

## **SEMANTIC AND SYNTACTIC EXTENSIONS OF COPALA TRIQUE BODY-PART NOUNS<sup>1</sup>**

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### **0. Introduction**

In Copala Trique, body-part nouns are extended to fill a wide variety of lexical and syntactic functions, both within the noun category and outside it. Within the noun category they are used to express parts of inanimate physical objects and also parts of abstract concepts. Body-part nouns are also commonly extended to prepositions; these body-part prepositions express not only spatial relations, but temporal, logical, and grammatical relations as well. Words that are derived from body-part nouns via a tone change function as adjectives and adverbs, and phrasal compounds that include body-part nouns function as conjunctions or as sentential adverbs that provide discourse cohesion.

In this study I describe various extended uses of Copala Trique body-part nouns and suggest possible paths by which these uses may have developed. I believe that these paths consist of a series of semantic and/or syntactic shifts, each one plausible in itself, even though the most remote extensions may have little in common with the body part the word originally referred to.

The shifts that these body-part nouns have undergone include both intra- and intercategory shifts. The intracategory shifts fall within the scope of metaphor because they involve the use of a term that belongs to one semantic field for something in a different field. These metaphors are, however, nearly all established in the lexicon and must be listed in any Trique dictionary as separate sense discriminations of the words.

Intercategory (syntactic) shifts are accomplished by quite different mechanisms, though these often interact with metaphor. The two mechanisms I have observed in Copala Trique category shifts are derivation and what I call (for want of a better term) the optical-illusion mechanism. In derivation a category shift is accomplished by introducing some overt change in the shape of the word. In the optical-illusion mechanism, on the other hand, there is no overt difference in the form of the word that

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marks the shift to a different category. It takes place via sentences that can be construed in two ways, though not in both ways at the same time; hence the name optical-illusion mechanism.

Because the extensions catalogued in this paper are in most cases the only way to express certain concepts in Trique, it is perhaps the case that they arose via catachresis, i.e., by the creation of a metaphor to fill a lexical gap. There are, however, certain problems with positing such a process when the gap occurs for basic relational notions rather than for some new artifact. This problem is discussed in section 6.

## 1. Body-Part Nouns

Most Copala Trique body-part nouns are inherently possessed, which means that they must be followed immediately by a noun phrase which expresses their possessor. In the following examples of common body-part nouns, the (a) part shows the noun alone, and the (b) part shows the noun together with a possessor.<sup>2</sup>

- (1) a *raʔa<sup>3</sup>!*  
hand-of
- b *raʔa<sup>3</sup> chi<sup>3</sup>*  
hand-of man  
'the man's hand'
- (2) a *rian<sup>32</sup>*  
face-of, eye(s)-of
- b *rian<sup>32</sup> wi<sup>1</sup>h tanu<sup>3</sup>*  
face-of two soldier  
'two soldiers' faces' or 'two soldiers' eyes'
- (3) a *tuʔwa<sup>3</sup>!*  
mouth-of
- b *tuʔwa<sup>3</sup>! zo<sup>3</sup>h*  
mouth-of you-plural  
'your mouths'

Even though I have recorded well over fifty body-part terms, I have found semantic extensions for fewer than half of them. The terms that are extended typically have three characteristics. First, they are short, monomorphemic words, rather than compounds or phrasal compounds. Second, they refer to an external part of the body.

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<sup>2</sup> Copala Trique has the following consonants: fortis stops *p t k*, lenis stops *b d g*, affricates *ts ch chr*, fortis sibilants *s sh shr*, lenis sibilants *z zh r*, nasals *m n*, lateral *l*, glides *y w*, and laryngeals *? h !*. (! is an abstract laryngeal that imposes shortness and ballistic features on the preceding vowel.) Copala Trique also has five vowels, *a e i o u*, nasalization, written as *n* following the last vowel of the word, and five levels of tone, written with numbers from 1 (low) to 5 (high). Word-final laryngeals are written as superscripts following tone numbers because they are considered to belong on the tonal tier, rather than the segmental tier. For further details about this analysis of tone and laryngeals see Hollenbach (1984a) and (1985).

And third, they refer to a body part that is cognitively salient; ‘eye’, for example, enters into more extensions than ‘cheek’ (see Brown and Witkowski 1983). Table One lists inherently possessed body-part nouns that frequently enter into extensions.

Table One. Body-part nouns that are often extended.

<i>chru</i> <sup>3h</sup>	‘nape of’
<i>katun</i> <sup>31</sup>	‘waist of’
<i>man</i> <sup>3!</sup>	‘body of’ (obsolescent)
<i>niman</i> <sup>4!</sup>	‘heart of’ (Spanish <i>ánima</i> ‘soul’)
<i>ra</i> <sup>31</sup>	‘head of’
<i>ra</i> <sup>4!</sup>	‘heart of’ (obsolescent)
<i>raʔa</i> <sup>3!</sup>	‘hand of’
<i>rian</i> <sup>32</sup>	‘face of’, ‘eye of’
<i>rike</i> <sup>3!</sup>	‘stomach of’
<i>sheʔe</i> <sup>4!</sup>	‘feet of’ (obsolescent)
<i>shia</i> <sup>4!</sup>	‘neck of’
<i>shiʔnu</i> <sup>5</sup>	‘side of’
<i>shko</i> <sup>5</sup>	‘shoulder of’, ‘wing of’
<i>shra</i> <sup>5</sup>	‘back of’
<i>shre</i> <sup>5</sup>	‘ear of’
<i>tako</i> <sup>5</sup>	‘foot of’
<i>takun</i> <sup>5</sup>	‘nose of’
<i>ta</i> <sup>3nu</sup> <sup>2</sup>	‘interior of’
<i>tuʔwa</i> <sup>3!</sup>	‘mouth of’

## 2. Extensions Within the Noun Category

The extensions of body-part nouns to parts of inanimate objects include the most obvious and least debatable metaphorical changes. Some of them, however, appear so self-evident to a speaker of Spanish or English that they do not seem metaphorical at all, at least, not until they are compared with some extensions that are different from either of these languages. Two extensions that are very much like both Spanish and English are:

- (4) *tako<sup>5</sup> ki<sup>32</sup>h*  
foot-of mountain  
'the foot of the mountain'
- (5) *takun<sup>5</sup> kuchri<sup>3?</sup>*  
nose-of vehicle  
'the nose of the airplane'

An extension that is found in Spanish, but not English, is:

- (6) *shre<sup>5</sup> shru<sup>3</sup>h*  
ear-of clay-pot  
'the handle of the clay pot'

An extension that is not found in either Spanish or English, but that seems quite obvious, is:

- (7) *rike<sup>3!</sup> we<sup>3?</sup>*  
stomach-of house  
'the inside of the house'

Some extensions that are not found in either Spanish or English, and that do not seem immediately obvious, are:

- (8) *takun<sup>5</sup> mi<sup>3</sup>shte<sup>4!</sup>*  
nose-of machete  
'the handle of the machete'
- (9) *shra<sup>5</sup> we<sup>3?</sup>*  
back-of house  
'the roof of the house'
- (10) *shia<sup>4!</sup> we<sup>3?</sup>*  
neck-of house  
'the space under the eaves of the house'
- (11) *tu<sup>?</sup>wa<sup>3!</sup> chra<sup>5</sup>*  
mouth-of river  
'the bank of the river'

In general, the natural extensions are those in which the general form of a human or animal body can be projected onto the inanimate object quite unambiguously, while the less natural cases are those in which such projection is difficult. Thus, the analogy between a human head and a clay pot is extremely compelling, and so the use of the term *shre*<sup>5</sup> ‘ear of’ for the two handles, which are located near where the ears are on a head and which are also shaped very much like ears, is instantly comprehensible. It is considerably more difficult to project a human or animal shape onto a machete or river, however, and so the use of *takun*<sup>5</sup> ‘nose of’ for machete handle and *tu?wa*<sup>3!</sup> ‘mouth of’ for riverbank seem far more arbitrary. (The use of mouth in English for the place where a river flows into the ocean is, of course, equally arbitrary.) Examples (9) and (10) are of interest because the Triques apparently use two conflicting projections for houses: an animal analogy seems to underlie the use of *shra*<sup>5</sup> ‘back of’ for roof, but a human (upright) analogy seems to underlie the use of *shia*<sup>4!</sup> ‘neck of’ for the space under the eaves.

Table Two lists extensions of inherently possessed body-part nouns to parts of concrete inanimate objects; all involve projecting the shape of a human or animal body onto these objects. This table is undoubtedly incomplete, partly because I have missed some of the extensions currently in use and partly because this process is still somewhat productive, for example, in naming the parts of newly introduced material objects. Furthermore, the contexts listed in the table are meant to be suggestive of the range of uses, not rigid limitations. (For a description of some similar extensions in Tarascan, another language spoken in Mesoamerica, see Friedrich 1969.)

Table Two. Body-part nouns that are extended to parts of objects.

<b>Noun</b>	<b>Gloss</b>	<b>Extended Meanings</b>
<i>katur</i> <sup>3!</sup>	‘waist of’	‘trunk of’ (tree) ‘stem of’ (plant) ‘middle of’ (bundle)
<i>man</i> <sup>3!</sup>	‘body of’	‘whole of’
<i>niman</i> <sup>4!</sup>	‘heart of’	‘center of’
<i>ra</i> <sup>3!</sup>	‘head of’	‘peak of’ (roof, mountain) ‘tip of’ (finger, toe) ‘point of’ (pencil) ‘front end of’
<i>ra</i> <sup>4!</sup>	‘heart of’	‘inside of’ (hollow object)
<i>ra?a</i> <sup>3!</sup>	‘hand of’	‘branch of’ (tree, plant) ‘leaf of’ (tree, plant) ‘petal of’ (flower) ‘lobe of’ ‘sleeve of’ ‘handle of’ (plow, bucket, kettle)

<i>rian</i> <sup>32</sup>	‘face of’, ‘eye of’	‘surface of’ (table, watch) ‘top side of’ (leaf, book) ‘front side of’ (shirt) ‘sharp edge of’ (knife)
<i>rike</i> <sup>3!</sup>	‘stomach of’	‘inside of’ (hollow or concave object) ‘space under’ (table)
<i>she?e</i> <sup>4!</sup>	‘feet of’	‘bottom of’ (pot) ‘base of’ (tree)
<i>shia</i> <sup>4!</sup>	‘neck of’	‘space under eaves of’ (house) ‘place where band goes on’ (hat) ‘wrist of’ (hand) ‘ankle of’ (foot)
<i>shi?nu</i> <sup>5</sup>	‘side of’	‘side of’
<i>shko</i> <sup>5</sup>	‘shoulder of’	‘sleeve of’ ‘wing of’ ‘eaves of’ (house) ‘crosspiece of’ (cross) ‘side points of’ (diamond)
<i>shra</i> <sup>5</sup>	‘back of’	‘roof of’ (house) ‘cover of’ (book) ‘lid of’ (eye) ‘outside surface of’ ‘sole of’ (shoe)
<i>shre</i> <sup>5</sup>	‘ear of’	‘handle of’ (clay pot) ‘lip of’ (pitcher) ‘knob of’ (radio, watch) ‘cap of’ (mushroom)
<i>tako</i> <sup>5</sup>	‘foot of’	‘bottom of’ ‘foundation of’ (house) ‘roots of’ (tree, hair, tooth)
<i>takun</i> <sup>5</sup>	‘nose of’	‘hill of’ (corn) ‘stump of’ (tree) ‘handle of’ (machete) ‘higher end of’ (metate)
<i>ta<sup>3</sup>nu<sup>2</sup></i>	‘interior of’	‘middle of’
<i>tu?wa</i> <sup>3!</sup>	‘mouth of’	‘opening of’ (bottle, clay pot) ‘edge of’ ‘bank of’ (river)

Some inconsistencies are found in the extensions in Table Two. In particular, as noted for ‘roof’ and ‘eaves’ above, there seem to be conflicting human and animal analogies that pervade the list. Human comparisons include the use of ‘head’ for peak, ‘face’ for front side, and ‘shoulder’ for the crosspiece of a cross; and animal comparisons include the use of ‘head’ for the front end, ‘stomach’ for the space under something, and ‘back’ for roof. A second inconsistency is found in the terms for parts of a tree. They include its ‘waist’ (trunk), ‘feet’ (roots), ‘hands’ (branches and leaves), and ‘nose’ (stump). For a living tree the comparison is clearly with a human body, but for a dead tree the way a stump projects from the ground is apparently being compared to the way the nose projects from the face.

In addition to the extension of the word *shia*<sup>4!</sup> ‘neck of’ to mean a constricted part of an object, this word has undergone a further extension. It is used to refer to an object that is tied in the middle, such as a skein of yarn or a bundle of corn fodder. This extension appears to have developed via synecdoche (the use of a part for the whole), rather than via metaphor.

Another important kind of extension is the use of a body-part noun to refer to the space that projects out from an object. (This extension can perhaps be more appropriately described as metonymy—the use of a term for something associated with its referent—than as metaphor. I will not, however, give further attention to such a distinction in this article.) For example, ‘head’ can refer to the space directly above a person or mountain peak as well as to his head or the peak itself; and ‘face’ can refer to the space in front of an object as well as to its front surface. An interesting example of this kind of extension is found in the terms for heaven and hell, which probably date to the sixteenth century.

(12) *rian*<sup>32</sup> *tyo*<sup>3se</sup><sup>1!</sup>  
face-of God  
‘heaven’

(13) *rian*<sup>32</sup> *ya*<sup>2an</sup><sup>32!</sup>  
face-of fire  
‘hell’

In that *rian*<sup>32</sup> means ‘eye of’ as well as ‘face of’, these terms can perhaps be best understood by thinking of *rian*<sup>32</sup> as ‘presence of’, rather than ‘(area near) front part of’.

Body-part nouns are also sometimes extended to parts of abstract concepts. One set that is so used is: *tako*<sup>5</sup> ‘foot of’, which is used for ‘beginning of’; *ra*<sup>31</sup> ‘head of’, which is used for ‘end of’; and *ta*<sup>3nu</sup><sup>2</sup> ‘interior of’, which is used for ‘middle of’. All of these are used with units of time, as seen in the following examples.

(14) *tako*<sup>5</sup> *yo*<sup>3?</sup>  
foot-of year  
‘the beginning of the year’

(15) *ra*<sup>31</sup> *yawi*<sup>32</sup>  
head-of month  
‘the end of the month’

- (16) *ta<sup>3</sup>nu<sup>2</sup> dyo<sup>4</sup>! man<sup>32</sup>*  
 interior-of season heat  
 ‘the middle of the dry season’

This system seems to be based (indirectly) on a comparison with the human body via the notion of stacking things up: it is necessary to begin at the bottom and end at the top. In spite of the fact that the comparison is less obvious and direct than those described above—because temporal units are more abstract than inanimate objects—it seems clear that this is a further case of metaphor based on analogy.

### 3. Extensions to Prepositions

Because body-part nouns are inherently possessed and must be followed by a possessor, there is a structural parallelism between a noun phrase with a possessed noun as its head and a prepositional phrase. The body-part noun is like a preposition, and its possessor is like the object of the preposition. The fact that Trique does not mark case or syntactic function in any overt way, either for possessors or for objects of prepositions, makes this parallelism even closer. All prepositional phrases in Trique could be viewed as noun phrases (though not all noun phrases could be viewed as prepositional phrases), and most Trique prepositions, whether spatial, temporal, or logical in reference, are simply extended uses of body-part nouns.<sup>3</sup>

The following sentences illustrate the uses of body-part nouns that serve as bridges to spatial prepositions.

- (17) *nikun<sup>1</sup>? gwa<sup>4</sup> shi<sup>?</sup>nu<sup>5</sup> tinu<sup>5</sup> zo<sup>3</sup>? a<sup>32</sup>*  
 stands John side-of brother-of him declarative  
 ‘John is standing next to his brother.’
- (18) *nikun<sup>1</sup>? gwa<sup>4</sup> rian<sup>32</sup> sha<sup>3</sup>na<sup>1</sup>! a<sup>32</sup>*  
 stands John face-of woman declarative  
 ‘John is standing in front of the woman.’
- (19) *katu<sup>5</sup>h gwa<sup>4</sup> rike<sup>3</sup>! nuwi<sup>4</sup> a<sup>32</sup>*  
 entered John stomach-of church.  
 ‘John entered the church.’
- (20) *nikun<sup>1</sup>? gwa<sup>4</sup> rike<sup>3</sup>! ni<sup>3</sup>h chi<sup>3</sup> a<sup>32</sup>*  
 stands John stomach-of the-plural man declarative  
 ‘John is standing among the men.’
- (21) *ne<sup>13</sup>! tukwa<sup>4</sup>! gwa<sup>4</sup> shra<sup>5</sup> tukwa<sup>4</sup>! no<sup>3</sup>? a<sup>32</sup>*  
 sits house-of John back-of house-of her declarative  
 ‘John's house is above (uphill from) her house.’

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<sup>3</sup> The prepositions in Copala Trique that show no evident relation to body-part nouns are: *ska<sup>?</sup>nu<sup>5</sup>h* ‘among’, *ga<sup>2</sup>!* ‘with’, ‘and’, and *nda<sup>13</sup>* ‘even’, ‘until’, ‘as far as’, ‘from’. The class of prepositions is, however, a very shaky one in Trique; *ga<sup>2</sup>!* was probably originally a conjunction, and *nda<sup>13</sup>* may have been some emphatic element.

The semantic difference between prepositional and nominal uses of body-part words is that prepositional uses describe relations rather than things. A crucial step that prepared the way for the category shift to preposition was undoubtedly metaphorical extension within the noun category, especially the extension from a part to the area projecting out from that part. At that point an optical-illusion mechanism accomplished the category shift. For example, in (17) it is possible to view ‘side’ as a noun referring to the area that projects out from his brother's sides. But it is equally possible to view ‘side’ as a preposition referring to the relation between John and his brother, rather than as some extended part of his brother. The sentence cannot be viewed in both ways at the same time, but different speakers can view it in different ways, and the same speaker can switch back and forth between the two perspectives.<sup>4</sup> I believe that sentences like these originally had two noun phrases, but have come to be seen as containing a noun phrase followed by a prepositional phrase.

Table Three lists spatial prepositions that are derived from body-part nouns, along with their original and derived meanings.

Table Three. Body-part nouns that serve as spatial prepositions.

<b>Noun</b>	<b>Gloss</b>	<b>Extended Meanings</b>
<i>man</i> <sup>3!</sup>	‘body of’	‘to’
<i>ra</i> <sup>3!</sup>	‘head of’	‘above’
<i>ra</i> <sup>4!</sup>	‘heart of’	‘in’
<i>rian</i> <sup>32</sup>	‘face of’, ‘eye of’	‘on’ ‘in front of’ ‘to’ ‘at the house of’ ‘in the presence of’
<i>rike</i> <sup>3!</sup>	‘stomach of’	‘in’ ‘under’ ‘between’, ‘among’
<i>she?e</i> <sup>4!</sup>	‘feet of’	‘at the base of’
<i>shi?nu</i> <sup>5</sup>	‘side of’	‘at the side of’ ‘next to’
<i>shra</i> <sup>5</sup>	‘back of’	‘above’ ‘on the outside of’
<i>tako</i> <sup>5</sup>	‘foot of’	‘at the base of’
<i>ta<sup>3</sup>nu</i> <sup>2</sup>	‘interior of’	‘in the middle of’

<sup>4</sup> For a perspective on change that allows for multiple analyses at a given time, see Hankamer (1977). Pike has also maintained that change takes place across the bridge of some shared component (1982:17, 118-25).

*tuʔwaʔ!*

‘mouth of’

‘at the edge of’

A few of the terms in Table Three are obsolescent as nouns. The word *raʔ!* ‘heart of’ has been replaced by the Spanish loanword *nimanʔ!* (from *ánima* ‘soul’); *raʔ!* occurs as a noun only in certain frozen phrases, but it is very common as a preposition. The word *sheʔeʔ!* ‘feet of’ is likewise obsolescent as a body-part noun; it has been almost completely replaced by *takoʔ* ‘foot of’, but *sheʔeʔ!* has many extended meanings, both nominal and prepositional, in common use. It is an old form, as shown both by the number of extensions and by the fact that Longacre was able to reconstruct the parent form (with the meaning ‘foot’) for Proto-Mixtecan (1957:132-33). The word *takoʔ*, on the other hand, has few semantic extensions, and no proposed Proto-Mixtecan etymology, both of which suggest that it is a recent development. The word *manʔ!*, ‘body of’ is also obsolescent as a body-part noun, occurring only in a few frozen phrases, but it is very common as a preposition to indicate grammatical relations (see the discussion below). There is, in fact, no clear term for body in present-day Trique, though *neʔ!* ‘flesh’ may come to fill this gap.

There is also a preposition *shkoʔ!* ‘beyond’, ‘on the other side of’, which is almost certainly related to the body-part noun *shkoʔ* ‘shoulder of’. (I am at present unable to account for the difference in form between the two words.)

Body-part nouns are also used in Trique for temporal and logical relations. Those used for temporal relations include *shraʔ* ‘back of’, which means ‘future to’, and *rikeʔ!* ‘stomach of’, which means either ‘before’ or ‘within’, as seen in the following examples.

- (22) *kaʔanʔh zoʔʔ shraʔ koʔʔngoʔ! aʔ*  
will-go he back-of Monday declarative  
‘He will go after Monday.’
- (23) *kaʔanʔh zoʔʔ rikeʔ! koʔʔngoʔ! aʔ*  
went he stomach-of Monday declarative  
‘He went before Monday.’
- (24) *kaʔanʔh zoʔʔ rikeʔ! waʔnuʔh gwiʔ aʔ*  
will-go he stomach-of three day declarative  
‘He will go within three days.’

The word *rianʔ* ‘face of’, ‘eye of’ is also used to express future.

- (25) *kaʔanʔh zoʔʔ rianʔ koʔʔngoʔ! aʔ*  
will-go he face-of Monday declarative  
‘He will go after Monday.’

The use of ‘stomach’ for ‘within’ is perhaps the most easily grasped of these extensions, because it is the most straightforward. The use of ‘back’ and ‘stomach’ for future and past is somewhat more difficult to grasp, but it seems to be related to the ‘uphill’ and ‘downhill’ senses of these terms. The Triques apparently conceive of

temporal elapsing as an uphill journey through which we walk.<sup>5</sup> The use of ‘face’ for future is also related to the idea of temporal elapsing as an uphill journey; as we walk through time, the future is ahead of us, rather than behind us.

The body-part nouns used as logical prepositions include *rian*<sup>32</sup> ‘face of’ for ‘instead of’, ‘than’, ‘with respect to’, and ‘in the opinion of’; and *she?e?*<sup>4!</sup> ‘feet of’ for ‘about’, ‘for’, ‘because of’, and ‘in exchange for’, as seen in the following examples.

- (26) *nayon*<sup>4!</sup> *le*<sup>3nde</sup><sup>4!</sup> *rian*<sup>32</sup> *si*<sup>3nde</sup><sup>4!</sup> *a*<sup>32</sup>  
 is-in-again alternate face-of president declarative  
 ‘The alternate substitutes for the president.’
- (27) *shkan*<sup>1</sup> *do*<sup>3h</sup> *gwa*<sup>4</sup> *rian*<sup>32</sup> *pe*<sup>3dro</sup><sup>4!</sup> *a*<sup>32</sup>  
 tall more John face-of Peter declarative  
 ‘John is taller than Peter.’
- (28) *nawi*<sup>3h</sup> *sa?an*<sup>32h</sup> *rian*<sup>32</sup> *gwa*<sup>4</sup> *a*<sup>32</sup>  
 finishes money face-of John declarative  
 ‘John ran out of money.’ or ‘The money ran out on John.’
- (29) *za*<sup>1?</sup> *wa*<sup>32</sup> *mi*<sup>3shte</sup><sup>4!</sup> *rian*<sup>32</sup> *gwa*<sup>4</sup> *a*<sup>32</sup>  
 good is machete face-of John declarative  
 ‘The machete is good in John's opinion.’
- (30) *ka?mi*<sup>32</sup> *gwa*<sup>4</sup> *she?*<sup>e?</sup><sup>4!</sup> *pe*<sup>3dro</sup><sup>4!</sup> *a*<sup>32</sup>  
 spoke John feet-of Peter declarative  
 ‘John spoke about Peter.’
- (31) *kiran*<sup>5h</sup> *gwa*<sup>4</sup> *?nu*<sup>5</sup> *she?*<sup>e?</sup><sup>4!</sup> *pe*<sup>3dro</sup><sup>4!</sup> *a*<sup>32</sup>  
 bought John corn feet-of Peter declarative  
 ‘John bought corn for Peter's benefit.’
- (32) *kawi*<sup>3?</sup> *zo*<sup>3?</sup> *she?*<sup>e?</sup><sup>4!</sup> *shi?*<sup>i?</sup><sup>31</sup> *za*<sup>1?</sup> *a*<sup>32</sup>  
 died he feet-of sickness good declarative  
 ‘He died because of an illness.’ (not from violence  
 or witchcraft)
- (33) *kiran*<sup>5h</sup> *zo*<sup>3?</sup> *yo?*<sup>o?</sup><sup>5</sup> *she?*<sup>e?</sup><sup>4!</sup> *sa?an*<sup>32h</sup> *a*<sup>32</sup>  
 bought he land feet-of money declarative  
 ‘He bought the land in exchange for money.’

The analogical basis for these metaphorical extensions is not always easy to see, but the cluster of meanings for *rian*<sup>32</sup> can perhaps be grasped fairly well by glossing it ‘with respect to’, and the cluster of meanings for *she?*<sup>e?</sup><sup>4!</sup> can be grasped by glossing it ‘on the basis of’. (Note that the Spanish word *base* and the English words *base* and *basis* are similar to *she?*<sup>e?</sup><sup>4!</sup> both in core meaning and in the range of extensions.)

<sup>5</sup> A more complete treatment of the extension of spatial terms to temporal concepts in Copala Trique is given in Hollenbach (1977) and (1982). For a discussion of different ways of conceptualizing the passage of time, see Fillmore (1975:28-29, 49).

As the sentences move from spatial to temporal to logical uses of body-part terms, I find it progressively harder to view the body-part terms as nouns and progressively easier to view them as prepositions. In (33), for example, it is hard to see money as having parts; and in (31), even though Peter has feet, a reading of the sentence with *she?e<sup>4!</sup>* as a noun yields something like ‘He bought corn at Peter’s feet’, which is referentially unrelated to the situation for which the sentence is used.

The etymological paths that most of these words seem to follow involve first metaphorical shifts within the noun category, then a shift from noun to preposition, and often further metaphorical shifts within the preposition category. For example, the use of ‘stomach’ for ‘within (a period of time)’ probably developed in the following way. First the noun for ‘stomach’ was extended to ‘inside part of’, after which it shifted to a spatial preposition meaning ‘in’, and finally it shifted to a temporal preposition. It is, however, possible that the extension from spatial to temporal took place within the noun category.

One other term provides further evidence of a category shift to preposition: *man<sup>3!</sup>* ‘body of’, which has now become a marker for indirect objects, human direct objects, and pronominal objects. It occurs in its original meaning only in a few frozen phrases. Consider the following sentences.

(34) *go<sup>3?</sup> gwa<sup>4</sup> sa?an<sup>32h</sup> man<sup>3!</sup> pe<sup>3dro<sup>4!</sup></sup> a<sup>32</sup>*  
gave John money body-of Peter declarative  
‘John gave the money to Peter.’

(35) *kene?e<sup>3!</sup> gwa<sup>4</sup> man<sup>3!</sup> pe<sup>3dro<sup>4!</sup></sup> a<sup>32</sup>*  
saw John body-of Peter declarative  
‘John saw Peter.’

(36) *rakwi<sup>5h</sup> gwa<sup>4</sup> man<sup>3!</sup> pe<sup>3dro<sup>4!</sup></sup> a<sup>32</sup>*  
helped John body-of Peter declarative  
‘John helped Peter.’

(37) *cha<sup>4!</sup> gwa<sup>4</sup> man<sup>3!</sup> yo<sup>3?</sup> a<sup>32</sup>*  
ate John body-of it declarative  
‘John ate it.’

The original nominal and spatial meaning of *man<sup>3!</sup>* is easy to perceive in (35), but less plausible in (36), where the help offered may be intangible.<sup>6</sup>

To sum up, even though the shift from noun to preposition is somewhat hard to pin down, there are three forms of evidence that it has indeed taken place. The first two have already been noted: some words are obsolescent as nouns but common as prepositions; and some sentences cannot plausibly be construed as having nouns, only as having prepositions. The third kind of evidence is that there are syntactic differences between noun phrases that have inherently possessed body-part nouns as heads and prepositional phrases. Noun phrases can take quantifiers and articles before the head noun, while, for most speakers, prepositional phrases take no elements preceding the

<sup>6</sup> Another form of the word for ‘body’, *ma<sup>3/an<sup>13!</sup></sup>*, is currently used in Copala Trique as a marker for emphatic and reflexive noun phrases; see Hollenbach (1984b) for further discussion of this form.

preposition. (At least one speaker, however, accepts quantifiers such as ‘all’ preceding *rian*<sup>32</sup> ‘face of’). Also, the way in which prepositional phrases are fronted for focus and for content questions is different from the way in which noun phrases are fronted for these purposes: prepositions can be stranded at the end of the sentence, and ordinary possessed nouns cannot be. Thus, sentences (38) and (39) are grammatical, while (40) and (41) are not.

- (38) *saʔan*<sup>32h</sup> *kaʔmi*<sup>32</sup> *gwa*<sup>4</sup> *sheʔe*<sup>4!</sup> *a*<sup>32</sup>  
 money spoke John feet-of declarative  
 ‘John spoke about MONEY.’
- (39) *me*<sup>3!</sup> *ze*<sup>32!</sup> *kaʔmi*<sup>32</sup> *gwa*<sup>4</sup> *sheʔe*<sup>4!</sup> *ga*<sup>2</sup>  
 which thing spoke John feet-of interrogative  
 ‘What did John speak about?’
- (40) \**gwa*<sup>4</sup> *keneʔe*<sup>3!</sup> *pe*<sup>3dro</sup><sup>4!</sup> *rian*<sup>32</sup> *a*<sup>32</sup>  
 John saw Peter face-of declarative  
 ‘Peter saw JOHN’S face.’
- (41) \**me*<sup>3!</sup> *zi*<sup>5</sup> *keneʔe*<sup>3!</sup> *gwa*<sup>4</sup> *rian*<sup>32</sup> *ga*<sup>2</sup>  
 which person saw John face-of interrogative  
 ‘Whom did John see the face of?’

These differences make it possible to construct a test to determine whether doubtful cases are noun phrases or prepositional phrases.

Before leaving this topic, it is perhaps necessary to ask how we know that the direction of change was from noun to preposition, and not vice versa. Three kinds of evidence come to mind. First, out of context, native speakers translate the words in question into Spanish as nouns, not as prepositions, which indicates that the nominal sense is felt to be basic. Second, when etymological information is available, these words reconstruct as nouns. Third, nouns are more concrete than prepositions, and cross-linguistically attested historical changes show considerably more evidence for changes from concrete to abstract than for the opposite change. Some common examples are found in the near universal use of spatial terms for temporal concepts.

#### 4. Extensions to Adjectives and Adverbs

Copala Trique has a fairly regular derivational process by which nouns can be made into adjectives by lowering the tone of the noun stem. As with most derivational processes, neither the existence of a derived form nor its precise meaning can be predicted, and so each such adjective needs to be separately listed in any dictionary of Copala Trique. When inherently possessed body-part nouns are made into adjectives by this process, they no longer take a possessor. Some examples of derived adjectives are given in examples (42)-(46).

- (42) *koʔo*<sup>3</sup> *tako*<sup>1h</sup>  
 bowl footed  
 ‘bowl with feet’ (cf. *tako*<sup>5</sup> ‘foot of’)

- (43) *shkwa<sup>5</sup> raʔa<sup>13!</sup>*  
 snake handed  
 ‘centipede’ (cf. *raʔa<sup>3!</sup>* ‘hand of’)
- (44) *gwi<sup>3</sup> shra<sup>1</sup>h*  
 day backlike  
 ‘future day’ (cf. *shra<sup>5</sup>* ‘back of’)
- (45) *ru<sup>3</sup>kuchra<sup>1?</sup> katun<sup>1</sup>*  
 board waistlike  
 ‘narrow board’ (cf. *katun<sup>31</sup>* ‘waist of’)
- (46) *shuman<sup>3?</sup> raʔa<sup>13!</sup>*  
 town handlike  
 ‘unimportant town’ (cf. *raʔa<sup>3!</sup>* ‘hand of’)

Example (42) is an idiom in that it is the name for a specific kind of bowl that has three projections at the bottom on which it stands. The adjective form of ‘foot’ is therefore being used in an extended sense, referring to these projections. Example (43) is also an idiom; it refers to the large and poisonous scolopendra centipede. Thus ‘snake’ is being used nonliterally, but the adjective form of ‘hand’ is used quite literally (though it is not clear to me why ‘hand’ rather than ‘foot’ was chosen here). The adjective form of ‘hand’ also occurs in (46), but in a quite different sense. While a centipede can be characterized as a snake that has hands, an unimportant town is a town that is in some way like a hand. The second use is related to the extended meaning of ‘hand’ as a lobe or projecting part, and it is easy to understand in the light of the prevailing patterns of political organization in the area. An unimportant town is one that is dependent on or tributary to some larger one. Example (44) shows a temporal sense for the adjective form of ‘back’ that is undoubtedly related to the use of ‘back’ as a temporal preposition. Example (45) shows the adjective form of ‘waist’, which has been generalized to mean ‘narrow’. This is the only way to express this rather basic concept in Trique, and it is doubtful that the notion of ‘waist’ ever crosses the speaker's mind when he uses the adjective form, even though this form is related to the noun by an absolutely regular derivational process.<sup>7</sup>

In Trique, both basic adjectives and those derived from nouns by lowering their tone can serve as manner adverbs with no change in form. Two examples of adjectives derived from body-part nouns serving as adverbs are shown in (47) and (48).

- (47) *che<sup>5</sup> rike<sup>13!</sup> gwa<sup>4</sup> a<sup>32</sup>*  
 walks stomachlike John declarative  
 ‘John walks downhill.’ (cf. *rike<sup>3!</sup>* ‘stomach of’)

<sup>7</sup> The fact that ‘narrow’ is closely related to ‘waist’ in form raises the question as to whether the adjectives are not historically basic, with the nouns derived from them by a process of tone raising. One piece of evidence that the noun forms are basic is that Longacre (1957) was able to reconstruct at least some of the noun forms for Proto-Mixtecan, but none of the adjective forms.

- (48) *che<sup>5</sup> rian<sup>2</sup> gwa<sup>4</sup> a<sup>32</sup>*  
 walks facelike John declarative  
 ‘John walks forward.’ or ‘John walks openly.’  
 (cf. *rian<sup>32</sup>* ‘face of’)

There is also an adverb derived from the preposition *shko<sup>4!</sup>* ‘beyond’, which is related to the body-part noun *shko<sup>5</sup>* ‘shoulder of’, as seen in the following sentence.

- (49) *che<sup>5</sup> shko<sup>1!</sup> gwa<sup>4</sup> a<sup>32</sup>*  
 walks shoulderlike John declarative  
 ‘John walks backwards.’

It is clear that all of these words are being used with extended meanings of various sorts because none of them is referring in any obvious way to a body part. The ‘downhill’ sense of the adjective form of ‘stomach’ is clearly related to the prepositional use of this word to mean ‘below’. The ‘forward’ sense of the adjective form of ‘face’ is probably related to the prepositional use of ‘face’ to mean ‘in front of’, and the ‘openly’ sense is probably related to the prepositional use ‘in the presence of’.

Table Four lists adjectives and adverbs derived from inherently possessed body-part nouns that have been recorded to date. This list is undoubtedly incomplete.

Table Four. Adjectives and adverbs derived from body-part nouns.

Noun	Gloss	Derived Form	Derived Meanings
<i>chru<sup>3h</sup></i>	‘nape of’	<i>chru<sup>13h</sup></i>	‘tight’ ‘confined’ ‘reduced’
<i>katun<sup>31</sup></i>	‘waist of’	<i>katun<sup>1</sup></i>	‘narrow’
<i>raʔa<sup>3!</sup></i>	‘hand of’	<i>raʔa<sup>13!</sup></i>	‘unimportant’ ‘having hands’
<i>rian<sup>32</sup></i>	‘face of’, ‘eye of’	<i>rian<sup>2</sup></i>	‘frontwards’ ‘openly’ ‘boldly’ ‘in the future’
<i>rike<sup>3!</sup></i>	‘stomach of’	<i>rike<sup>13!</sup></i>	‘downhill’ ‘below’ ‘in the past’
<i>shiʔnu<sup>5</sup></i>	‘side of’	<i>shiʔnu<sup>1h</sup></i>	‘to one side’
<i>shra<sup>5</sup></i>	‘back of’	<i>shra<sup>1h</sup></i>	‘uphill’ ‘above’ ‘in the future’

Because the category shift from noun to adjective or adverb is correlated with an overt formal mechanism, namely, the tone lowering, there is no ambiguity involved in determining whether or not the category shift has taken place. Forms with lowered tone are adjectives or adverbs, and forms with basic tone are nouns. (I assume that the tone lowering is a single process with multiple uses, not two or three distinct processes; see Hollenbach 1984a:229-47 for further discussion.) It seems likely that at least some metaphorical extensions took place before the tone lowering, and others took place after it. Perhaps certain meanings that provided links between the basic and lowered tone forms were lost, leaving a semantic gap.

## 5. Other Extensions

There is one important conjunction that has developed from the body-part noun *she?e<sup>4!</sup>* ‘feet of’, and there is also one important sentential adverb that has developed from this word.

The conjunction is *she?e<sup>4!</sup> ze<sup>32!</sup>* ‘because’, which consists of the word for ‘feet’ plus the complementizer *ze<sup>32!</sup>* ‘that’. Sentence (50) illustrates the use of this conjunction.

- (50) *kawi<sup>3?</sup> zo<sup>3/?</sup> she?e<sup>4!</sup> ze<sup>32!</sup>*  
 died he feet-of that  
 ‘He died because

*kachen<sup>4!</sup> aga<sup>3?</sup> rike<sup>3!</sup> zo<sup>3?</sup> a<sup>32</sup>*  
 passed metal stomach-of him declarative  
 a bullet passed through his stomach.’

This conjunction appears to have developed from the prepositional use of *she?e<sup>4!</sup>* to mean ‘because of’ by a reinterpretation of constituent boundaries. In the original construction, the complementizer preceding the second sentence allowed it to be treated as a noun phrase, and it could therefore follow a preposition and serve as its object. In the reinterpreted construction, the complementizer was construed with the preposition so that the combination formed a phrasal compound, which served as a conjunction that introduced an embedded sentence. This reanalysis was favored by the fact that the sequence was very common. The lexical unity of *she?e<sup>4!</sup> ze<sup>32!</sup>* is shown by the fact that a fused form, *e<sup>3</sup>ze<sup>32!</sup>*, exists for some speakers.<sup>8</sup>

To sum up the history of this conjunction, the body-part noun *she?e<sup>4!</sup>* ‘feet of’ acquired certain extended nominal meanings, such as ‘bottom part of’. Next this word shifted category to become a preposition which meant ‘at the base of’. In the third stage it acquired certain other extended meanings within the preposition category, such as ‘because of’. And in the fourth and final stage, it combined with *ze<sup>32!</sup>* to form a conjunction. The first and third steps in this process involved metaphor, while the second and fourth steps involved a category shift of the optical-illusion type.

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<sup>8</sup> The creation of a conjunction from a preposition and a complementizer is, of course, attested in other languages. In Spanish, *que* can be added to the prepositions *para* and *por* to produce the conjunctions *para que* and *porque*; and in English, *that* can be added to the preposition *except* to produce the conjunction *except that*.

The sentential adverb that developed from this body-part noun is *she?e<sup>4</sup> dan<sup>32!</sup>* ‘therefore’, which consists of the word for ‘feet’ plus *dan<sup>32!</sup>* ‘that’, which is a demonstrative adjective or pronoun. This adverb connects a sentence to the previous context, as shown in (51).

(51) *kawi<sup>3?</sup> ni<sup>3</sup>ka<sup>2!</sup> zo<sup>3?</sup> a<sup>32</sup>*  
 died spouse-of him declarative  
 ‘His wife died.’

*she?e<sup>4!</sup> dan<sup>32!</sup> nano<sup>4!</sup> ra<sup>4!</sup> zo<sup>3?</sup> a<sup>32</sup>*  
 feet-of that tells inside he declarative  
 ‘Therefore he’s sad.’

This adverb clearly developed from a prepositional phrase, and it can still be construed as one, meaning ‘because of that’. Its specialized discourse function as a sentence introducer can be shown by two things. First, *dan<sup>32!</sup>* is obsolescent as a demonstrative; it survives mainly in certain frozen expressions, and its presence in this one shows that the expression is frozen. Second, this compound adverb occurs only in sentence-initial position, even though other prepositional phrases introduced by *she?e<sup>4!</sup>* commonly occur toward the end of sentences. The first three steps in the history of this adverb were metaphorical extension within the noun category, category shift to preposition, and metaphorical extension within the preposition category, just as in the history of the conjunction meaning ‘because’. The fourth step was an optical-illusion category shift in which a prepositional phrase was reinterpreted as a compound sentential adverb. Unlike the case of ‘because’, however, no reinterpretation of constituent boundaries was involved.

These two expressions, together with the prepositional uses of *she?e<sup>4!</sup>* ‘feet of’, show how important this word has become in expressing logical relations in Trique. Even though there is a solid array of cognates in Mixtecan languages witnessing to ‘foot’ as its basic meaning (Longacre 1957:132-33), the nominal uses are being lost in Copala Trique. Within a few generations it is conceivable that there will be no language-internal evidence for its original meaning.

## 6. The Role of Catachresis

In present-day Trique, the only way to express most relational concepts is via the extensions of body-part nouns catalogued above. It therefore seems plausible to consider these extensions cases of catachresis, i.e., the use of a metaphor to fill a lexical gap. (For the purpose of this discussion, I include category shift together with metaphor.) There is, however, one significant problem for the catachresis hypothesis. Typical cases of catachresis involve the extension of a term from one semantic field to a concept in another field to fill a newly felt need, which happens often with technological innovations. Successful instances of catachresis quickly become part of the lexicon, as Black has noted (1962:32-33). While it is certainly the case that the extensions described in the present paper have become part of the Trique lexicon, for the most part they do not involve any newly felt need. Instead, they supply a term for basic relational concepts that every language needs to express all the time. This seems to leave us with two unacceptable alternatives. Either there was a period in which

there was no way to express these concepts, or there was not. If there was such a period, then we do indeed have a case of catachresis, but the scenario is implausible. If there was no such period, then we are not dealing with a case of catachresis. The scenario is more plausible, but we are left with no explanation as to why extended uses of body-part nouns constitute the sole means of expressing most of these relations.

Perhaps the best way to resolve this dilemma is to posit a scenario that involved gradual replacement of existing terms by body-part nouns. The existing terms may have included a system of bound case markers that underwent phonetic erosion. As they lost their distinctive forms, some of the meaning differences were lost, and body-part nouns were pressed into service to resolve cases of ambiguity. Then the case markers were completely lost, and the body-part nouns were used consistently.

It is also possible that body-part nouns were extended to new uses as loan translations from some neighboring language. The extensive use of body-part nouns to express relations is an areal feature of Mesoamerica, found in both Otomanguean and non-Otomanguean languages. Of course, such a hypothesis does not solve the problem of why body-part nouns are used for relations; it merely pushes it back one stage farther. The innovation had to begin somewhere as a live metaphor, and no matter which language it began in, the same questions remain. If body-part nouns were extended to fill a lexical gap, how did people get along without any terms for such basic concepts for even a short period of time? If there was no lexical gap, then why did people bother to invent such quaint terminology? When we are finally able to answer such questions, we will know considerably more about both language and cognition than we do at present.

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