



# A Cognitive Analysis of Mixtepec-Mixtec Body Part Terms

Jack Bowers

## ► To cite this version:

Jack Bowers. A Cognitive Analysis of Mixtepec-Mixtec Body Part Terms. 2016 - II Coloquio Internacional sobre la Tipología de las lenguas Amerindias , Oct 2016, Lima, Peru. pp.1-31. hal-01745562v1

**HAL Id: hal-01745562**

**<https://inria.hal.science/hal-01745562v1>**

Submitted on 28 Mar 2018 (v1), last revised 1 Feb 2019 (v2)

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

# A Cognitive Analysis of Mixtepec-Mixtec Body Part Terms

**Jack Bowers**

Inria, France

Austrian Academy of Sciences

Austrian Center for Digital Humanities



II Coloquio Internacional sobre la Tipología de las lenguas Amerindias  
Lima, 27-29 de octubre de 2016

# Mixtepec-Mixtec (Sa'an Savi)

- Sa'an Savi '*rain language*'
- ISO 639-3 code: 'mix'
- Oto-Manguean, Mixtecan, Mixtec-Cuicatec, Mixtepec-Mixtec

*Source: Ethnologue*

- San Juan de Mixtepec Juxtlahuaca district (Oaxaca, MEX)

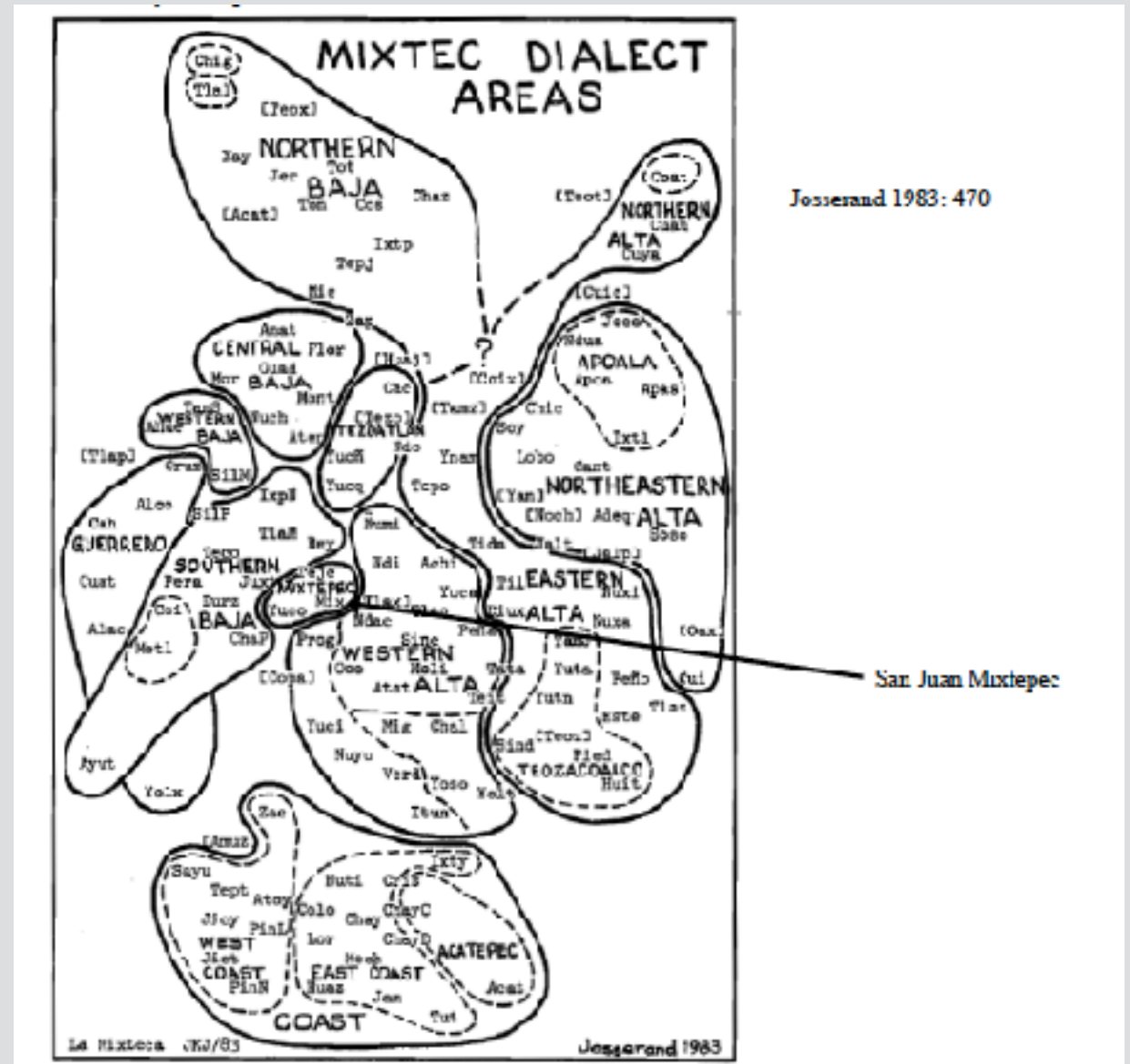
- Data mostly collected in sessions working with speakers from a small village called Yucanani (17.301559,-97.893763) in the SJM municipality

- Estimated (+-9,000-9,500 speakers)

*Source: Beckman and Nieves (2005)*

Has been studied by:

- Pike and Ibach (1978); Paster and Azcona (2004-2007); Beckman and Nieves-SIL (2005-current)



# Mixtepec-Mixtec (Sa'an Savi)

## San Juan de Mixtepec

(mix) Xnubiko

[ʃnũũ.βíkò]

*'bring down from the clouds'*

ʃnũũ      βíkò  
*'bring down from'*      *'cloud(s)'*

nũũ

*'face'*

# Body-Part Terms (BPT) in Mixtepec-Mixtec

- Polysemous BPT in MIX and other Mixtecan: *'head'*, *'face'*, *'back'*, *'foot'*, *'leg'*, *'back'*, *'hand/arm'*, *'stomach'*, and *'mouth'*
- Compounding prominent strategy
- Many or most of BPT extensions in MIX and other Mixtecan varieties express locative or spatial configurational functions
- also used to express other functions of varying levels of conceptual and grammatical abstraction
- Metaphor, Metonymy primary cognitive and lexical vehicles of extension
- different paths show different levels of grammaticalization
- *'foot'* [tsàʔá] and *'face'* [nũũ] are the most frequently extended BPT in MIX as is the case in related varieties of Mixtecan
- In addition to polysemous extensions, BPT are also observed incorporated into compounds with unknown possible prefixes, which show higher level of grammaticalization
- Inalienable in literal use
- No body part prefixes



# Preliminary Examples:

## (MIX compounds w/ Body Part Terms)

**xnuu**

[(/)+**face**]

*'bring down from'*

**xiní nta'a**

[head+hand]

*'finger'*

**vikó nuu**

[cloud+**face**]

*'fog'*

**sata nta'a**

[back+hand]

*'back of the hand'*

**nuu nta'a**

[face+hand]

*'palm'*

**ntuchi nuu**

[bean+**face**]

*'eyes'*

**nuu itu**

[**face**+field]

*'cornfield'*

# BPT in Mixtec Literature

- BPT express locative relations
- Spatial BPT described as nouns in N-N compound sequences (Brugman, 1983; Brugman and Macaulay, 1986)
- Figure-Ground system (Talmy, 1985) used to systematize spatial relations of “N-N” compound, with ‘figure’ representing predicated entity, ‘ground’ representing the relative entity (Brugman, 1983; Brugman and Macaulay, 1986)
- Semantic and Syntactic Changes:
  - Paths move from more concrete to more abstract (Hollenbach, 1995)
- Mechanisms of semantic change: Metaphor & Metonymy (Brugman, 1983; Brugman and Macaulay, 1986; Hollenbach, 1995)
- Mechanisms of syntactic change less clear than those of Semantic, though most important is *Syntactic Reanalysis* (Hollenbach, 1995)

# Key Theoretical Principles

## **Embodiment** (Johnson, 1987; Johnson & Lakoff, 1989)

- Embodied experience from physical and perceptual interacting with entities, relationships and processes in the external world gives rise to schematic knowledge (image-schemas);
- Need to accomodate new, possibly more nuanced, complex concepts into knowledge base grows with experience, to do so humans re-use/ anchor the novel information to salient/readily accessible properties and/ or relationships of pre-existing areas of ontological knowledge
- Due to their prominent role in human experience, these pre-existing terms and concepts used are often from '*Primitives*', or '*Primes*' such as body parts, environmental features, or prominent cultural entities
- Key strategies at work are Metaphor and Metonymy\* on the cognitive and lexical level



*“lexical items, and particularly spatial ones, are strongly polysemous, i.e., characterized by a multiple set of distinct, but systematically related senses”*

*(Lakoff, 1987; Langacker, 1987; Deane, 1988; Cuyckens, 1991; Geeraerts, 1993; Regier, 1996; Tuggy, 1999; from Zlatev, 2007)*

## Key Motivating Ontological, Schematic Knowledge

- Meronymy (i.e. *part-whole relations*)
- Physical Attributes (e.g. shape, size, color, etc.)
- Natural Partitions (polarized, or distinct configurations)
- General Physical Orientation (*front, back, side, top, bottom*)
- Function(s) (*associated with the body part or region*)

*(Johnson, 1987; Langacker, 1987 Johnson & Lakoff, 1989; Svorou, 1994;)*

*Note: these are not mutually exclusive and may co-occur*

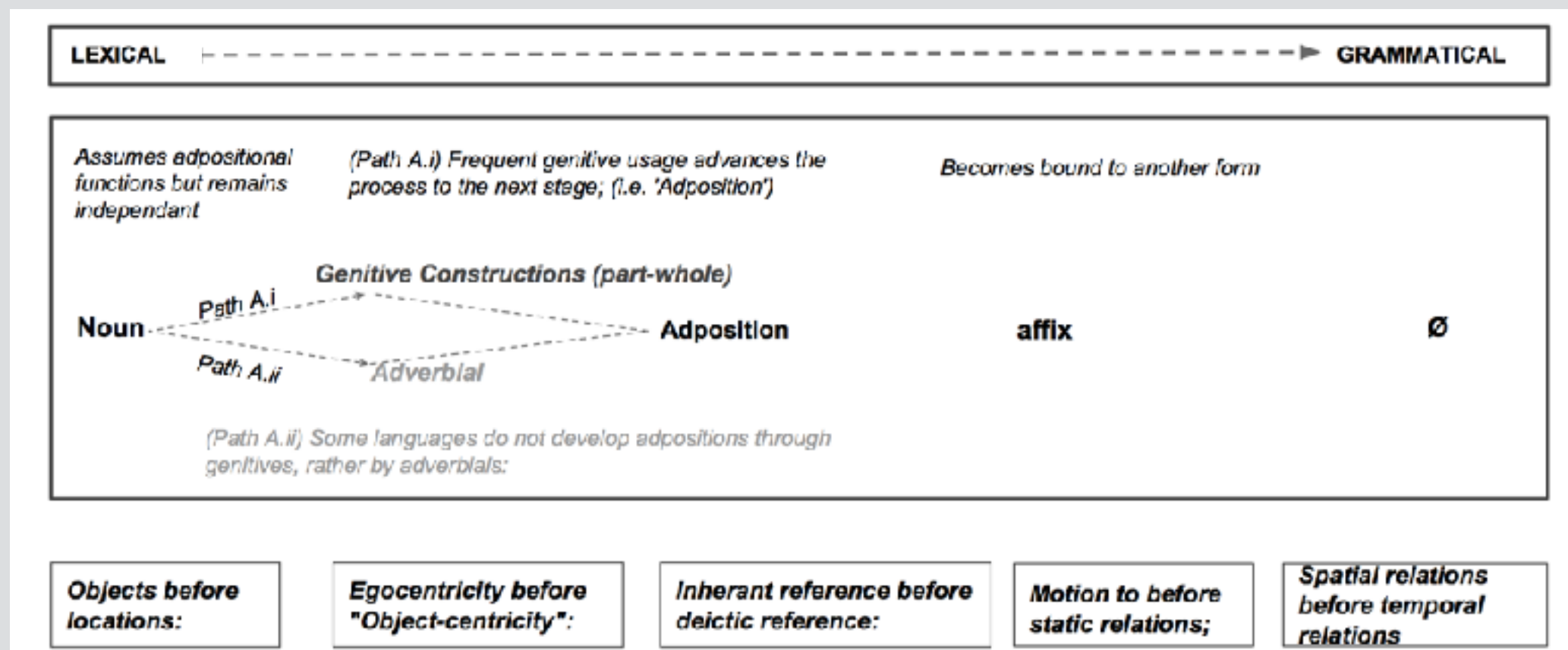
# Key Studies in BPT and the Language of Space

## Svorou (1994):

- Compared sources of 'spatial grams' BPT in 55 languages
- Small number of BPT give rise to small number of spatial grams
- Functionality of BP is also a motivation for extension
- Unidirectional diachrony between relational BP going to relational object part
- BPT make good candidates for grammaticalization because of their relational nature
- The gap between an '*open-*' and '*close-*' class form is the degree of grammaticalization

# Continuum of Grammaticalization (Svorou, 1994)

*“To qualify for grammatical status, a lexical item should have lost its ability to be modified by free and bound elements and its independence in appearing in different positions within the sentence, and assumed a fixed position.”*



## **‘Open-class’**

*Forms are semantically rich, more conceptually concrete*

## **‘Close-class’**

*Grammatical Forms:*

- have little to no independent semantic value;*
- are more conceptually abstract, potentially meaningless outside of context*

# Metaphor & Schematic Motivations

PHYSICAL SHAPE + RELATIVE LOCATION

**nta'a yutu**  
hand/arm tree  
*'tree branch'*  
*'rama'*

active attribute (source)= physical shape (HAND/ARM)

target= TREE BRANCH



# Metaphor & Schematic Motivations

## FUNCTION

**yu'u yucha**

mouth+river

*'river bank'*

*'orilla del río'*

active attribute (source)= function (MOUTH(BODY))

target= RIVER

## PHYSICAL SHAPE + FUNCTION

**xii mesa**

leg+table

*'table leg'*

*'pata de mesa'*

active attribute (source)= physical shape, function (LEG(ANIMAL))

target=TABLE

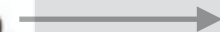
## PHYSICAL SHAPE + COLOR

**ntuchi**

bean

*'kidney'*

*'riñón'*



active attribute (source)= physical attributes (BEAN)

target=KIDNEY



# Spatial Semantics

A spatial expression must express a '*trajector*' (*TR*) whose profile is of relevance to the identification of a '*landmark*' (*LM*). (*Lakoff, 1987; Langacker, 1987; Regier, 1996*)  
(trajector-landmark system similar to notion 'Figure' (Talmy 1975, 1983, 2000; Levinson 1996, 2003))

Spatial expressions do not usually tend to specify the trajector's location with full precision; instead they most often place it within a certain region with respect to the landmark. This region is the '*Search Domain*'.

Hawkins (1984), Langacker (1987, 2002)

The trajector/landmark asymmetry is fundamental to relational predicates and underlies the universal subject/object distinction (Langacker 1987).

Zlatev (2007): elaboration of TR-LM system

- Trajector: (static | dynamic)
- Landmark: (person | object | *event*) (*based on Levinson, 1996*):
- Frame of Reference (For): (viewpoint centered | relative | intrinsic)
  - Region: (interior | exterior)
  - Path: (beginning | middle | end | zero)
  - Direction: (*in combination w/FoR where no LM present*)
  - Motion: (*multiple types possible*)

# Key Spatial, Configurational Schemas

Multiple studies of Mixtecan and other languages have shown BPT extensions to express the following spatial schematics:

TOP-BOTTOM (configuration of object): HEAD-FOOT

FRONT-BACK (configuration of object): FACE-BACK

ABOVE-BELOW (adjacent space to object): HEAD-FOOT

IN FRONT OF-IN BACK OF (adjacent space to object): FACE-BACK

(Brugman, 1983; Brugman and Macaulay, 1986; Svorou, 1994; Hollenbach, 1995)

# Basic Paths of BPT Polysemy in Spatial Language

\*Metaphor

\*Metonymy

*body part (INDIVIDUAL) > INDIVIDUAL*

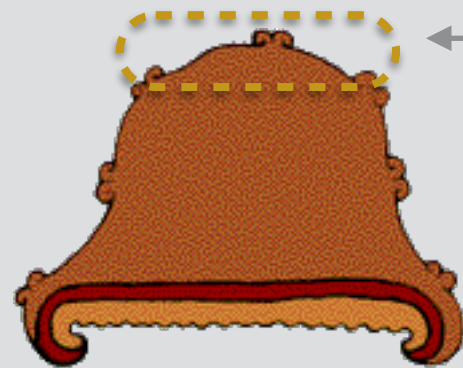
*subpart of (BODY) > subpart of (OBJECT)*

*subpart of body(INDIVIDUAL) > adjacent space to body(INDIVIDUAL)*

*subpart of physical form(OBJECT) > adjacent space to (OBJECT)*

# Metaphor & Schematic Motivations

TOP-BOTTOM (configuration of object): HEAD-FOOT



TR LM

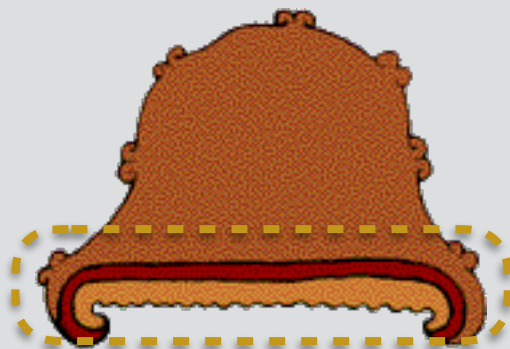
**xiní yku**  
[head+hill]

*'top of the hill'*

FoR:Relative

active attribute (source)= physical orientation, natural partitions (HEAD(BODY))

target= HILL



TR LM

**tsa'a yuku**  
[foot+hill]

*'bottom of the hill'*

active attribute (source)= physical orientation, natural partitions (FOOT(BODY))

target= HILL

# Metaphor & Schematic Motivations: Configurational Space

FRONT-BACK (configuration of object): FACE-BACK



TR LM

**nuu** ve'e

[face+house]

*'front of the house'*

*'frente de la casa'*

active attribute (source)= physical orientation, natural partitions, function (FACE(BODY))

target= HOUSE

TR LM

**sata** ve'e

[back+house]

*'back of the house'*

*'trasera de la casa'*

active attribute (source)= physical orientation, natural partitions (BACK(BODY))

target= HOUSE

>Note: this is not implying a schema based on verticality but on the frame of reference with regards to the general orientation of the source and target!!



# Metonymy, Projected Space and & Conceptual Overlap (possessor as Landmark)



TR (static) LM  
ntu'u saa-ka nu-u  
sit[3SG.INF] bird-TPC face\1SG  
*'the bird is sitting in front of me'*



TR (dynamic) LM  
ntava saa-ka nu-u  
CMPL\fly[3SG.INF] bird-TPC face\1SG  
*'the bird flew in front of me'*

>This case represents an intermediate case where the literal sense of the BPT is equally as valid semantically as the extended sense in which the body part occurs with the possessive

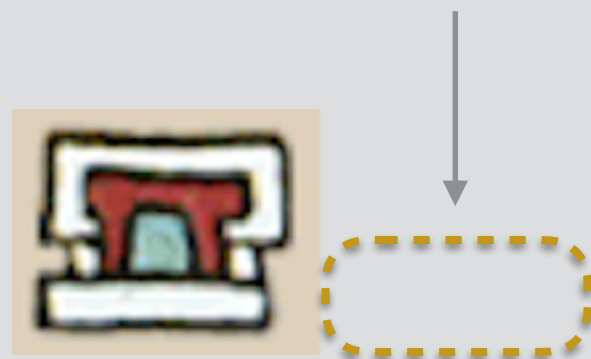
*possessor raising*

*possessive body part (INDIVIDUAL) > INDIVIDUAL*

---

Note: “- u” represents falling tone inflection as represented in Mixtec orthography

# Metaphor & Metonymy in Adjacent Space



TR

LM

ku-ntu'u-u **xii** ve'e

CMND-sit-2SG.INF **leg** house

*'sit next to/on the side of the house'*

**Process**=(I)Metaphor, (II)Metonymy

**Schematic Motivations** =Natural Partitions, General Orientation, Function

**Metaphor:**

SIDE REGION (BODY (LEG)) > SIDE REGION (OBJECT (HOUSE))

Source Domain (BODY) > Target Domain (HOUSE)

**Metonymy:**

Adjacent Space to FRONT REGION (Object (HOUSE))

# BPT in Motion

Backwards motion:

FoR: Relative, Origin, Addressee (no explicit TR or LM)

kaka **sata**

[CMND]walk[2SG.INF] **back**

*‘walk backwards’*

**Process=Metonymy**

**Schematic Motivations** = (Reverse) General Orientation (LOCALMOTION)

# *'face'* in Contrasting Spatial and Motion Constructions

Stationary location within landmark:

LM

TR<sub>(static)</sub>

**nuu** juku inkaa-yu

**face** forest COP.LOC-1SG

*'I am in the forest'*

Motion towards & subsequent  
interaction with goal:

TR<sub>(static)</sub>

LM

ntava chumi-ka **nuu** yutu

CMPL\fly owl-TPC **face** tree

*'the owl flew into the tree'*

Motion away from source:

TR<sub>(static)</sub>

LM

ntakoo chumi-ka **nuu** yutu

CMPL\arise owl-TPC **face** tree

*'the owl arose(flew) out of the tree'*

# Nuances

## Interaction-based differences

TR

LM

ntava tikuchi-ka ni-ntivi-a **nuu** kava  
CMPL\fly bat-TPC CMPL-enter-3S.INF **face** cave

*'the bat flew into the cave'*

*'the bat flew to the opening/mouth of the cave, and entered'*

TR

LM

ntava tikuchi-ka **yu'u** kava  
CMPL\fly bat-TPC **mouth** cave

*'the bat flew to the cave'*

*'the bat flew to the opening/mouth of the cave' (but didn't enter))*

> Key difference in the use of BPT is not spatial in nature but has to do with interaction with the goal



# Conceptual Overlap

Some instances the literal term overlaps with the extended:

TR<sub>(static)</sub> LM  
kantu'u likuaku **nuu nta'a** suluu-ka  
sit[3SG.INF] lizard **palm**[face+hand] boy-TPC  
*'the lizard is in the boys hand(palm)'*

TR<sub>(static)</sub> LM  
skaa tutu **sata** lurru  
[CMND]put[2SG.INF] wood **back** donkey  
*'put the wood on the donkey/on to the donkey's back'*

# Ommision of adpositional BPT

Absence of additional polysemous BPT:

TR LM

ku-nche'e ntuchinu-u

CMND-look[2SG.INF] **eyes**[=bean+face]\1s

*'look into my eyes'*

*This case represents an another intermediate case where is no polysemous relational extended body part term needed as the literal presence of the BPT 'eyes' provides sufficient information*

# Omission of BPT or adposition

Motion to goal:

TR

LM

ku-kitsa-i      **nuu** sachuun   ka uni  
FUT-arrive-GL.FOC-3SG.INF **face** work   3\_o'clock  
*'she will get to work at 3'*

Motion to goal: *home focus*

LM TR

kun-**nu'**-in   ka uni  
FUT-go.GL.FOC=HM-3SG.INF 3\_o'clock  
'go\_home'  
*'she will go home at 3'*

(Hypothesis):

If the root of the word “**nu'u**” ‘go home’ is in fact a reduced, coalesced and reanalysed version of “**nuu**” ‘face’; then the fact that there is no adposition needed in this second phrase as opposed to the first is significant and can likely be accounted schematically from the ‘general orientation’ schema that is inherent to the concept of FACE and is being analogically applied to the concept of HOME

# Non-Spatial Extensions: Possessive BPT > Pronouns & General Reference

*Pronoun-Indirect object: LISTENER*

ntakan-i na nu-u ña .....

CMPL\tell-3SG.INF MOOD **face\1SG** CONJ...

*‘someone told me that...’*

*Pronoun-Indirect object: RECIPIENT*

kun-kua’a chuun **nuu** Jack

FUT<sup>ii</sup>-give\1SG money **face** Jack

*‘I will give money to Jack’*

*Comparative Conjunction & Pronoun: THEME*

nani kue-ta’a-ka nu-u

be\_elder PL-sibling-TPC **face\1SG**

*‘my siblings are elder **than me**’*

**Process = Metonymy: (Part > Whole)**

**Schematic Motivations** = Meronymy, General Orientation (body, individual), Function=Identity  
& primary region of interaction with (individual)

*Since humans inherently associate the 'face' with the everyday person-person interactions, and attention, this BPT makes a fitting candidate to expand in expressing concepts that are related to the functional nature of the BPT (Svorou, 1994)*



# Non-Spatial Extensions: ‘foot’

*Conjunctive adverbials: BENEFACTIVE*

TR

LM

sachuun **tsa’a** Maria -ka  
work\1SG **foot** Maria-TPC

*“I’m working instead of Maria”*

TR

LM

ka’an-yu **tsa’a** Pedro  
speak-1SG **foot** Pedro

*‘I am speaking on behalf of Pedro’*

*Topical preposition: STIMULUS*

TR

LM

sko’a ncho’a tsini-yu na **tsa’a** kue- azteka -ka  
*unk* adv-deg.much know-1SG CONJ **foot** PL- aztecs -TPC

*‘I know a lot about the Aztecs’*

# BPT in Grammaticalized Compound

## Adpositions: Deviation of *'face'*

nchaa tsa'a  
(ndʒà)+**foot**  
*'on top (of container)'*



nchaa nuu  
(ndʒà)+**face**  
*'on bottom (of container)'*



chi ni **nuu**  
[(tʃí)+(ní)+**face**]  
*'south'*

Static configurational position:

chikuchi inkaa xin-u ra chin**nuu** inkaa tsa'-u  
above COP.LOC head-2SG.INF CONJ below COP.LOC foot-2SG.INF  
*'your head is above your feet'*  
*'your head is above, your feet are below'*

# Conclusions

- Examples in which there is an equally valid interpretation of the BPT as an extended sense and/or a literal sense show semantic and pragmatic licence for the extensions within the language
- BPT may have multiple possible schematic sources of lexical extension
- A single BPT may have multiple separate yet concurrent paths of extension *as per Svorou (1994)*
- Evidence from MIX in which an actual body part is involved BPT shows that the semantic profiles of the lexical content of an utterance can supercede what would be otherwise regarded as ‘grammatical structure’
- Grammaticalized compounded adpositions merit more investigation

# Tatsavi kueni!

## Thank you!

Special thanks also to my se'e savi for sharing so much of their time and language with me!

- Tisu'ma X Salazar
- Geremaia Salazar

[iljackb@gmail.com](mailto:iljackb@gmail.com)



*Note: The examples in this presentation are transcribed using a combination of IGT with the working Mixtec orthography as being developed by SIL Mexico with the exception of the spelling of 'face' **nuu** in non-literal senses, which is, now as of recent updates, spelled "**nu**".*