Abstract

Verbs of wearing show unusual linking properties in two languages of Oaxaca: San Dionisio Ocotepec Zapotec and Copala Triqui. Several distinct lexical types must be recognized, and their linking to grammatical relation is not predictable on general principles.

1. Two Oaxacan language documentation projects

Oaxaca is a state in southern Mexico with a rich variety of indigenous languages. I and my students at University at Albany have been engaged in language documentation projects on two of these languages since about since about 1998.

The two languages are San Dionisio Ocotepec Zapotec and Copala Triqui. San Dionisio Ocotepec Zapotec is a Zapotecan language spoken in Oaxaca, Mexico by about 2,000 people.[1] It is spoken in the town of San Dionicio Ocotepec, which is 15-20 miles south of Tlacolula and 10-15 miles southwest of Mitla in the Central Valley of Oaxaca.

Copala Triqui is a Mixtecan language, spoken in the mountains of western Oaxaca, Mexico.[2] There about 30,000 speakers in Oaxaca, Mexico (and in other parts of Mexico and the United States).

Zapotecan and Mixtecan languages are part of the larger Otomanguean stock, but Proto-Otomanguean has a time-depth of 4000-7000 years (Kaufman and Justeson 2009). Zapotec and Triqui languages are thus not very closely related to each other. They are also spoken in non-adjacent parts of Oaxaca, so similarities are probably due to influences of the language area, rather than direct contact or borrowing.[3]

[†]I thank the audience at HPSG 2014 for helpful comments and suggestion. I also thank speakers of San Dionisio Ocotepec (Luisa Martinez and Pedro Morales) and Copala Triqui (Román Vidal-López, Monica deJesus Ramírez, and others) for their patience and help in understanding their languages.

[1]San Dionicio Ocotepec Zapotec (ISO 639-3 code: ztu) is written in a practical orthography, which is adapted from the practical orthographies for other Zapotec languages spoken in the Valley of Oaxaca. In this orthography, <x> = /ʃ/, <zh> = /ʒ/, <dx> = /dʒ/, <ch> = /tʃ /, and <qu> = /k/ before front vowels, <c> = /k/ elsewhere. <y> represents IPA /j/. Doubled vowels are long. SDZ is a language with four contrastive phonation types: breathy <Vh>, creaky <V'V>, checked <V'>, and plain <V>. High tone is marked with an acute accent, low with a grave.

2. Basic syntactic properties

Both of these languages are head initial, with Verb Subject Object order and prepositions.

(1) [ztu]
Ù-cà' *Juáàny* *bgùù* *lòò* *dù'ù*
com-put Juan knot to rope

'Juan tied the rope'

(2) [trc]
A'nií *Mariá* *chraa* *rá* *yoó* *a.*
put Maria tortilla in straw:container decl

'Maria puts the tortilla in the tenate (straw container).'

Both have the possessum before the possessor and both show a distinction between inalienable (3, 5) and alienable (4, 6) possession.

(3) [ztu]
lòò *Juààny*
face Juan

'Juan's face'

(4) [ztu]
x-pè'cw *Juààny*
poss-dog Juan

'Juan's dog'

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[2]The orthography for Copala Triqui (ISO 639-3 code: trc) used in this paper is based on the practical orthography developed by Barbara and Bruce Hollenbach of the Summer Institute of Linguistics for their translation of the New Testament. I follow their usage in the representation of the consonants, including the following conventions: <x> = [ʃ], <xr> = [ʂ] (a retroflex alveopalatal sibilant), <ch> = [tʃ], <chr> = [tʂ], <c> = [k] (before front vowels), <qu> = [k] before back vowels, [v] = [β] and <j> = [h]. <Vn> represents a nasalized vowel. Triqui has five level tones (1, 2, 3, 4, 5) and three contour tones (13, 31, 32), as discussed in Hollenbach (1984), but this paper shows only the tonal marking of the popular orthography, which is detailed enough to show the relevant morphological distinctions of the language

[3]One might compare them to languages in two different branches of Indo-European, such as German and Spanish.

(5) *rihaan xnii*
[trc] face child

'the child's face'

(6) *se cafeé xnii*
[trc] poss coffee child

'the child's coffee'

Unlike Zapotec, Copala Triqui has case marking. An accusative particle *man* is obligatory before pronominal objects and optional before other objects:

(7) *Que-ne'e Mariá (man) Juán.*
[trc] com-see Maria (acc) Juan.

'Maria saw Juan.'

(8) *Que-ne'e Mariá man so'.*
[trc] com-see Maria (acc) 3msg.

'Maria saw him.'

(9) **Que-ne'e Mariá so'.*
[trc] com-see Maria 3msg.

(Intended: 'Maria saw him.')

3. Verbs of wearing and linking theory

Both Zapotec and Triqui have complex sets of verbs that are used to describe 'wearing situations'. Different types of 'clothing/adornment' require different verbs:

(10) *Cáá lèènt lòò Màrìì.*
[ztu] wear glasses face Maria

'Maria is wearing glasses.'

(11) *Bè'cy Juààny pàntlòòn.*
[ztu] wear Juan pants

'Juan is wearing pants.'

Below I will demonstrate that in (10), *lèènt* 'glasses' is the subject of the sentences, while in (11), the wearer *Juààny* 'Juan' is the subject.

For San Dionisio Ocotepec Zapotec, there are five verbs of wearing.

Verb	**Subject**	**Object**	**Clothing/Adornment**
R-àjcw	wearer	clothing	shirts, dresses
Rr-cáá	clothing	poss'd body part	glasses, shoes, watches
R-áày	wearer	clothing	skirts, diapers
Rr-bè'cy	wearer	clothing	pants, underwear
N-ù'ú	clothing	poss'd body part	earrings, false teeth, wigs, stockings, belts, girdles, gloves, ribbons, hats

In order to discuss the two possible syntactic realizations of verbs in this group, I will introduce some terms to distinguish the types.

Zapotec verbs which make the wearer the subject of these verbs have a mapping like English. I will call these W-verbs (mnemonic for "wearer subject"). Verbs for wearing pants, underwear, skirts, shirts, diapers, and dresses show this mapping. The subcategorization for W-verbs is <wearer, clothing>. The body part is not explicit, but must be a large part of the trunk.

Zapotec verbs which make the clothing the subject have the reverse mapping from English. I will call these C-verbs (For "clothing subject"). Verbs for wearing items such as hats, shoes, belts, earrings, etc. show this mapping. The subcategorization for C-verbs is <clothing, <body part <wearer> >. Peripheral body parts use C-verbs, and this is also the case for clothing worn on the trunk that fails to cover all the trunk (belt, girdle).

The following table shows the five Zapotec verbs categorized by type.

Verb	**Type**	**Clothing/Adornment**
R-àjcw	W-verb	shirts, dresses
Rr-cáá	C-verb	glasses, shoes, watches
R-áày	W-verb	skirts, diapers

Verb	Type	Clothing/Adornment
Rr-bè'cy	W-verb	pants, underwear
N-ù'ú	C-verb	earrings, false teeth, wigs, etc.

3.1. The linking problem for Zapotec

Many/most syntactic theories assume that the linking of arguments to grammatical relations is predictable given the semantics or semantic roles. E.g. Lexical Mapping theory in LFG (Bresnan and Kanerva 1989) or Proto-role entailments (Dowty 1991).

However, in what way are the semantic roles for 'John' different in the sentences like the following?

- *'John is wearing pants'*
- *'John is wearing glasses'*

For verbs of wearing, neither argument necessarily displays the semantic properties that have most frequently been cited as diagnostic-- e.g. volition, causation, incremental themes, or movement.

Since these general approaches to linking do not offer clear insight into these verbs, it seems more promising to pursue approaches that use more carefully structured accounts of lexical semantics, such as Simpler Syntax (Culicover & Jackendoff 2005) or some work in HPSG (Davis 2001).

4. The syntax of wearing in San Dionisio Ocotepec Zapotec

4.1. Subject properties in Zapotec

What is the evidence that for some verbs of wearing, the wearer is subject, while for others the clothing is the subject? First, Zapotec is a strictly VSO language so simple word order is an excellent diagnostic. VOS is never grammatical in Zapotec:

(12) *Cáá lèènt lòò Màrìì.*
[ztu] wear glasses face Maria

'Maria is wearing glasses.'

(13) **Cáá lòò Màrìì lèènt.*
[ztu] wear face Maria glasses

(Intended: 'Maria is wearing glasses.')

Zapotec also shows subject raising with negative predicates like *íity* ‘not’ and *cáády* ‘still not’ (Broadwell 2012). Consider these C-verbs (clothing=subject):

(14) *Íity lèènt ní-càà lòò Màrìì.*
[ztu] not glasses neg-wear face Maria

'Maria didn't wear glasses.'

(15) *Cáády lèènt ní-càà lòò Màrìì.*
[ztu] still:not glasses wear face Maria

'Maria didn't wear glasses.'

Raising applies only to the subject; other objects of the verb cannot appear after negatives:

(16) **Íity lòò Màrìì ní-càà lèènt .*
[ztu] not face Maria neg-wear glasses

(Intended: 'Maria didn't wear glasses.')

W-verbs have a VSO order which shows that the wearer is the subject:

(17) *Bé'cy Juààny pàntlòòn*
[ztu] wear Juan pants

'Juan is wearing pants.'

The wearer subject of a W-verb may also undergo raising:

(18) *Cáády Juààny gwé'cy pàntlòòn.*
[ztu] still:not Juan pot:wear pants

'Juan is still not wearing pants.'

The subject of a W-verb passes an additional subject test: ability to be an equi target:

(19) *B-yè'là'z Juààny gwé'cy pàntlòòn*
[ztu] com-forget Juan pot:wear pants

'Juan forgot to wear pants.'

In contrast, C-verbs cannot undergo equi, since the subject of a matrix verb like 'forget' cannot be equal to the clothing which is the subject of its complement:[4]

(20) [ztu]
B-yè'là'z Juààny n-yù'ú xhùmbrèl ìicy
com-forget Juan neg-wear hat head

'Juan forgot to wear pants.'

(21) [ztu]
B-yè'là'z ìicy Juààny n-yù'ú xhùmbrèl
com-forget head Juan neg-wear hat

'Juan forgot to wear pants.'

4.2. Causation and wearing in Zapotec

Because ‘wear’ represents a stative event, we might expect its mapping to be less predictable. ‘Put (clothing) on [SELF]’ might be expected to contain CAUSE and an agent in the semantics. Yet even in this case, the agent is not necessarily the subject.

My consultant reports that both C-verbs and W-verbs have another possible reading -- ‘put (clothes) on [SELF]’. The mapping is identical for this reading.[5]

Consider the following examples:

(22) [ztu]
Ù-lè'cy Juààny pàntlòòn.
perf-wear Juan pants

'Juan wore pants.' OR 'Juan put his pants on.'

(23) [ztu]
Cwáá lèènt lòò Màrìì.
perf:wear glasses face Maria

[4]To express a roughly equivalent meaning, speakers have to switch the complement verb to something like 'pick up' or 'take' which has the wearer as subject.

[5]To get the 'put on' reading, it is necessary to shift the examples into an aspect, such as perfective, that is compatible with the eventive reading. 'Wear' readings typically have a verb in the stative aspect, which has either the prefix /n(i)-/ or is the bare stem of the verb.

'Maria wore glasses.' OR 'Maria put on her glasses.'

Thus even when the subject is agentive, as in (23), it is not the subject of a C-verb.

Although there is no morphology that differentiates the stative and eventive versions of these verbs, there are morphological causatives which refer to ‘putting (clothing) on (another person)’. Distinct valence patterns are seen for W-verbs and C-verbs.

The causative of a C-verb is a ditransitive:

(24) [ztu]
Ù-càà dòctòrr lèènt lòò Màrìì.
perf-put doctor glasses face Maria.

'The doctor put glasses on Maria.'

The causative of a transitive W-verb, however is still a transitive. The ‘wearer’ must undergo ‘possessor lowering’:

(25) [ztu]
B-cwè'cy Juààny x-pàntlòòn xì'ny=ní'.
perf-put Juan poss-pants child=3ref

'Juan put pants on his child.'

(26) [ztu]
Ù-gwááy Màrìì x-fààld xì'ny=ní'.
perf-put Maria p-skirt child=3ref

'Maria put a skirt on his child.'

In these examples, *xpàntlòòn xì'nyní'* 'his child's pants' and *xfààld xì'ny=ní'* 'his child's skirt' are NP constituents, as shown by standard constituency tests.

(27) [ztu]
[Túú x-pàntlòòn] b-cwè'cy Juààny.
who poss-pants perf-put Juan

'Who did Juan put pants on?' (Lit. 'Whose pants did Juan put?')

In the causative of C-verbs, the NP of clothing/adornment and the possessed body part do not form a constituent. This can be seen by the inability of these two elements to undergo pied-piping in wh-questions:[6]

(28) *[Túú lèènt lòò] ù-càà dòctòrr?
[ztu] Who glasses face perf-put doctor

(Intended 'Who did the doctor put glasses on?')

(29) *[Túú lòò lèènt] ù-càà dòctòrr?
[ztu] Who face glasses perf-put doctor

(Intended 'Who did the doctor put glasses on?')

The causative wearing verbs in Zapotec are shown in the following chart.[7]

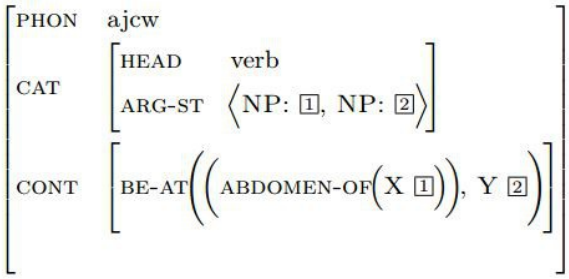
Verb	**Type**	**Subj**	**Obj**	**Second Obj**	**Clothing**
rr-gwàjcw	W-verb	Causer	Poss'd clothing	--	shirt,dress
rr-cwáá	C-verb	Causer	Clothing	Poss'd body part	glasses, etc
rr-gwáày	W-verb	Causer	Poss'd clothing	--	skirt, diaper
rr-cwè'cy	W-verb	Causer	Poss'd clothing	--	pants, underwear
r-gù'ú	C-verb	Causer	Clothing	Poss'd body part	earrings, etc.

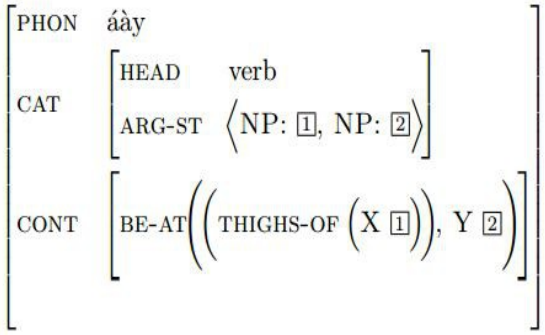
4.3. Tentative analysis of Zapotec wearing

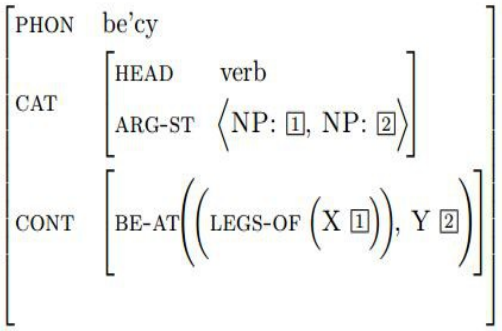
Tentative analyses of the three W-verbs are shown below:

[6]The word orders in pied-piping contexts are discussed in some detail in Broadwell (2001).

[7]The morphological causative is expressed in a number of distinct ways in Zapotec, but for these verbs by a /gw-/ or /g-/ prefix or a /-w-/ infix.



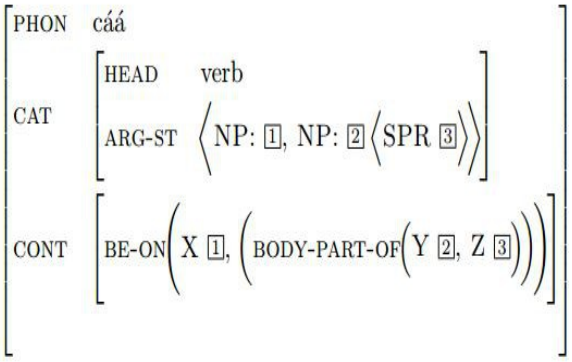


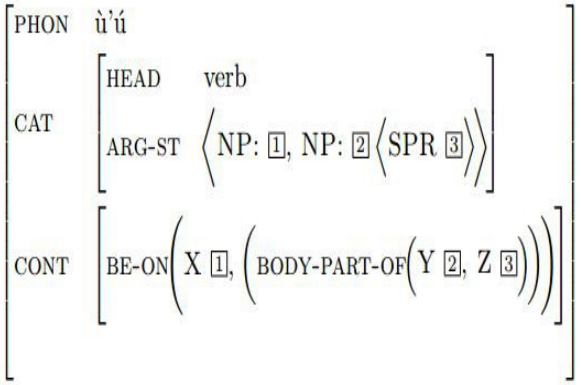


Verbs of this type involve an implied body part (abdomen, legs, thighs) which is not expressed as an argument. We can call these body parts central ; they serve as metonymies for the whole person.

BE-AT predicates are symmetrical, with Figure-Ground relations established by preferences like Person > Non-Person; More mobile > Less mobile. For these verbs, one argument qualifies as a Person, and is thus the Figure.[8]

In contrast, the C-verbs require expression of the body part, thus their ARG-ST shows three elements linked to the lexical semantics. I tentatively give them the following analyses:





For verbs where the body part must be explicit in the argument structure, the wearer is in an embedded structure in both CONTENT and ARG-ST. I have given the same structures for *cáá* and *ù'ú*, on the assumption that the subtle difference between them is probably a matter of selection.

[8] I list the Figure before the Ground in the lexical decomposition.

4.4. Uses of these verbs outside wearing contexts

The three W-verbs of Zapotec are specialized for wearing various items, and don't have other uses. In contrast, the C-verbs are specialized uses of locational verbs that are used for other items as well:

Rr-cáá is used to describe the location of high or hanging objects, e.g. fruit on a tree. *N-ù'ú* is used as a general verb of existence when no more specific verb (sit, stand, hang, …) is appropriate.

The use of these verbs in wearing situations shares the semantics of BE-AT with other uses of these verbs.

5. Verbs of wearing in Copala Triqui

5.1. Types of wearing verbs in Copala Triqui

Copala Triqui is like San Dionisio Ocotepec Zapotec in having multiple verbs of wearing, but shows an even more complex system, with three types of wearing verbs.

In addition to the C-verb and W-verb types, there is a third type, which I label B-verb, in which the subject must be a possessed body part. Consider the following examples:

(30) *'Nij ra'a Juán nuj guanté*
[trc] wear hand Juan glove

'Juan is wearing gloves.'

(31) *Nuu rihaan Juán scuraan.*
[trc] wear face Juan glass

'Juan is wearing gloves.'

The following table shows the four verbs used in wearing expressions in Copala Triqui:

Verb	**Type**	**Subj**	**Obj**	**Items**
'nij	B-verb	poss'd body part	clothing	shoes, gloves, sashes
nuu (1)	W-verb	wearer	clothing	shirt, huipil, pants, dress, underwear
nuu (2)	C-verb	clothing	poss'd body part	hat, mask

Verb	Type	Subj	Obj	Items
nuu (3)	B-verb	poss'd body part	clothing	glasses, ring, watch, hat
táá	C-verb	clothing	poss'd body part	mask, turban
nacutáj	C-verb	clothing	poss'd body part	diaper

Copala Triqui has only one W-verb (wearer =subject), but it is used for a wide variety of clothing.

(32) *Nuu Juán cotoó marę̲e.*
[trc] wear Juan shirt red

'Juan is wearing a red shirt.'

Nuu thus covers the same range as three different Zapotec verbs.

In contrast to Zapotec, C-verbs are rather marginal in the Copala Triqui system. The only examples are *táá* for something that sits on top of the head, but not in the usual 'hatlike' way. (Our speaker suggested a turban or cloth for this.) *Nacutáj* is used for something that encircles a person like a diaper.

5.2. Three uses of *nuu*

The verb *nuu* is remarkable in Copala Triqui, in that it shows three different subcategorizations, depending on the type of clothing and body part. Example (32) above shows its use as a W-verb. However, C-verb and B-verb patterns are also found:

(33) *Nuu navę̲ raą̲ Juán .*
[trc] wear hat head Juan

'Juan is wearing a hat.' (C-verb)

(34) *Nuu rihaan Juán scuraą̲n.*
[trc] wear face Juan glass

'Juan is wearing gloves.' (B-verb)

It is surprising that 'hat' appears with the verb *nuu* in both the C-verb and B-verb frames. Thus in addition to (33), it is also possible to say

(35) *Nuu raa Juán navẹ.*
[trc] wear head Juan hat

'Juan is wearing a hat.' (B-verb)

This is currently the *only* verb in our lexicon that shows this kind of subject/object variety, and I do not have a good explanation of this variability.

5.3. Textual examples

'Wear' must be translated in several different ways in Copala Triqui, depending on the clothing and body part. For this reason, textual examples translated from European languages often show interesting alternations in verb choice. Consider the following:

(36)... *nẹ nụụ so' yatzíj xcạạn , nẹ 'nịj*
nẹ nụụ so' yatzéj xcạạn nẹ 'nịj
and wear 3mSg clothes long and wear
catuụn so' merquẹ caxrạ' ...
catuụn so' marquẹ caxrạ'
waist 3mSg sash wide
'..and he was dressed in a robe reaching down to his feet and with a golden sash around his chest.' (Rev 1:13)

Because the verbs for wearing a robe and wearing a sash are of different types, it is necessary to coordinate the two clauses here, and it is not possible to have a coordinated NP object.

5.4. Variable treatment of arguments and figure-ground geometry

Copala Triqui verbs of wearing are sensitive to the geometry of wearing verbs, so the grammar reflects clothing/adornment worn in an unusual way. Consider the three different ways in which wearing a crown may be expressed in the texts:

(38) *Ga̱a ne̱ curiha̱nj Jesucristó xe' ,*
ga̱a ne̱ c- uriha̱nj Jesucristó lle'
then com leave, quit; go out Jesus Christ outside

ne̱ 'ni̱j ra̱a so' cachriin tanj , ne̱ nu̱u̱
ne̱ 'ni̱j ra̱a so' cachriin tanj ne̱ nu̱u̱
and wear head of 3mSg crown thorn and wear

so' yatzíj tintá sa̱' yo' a .
so' yatzéj tintá sa̱' yo' a
3mSg clothes purple, dark blue good 3n decl

'When Jesus came out wearing the crown of thorns and the purple robe...' (John 19:5)
Lit. 'And then Jesus went out and his head wore a crown of thorns and he wore those good purple clothes.' *B-verb*

(39) *ne̱ táá chi̱' cachriin ra̱a nij*
ne̱ táá chi̱' cachriin ra̱a nij
and be in, be on top ten crown head of pl

cúú ta̱j ra̱a xo' a .
cúú ta̱j ra̱a xo' a
bone, horn be in, be on top head of 3an decl

'…and it had ten crowns on the horns on its head.' (Rev 19:14)

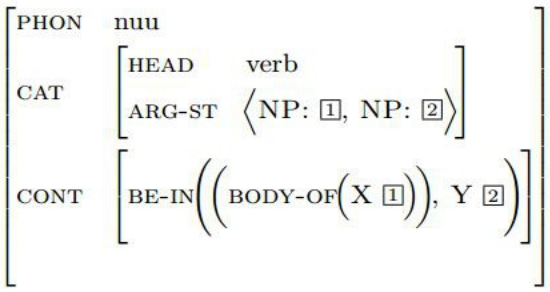
(40) *ne̱ nu̱u̱ ra̱a nij so' cachriin aga' oró míí a.*
and wear head:of 3pl crown gold decl

'and they wore golden crowns.' (Rev 4:4) (*B-verb*)

Notice that in these examples, the choice of the appropriate verb is determined by the appropriate contact relationship between the wearer and the clothing/adornment. *'nij* is appropriate in (38) because the crown is stuck into the skin. When the crowns are on the horns of a monster in (39), *táá* is the appropriate verb because the canonical contact relation between the crown and the skin does not hold. (I.e. the crown is above the head, not on it.) *Nuu* is the most normal verb for 'wear' with a crown in (40), but notice that it is a regular B-verb, in contrast to the (irregular) treatment of 'hat' seen in examples like (33) above where it is a C-verb.

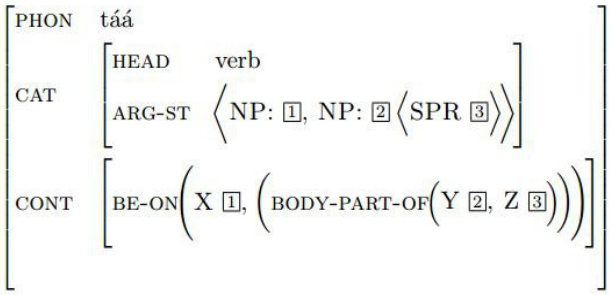
5.5. Analysis of the Triqui verbs

For W-verbs in Copala Triqui, I use a structure very similar to that for Zapotec:



This structure accounts for examples like (32) above. Triqui differs from Zapotec in having one general 'body-of' element, while Zapotec differentiates upper, lower, and middle body areas.

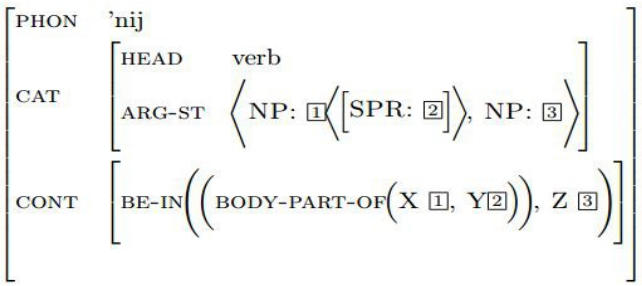
C-verbs also have an analysis similar to that for Zapotec. Consider the structure for *táá* below.



This structure accounts for examples like the following:

(41) *Táá tzej raa Juán.*
be:on cloth head Juan
'Juan is wearing a turban.'
Lit. 'A cloth is on top of Juan's head.'

Finally, B-verbs have a structure like the following:



B- and C-Predicates like *táá* 'be on top of', *'nij* 'be (tightly) inside, *nacutáj* 'encircle' are inherently asymmetrical. To account for the multiple uses of nuu, the least costly account probably posits BE-IN). *Nuu* as a B-verb shows is the most regular use (since the body part is inside the clothing). *Nuu* as a W-verb is probably a metonymy, with an implied element 'body'. I do not have a good account of *nuu* used as a C-verb with 'hat', and have to treat this as irregular.

Unlike Zapotec, Copala Triqui does not seem to have any verbs that are specialized for wearing clothing. All the verbs discussed here function as general locatives for other situations:

- *táá* 'be on top of'
- *nuu* 'be inside'
- '*nij* 'be stuck inside; be inside with tight contact'
- *nacutáj* 'be wrapped in'

6. Conclusions

The kinds of considerations that seem to be relevant to the mapping of Zapotec and Copala Triqui verbs of wearing include the following:

- Which parts of the body may stand as metonomies for the whole

- The geometry (IN, ON, AT) of the relationship between clothing and the body of the wearer
- The relative prominance of arguments for Figure/Ground assignment
- Lexical exceptions (hats in Copala Triqui; shoes in Zapotec)

Few syntactic theories are constructed in such a way as to allow reference to all the relevant factors. Theories based on a small number of semantic roles are particularly poor at accommodating these facts.

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