find that similar, if not identical situations are expressed by different space relators which highlight different parts of the landmark. The choice of *táan chúumuk* in E26. highlights the plurality and separateness of the individuals which make up the complex landmark. The choice of *ichil* in E16., however, highlights the mass properties and homogeneity of the landmark. E26. represents the many people as a collection of individuals whereas E16. represents them as a mass.

2.3. Neutralization with topological relations

Most of the topological relations discussed above have in common that they may remain underspecified. *ti'*, the minimal space relator¹⁰ may take the place of the more specific expressions under certain conditions.

The spatial relation may be underspecified if the context and/or the typicality of a spatial situation permit a correct interpretation. Let's call this underspecification a **neutralization** in favour of *ti'*.

- E27. *a mamah t-yàan t-e ch'e'n-o'*
 POSS.2 mother there-EXIST LOC-DEF well-D2(*le*)
 'Your mother is at the well.' (FC)

⁹ Plural marking is optional in Yucatec Maya anyway.

¹⁰ This simplifies things a bit. We leave out of our account certain space relations which have the interrogative pronoun *tu'x* "where", toponyms or certain man-made places (like plazas, prisons, castles etc.) as their landmarks. The space relator is zero then, i.e. the space relation is simply expressed by juxtaposition of the noun phrase which denotes the landmark. This zero expression of space relations may be ignored here because it is confined to a rather small group of landmarks.

In E27. the minimal space relator *ti'* could be correctly replaced by *iknal*. The typicality of the situation allows a correct interpretation: the woman can be correctly located at the well, not, for example, in or above the well. The phenomenon of neutralization takes place with space relations of inclusions, too.

- E28. *le ha'-o' t-yàan t-e ch'e'n-o'*
 DEF water-D2(*le*) there-EXIST LOC-DEF well-D2(*le*)
 'The water is in the well.' (FC)

In this case the water can be correctly located in the well. If a space situation is not as typical as those presented in E27. and E28., the neutralization in favour of *ti'* cannot take place because a correct interpretation is not warranted, as in E29. Here, the landmark is once again a well, but the trajector is Joseph of the biblical story who has been thrown into the well by his malevolent brothers.

- E29. *táan u y-òok'-ol ichil le aktun-o'*
 PROG SBJ.3 0-cry-INTR.IMP inside DEF well-D2(*le*)
 'He is crying inside the well.' (JH 29)

One prerequisite of neutralization is the typicality of a space situation. Another condition under which neutralization can take place is context-dependency: the specific space relation has been made explicit before, i.e. the context provides clues for a correct interpretation. A popular stylistic means of the Yucatec art of story-telling is the varying resumption of important parts of a sentence in a kind of afterthought which constitutes paired sentences. If the space relation has been made explicit in the first part, its expression may be replaced by *ti'* in the second part.

- E30. *le máak-o' t-yàan ichil le karsel-o' k'al-a'an*
 DEF person-D2(*le*) there-EXIST inside DEF prison-D2(*le*) lock-PART.RES
t-e karsel-o'
 LOC-DEF prison-D2(*le*)
 'The man is in prison, locked up in prison.' (FC)

The expression of a space relation of superiority with contact may be neutralized as well.

- E31. *le ch'úich'-o' t-yàan t-u k'ab che'*
 DEF bird-D2(*le*) there-EXIST LOC-POSS.3 hand tree
 'The bird is on the bough.' (FC)

At the moment there is no evidence that *òok'ol* could be neutralized in favour of *ti'* without implying contact between trajector and landmark. In E19., *òok'ol* cannot be neutralized in the same way because it expresses superiority **without** contact.

This fact supports the hypothesis that *òok'ol* is used prototypically and that the best (which also means the most typical) instantiations are those where both requirements of superiority and contact are fulfilled. *òok'ol* can be neutralized only in those cases. We have found no evidence yet that *òok'ol* can be neutralized if only one requirement (superiority **or** contact) is fulfilled.

All the space relations which allow neutralization are topological relations. We suppose the neutralization in favour of *ti'* or its alternant *t-* (which may be interpreted as a locative case prefix) to be an alternation between syntactical and more or less morphological marking of space relations. These findings correspond with findings of the UNITYP pro-

ject, Cologne,¹¹ that topological relations are more likely to be expressed morphologically (i.e. as case affixes) than dimensional relations.

Or, if we put this into an implicational form: A language that expresses dimensional relations morphologically also expresses topological relations in that way. On the other hand, Yucatec differs from the languages investigated by UNITYP in that it codes all the said topological relations with only one case affix (if *ti'* can be regarded as one) and that there is also a more syntactic alternative (namely complex prepositions) of expressing those relations. Nevertheless, neutralization should be examined more closely in order to find an adequate description of the phenomenon.

3. Conclusion

In contrast to space relations found for example in Tzeltal, another Mayan language, Yucatec Mayan space relations heavily emphasize physical properties of the landmark and not of the trajector. The search domain of the trajector is limited by specifying spatial parts of the landmark or regions projecting from them, a strategy that reminds one of Indo-european languages, for example.

Space relations in Yucatec are expressed by prepositions which may be simple or complex. Their (synchronic and diachronic) formation is not unusual: most of them have been grammaticalized from relational nouns, some of them designating body parts, directly or via adverbs.

As for the semantics of Yucatec space relators, we have found markedness relations between different expressions of one space relation, that of inclusion, for example. The least grammaticalized space relator, *ts'u'* is the most marked expression. If we take a look at dimensional relations, the interaction of relations of posteriority and ulteriority and of relations of anteriority and cteriority seems to differ. At the moment there is no satisfying answer to the question: why do most speakers express relations of posteriority and ulteriority with *pàach*, but use *táan* exclusively to express anteriority (and not cteriority)?

We have seen not only the case that several space relations are expressed by one space relator (*pàach* and *iknal* are relevant here), but also the reverse case where one spatial situation¹² can be expressed by different space relators, as with *táan chíumuk* and *ichil*. The different space relators highlight different spatial properties of the landmark.

The topological relations of proximity, inclusion, and superiority with contact can be underspecified. In this case *ti'* takes the place of a more specific preposition. The neutralization takes place only if the context or the typicality of the spatial situation allow this.

Appendix A: Sources

The examples are taken from two narrative texts and two field corpora:

- AC is a text on the *Ch'a'chak-ceremony* recorded and transcribed by MANUEL ANDRADE in Chich'en Itzá, Yucatán.
- JH is a biblical narration about Joseph and his brothers, recorded, transcribed, analyzed and translated in Ya'xley, Quintana Roo by members of the Yucatec project, University of Bielefeld.
- RMC is a field corpus collected by CHRISTIAN LEHMANN in Ya'xley.
- FC is a field corpus on space relations collected by the author in Ya'xley in the summer of 1989.

¹¹ C.f. DROSSARD (1992).

¹² It is a goal of future theoretical work to clarify if we have either different spatial situations, but one space relation or different space relations in E16. and E26.

Appendix B: List of abbreviations used in morphemic translation

1	first person	INTR	intransitive
2	second person	LOC	localizer
3	third person	PART	participle
ABS	absolutive	PASS	passive
AN	animate	PAST	preterite
CLASS	classifier	PL	plural
CONJ	conjunction	POSS	possessive clitic
D1	proximal deixis	PROG	progressive
D2	distal deixis	PRON	pronoun
D3	neutral deixis	RED	redoubled
DEF	definite	RES	resultative
EXIST	existential verb	SBJ	subject clitic
FACT	factive	SG	singular
FEM	feminine	TOP	topicalizer
IMPF	imperfective	TR	transitive

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Yukatekische lokale Relatoren in typologischer Perspektive

Abstract

Local relators such as the English prepositions *to* and *through* combine two meaning components: They designate both a certain spatial region of the reference object (in the examples, the proximity and the interior, respectively) and a certain local relation to it (here orientation towards the reference object and past its axis, respectively). In the Maya language of Yucatan, prepositions designate exclusively spatial regions. The local relation, instead, is implied in the semantic and syntactic valency of the governing verb. This entails considerable differences in the structure of localizing expressions.

A universal conceptual framework is developed within which such differences may be described; a typology of alternative techniques for its linguistic manifestation is sketched; and the Yucatec technique is assigned a place in this typology.

1. Einleitung

1.1. Einstieg

Im Zentrum der folgenden Überlegungen steht das Yukatekische. Dies ist die Mayasprache von Yucatan, der in die Karibik hineinragenden Halbinsel im Nordosten Mexikos. Die Daten sind in eigener Feldforschung im Sprachgebiet gewonnen (vgl. LEHMANN 1991[Y]).¹ Die Sprecher beherrschen das Spanische als Zweitsprache zu unterschiedlichen Graden. Die Beispiele in B1 sind typische Erzeugnisse solcher Sprecher.

- B1. a. *¿Dónde vienes?* [statt: *¿De dónde vienes?*]
SPAN 'Woher kommst du?'
- b. *El ratón salió en su agujero.* [statt: *de su agujero*]
'Die Maus kam aus ihrem Loch.'
- c. *El ratón pasó en su agujero.* [statt: *por su agujero*]
'Die Maus rannte durch ihr Loch.'
- d. *Saqué el venado sobre el camino.* [statt: *del camino*]
'Ich holte das Reh vom Weg herunter.'

Nun sind die Probleme mit den Präpositionen beim Erlernen einer Fremdsprache alles andere als ungewöhnlich. Sie treten allerdings typischerweise in solchen Fällen auf, in

¹ Die Wenner-Gren Foundation for Anthropological Research in New York hat die Feldforschung 1989 über Raumorientierung im Yukatekischen unterstützt, wofür ihr auch an dieser Stelle gedankt sei. – Die verwendete yukatekische Orthographie ist die von BARRERA VÁSQUEZ et al. 1980, jedoch werden zusätzlich die Töne bezeichnet.

denen die Wahl der Präposition nicht auf rein semantischer Basis vorhersehbar, sondern z. B. durch das regierende Verb determiniert ist. Das ist hier nicht der Fall. Vielmehr sind die Kontexte völlig konkret lokal. Man möchte annehmen, daß unter solchen Umständen das Raumkonzept selbst die Wahl der Präposition determiniert. Hinzukommt, daß das Yukatekische durchaus ebenso wie das Spanische Präpositionen zum Ausdruck lokaler Relationen verwendet. Es stellt sich also die Frage, woher diese Fehler rühren.

1.2. Struktur einer lokalen Situation

Wir schaffen uns zunächst einen konzeptuellen Rahmen, auf den wir die einzelsprachlichen Strukturen von Lokalisationsausdrücken abbilden. Dieser Rahmen ist die Struktur einer **lokalen** Situation, illustriert an B2 (und unten in F1 zusammengefaßt).

B2. *Erna führte den Gast zur Rückseite des Instituts.*
 Situationskern zentraler Partizipant lokales räumliche Region Bezugsobjekt
 = lokalisiertes Objekt Verhältnis

Sie hat folgenden Aufbau:

1. Zunächst gibt es einen **Situationskern** (auch Partizipatum genannt), der im einfachsten Falle durch ein Verb symbolisiert wird. Nach dem Parameter der **Dynamizität** kann der Situationskern und damit die ganze Situation **statisch** oder **dynamisch** sein.²
2. Der Situationskern enthält einen **zentralen Partizipanten**, der im einfachsten Falle durch ein Nominalsyntagma (NS) kodiert wird. Er kann verschiedene aktive oder passive Rollen in der Situation haben (in B2 ist er Patiens).
 Eine lokale Situation ist eine solche, die konzeptuell an das Stattfinden im Raum geknüpft ist. Es kann sich darum handeln, daß der zentrale Partizipant kniet oder liegt, läuft oder steigt, geflickt oder geworfen wird, aber auch, daß er singt oder stirbt. Ausgeschlossen sind dagegen Situationen, in denen der betreffende Partizipant grün oder welk ist, einen anderen haßt oder ihm ähnelt, kurz also Situationen, die nicht im Raum stattfinden.
3. Zusätzlich kann es weitere Partizipanten mit diversen semantischen Rollen (wie etwa *Erna* mit Agensrolle in B2) geben, die hier vernachlässigt werden können. Konstitutiv für die lokale Situation ist lediglich ein weiterer Partizipant, das **Bezugsobjekt**.
4. Hieran schließt sich eine weitere für die lokale Situation konstitutive begriffliche Komponente an, nämlich das **lokale Verhältnis**, das zwischen dem Situationskern einschließlich dem zentralen Partizipanten und dem Bezugsobjekt besteht. Die für die Beschreibung lokaler Verhältnisse relevanten Begriffe sind in Tabelle 1 zusammengefaßt. Durch das lokale Verhältnis wird der zentrale Partizipant zum **lokalisierten Objekt**, gleichgültig, welche Rolle er etwa sonst noch in der Situation spielt. An einem lokalen Verhältnis sind zwei Aspekte zu unterscheiden. Erstens kann es eines der **Ortsruhe** oder der **Bewegung**, also ein **essives** oder **latives** sein. Dieser Aspekt ist jedoch vollständig durch die Dynamizität der Situation determiniert und folglich kein unabhängiger Parameter zur Klassifikation lokaler Verhältnisse. Dagegen ist das lokale Verhältnis wesentlich durch einen zweiten Aspekt ausgezeichnet, nämlich eine gewisse **lokale Orientierung** des Situationskerns einschließlich des lokalisierten Objekts gegenüber dem Bezugsobjekt. Ich beziehe diese Orientierung im folgenden nur auf lative Verhältnisse.

² In einer angemessenen Konzeption muß man Grade der Dynamizität unterscheiden; s. LEHMANN 1991 [P].

Tabelle 1. Räumliche Verhältnisse

Dynamizität			
statisch	dynamisch		
Ortsruhe	Bewegung		
essiv	lativ		
Orientierung			
am Bezugsobjekt	zum Bezugsobjekt hin	vom Bezugsobjekt weg	am Bezugsobjekt entlang
	allativ	ablativ	perlativ

5. Der Raum, der durch die räumliche Beschaffenheit eines Objekts, hier besonders des Bezugsobjekts, und seine unmittelbare Umgebung, genauer: durch seine **topologische Struktur** und seine **Dimensionalität**, determiniert wird, wird in **räumliche Regionen** unterteilt. Diese sind in Tabelle 2 dargestellt

Tabelle 2. Räumliche Regionen

topologisch	Nähe Kontakt Umschließung (Inneres)
dimensional	Vorderseite / Rückseite Oberseite / Unterseite linke Seite / rechte Seite

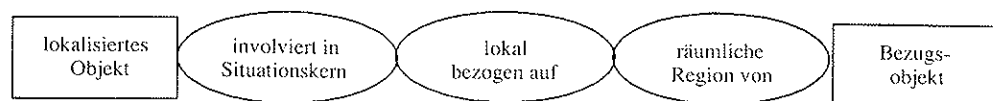
Die bis hierhin eingeführten Komponenten des konzeptuellen Rahmens bilden noch kein vollständiges kognitives Modell einer lokalen Situation. Es müßte mindestens in den folgenden Hinsichten erweitert werden:

1. Als weitere Komponente wäre das deiktische Zentrum einzuführen. Es determiniert z. B. die Wahl zwischen *her* und *hin* und die referentielle Interpretation einiger Präpositionen wie *vor* (lokalisiertes Objekt ist entweder an der intrinsischen Vorderseite des Bezugsobjekts oder zwischen deiktischem Zentrum und Bezugsobjekt).
2. Es wäre in Rechnung zu stellen, daß nicht nur das Bezugsobjekt, sondern auch das lokalisierte Objekt und das deiktische Zentrum räumliche Objekte sind, die räumliche Regionen haben. So beschränkt die räumliche Beschaffenheit des lokalisierten Objekts die Arten von Situationskernen, deren zentraler Partizipant es ein kann, also etwa, ob man von ihm normalerweise sagt, es stehe oder es liege. In Sprachen wie dem Daga (vgl. ANDERSON & KEENAN 1985: 291) sind Situationen durch grammatische Mittel zu lokalisieren in bezug auf die räumliche Region des deiktischen Zentrums, also z. B. im Hinblick darauf, ob sie oberhalb, auf derselben Höhe oder unterhalb des Ortes der Sprechsituation stattfinden.
3. Die Orientierung kann auch in essiven Verhältnissen wirksam werden. Wenn z. B. das lokalisierte Objekt in der Vorderregion des Bezugsobjekts ist, so ist es *vor* ihm. Ist dies jedoch der Fall und das lokalisierte Objekt hat zusätzlich seinerseits eine Vorderregion, die auf das Bezugsobjekt orientiert ist, so ist es ihm *gegenüber*.

Der in § 2 folgende typologische Vergleich beschränkt sich jedoch auf gewisse nicht-deiktische Eigenschaften lokaler Relatoren und kommt mit dem bisher eingeführten konzeptuellen Rahmen aus.

Die konzeptuellen Komponenten, die eine lokale Situation ausmachen, bilden natürlich nicht bloß eine Menge, sondern haben **Relationen** zueinander. Diese sind jedoch nicht in einfacher Weise als syntagmatische Relationen natürlicher oder formaler Sprachen aufzufassen. Solche sind nämlich notwendigerweise semiotischer Natur, d. h. Bestandteile eines bestimmten Zeichensystems, während die konzeptuellen Komponenten und ihre Relationen rein kognitive Größen, also (noch) nicht semiotischer Natur sind. Es kommt im folgenden gerade darauf an, nichts über die einzelsprachlichen grammatischen Strukturen, die die begrifflichen Verhältnisse abbilden sollen, zu präjudizieren. Daher begnüge ich mich hier mit einer völlig informellen, intuitiven Darstellung des in einer lokalen Situation bestehenden Beziehungsnetzes, so wie in F1 veranschaulicht.

F1. Lokale Situation



Die Intension des Situationskerns kann verschieden reichhaltig sein. Im Extremfall ist sie leer. Dann reduziert sich das relationale Zentrum der lokalen Situation auf das lokale Verhältnis zwischen lokalisiertem und Bezugsobjekt. B3 illustriert dies im Vergleich mit B2.

B3. Der Gast ist an der Rückseite des Instituts.

In eher formal angelegten Arbeiten zur räumlichen Orientierung (etwa in HABEL 1989) steht diese Konstellation im Vordergrund. In der hier gewählten Perspektive ist sie jedoch ein Grenzfall.

1.3. Zum typologischen Vergleich

1.3.1. Symbolisierung

Um eine einzelsprachliche Strategie als Repräsentanten eines Typs zu begreifen, müssen wir sie auf den in F1 gegebenen universalen Rahmen beziehen. Dazu untersuchen wir, in welcher Weise dessen Komponenten durch Ausdrucksmittel der Einzelsprache umgesetzt werden. Die beiden Aspekte, nach denen wir diese Symbolisierung systematisieren, sind der syntagmatische und der paradigmatische. Wir stellen also einerseits fest, daß die begrifflichen Komponenten im Prinzip zwar einzeln symbolisiert werden können, daß aber die grammatischen Strukturen von Sprachen doch die Zusammenfassung von Teilmengen davon in einem Ausdrucksmittel vorsehen. Jedenfalls aber werden sie auf grammatischer Ebene zu Syntagmen gruppiert. Und andererseits lassen sich alle begrifflichen Komponenten durch Lexeme wiedergeben; aber die Lokalisation wäre von geringem linguistischem Interesse, wenn nicht die Sprachen diverse davon in grammatischen Kategorien und Paradigmen kodierten.

Zusammengefaßt können sich Sprachen bei der Symbolisierung einer lokalen Situation in folgenden Hinsichten unterscheiden:

1. Die begrifflichen Komponenten können in unterschiedlichem Maße in grammatische Kategorien umgesetzt werden.

2. Die begrifflichen Komponenten können in der syntagmatischen Struktur verschieden gruppiert und zu Einheiten zusammengefaßt werden.

Der folgende typologische Vergleich des Yukatekischen mit dem Awarischen und Deutschen im Bereich der Lokalisierung konzentriert sich auf diese beiden Aspekte.

1.3.2. Lokale Relatoren

Bei der sprachlichen Umsetzung lokaler Situationen treten lokale Relatoren auf. Ein **lokaler Relator** ist ein Sprachzeichen, das ein lokales Verhältnis zwischen lokalisiertem Objekt und Bezugsobjekt ausdrückt. Häufig werden allerdings das Verhältnis selbst und die betreffende räumliche Region des Bezugsobjekts gleichzeitig ausgedrückt. Z. B. bezeichnet die deutsche Präposition *aus* gleichzeitig das Innere des Bezugsobjekts als die relevante Region und die Bewegung des lokalisierten Objekts als vom Bezugsobjekt weggerichtet. Daher kann man die lokalen Verhältnisse mit den räumlichen Regionen kreuzklassifizieren und erhält so eine zweidimensionale Matrix wie in T3. Die einzelnen Verhältnisse einschließlich der lokalen Orientierungen bilden die Spalteneingänge, die räumlichen Regionen die Zeileneingänge. Die Matrix ist übrigens eine vereinfachte Fassung derjenigen, die im *Lingua Descriptive Studies Questionnaire* (COMRIE & SMITH 1977: 31f.) im Kapitel „Noun inflection“ angeboten wird. Ich benutze sie im folgenden vorläufig zu heuristischen Zwecken als Folie für eine onomasiologische Analyse und beschränke mich zur Illustration auf einige wichtige räumliche Regionen.

2. Lokale Relatoren im Awarischen

2.1. Übersicht

Eine solche zweidimensionale Matrix ist am einfachsten auszufüllen für eine Sprache mit einem reichhaltigen Lokalkasussystem. Dazu gehören viele finno-ugrische Sprachen wie etwa das Ungarische, aber auch kaukasische Sprachen wie das Awarische. Tabelle 3 bietet einen Ausschnitt aus dem Lokalkasussystem des Awarischen (nach EBELING 1966 und CHARACHIDZÉ 1981: 48f.).

Tabelle 3. Lokalkasus im Awarischen

Verhältnis Region	essiv	allativ	ablativ	perlativ
unspezifisch	-Ø	-Ø-e	-Ø-s:a	-Ø-s:a-n
Nähe	-q	-q-e	-q-a	-q-a-n
Inneres	-x̣	-x̣-e	-x̣-a	-x̣-a-n
Oberseite	-da	-d-e	-da-s:a	-da-s:a-n
Unterseite	-x̣'	-x̣'-e	-x̣'-a	-x̣'-a-n

Die Kasussuffixe sind größtenteils morphologisch komplex. Der erste Bestandteil identifiziert die räumliche Region, der zweite das lokale Verhältnis. Allerdings hat ein essives Verhältnis keinen eigenen Ausdruck; lediglich die lokalen Orientierungen eines lativen Verhältnisses werden unterschieden. Dabei erscheint das perlativische Verhältnis als aus dem ablativischen mit einem weiteren Suffix abgeleitet. Wie man sieht, rechtfertigt ein solches System die hinter der Matrix stehende Intuition in hohem Maße.

2.2. Typologisches Verfahren

Die Schaubilder F2–F4 veranschaulichen, wie die konzeptuellen Komponenten einer lokalen Situation (F1) in einer Sprache grammatikalisiert und gruppiert werden. Sie stellen nicht die Linearisierung der einzelsprachlichen Kategorien dar.

Das typologische Verfahren des Awarischen zur Umsetzung von F1, dargestellt in F2, ist wie folgt charakterisiert:

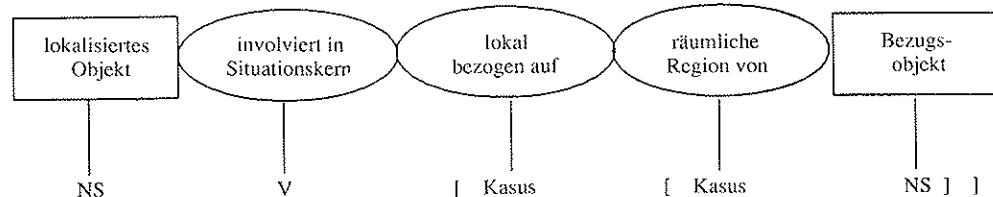
Umsetzung der Komponenten:

- räumliche Region: Kasus
- lokales Verhältnis: Kasus

Gruppierung der Komponenten:

Beide sind mit dem Bezugs-NS zu einem Syntagma zusammengefaßt.

F2. Lokalisation im Awarischen



Ohne einer präziseren Fassung von F1 vorzugreifen, wird man doch die Tatsache, daß die räumliche Region durch das innere, das lokale Verhältnis durch das äußere Affix ausgedrückt wird, ikonisch nennen dürfen.

Diese Strategie des Awarischen fügt sich leicht weiterreichenden typologischen Prinzipien der Sprache. Die Art der Involvierung des lokalisierten Objekts qua Partizipanten des Situationskerns wird nämlich ebenfalls durch Kasusuffixe an diesem ausgedrückt. Das heißt, semantische Rollen von Partizipanten werden grundsätzlich an diesen und insofern **dezentral** kodiert.

3. Lokale Relatoren im Deutschen

3.1. Übersicht

Die meisten Sprachen bedienen sich zur Bezeichnung räumlicher Relationen einer Kombination von Kasusaffixen und Adpositionen. Dazu gehört auch das Deutsche. Ein Ausschnitt des relevanten Subsystems ist in Tabelle 4 dargestellt.

Die räumlichen Regionen werden durch Präpositionen bezeichnet. Das lokale Verhältnis wird dadurch teils mitausgedrückt, teils wird es durch eine Kombination von Kasus und postpositionalem Adverb bezeichnet, wobei der Kasus allerdings teils durch das Verb, teils durch die Präposition bestimmt wird. Wie man sieht, ist das System hochgradig komplex und unregelmäßig. U. a. lassen sich folgende Generalisierungen machen:

- In jedem Falle ist eine Präposition nötig. Es gibt keinen Ausdruck für ein lokales Verhältnis ohne Spezifikation der Region.³

³ Dies ist übrigens in mehreren europäischen Sprachen so und sicher mit dafür verantwortlich, daß wir uns an die hybriden lokalen Relatoren der in § 1.3.2. beschriebenen Art gewöhnt haben.

Tabelle 4. Lokale Relatoren im Deutschen

Verhältnis / Region	essiv	allativ	ablativ	perlativ
unspezifisch	–	–	–	–
Kontakt	an (dat.)	an (acc.)	von (dat.)	an (dat.) (... entlang)
Nähe	bei (dat.)	nach, zu (dat.) (... hin)	von (dat.) (... weg)	an/bei (dat.) ... vorbei
Inneres	in (dat.)	in (acc.) (... hinein)	aus (dat.) (... heraus)	durch (acc.) (... hindurch)
Vorderseite	vor (dat.)	vor (acc.)	vor (dat.) ... weg	vor (dat.) ... vorbei
Rückseite	hinter (dat.)	hinter (acc.)	hinter (dat.) ... weg	hinter (dat.) ... vorbei
Oberseite	auf, über (dat.)	auf, über (acc.)	von (dat.) ... herunter/weg	über (acc.) (... weg)
Unterseite	unter (dat.)	unter (acc.)	unter (dat.) ... hervor/weg	unter (dat.) ... durch
Seite	neben (dat.)	neben (acc.)	von (dat.) ... weg	an (dat.) ... vorbei

- Ortsruhe wird durch eine Präposition mit dem Dativ ausgedrückt.
 - Allative Bewegung wird, mit Ausnahme der Proximität, durch eine Präposition mit dem Akkusativ ausgedrückt. Ein adverbialer Bestandteil ist in einigen Fällen möglich.
 - Ablative Bewegung wird durch eine Präposition mit dem Dativ sowie meistens zusätzlich ein Adverb (i. a. *weg*) ausgedrückt.
 - Perlative Bewegung wird durch eine Kombination von Präposition, Kasus und – in einigen Fällen optionalem – Adverb ausgedrückt.
 - Wenn bei gegebener Region eine Präposition mehr als ein lokales Verhältnis bezeichnet, so sind immer essives und allatives Verhältnis synkretistisch.
 - Wenn bei gegebener Region lokale Verhältnisse durch die Präposition unterschieden werden, so ist immer das ablativ Verhältnis von allen anderen distinkt.
- Es versteht sich, daß eine semasiologische Analyse der relevanten deutschen Ausdrucksmittel hier zu einer anderen Systematik käme, als sie durch die zweidimensionale Matrix vorgegeben ist.

3.2. Typologisches Verfahren

Das typologische Verfahren zur Umsetzung von F1 ist in F3 dargestellt und wie folgt charakterisiert:

Umsetzung der Komponenten:

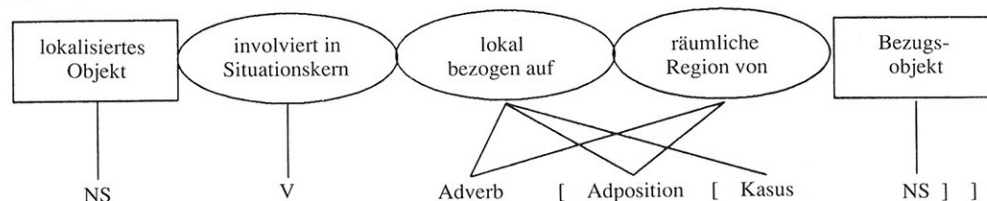
räumliche Region: Präposition; marginal auch postpositionales Adverb

lokales Verhältnis: Präposition, postpositionales Adverb, Kasus (dieser teils durch Verb, teils durch Präposition bestimmt).

Gruppierung der Komponenten:

Präposition ist mit dem Bezugs-NS zu einem Syntagma zusammengefaßt;
Adverb steht zwischen Verb und Bezugs-NS.

F3. Lokalisation im Deutschen



Im Vergleich mit der awarischen Strategie scheint die deutsche leicht kontraikonisch, insofern die Ausdruckselemente, die am engsten mit dem Bezugs-NS zusammengruppiert sind, eben die Kasussuffixe, ausgerechnet die räumliche Region des Bezugsobjekts nicht ausdrücken. Dem gegenüber steht allerdings der Ausdruck des zwischen Situationskern und Bezugsobjekt bestehenden lokalen Verhältnisses: die Adverbien, die dieses unter anderem ausdrücken, werden weder mit dem Repräsentanten des Situationskerns noch mit dem des Bezugsobjekts zusammengruppiert, sondern – ikonischerweise – neben die beiden gesetzt.

Die Kodierung der lokalen Relationen ist also weder zentral noch dezentral, sondern **diskontinuierlich**. Diese Strategie paßt ins Gesamtbild einer Sprache, die in mehreren Bereichen der Morphologie und Syntax diskontinuierliche Strukturen bevorzugt. Die vergleichsweise prominente Rolle des Adverbs im Deutschen zeigt sich auch in anderen funktionalen Bereichen, etwa demjenigen, in den die Kategorien von Aspekt und Aktionsart gehören (vgl. Lehmann 1990[I] und 1990[SI]).

4. Lokale Relatoren im Yukatekischen

4.1. Übersicht

4.1.1. Lokale Relatoren und lokale Orientierung

Im Yukatekischen gibt es keine Kasus.⁴ Räumliche Regionen werden durch Präpositionen ausgedrückt. Von diesen ist *ti'* ein rein grammatisches Formativ. Es bezeichnet auch die Relation des indirekten Objekts. Vor einem Determinator (definitem Artikel oder Possessivpronomen) reduziert es sich auf das Präfix *t-* und fusioniert mit ihm, ganz ähnlich wie die deutschen primären Präpositionen. Es gibt noch eine weitere primäre Präposition, *ich* 'in'. Alle anderen sind von relationalen Substantiven wie 'Nähe', 'Oberseite' usw. abgeleitet.

Die morphologischen Details vernachlässige ich im folgenden (s. dazu GOLDAP, im selben Band). Auch beschränke ich die Illustration auf die unspezifische Lokalisation sowie die räumlichen Regionen Inneres und Rückseite. In der Morphemübersetzung schließen eckige Klammern das lokale Komplement ein. B4 illustriert Ortsruhe (a) an einem Bezugsobjekt ohne nähere Spezifikation der räumlichen Region, (b) in und (c) hinter dem Bezugsobjekt.

⁴ Die einzigen Kandidaten für diese Kategorie sind erstens das Lokativpräfix *t-*, das jedoch im folgenden als proklitische Allomorph der Lokativpräposition *ti'* analysiert wird, und das adverbialisierende Suffix *-il*, das z. B. in dem Wort *pàach-il* (B4.c) zu sehen und besser als umkategorisierendes Derivationsuffix zu analysieren ist.

- B4. a. *Hüulyah-e' mina'n t-eh ch'e'n-o'.*
 YUK Julia-D3 NEG.EXIST [LOK-DEF Brunnen-D2]
 'Julia ist nicht am Brunnen.'
- b. *Le ch'o'-e' ti' yàan ich u y-áaktun-e'.*
 DEF Maus-D3 da EXIST [in POSS.3 Höhle-D3]
 'Die Maus ist in ihrem Loch.'
- c. *Wa'l-akbal pàach-il ti' Hwàan.*
 steh-PART.STAT [Rückseite-ADVR LOK Hans]
 'Er steht/stand hinter Hans.'

Wir sehen in B4.a und b die primären Präpositionen *ti'* 'Lokativ' und *ich* 'in' und in c die komplexe Präposition *pàach-il ti'* 'hinter' (wörtl. „rückseits zu“).

Die Serie in B5 illustriert dieselben räumlichen Regionen für die allative Bewegung.

- B5. a. *Hüulyah-e h bin t-eh ch'e'n-o'.*
 YUK Julia-D3 PRÄT geh (ABS.3.SG) [LOK-DEF Brunnen-D2]
 'Julia ging zum Brunnen.'
- b. *Le ch'o'-e h òok ich u y-áaktun.*
 DEF Maus-D3 PRÄT hineingeh (ABS.3.SG) [in POSS.3 Höhle]
 'Die Maus ging in ihr Loch.'
- c. *H bin pàach-il ti' Hwàan.*
 PRÄT geh (ABS.3.SG) [Rückseite-ADVR LOK Hans]
 'Er ging hinter Hans.'

Hier erscheinen dieselben Präpositionen wie bei Ortsruhe. Dies ist ganz ähnlich wie im Deutschen und vielen vertrauerten Sprachen und insoweit unauffällig.

Die Serie in B6 illustriert dieselben räumlichen Regionen für die ablativ Bewegung.

- B6. a. *Hüulyah-e h luk' t-eh ch'e'n-o'.*
 YUK Julia-D3 PRÄT weggeh (ABS.3.SG) [LOK-DEF Brunnen-D2]
 'Julia ging vom Brunnen weg.'
- b. *Le ch'o'-e h hóok' ich u y-áaktun.*
 DEF Maus-D3 PRÄT herausgeh (ABS.3.SG) [in POSS.3 Höhle]
 'Die Maus kam aus ihrem Loch.'
- c. *H luk' pàach-il ti' Hwàan.*
 PRÄT weggeh (ABS.3.SG) [Rückseite-ADVR LOK Hans]
 'Er ging hinter Hans weg.'

Hier nun treten abermals dieselben Präpositionen auf. Am frappantesten ist der Gegensatz zum Deutschen und anderen europäischen Sprachen im Falle b, also bei der Bewegung aus dem Inneren des Bezugsobjektes heraus. Hier können wir die Präposition *in* überhaupt nicht verwenden.

Schließlich gibt B7 noch einmal dieselben räumlichen Regionen für die perlativ Bewegung.

- B7. a. *Hüulyah-e h máan t-eh ch'e'n-o'.*
 YUK Julia-D3 PRÄT vorbeigeh (ABS.3.SG) [LOK-DEF Brunnen-D2]
 'Julia ging am Brunnen vorbei.'
- b. *Le ch'o'-e h máan ich u y-áaktun.*
 DEF Maus-D3 PRÄT vorbeigeh (ABS.3.SG) [in POSS.3 Höhle]
 'Die Maus lief durch ihr Loch.'
- c. *H máan pàach-il ti' Hwàan.*
 PRÄT vorbeigeh (ABS.3.SG) [Rückseite-ADVR LOK Hans]
 'Er ging hinter Hans vorbei.'

Auch hier treten unverändert dieselben Präpositionen auf. Ich kann an dieser Stelle verallgemeinern, daß die Situation für alle räumlichen Regionen in allen lokalen Verhältnissen dieselbe ist: eine yukatekische Präposition variiert nie nach der Art, insbesondere der Orientierung, des Verhältnisses.

Wenn wir daher die lokalen Relatoren des Yukatekischen in unsere Matrix eintragen, so enthalten alle Spalten einer gegebenen Zeile dieselbe Präposition. Daher können wir die zweidimensionale Matrix hier ebensogut auf eine eindimensionale reduzieren, wie es in Tabelle 5 geschehen ist. Die Tafel enthält eine repräsentative Auswahl von Präpositionen zur Bezeichnung diverser räumlicher Regionen des Bezugsobjekts.

Tabelle 5. Lokale Präpositionen im Yukatekischen

Region \ Verhältnis	essiv/lativ
unspezifisch	ti'
Nähe	iknal
Inneres	ich(-il)
Vorderseite	táan(il)
Rückseite	pàach(-il)
Oberseite	óok'ol
Unterseite	áanal
Seite	tséel

4.1.2. Zentrierung lokaler Verhältnisse am Verb

Hier bleibt nun die Frage, wie denn das Yukatekische die lokalen Verhältnisse unterscheidet. Es stellt sich heraus, daß dies ausschließlich durch das Verb geleistet wird, das den zentralen Partizipanten im Hinblick auf das Bezugsobjekt lokalisiert. So erfordern die Verben in B4, daß das lokalisierte Objekt ein essives Verhältnis zum Bezugsobjekt hat. Die Verben in B5 erfordern eine allative, die in B6 eine ablative, die in B7 eine perlativ Orientierung des lokalen Verhältnisses.

Eine solche Sachlage ist bis zu einem gewissen Grade aus dem Deutschen vertraut. Auch die deutschen Gegenstücke der Verben in B4 nehmen ein Adverbial der Ortsruhe und keines der Bewegung, während die Verben in B5–B7 in erster Linie ein Bewegungsadverbial, nur mühsam eines der Ortsruhe nehmen. Aber die alternativen Orientierungen einer Bewegung sind im Deutschen gewöhnlich nicht in der Verbsemantik verankert, mindestens dann nicht, wenn das Bezugsobjekt adverbial anzuschließen ist. Z. B. hat man im Deutschen Paare wie die in B8 und B9, wo jeweils der a-Satz ablativisch, der b-Satz allativisch ist.

- B8. a. *Woher kommst du?*
 b. *Ich kam nach Hause.*
- B9. a. *Hans fiel aus der Hängematte.*
 b. *Hans fiel in die Hängematte.*

Hier wäre nun zu prüfen, ob denn das Yukatekische solche Unterscheidungen nicht machen kann.

Wenn wir die beiden Satzpaare ins Yukatekische übersetzen, stoßen wir auf verschiedene Strategien, um das Problem zu lösen. B10 zeigt das Gegenstück zu B8.

- B10. a. *Tu'x a tàal?*
 YUK [wo] SBJ.2 komm
 'Woher kommst du?'
- b. *H k'uch-en t-in w-otoch.*
 PRÄT ankomm-ABS.1.SG [LOK-POSS.1.SG 0-Heim]
 'Ich kam zu Hause an.'

Hier gibt es zwei morphologisch beziehungslose Verben der Bedeutung 'kommen'. Eines, *k'uch*, nimmt ein allativisches, das andere, *tàal*, ein ablativisches Komplement. B10 zeigt sie in Kombination mit einem Bezugs-NS ohne Spezifikation einer räumlichen Region.

Das yukatekische Gegenstück zu B9 ist in B11 zu sehen.

- B11. a. *Hwàan-e' h lúub t-u k'àan.*
 YUK Hans-D3 PRÄT fall (ABS.3.SG) [LOK-POSS.3 Hängematte]
 'Hans fiel aus seiner Hängematte.'
- b. *Hwàan-e' h lúub-e' ká kul-k'ah t-eh k'àan-o'.*
 Hans-D3 PRÄT fall-D3 KONJ sitz-SPONT [LOK-DEF Hängematte-D2]
 'Hans fiel (und kam zu sitzen) in die Hängematte.'

Wenn man an das Verb *lúub* 'fallen' das lokale Adverbial mit Hilfe der allgemeinen Präposition *ti'* ohne weitere Spezifikation anschließt, so ergibt sich B11.a. Der Satz ist vollkommen unzweideutig, denn dieses Verb ist lexikalisch auf ablativ Orientierung des lokalen Komplements festgelegt. Es ist nicht möglich, ein allativisches Komplement direkt anzuschließen. Um ein Gegenstück zu B9.b zu bekommen, muß man daher ein zweites Verb einführen, das seinerseits ein allativisches Komplement nehmen kann. Das Ergebnis ist eine Paraphrase, wie in B11.b zu sehen.

Diese Beispiele bekräftigen, daß die Art eines lokalen Verhältnisses zu einem Bezugsobjekt im Yukatekischen Teil der lexikalischen Information des Verbs, also mit einem verbalen Lexem gegeben ist. Sie kann nur variiert werden, indem man den Situationskern durch ein anderes Verb ausdrückt oder ein anderes Verb hinzufügt.

4.2. Typologisches Verfahren

Das typologische Verfahren des Yukatekischen zur Umsetzung von F1 ist in F4 dargestellt und wie folgt charakterisiert:

Umsetzung der Komponenten:

räumliche Region: Präposition

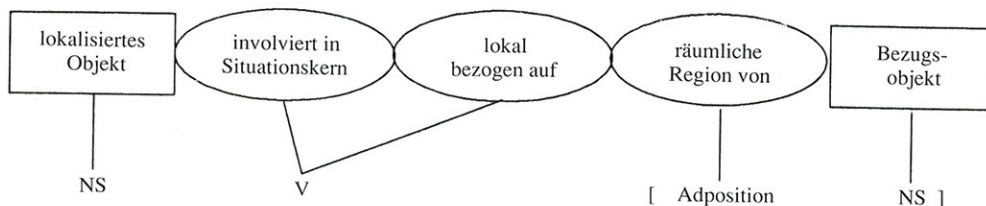
lokales Verhältnis: entweder kein eigener Ausdruck oder grammatikalisierter Orientierungsverb (s. § 4.3)

Gruppierung der Komponenten:

Präposition ist mit dem Bezugs-NS zu einem Syntagma zusammengefaßt;

lokales Verhältnis ist Bestandteil der semantischen und syntaktischen Valenz des Verbs.

F4. Lokalisation im Yukatekischen



Diese Strategie paßt ins Gesamtbild einer Sprache, die Partizipantenrelationen grundsätzlich am Situationskern **zentralisiert**, die also die semantische Argumentstruktur eines Verbs ganz eng an seine syntaktische Valenz koppelt. Dazu paßt ferner, daß die beiden zentralen Aktanten grundsätzlich durch Personalsuffixe bzw. -klitika am Verb vertreten sind.

4.3. Grammatische Zusammenhänge

Die Komponente des lokalen Verhältnisses, einschließlich seiner Orientierung, verbleibt also im Yukatekischen vollständig im verbalen Bereich. Das hat eine Reihe von Konsequenzen für die Grammatik.

4.3.1. Grammatikalisierte Orientierungsverben

Eine davon betrifft die Grammatikalisierung von Verben der Ortsruhe, der Bewegung und des Transports. Die diversen Ausprägungen auf dem Parameter des lokalen Verhältnisses einschließlich seiner Orientierung sind ja in vielen Sprachen hochgradig grammatikalisiert, i.a. in Kasusaffixen, wie etwa im Awarischen, z. T. auch im deutschen Akkusativ vs. Dativ, den die Präpositionen „regieren“. Im Yukatekischen, wo es keine Kasus gibt, ist diese Art der Grammatikalisierung ausgeschlossen. Statt dessen gibt es Bewegungsverben, die wenig mehr als die lokale Orientierung eines Situationskerns zu einem Referenzobjekt ausdrücken.⁵ Das Paradigma ist in Tabelle 6 dargestellt. Die beigegebenen Übersetzungen sind nur sehr approximativ, weil das Deutsche solche Verben nicht hat.⁶

Tabelle 6. Inhärente lokale Orientierung yukatekischer Bewegungsverben

Orientierung	allativ	ablativ	perlativ
Region			
unspezifisch	<i>bin</i> '(hin-)gehen'	<i>luk'</i> 'weggehen' <i>tàal</i> 'kommen'	<i>máan</i> 'passieren'
Inneres	<i>òok</i> 'hineingehen'	<i>hóok'</i> 'hinausgehen'	

Diese Verben werden zwar durchaus als Vollverben gebraucht, wie die zuvor gegebenen Beispiele zeigen. Sie treten jedoch auch als zweites Verb in Sequenzen wie den durch B12.f illustrierten auf.

B12. *Hwaàn-e' xímbal-nah bin Ya'xley.*
YUK Hans-D3 spazier-PRÄT (ABS.3.SG) geh [Yaxley]
'Hans ging zu Fuß nach Yaxley.'

B13. *Le xch'uppale' alkab-nah hóok' t-eh k'áax-o'.*
YUK DEF Mädchen-D3 lauf-PRÄT (ABS.3.SG) ausgeh [LOK-DEF Wald-D2]
'Das Mädchen lief aus dem Wald.'

⁵ Für das essive Verhältnis gibt es das Existenzverb *yáan*, wie in B4.b.

⁶ Die Paradigmen der Tabellen 6 und 7 sind wohl offen in dem Sinne, daß auch manche Vollverben die grammatischen Eigenschaften der hier aufgeführten Orientierungsverben annehmen können. – *Luk'* und *tàal* unterscheiden sich deiktisch. Bei *luk'* befindet sich das deiktische Zentrum am Bezugsobjekt, bei *tàal* nicht.

Der Situationskern wird hier durch ein ungerichtetes Bewegungsverb repräsentiert, das kein lokales Komplement nimmt. Um die Orientierung der Bewegung auf ein Bezugsobjekt auszudrücken, wird ein weiteres Verb, eben ein grammatikalisches Verb der lokalen Orientierung, zu Hilfe genommen, das gerade ein Komplement der gewünschten Art nimmt. Solche Verben erfüllen also teilweise die Funktion deutscher direktonaler Präpositionen wie *nach*, *aus* sowie der Kasus Akkusativ und Dativ.

Wir hatten bereits anhand von B11.b gesehen, daß man für einen gegebenen Situationskern ein lokales Verhältnis zu einem Bezugsobjekt spezifizieren kann dadurch, daß man ein weiteres Verb einführt. Hierzu kann im Prinzip jedes semantisch geeignete Verb dienen. Es entsteht dann ein eigener Teilsatz, der mit der Konjunktion *ká* angeschlossen wird. Bei den grammatikalisierten Orientierungsverben ist das anders. Wenn sie zum Anschluß eines Bezugs-NSs eingesetzt werden, so werden sie, wie man in B12.f sieht, asyndetisch angeschlossen. Es bleibt zu untersuchen, ob man es hier mit Verbalisierung zu tun hat.⁷

Aus den in Tabelle 6 aufgeführten Bewegungsverben lassen sich durch Kausativierung (mittels eines *-s*-Suffixes) Transportverben ableiten. Das Paradigma ist in Tabelle 7 zu sehen. Auch diese können als Vollverben fungieren; B16 ist ein Beispiel dafür. Der serielle Gebrauch analog zu B12f bleibt zu untersuchen.

Tabelle 7. Inhärente lokale Orientierung yukatekischer Transportverben

Orientierung Region	allativ	ablativ	perlativ
unspezifisch	<i>bi-s</i> 'hinbringen'	<i>luk'-s</i> 'wegbringen' <i>tàa-s</i> 'herbringen'	<i>máan-s</i> 'transportieren'
Inneres	<i>òok-s</i> 'hineintun'	<i>hóok'-s</i> 'herausholen'	

4.3.2. Attribution

Eine zweite Konsequenz der Tatsache, daß Adverbialien einschließlich Präpositionalsyntagmen lokale Verhältnisse nicht ausdrücken, zeigt sich in der Attribution. Im Deutschen können lokale Adverbialien als Attribut verwendet werden, wie in B14.

- B14. a. *die Schale auf dem Tisch*
 b. *der Weg in die Stadt*
 c. *die Leute aus Yukatan*

Dergleichen ist im Yukatekischen ausgeschlossen. Da das lokale Verhältnis durch Verben ausgedrückt wird, müssen zur Wiedergabe von Vorstellungen wie denen in B14 Relativsätze gebildet werden. B15 zeigt die yukatekischen Gegenstücke zu B14.

- B15. a. *le lùuch yàan t-eh / y-òok'ol le mèesah-o'*
 YUK DEF Schale EXIST [LOK-DEF 0-Oberseite DEF Tisch]-D2
 'die Schale, die auf dem Tisch ist'

⁷ Die Situation im Thai ist insgesamt der yukatekischen nicht unähnlich. Gemäß KÖLVER 1984 spielt der Einsatz serieller Verbkonstruktionen zum Anschluß weiterer, insbesondere auch lokaler Partizipanten dort eine erhebliche Rolle.

- b. *le beh k-u bin kàah-o'*
 DEF Weg IMPF-SBJ.3 geh [Stadt]-D2
 'der Weg, der in die Stadt geht'
- c. *le máak-o'b k-u tàal-o'b Yúukatàan-o*
 DEF Person-PL IMPF-SBJ.3 komm-ABS.3.PL [Yukatan-D2]
 'die Leute, die aus Yukatan kommen'

Jede der beiden hier besprochenen grammatischen Konsequenzen der zentralen Kodierung lokaler Verhältnisse steigert natürlich die Prominenz des Verbs in der Sprache.

4.4. Interferenz mit dem Spanischen

Am Schluß dieses Abschnitts wollen wir kurz zu den Präpositionsfehlern zurückkehren, die wir eingangs im Spanischen von Yukatekischsprechern beobachtet haben. Um deren Quelle zu identifizieren, brauchen wir lediglich die eingangs gegebenen Beispiele mit ihren yukatekischen Übersetzungen zu vergleichen. B10.a entspricht B1.a; B6.b entspricht B1.b; B7.b entspricht B1.c; und schließlich entspricht B16. B1.d.

- B16. *t-in ho's-ah le keh y-óok'ol beh-o'*
 YUK PRÄT-SBJ.1.SG herausnehm-TR.PERF DEF Reh [0-Oberseite Weg-D2]
 'Ich holte das Reh vom Weg herunter.'

Wie man sieht, kommen die fehlerhaften spanischen Präpositionen in allen Fällen durch Interferenz mit dem Yukatekischen zustande. Die Sprecher haben nicht gelernt, daß das lokale Verhältnis einer lokalen Situation im Spanischen nicht, wie im Yukatekischen, hinreichend durch das Verb ausgedrückt, sondern in gewissen Fällen durch die Präposition kodiert wird.

5. Ausblick

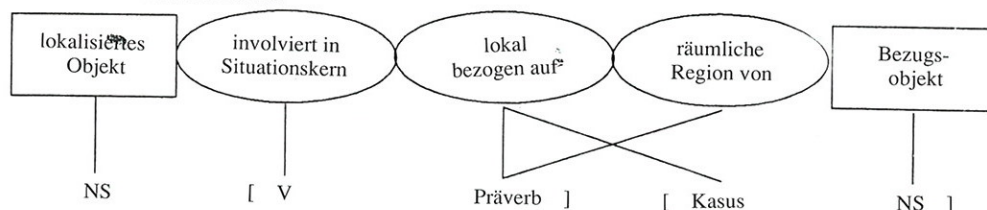
5.1. Empirische Ausweitung

Ein begrifflicher Rahmen wie der durch F1 veranschaulichte ergibt sich natürlich nicht rein induktiv. Dennoch ist seine Struktur auch eine empirische Frage. Wenn man mehr Sprachen in die Untersuchung einbezieht, wird man noch mehr Möglichkeiten der strukturellen Umsetzung und Zusammenlegung der begrifflichen Komponenten auffinden. Zum Beispiel könnte man aus theoretischen Gründen zu der Annahme neigen, daß die räumliche Region, wenn sie denn mit irgend etwas im Ausdruck zusammengefaßt wird, notwendigerweise eine Ausdruckseinheit mit dem NS bildet, das das Bezugsobjekt symbolisiert, da sie ja von diesem eine räumliche Region ist. Das bestätigt sich aber in den Sprachen durchaus nicht. Gar nicht wenige Sprachen verfahren hier wie das Lateinische. Dies verfügt über eine Strategie – die allerdings nicht seine einzige und weitgehend auf die poetische Sprache beschränkt ist –, die in B17 illustriert ist.

- | | | | |
|------|----------------------------|----|--------------------------------------|
| B17. | Caesar milites | a. | <i>castris</i> (dat.) <i>induxit</i> |
| LAT | 'Cäsar führte die Soldaten | | 'ins Lager' |
| | | b. | <i>castris</i> (abl.) <i>eduxit</i> |
| | | | 'aus dem Lager' |
| | | c. | <i>colle</i> (abl.) <i>deduxit</i> |
| | | | 'von dem Hügel herunter' |
| | | d. | <i>flumen</i> (acc.) <i>traduxit</i> |
| | | | 'über den Fluß' |

Dieses Verfahren drückt Ruhe vs. Bewegung in dem Verb aus, das den Situationskern repräsentiert. Die räumliche Region wird durch ein Präverb an eben diesem Verb ausgedrückt (vgl. LEHMANN 1983). Die lokale Orientierung wird z. T. durch das Präverb, z. T. durch das Kasussuffix des Bezugs-NSs (Dativ oder Akkusativ für allative, Akkusativ für perlative, Ablativ für ablative Orientierung) ausgedrückt. Das Verfahren ist also ähnlich diskontinuierlich wie das deutsche. Besonders auffällig aber und im gegenwärtigen Zusammenhang relevant ist, daß Orientierung und Region, bezogen auf F1, teilweise über Kreuz kodiert werden, wie F5 veranschaulicht.

F5. Lokalisation im Latein



Die gesuchte Theorie der Lokalisation muß auch für solche Strukturen noch eine Motivation finden. Die Lösung dürfte in folgender Richtung zu suchen sein: Wenn eine Bewegung die Grenze einer lokalen Region eines Bezugsobjekts überschreitet, so beeinflusst das ihre Telizität. Diese aber erscheint als Aktionsart und damit als verbale Kategorie. Insofern die Präverbien Aktionsart mitausdrücken, ist es natürlich, daß sie am Verb kodiert werden.⁸

5.2. Theoretische Konsequenzen

In der deskriptiven Linguistik ist ein Begriff des lokalen Relators tradiert, der an Sprachen gewonnen ist, die semantische Rollen einschließlich lokaler Verhältnisse überwiegend dezentral an den Partizipanten kodieren, und der wesentlich lokale Adpositionen und Kasus einschließt. Wir haben in § 3.2. gesehen, daß ein solcher Begriff bereits für Sprachen wie Deutsch, die in diesem funktionalen Bereich nicht so geradlinig kodieren, nicht zureicht. Schlechthin unangemessen ist der Begriff für Sprachen wie Yukatekisch, die semantische Rollen zentral am Situationskern kodieren. Die Präpositionen könnten hier nur dann lokale Relatoren genannt werden, wenn man das Erfordernis fallen ließe, daß ein lokaler Relator ein lokales Verhältnis ausdrücke. Andernfalls müßte man die grammatikalisierten Orientierungsverben des Yukatekischen lokale Relatoren nennen.

Ich hatte in § 1.3.2. einen methodischen Zugang zur Beschreibung des Systems von Ausdrucksmitteln im Bereich der lokalen Relationen eingeführt, der sich in einer zweidimensionalen Matrix mit den lokalen Verhältnissen als Spalten- und den räumlichen Regionen als Zeileneingängen niederschlägt. Die Matrix basiert auf der Erwartung, daß eine Sprache ein Subsystem, im klarsten Falle eben ein Paradigma lokaler Relatoren hat, die gerade diese beiden Funktionen in sich vereinigen. Wir haben anhand von Tabelle 5 und Tabelle 6 gesehen, daß eine Sprache die beiden Funktionen in völlig verschiedenen grammatischen Bereichen erfüllen kann.

Der lokale Relator ist einer von den zahlreichen linguistischen Begriffen, die insofern hybride sind, als sie funktionale („lokal“) und strukturelle („Relator“) begriffliche Anteile

⁸ S. MITHUN (1989) zur Motivation und zu den Auswirkungen der Kodierung einer gegebenen konzeptuellen Komponente, insbesondere auch lokaler Begriffe, in verschiedenen strukturellen Positionen.

vermengen. Auf der Ebene der Beschreibung der Einzelsprache sind solche Begriffe durchaus am Platze. In einem universalen funktionalen Rahmen haben sie nichts verloren. Hier muß man dagegen kognitive Größen wie die der lokalen Situation, ihrer Komponenten und des Beziehungsnetzes zwischen ihnen (vgl. F1) ansetzen. Das Modell muß im vorliegenden Falle dafür sorgen, daß ein räumliches Verhältnis die Verbindung zwischen einem Situationskern und einem Bezugsobjekt herstellt. Als Zwischenglied kann es in der Versprachlichung sowohl auf die eine als auch auf die andere Seite gezogen werden. Eine stärkere Strukturierung des Modells, die zweifellos wünschenswert ist, kann sich insofern erst ergeben, wenn die typologischen Verfahren seiner Umsetzung in weiteren Sprachen empirisch erforscht sind.

Abkürzungen

ABS	Absolutiv	LOK	Lokativ
D2	Deiktikum der 2. Person	NEG	Negator
D3	Deiktikum der 3. Person	PART	Partizip
DEF	definit	PERF	perfektiv
EXIST	existent	PL	Plural
IMPF	imperfektiv	POSS	possessiv
KONJ	Konjunktion	PRÄT	Präteritum
REL	Relator	STAT	stativ
SBJ	Subjekt	TR	transitiv
SG	Singular	1, 2, 3	1., 2., 3. Person
SPONT	spontaner Vorgang		

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