REPORT 13

SURVEY OF CALIFORNIA AND OTHER INDIAN LANGUAGES

CONFERENCE ON OTOMANGUEAN AND OAXACAN LANGUAGES

March 19-21, 2004
University of California at Berkeley

Rosemary Beam de Azcona and Mary Paster, Editors
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INTRODUCTION

This volume of Survey reports is a sample of the papers heard at the Conference on Otomanguean and Oaxacan Languages (COOL), which took place at UC Berkeley March 19-21, 2004. There is more scholarly investigation being done on Otomanguean languages and other languages of Oaxaca today than ever before, yet unlike other groups such as Uto-Aztecanists and Mayanists, Otomangueanist and Oaxacanist scholars have not had a regular forum in which to meet and share their ideas. In 2000 a one-time conference took place at UCLA called La Voz Indígena de Oaxaca, organized by Pamela Munro, G. Aaron Broadwell, and Kevin Terraciano. As a result of this conference many of the participant linguists were able to make new and fruitful contacts with each other and several proposed that the conference should become a recurring event. With the help of the UC Berkeley Graduate Assembly, Graduate Division, Center for Latin American Studies, and the departments of Linguistics, Anthropology, and Ethnic Studies, four years after the original UCLA conference COOL was finally able to follow in its footsteps. Now there are plans for a third conference to be held very appropriately in the city of Oaxaca at the Centro Cultural Santo Domingo in 2006, organized by Alejandro de Ávila. We all hope that this will become an on-going event and it appears that COOL is on its way to becoming a regular, biannual and international conference.

Rosemary Beam de Azcona
COOL 2004 Organizer
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
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</tr>
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<td>George Aaron Broadwell – The Morphology of Zapotec Pronominal Clitics</td>
<td>15</td>
</tr>
<tr>
<td>Flavia Cuturi &amp; Maurizio Gnerre – Concomitance in Huave</td>
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<td>Michael Galant – The Nature of the Standard of Comparison in San Lucas Quiaviní Zapotec Comparatives</td>
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<td>Edgar Martín del Campo – An Ethnopoetic Approach to a Copala Triqui Myth Narrative</td>
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<td>Pamela Munro – Zapotec Grammar Without Tears (except perhaps for the grammarian)</td>
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</tbody>
</table>
An Autosegmental Analysis of Me'phaa (Tlapanec) Noun Inflection

CHERYL A. BLACK
SIL International and University of North Dakota

1. Introduction
Noun inflection in Tlapanec consists of a noun root with a suffix marking the person and number of the possessor. Both segmental and tonal changes occur when the suffix is added and understanding the tonal patterns is crucial since tone is the only distinguishing factor between some forms. At first glance, there is huge variation in the Tlapanec noun paradigms. Both tones and segmental material seem to change without any logical reason, as partly exemplified in (1):

<table>
<thead>
<tr>
<th>(1) Sample noun paradigms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Root</td>
</tr>
<tr>
<td>aga 'hog'</td>
</tr>
<tr>
<td>chidg 'mache'</td>
</tr>
<tr>
<td>inu 'face'</td>
</tr>
<tr>
<td>ixe 'tree'</td>
</tr>
<tr>
<td>mágá 'onion'</td>
</tr>
<tr>
<td>wipí 'butterfly'</td>
</tr>
</tbody>
</table>

Once the data is reorganized based on several crucial insights from Weathers and Carrasco (1988), patterns emerge, leading to a coherent analysis within the framework of Autosegmental Phonology. These key insights will be covered in section 1.2, after the necessary background information is given and before presenting the analysis.

1.1. Background information
Me'phaa (Tlapanec) is spoken by over 75,000 people (perhaps as many as 95,000) in the state of Guerrero, Mexico. It is part of the Otomanguean family of languages. There are at least eight major variants, which can be identified by the larger towns in the area where they are spoken: Acatepec, Azoyú, Malinaltepec, Nancintla, Teocuitlapa, Tlacoapa, Zapotitlán Tablas (including

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1 Abbreviations: s=singular; p=plural; d=dependent; e=exclusive; 1pi=plural inclusive, otherwise i=indepedent. The dependent form (third person only) is used when there is another noun present that it agrees with, whereas the independent form is used when the possessor is not otherwise overtly expressed.
Huitzapula, which some regard as distinct), and Zilacayotitlán. Many speakers have learned more than one variant and the differences between variants can be smaller or larger, depending on which pair of variants is compared. It is therefore difficult to determine which and how many of the varieties are separate languages. SIL International has worked in the Acatepec, Malinaltepec, and Tlacoapa varieties and is beginning in several others now. (The now-extinct Subtiaba language of Nicaragua is also in this family.)

The name Me'phaa, which speakers use for their own language, is preferred over the traditional name, Tlapaneco, which is derived from Nahuatl, because some consider it to have been a derogatory label. (The form Me'phaa is the one used by Malinaltepec speakers. The other varieties have slightly different forms of the name, such as Me'pa in Acatepec and Mi'pha in Tlacoapa.)

The data used in this paper are from Malinaltepec (except the Acatepec data presented in section 4). Unless noted otherwise, they are taken from a set of paradigms collected from various native speakers by Mark and Esther Weathers, who have worked on one or more varieties of Tlapanec since 1973 under the auspices of SIL. Other works on Malinaltepec Tlapanec include Suárez (1983), Marlett and Weathers (1985), Weathers and Carrasco (1988) and Carrasco Zúñiga (in progress), none of which present an autosegmental analysis.

The orthography used in the data follows that of Weathers and Carrasco (1988). The IPA equivalents for the consonants are shown below the practical orthography form in (2):

<table>
<thead>
<tr>
<th>(2) Orthographic symbols used</th>
<th>labial</th>
<th>dental</th>
<th>palatal</th>
<th>velar</th>
</tr>
</thead>
<tbody>
<tr>
<td>voiceless</td>
<td>p</td>
<td>t</td>
<td>ch</td>
<td>k</td>
</tr>
<tr>
<td></td>
<td>pʰ</td>
<td>tʰ</td>
<td>tʃ</td>
<td>kʰ</td>
</tr>
<tr>
<td>aspirated</td>
<td>ph</td>
<td>th</td>
<td>dh</td>
<td>kh</td>
</tr>
<tr>
<td></td>
<td>pʰ</td>
<td>tʰ</td>
<td>dʒ</td>
<td>kʰ</td>
</tr>
<tr>
<td>voiced</td>
<td>b</td>
<td>d</td>
<td>dx</td>
<td>g</td>
</tr>
<tr>
<td></td>
<td>bʰ</td>
<td>dʰ</td>
<td>dʒ</td>
<td>g</td>
</tr>
<tr>
<td>continuant</td>
<td>f</td>
<td>s</td>
<td>x</td>
<td>j</td>
</tr>
<tr>
<td></td>
<td>φ</td>
<td>s</td>
<td>ʃ</td>
<td>j</td>
</tr>
<tr>
<td>nasal</td>
<td>m</td>
<td>n</td>
<td>ñ</td>
<td>ñ</td>
</tr>
<tr>
<td></td>
<td>m</td>
<td>ñ</td>
<td>ñ</td>
<td>ñ</td>
</tr>
<tr>
<td>sonorant</td>
<td>wʰ</td>
<td>l</td>
<td>y</td>
<td>j</td>
</tr>
<tr>
<td></td>
<td>w</td>
<td>l</td>
<td>j</td>
<td>j</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>r</td>
<td>r</td>
</tr>
</tbody>
</table>

The five vowels are the usual ones (a, e, i, o, u) and they can also appear nasalized, lengthened, and glottalized, or any combination thereof.

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2 The background information on Me'phaa is taken from the SIL Mexico Branch website: http://www.sil.org/mexico/tlapanea/familia-tlapanea.htm.
3 The [w] is probably labio-velar.
1.2 Key insights for reorganizing the data
The crucial insights obtained from Weathers and Carrasco (1988) involve noun classes, syllable structure, and tone.

1.2.1 Noun classes
Nouns are divided into two classes, based mainly upon animacy. Class 1 nouns are mostly inanimate and Class 2 nouns are mostly animate. The animate/inanimate distinction also plays a role in other parts of the grammar, such as the form of adjectives and numbers.

The first step in reorganizing the data was to attempt to divide the nouns between Class 1 and Class 2, simply on the basis of the animacy implied by the gloss. This division had to be amended later in some cases, as outlined below.

1.2.2 Syllable structure
The nucleus and coda of a syllable are especially important to the analysis of tone. As noted above, vowels may appear as simple vowels or lengthened, nasalized, or glottalized. The glottal stop symbol ' appearing after a vowel is therefore not a coda consonant but a vowel feature which is part of the nucleus of the syllable. Nasalization is a feature of the syllable, not just of the vowel. The current orthography (based on Weathers and Carrasco 1988: 29) writes an n at the end of the syllable to indicate nasalization, unless the syllable begins with a nasal onset, in which case the syllable is automatically nasalized. This means that all syllables are open, with only the nasal feature noted as n and the glottal stop ' appearing after the vowels.

Though there is vowel length, written as two like vowels, there are no true diphthongs. A series of unlike vowels beginning with a low vowel indicates two distinct syllable nuclei. However, a series of unlike vowels beginning with a high vowel forms a single syllable, with the high vowel acting either as a glide or as palatalization or labialization of the preceding consonant. This is evidenced by the fact that the high vowel in these sequences never bears a contrasting tone (Weathers and Carrasco 1988: 39).

Given these insights into the syllable structure, each class was further subdivided by the vowel of the final syllable of the uninflected root. Each of these divisions were then grouped by the vowel length, nasalization, and glottalization on the final syllable of the uninflected root.

In working through the organized data group by group, I listed the allomorphs for the person suffixes, ignoring tone. These are given below in section 2.1. It soon became clear that some of the odd allomorphs were due to that noun being a member of the other class. Also, a few adjectives were found in the noun data. These had to be moved to a separate file for analysis, since the adjectives have related but distinct forms for the person suffixes from those used by the nouns, as will be shown in section 3.3.

The data show no distinction in pattern between nouns with long vowels and nouns with short vowels in the final syllable of the uninflected form. Nasalization and usually glottalization in the final syllable of the uninflected form carry over to the inflected forms, meaning these features are autosegments like tone. (See Marlett 1992 for an autosegmental analysis of nasalization in Mixtec.)

1.2.3 Tone
There are three basic tones: high, mid, and low; mid is the unmarked, default tone. In addition, there can be a combination of two tones on a short vowel and up to four tones on a long vowel. The overwhelmingly general case is that there is only one tone per syllable in monomorphemic
forms. Contour tones are (almost always) formed in the morphology, either by compounding or affixation (Weathers and Carrasco 1988: 38). In the affixation process, segmental material is lost, such as the vowel(s) of the final syllable in the case of noun inflection, but the underlying tones remain (as does nasalization and usually glottalization) and are relinked to the new segmental material, forming contour tones as necessary.

Given the above insights, the class divisions separated by the final vowel of the uninflected noun were further subdivided by the tone on that final vowel to begin the analysis.

2. The autosegmental analysis for nouns

Autosegmental Phonology (Goldsmith 1979, 1990), which allows tones and other features to act independently of segments, provides an ideal framework for analyzing Me’phaa (Tlapanec).

Before determining the underlying tones on the inflectional suffixes which mark the person of the possessor for nouns, their basic shape and allomorphy conditions are given.

2.1 The segmental allomorphy of the person suffixes

Class 1 nouns have the following basic forms for the person suffixes, where only the exceptions to the general case are noted. The changes for the roots ending in non-nasal [a] are the equivalent of adding the feature [+low] to the general allomorph for the singular forms.

(3) Class 1 suffixes

<table>
<thead>
<tr>
<th>Root ending</th>
<th>1s</th>
<th>2s</th>
<th>3sd</th>
<th>3si</th>
<th>1pi</th>
<th>1pe</th>
<th>2p</th>
<th>3pd</th>
<th>3pi</th>
</tr>
</thead>
<tbody>
<tr>
<td>general</td>
<td>-u'</td>
<td>-aa'</td>
<td>-uu</td>
<td>-uu</td>
<td>-aló'</td>
<td>-axg'</td>
<td>-ala'</td>
<td>-uun</td>
<td>-uun</td>
</tr>
<tr>
<td>L tone</td>
<td></td>
<td></td>
<td>-a'lo'</td>
<td>-a'xo'</td>
<td>-a'la'</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>most [-nas]</td>
<td>-o'</td>
<td></td>
<td>-oo</td>
<td>-oo</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The suffixes for the Class 2 nouns have similar forms. In the case of the 2s, 1pi, 1pe, and 2p forms, it would be possible to split off -i from the Class 1 forms as a separate morpheme, such as the theme vowel suggested in Marlett and Weathers (1985) or a marker of animacy. This analysis is not as clear in the other forms, so I have chosen to simply include the /i/ in the Class 2 person suffix allomorphs. Note that the same changes for roots ending in low tone (the addition of ') and non-nasal [a] (the addition of the feature [+low]) occur.

(4) Class 2 suffixes

<table>
<thead>
<tr>
<th>Root ending</th>
<th>1s</th>
<th>2s</th>
<th>3sd</th>
<th>3si</th>
<th>1pi</th>
<th>1pe</th>
<th>2p</th>
<th>3pd</th>
<th>3pi</th>
</tr>
</thead>
<tbody>
<tr>
<td>general</td>
<td>-i'</td>
<td>-iia'</td>
<td>-ii</td>
<td>-ii</td>
<td>-ialó'</td>
<td>-iaxg'</td>
<td>-iala'</td>
<td>-iin</td>
<td>-iin</td>
</tr>
<tr>
<td>L tone</td>
<td></td>
<td></td>
<td>-ia'lo'</td>
<td>-ia'xo'</td>
<td>-ia'la'</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>most [-nas]</td>
<td>-e'</td>
<td></td>
<td>-ee</td>
<td>-ee</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

4 Alternatively, the animacy marker could be the feature of palatalization ([+pal]) which surfaces as an [i] before [a] but u[+pal] → i. The loss of rounding is still unexplained.
2.2 Tones on the person suffixes
To decipher the tone patterns, it is crucial to look at the nouns which have a mid tone on the final syllable of the uninflected root. This group of nouns shows clearly the tones which come with the person suffixes, as no marked tones are carried over from the lost final nucleus of the root. The noun roots which had high or low tones in the final nucleus of the uninflected form rejoin those tones to the suffix vowels in addition to the tones which come with the suffix, forming contour tones in many cases, as shown in the derivations below.

Based on the tones found on the uninflected noun roots ending in mid tone, it is evident that the independent third person forms (3si and 3pi) have a low tone and the third person plural forms (3pd and 3pi) have a high tone (so 3pi has both a high tone and a low tone). These tones contrast with the high tone which always shows up on hā in the 1pi suffix and the low tone which always shows up on xo in the 1pe suffix, which do not interact with the other root or suffix tones and thus are treated as fixed for the autosegmental analysis. The same is true for the root tones which are linked to any non-final syllables.

The person affixes with the underlying tones included are shown in (5) for each class, where the tones marked below the segments are not linked underlingly. Their linking will be shown in the derivations in section 2.3.

(5) Underlying tones on the person suffixes

<table>
<thead>
<tr>
<th>Root ending</th>
<th>1s</th>
<th>2s</th>
<th>3sd</th>
<th>3si</th>
<th>1pi</th>
<th>1pe</th>
<th>2p</th>
<th>3pd</th>
<th>3pi</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>general</td>
<td>-u'</td>
<td>-aa'</td>
<td>-uu</td>
<td>-uu L</td>
<td>-alō'</td>
<td>-axō'</td>
<td>-ała'</td>
<td>-uun H</td>
<td>-uun HL</td>
</tr>
<tr>
<td>L tone</td>
<td>-a'lō'</td>
<td>-a'xō'</td>
<td>-a'ła'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>most</td>
<td>-o'</td>
<td>-oo</td>
<td>-oo L</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a[-nas]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>general</td>
<td>-i'</td>
<td>-iaa'</td>
<td>-ii</td>
<td>-ii L</td>
<td>-ialō'</td>
<td>-iaxō'</td>
<td>-iala'</td>
<td>-ii H</td>
<td>-ii HL</td>
</tr>
<tr>
<td>L tone</td>
<td>-ia'lō'</td>
<td>-ia'xō'</td>
<td>-ia'ła'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>most</td>
<td>-e'</td>
<td>-ee</td>
<td>-ee L</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a[-nas]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2.3 Derivations
2.3.1 Roots with a final mid tone
In the case of noun roots which have a final mid tone in their uninflected form, the inflected forms are generated by deleting the vowel(s) of the final syllable and attaching the suffix in its place. The only tones are those of the suffixes. These tones attach one-to-one, right-to-left, with the high tone on 3pd also spreading left within its long syllable to the empty vowel (or tone-bearing unit=TBU). The HL tones on the 3pi suffix create a falling tone. These steps are illustrated for representative forms in (6):
Sample derivations for roots ending in mid tone

<table>
<thead>
<tr>
<th>Root</th>
<th>1s</th>
<th>2s</th>
<th>3sd</th>
<th>3si</th>
<th>1pi</th>
<th>1pe</th>
<th>2p</th>
<th>3pd</th>
<th>3pi</th>
</tr>
</thead>
<tbody>
<tr>
<td>idu 'eye, bamboo'</td>
<td>id-u'</td>
<td>id-aa'</td>
<td>id-uu</td>
<td>id-uu</td>
<td>id-aló'</td>
<td>id-axô'</td>
<td>id-ala'</td>
<td>id-uun</td>
<td>id-uun</td>
</tr>
<tr>
<td>ada 'shoe'</td>
<td>ad-o'</td>
<td>ad-aa'</td>
<td>ad-oo</td>
<td>ad-oo</td>
<td>ad-aló'</td>
<td>ad-axô'</td>
<td>ad-ala'</td>
<td>ad-uun</td>
<td>ad-uun</td>
</tr>
</tbody>
</table>

Class 1

<table>
<thead>
<tr>
<th>Root</th>
<th>1s</th>
<th>2s</th>
<th>3sd</th>
<th>3si</th>
<th>1pi</th>
<th>1pe</th>
<th>2p</th>
<th>3pd</th>
<th>3pi</th>
</tr>
</thead>
<tbody>
<tr>
<td>ts'l'bu 'grasshopper'</td>
<td>ts'l'bu'</td>
<td>ts'l'bu-aa'</td>
<td>ts'l'bu-ii</td>
<td>ts'l'bu-ii</td>
<td>ts'l'bu-inló'</td>
<td>ts'l'bu-iaxô'</td>
<td>ts'l'bu-ala'</td>
<td>ts'l'bu-uun</td>
<td>ts'l'bu-uun</td>
</tr>
<tr>
<td>aga 'hog'</td>
<td>ag-e'</td>
<td>ag-iaa'</td>
<td>ag-ee</td>
<td>ag-ee</td>
<td>ag-ialó'</td>
<td>ag-iaxô'</td>
<td>ag-ala'</td>
<td>ag-uun</td>
<td>ag-uun</td>
</tr>
</tbody>
</table>

Class 2

2.3.2 Roots with a final high tone
Final high-toned noun roots are inflected in the same way as mid-toned roots, except that the final high tone from the root attaches to the left-most vowel (TBU) of the suffix before the suffix tones are linked. There is now no free TBU for the high tone of 3pd to spread onto. Further, the high tone of the 3pi suffix does not have any place to link, so it simply merges with the high tone from the root. These steps are illustrated for representative forms in (7), with the root high tone shown above the form and the suffix tones below the form:

Sample derivations for roots ending in high tone

<table>
<thead>
<tr>
<th>Root</th>
<th>1s</th>
<th>2s</th>
<th>3sd</th>
<th>3si</th>
<th>1pi</th>
<th>1pe</th>
<th>2p</th>
<th>3pd</th>
<th>3pi</th>
</tr>
</thead>
<tbody>
<tr>
<td>rybú 'pear'</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td></td>
<td>ryb-u'</td>
<td>ryb-aa'</td>
<td>ryb-uu</td>
<td>ryb-uu</td>
<td>ryb-aló'</td>
<td>ryb-axô'</td>
<td>ryb-ala'</td>
<td>ryb-uun</td>
<td>ryb-uun</td>
</tr>
<tr>
<td>mágá 'onion'</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td></td>
<td>mág-o'</td>
<td>mág-aa'</td>
<td>mág-oo</td>
<td>mág-oo</td>
<td>mág-aló'</td>
<td>mág-axô'</td>
<td>mág-ala'</td>
<td>mág-uun</td>
<td>mág-uun</td>
</tr>
</tbody>
</table>

Class 2

<table>
<thead>
<tr>
<th>Root</th>
<th>1s</th>
<th>2s</th>
<th>3sd</th>
<th>3si</th>
<th>1pi</th>
<th>1pe</th>
<th>2p</th>
<th>3pd</th>
<th>3pi</th>
</tr>
</thead>
<tbody>
<tr>
<td>wipí 'butterfly'</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td></td>
<td>wip-i'</td>
<td>wip-iaa'</td>
<td>wip-ii</td>
<td>wip-ii</td>
<td>wip-ialó'</td>
<td>wip-iaxô'</td>
<td>wip-iala'</td>
<td>wip-uun</td>
<td>wip-uun</td>
</tr>
<tr>
<td>ky'wá 'thief'</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td></td>
<td>ky'w-e'</td>
<td>ky'w-iaa'</td>
<td>ky'w-ee</td>
<td>ky'w-ee</td>
<td>ky'w-ialó'</td>
<td>ky'w-iaxô'</td>
<td>ky'w-iala'</td>
<td>ky'w-uun</td>
<td>ky'w-uun</td>
</tr>
</tbody>
</table>
2.3.3 Roots with a final low tone

Final low-toned noun roots are inflected in much the same way as final high-toned roots (except for the choice of the glottalized allomorph for 1pi, 1pe and 2p), where the final low tone from the root attaches to the left-most vowel (TBU) of the suffix prior to linking of the suffix tones. There is again no free TBU for the high tone of 3pd to spread onto. The difference shows up with the 3pi suffix, where again the high tone from the suffix does not have any place to link. In this case it cannot merge with the low tone from the root, so a further contour (LHL) is created. Note also that for some reason the majority of the Class 1 forms have the root low tone spread to the right for the singular forms, making it impossible to distinguish the 3sd and 3si forms. Class 2 forms do not spread this tone, yielding the expected result in line with the behavior seen in the final mid-toned and final high-toned roots. This is illustrated for representative forms in (8):

(8) Sample derivations for roots ending in low tone

<table>
<thead>
<tr>
<th>Root</th>
<th>1s</th>
<th>2s</th>
<th>3sd</th>
<th>3si</th>
<th>1pi</th>
<th>1pe</th>
<th>2p</th>
<th>3pd</th>
<th>3pi</th>
</tr>
</thead>
<tbody>
<tr>
<td>ixg 'tree, wood'</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>L</td>
</tr>
<tr>
<td></td>
<td>ix-u'</td>
<td>ix-aa'</td>
<td>ix-uu</td>
<td>ix-uu</td>
<td>ix-a'lo'</td>
<td>ix-a'xo'</td>
<td>ix-a'la'</td>
<td>ix-uun</td>
<td>ix-uun</td>
</tr>
<tr>
<td>laxa 'orange, lime, grape-fruit'</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>L</td>
</tr>
<tr>
<td></td>
<td>lax-o'</td>
<td>lax-aa'</td>
<td>lax-oo</td>
<td>lax-oo</td>
<td>lax-a'lo'</td>
<td>lax-a'xo'</td>
<td>lax-a'la'</td>
<td>lax-uun</td>
<td>lax-uun</td>
</tr>
</tbody>
</table>

2.4 Coverage of the analysis

The described analysis covers the vast majority of the noun forms in the data set. The data for the few exceptional uninflected forms with contour tones are not consistent. There are also cases where a final [i] in the uninflected form remains as a glide (or palatalization) in Class 1. All of the uninflected forms in this set which have a single long syllable inflect as if they consist of two short syllables. In a few cases, the uninflected form bears little resemblance to the inflected forms, so a distinct underlying root for the uninflected forms must be posited (suppletion).

About 25% of the nouns have a locative form. Almost all are Class 1 nouns, perhaps due to semantic or pragmatic issues related to the animacy distinction. There does not seem to be a distinction in form for the few Class 2 nouns. Instead, the distinction is by the quality of the final vowel of the uninflected noun. Forms ending in any type of [a] have -aa as the locative allomorph. Forms ending in [e], [i], or [o] have -ii as the locative allomorph. Forms ending in [u]
have either -ii or -uu as the locative suffix. Nasalization and tone from the uninflected noun are again kept, but not glottalization. The tone data show that the locative suffix carries a high tone, which spreads left if there is no tone from the root. This results in a HH pattern for all final mid- and high-toned roots, and a LH pattern for all final low-toned roots. A few examples illustrating the analysis are given in (9):

(9) **Sample locative derivations**

<table>
<thead>
<tr>
<th>Final root tone</th>
<th>Uninflected root</th>
<th>Locative</th>
<th>Final root tone</th>
<th>Uninflected root</th>
<th>Locative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mid</td>
<td>aga ‘throat’</td>
<td>ag-aa</td>
<td>Mid</td>
<td>inu ‘face, point’</td>
<td>in-uu</td>
</tr>
<tr>
<td></td>
<td></td>
<td>_</td>
<td></td>
<td></td>
<td>_</td>
</tr>
<tr>
<td>High</td>
<td>gu’wá ‘house’</td>
<td>gu’w-aa</td>
<td>High</td>
<td>itsi ‘stone’</td>
<td>itsii</td>
</tr>
<tr>
<td></td>
<td></td>
<td>H</td>
<td></td>
<td></td>
<td>H</td>
</tr>
<tr>
<td>Low</td>
<td>ajuan’ ‘weapon, bell’</td>
<td>aju-an</td>
<td>Low</td>
<td>ixg ‘tree, wood’</td>
<td>ix-i</td>
</tr>
<tr>
<td></td>
<td></td>
<td>L</td>
<td></td>
<td></td>
<td>L</td>
</tr>
</tbody>
</table>

3. **Extension of the analysis to other categories**
The nouns are the only category for which extensive data are available and for which analysis has been completed so far. Hypotheses are given for extending the autosegmental analysis to the following categories, however, based on the data available at this time. Such evidence lends further viability to the analysis for nouns, since similar patterns are seen throughout the language.

3.1 **Body part nouns used as prepositions**
Almost all prepositions are body part nouns which are inflected for a third person singular possessor. Weathers and Carrasco (1988: 84) show that it is also possible to conjugate the ‘prepositions’ for other persons, given below. This is simply the addition of the possessor suffix used in the nouns for the appropriate person and number.

(10) **Inflection of body part nouns used as prepositions**

<table>
<thead>
<tr>
<th>Me’phaa</th>
<th>Literal translation</th>
<th>Free translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>manújngo’ in-aa’</td>
<td>I will pass your face</td>
<td>I will pass before you / with your permission</td>
</tr>
<tr>
<td>anújingaa’ in-u’</td>
<td>You (imperative) pass my face</td>
<td>You pass before me!</td>
</tr>
<tr>
<td>anúnjngaa’ in-uu</td>
<td>You (imperative) pass before his face</td>
<td>You pass before him!</td>
</tr>
</tbody>
</table>
3.2 Manner adverbs
When an adverb expressing manner is used in a sentence where the subject is animate, there is agreement marking on the adverb to match the person of the subject. From the very limited adverb data given in Weathers and Carrasco (1988: 81), it appears that they take the same person suffixes as Class I nouns do, as illustrated in (11).

(11) Animate agreement marking on manner adverbs

<table>
<thead>
<tr>
<th>Root</th>
<th>1s subject</th>
<th>2s subject</th>
<th>3si subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>máján ‘well’</td>
<td>múj-úñ’</td>
<td>máj-áán’</td>
<td>múj-úgn</td>
</tr>
<tr>
<td>gúká ‘firmly’</td>
<td>gúk-ú’</td>
<td>gúkú-áa’</td>
<td>gúk-úu</td>
</tr>
<tr>
<td>ngíná ‘poorly’</td>
<td>ngín-u’</td>
<td>ngín-áa’</td>
<td>ngín-úu</td>
</tr>
<tr>
<td>guéño ‘a lot’</td>
<td>guéñ-aa’</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3.3 Qualitative adjectives
Adjectives expressing a quality may have person suffixes marking the subject when the adjective is used as a stative predicate. If the subject is inanimate, the uninflected form of the adjective is used, but for animate subjects, person suffixes quite similar to those for nouns are used. Based on the paradigms for adjectives included in the noun data plus a few more from Weathers and Carrasco (1988: 62), it looks like a very similar analysis will work for adjectives, though the tone pattern and segments of the suffixes are different than those for nouns. These forms are shown in (12). Adjectives ending in [a] have distinct forms from those ending in the other vowels.

(12) Person suffixes marking animate subjects on adjectives

<table>
<thead>
<tr>
<th>Root ending</th>
<th>1s</th>
<th>2s</th>
<th>3s</th>
<th>3si</th>
<th>1pi</th>
<th>1pe</th>
<th>2p</th>
<th>3p</th>
<th>3p</th>
</tr>
</thead>
<tbody>
<tr>
<td>except a</td>
<td>-uun’ H</td>
<td>-iín’ H</td>
<td>-îi</td>
<td>-ii L</td>
<td>aan'łó’ HL</td>
<td>aan’xo’ HL</td>
<td>aan’la’ HL</td>
<td>-uun’ or -iín’</td>
<td>-uun’ or -iín’</td>
</tr>
<tr>
<td>a</td>
<td>-uun’ H</td>
<td>-aan’ H</td>
<td>-aa</td>
<td>-aa L</td>
<td>aan’łó’ HL</td>
<td>aan’xo’ HL</td>
<td>aan’la’ HL</td>
<td>-iín’</td>
<td>-iín’ L</td>
</tr>
</tbody>
</table>

Paradigms showing adjectives ending in [a] and non-[a] with all three tone patterns are exemplified in (13).

---

5 Weathers and Carrasco (1988: 62) and some of the paradigms have a mid tone after the HL contour for 1pi, 1pe, and 2s. This tone is not included here, since it is not always written. This tone could be added to the analysis, but it would require a marked M, which has been used in the analyses of many other languages but was not needed in the nouns for Me’phaa.
(13) Paradigms for person suffixes marking animate subjects on adjectives

<table>
<thead>
<tr>
<th>Root</th>
<th>1s</th>
<th>2s</th>
<th>3sd</th>
<th>3si</th>
<th>1pi</th>
<th>1pe</th>
<th>2p</th>
<th>3pd</th>
<th>3pi</th>
</tr>
</thead>
<tbody>
<tr>
<td>jmbu 'straight'</td>
<td>jmbú'n'</td>
<td>jmbí'n'</td>
<td>jmbii</td>
<td>-i'</td>
<td>jmb-á'ng'lo'</td>
<td>jmb-á'ng'xo'</td>
<td>jmb-á'ng'la'</td>
<td>jmbí'n</td>
<td>-i'n</td>
</tr>
<tr>
<td>tsú'khaan 'delicate'</td>
<td>tsú'khaan'</td>
<td>tsú'khaan'</td>
<td>tsú'khaan</td>
<td>-a'gn</td>
<td>tsú'khaan'</td>
<td>tsú'khaan'</td>
<td>tsú'khaan'</td>
<td>tsú'khaan'</td>
<td>-i'n</td>
</tr>
<tr>
<td>gúkú 'strong/hard'</td>
<td>gúkú'n'</td>
<td>gúkí'n'</td>
<td>gúkii</td>
<td>-i'</td>
<td>gúk-á'ng'lo'</td>
<td>gúk-á'ng'xo'</td>
<td>gúk-á'ng'la'</td>
<td>gúkú'n</td>
<td>-u'ñ</td>
</tr>
<tr>
<td>máján 'good'</td>
<td>májú'n'</td>
<td>májíán'</td>
<td>májáán</td>
<td>-a'gn</td>
<td>máj-á'ng'lo'</td>
<td>máj-á'ng'xo'</td>
<td>máj-á'ng'la'</td>
<td>májí'n</td>
<td>-i'n</td>
</tr>
<tr>
<td>mujmú 'yellow'</td>
<td>mujmú'n'</td>
<td>mujmí'i</td>
<td>mujmí-i'</td>
<td>-i'i'</td>
<td>mujmí-a'á'ló'</td>
<td>mujmí-a'á'xo'</td>
<td>mujmí-a'á'la'</td>
<td>mujmí'i'</td>
<td>-i'i'</td>
</tr>
<tr>
<td>tšídá 'tall'</td>
<td>tšídú'n'</td>
<td>tsídáán'</td>
<td>tsídáan'</td>
<td>-a'a'</td>
<td>tsíd-a'á'ang'lo'</td>
<td>tsíd-a'á'ang'xo'</td>
<td>tsíd-a'á'ang'la'</td>
<td>tšídín'</td>
<td>-i'i'</td>
</tr>
</tbody>
</table>

Though details of the analysis for adjectives still need to be worked out, such as the conditions on the allomorphy and the LML tone pattern on the 3pi forms for low-toned roots, it is clear that a very similar analysis to that proposed for the nouns should be workable. Note that one reason for the two distinct tone patterns in the language is to allow for distinctions like that between adverbs and adjectives: as shown in the table above for adjectives and the one in section 3.2 for adverbs, the same root gúkú may be ‘strong/hard’ if the adjectival suffixes are added or ‘firmly’ if the nominal suffixes are added; similarly, májín may mean either ‘good’ or ‘well’ depending on the conjugation used.

3.4 Independent pronouns
The independent pronouns are given in Weathers and Carrasco (1988: 50) as shown in (14).

<table>
<thead>
<tr>
<th>1s</th>
<th>2s</th>
<th>3sd</th>
<th>3si</th>
<th>1pi</th>
<th>1pe</th>
<th>2p</th>
<th>3pd</th>
<th>3pi</th>
</tr>
</thead>
<tbody>
<tr>
<td>ikhú'n'</td>
<td>ikhá'án'</td>
<td>ikháaan</td>
<td>ikháan</td>
<td>ikhá'ang'lo'</td>
<td>ikhá'ang'xo'</td>
<td>ikhá'ang'la'</td>
<td>ikhí'n</td>
<td>ikhi'n</td>
</tr>
</tbody>
</table>

These forms are exactly what would be predicted if they are formed from a base word ikha to which the [a]-final suffixes given above for adjectives are added.

3.5 Verbs
Unsurprisingly, verbs have the most complex morphology and tone patterns of all categories and their analysis is made even more difficult due to the fact that there are no infinitives in Tlapanec, so there is no uninflected form to use in determining the underlying tones. The analysis of verbal inflection will be the subject of a future paper when more data is available. It appears so far for intransitive verbs that some of the intransitive verbs mark the subject agreement with the same set of suffixes used for Class 1 nouns (except that a L tone is added to 1s), while others use the

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6 Except that I have removed the mid tone after the HL contour for 1pi, 1pe, and 2s, as mentioned in the previous footnote.
An Autoconceptual Analysis of Me’phaa (Tlapanec) Noun Inflection

set used by the adjectives (except that the glottal in the 1pi, 1pe, and 2p forms does not always appear). Derivations are given in (15) for two intransitive verbs that I analyze as underlyingly mid-toned to illustrate these patterns:

<table>
<thead>
<tr>
<th>Verb</th>
<th>1s</th>
<th>2s</th>
<th>3sd</th>
<th>3si</th>
<th>1pi</th>
<th>1pe</th>
<th>2p</th>
<th>3pd</th>
<th>3pi</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘to dawn’ (Noun pattern)</td>
<td>nats-‘u’</td>
<td></td>
<td>nats-’u’</td>
<td></td>
<td>nats-’u’</td>
<td></td>
<td>nats-’u’</td>
<td></td>
<td>nats-’u’</td>
</tr>
<tr>
<td>‘to get fat’ (Adjective pattern)</td>
<td>nang-‘u’</td>
<td></td>
<td>nang-’a’</td>
<td></td>
<td>nang-aa</td>
<td></td>
<td>nang-aa</td>
<td></td>
<td>nang-aa</td>
</tr>
</tbody>
</table>

For transitive verbs, these same two sets of suffixes and tone patterns seem to be used to mark the object agreement, with other morphology and tone distinctions to indicate the subject.

4. Extension of the analysis for nouns to Acatepec Tlapanec
If the autosegmental analysis proposed here for noun inflection in Malinaltepec Tlapanec (Me’phaa) is on the right track, we would expect a similar analysis, with only systematic changes and the usual lexical exceptions, to work for the other varieties of the language. This expectation is met in the noun paradigms available for Acatepec Tlapanec (Me’pa).

The first systematic difference is that Acatepec Tlapanec does not have any distinction between dependent and independent forms for third person, either singular or plural; instead, the comparative dependent forms are used for both cases so there is no addition of a low tone to indicate the independent forms. The second difference is that there is no marked addition of a glottal in 1pi, 1pe, and 2p forms for low-toned roots. Third, the addition of the [+low] feature to change the allomorphs for 1s and 3s applies to non-nasal [o] as well as [a] in Acatepec. Finally, there are segmental (but not tonal) differences between the two varieties, as shown in (16).

<table>
<thead>
<tr>
<th>Root ending</th>
<th>1s</th>
<th>2s</th>
<th>3s</th>
<th>1pi</th>
<th>1pe</th>
<th>2p</th>
<th>3p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>general</td>
<td>-‘u’</td>
<td>-’aa’</td>
<td>-‘u’</td>
<td>-’ulú’</td>
<td>-’uxu’</td>
<td>-’ala’</td>
<td>-’uun’</td>
</tr>
<tr>
<td>[-nas] a and o</td>
<td>-’o’</td>
<td>-’oo’</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>general</td>
<td>-’iu’</td>
<td>-’iaa’</td>
<td>-’iu’</td>
<td>-’iulú’</td>
<td>-’iuxu’</td>
<td>-’iala’</td>
<td>-’iuun’</td>
</tr>
<tr>
<td>[-nas] a and o</td>
<td>-’io’</td>
<td>-’ioo’</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7 See Wichmann (this volume) for an analysis of the use of these sets as reflecting different case marking.
8 Note that the difference here between Class 1 and Class 2 suffixes is simply the addition of an [i] for Class 2, so the theme vowel analysis in Marlett and Weathers (1985) or analysis as an animate morpheme would work quite well for Acatepec Tlapanec.
The same processes of linking and spreading apply in the Tlapanec spoken in Acatepec as in Malinaltepec to obtain the results shown in (17) for illustrative forms:

(17) Sample Acatepec Tlapanec noun paradigms

<table>
<thead>
<tr>
<th>Class</th>
<th>Tone</th>
<th>Root</th>
<th>1s</th>
<th>2s</th>
<th>3s</th>
<th>1pi</th>
<th>1pe</th>
<th>2p</th>
<th>3p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>M</td>
<td>idu ‘eye’</td>
<td>idu’</td>
<td>ida’a</td>
<td>idu</td>
<td>idulú</td>
<td>idux</td>
<td>idala</td>
<td>idùú’n</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ska ‘wound’</td>
<td>sko’</td>
<td>skaa’</td>
<td>skoo</td>
<td>skulú</td>
<td>skux</td>
<td>skala</td>
<td>skùú’n</td>
</tr>
<tr>
<td>2</td>
<td>M</td>
<td>seh’bu ‘grasshopper’</td>
<td>seh’bu’</td>
<td>seh’bii’a’</td>
<td>seh’biiu</td>
<td>seh’biiulú</td>
<td>seh’biiux</td>
<td>seh’biiala</td>
<td>seh’biiùú’n</td>
</tr>
<tr>
<td></td>
<td></td>
<td>goboo ‘frog’</td>
<td>goboo’</td>
<td>gubia’a’</td>
<td>gobioo</td>
<td>gubiiulú</td>
<td>gubiiux</td>
<td>gubiala</td>
<td>gubiiùú’n</td>
</tr>
<tr>
<td>1</td>
<td>H</td>
<td>rubú ‘pear’</td>
<td>rubú’</td>
<td>rubáaa’</td>
<td>rubúu</td>
<td>rubólú</td>
<td>rubúx</td>
<td>rubála</td>
<td>rubúù’n</td>
</tr>
<tr>
<td></td>
<td></td>
<td>raká ‘nose’</td>
<td>rakó’</td>
<td>rakáaa’</td>
<td>rakóo</td>
<td>rakulú</td>
<td>rakúx</td>
<td>rakala</td>
<td>rakúù’n</td>
</tr>
<tr>
<td>2</td>
<td>H</td>
<td>pipi ‘butterfly’</td>
<td>pipiú’</td>
<td>pipiáa’</td>
<td>pipiúu</td>
<td>pipiúlú</td>
<td>pipiúx</td>
<td>pipiála</td>
<td>pipiùú’n</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ada ‘boy’</td>
<td>a’dío’</td>
<td>a’dii’a’</td>
<td>a’diúo</td>
<td>a’diulú</td>
<td>a’diux</td>
<td>a’diala</td>
<td>a’diùú’n</td>
</tr>
<tr>
<td>1</td>
<td>L</td>
<td>ixi ‘tree’</td>
<td>ixiu’</td>
<td>ixa’a’</td>
<td>ixiu</td>
<td>ixiulú</td>
<td>ixiux</td>
<td>ixiala</td>
<td>ixiù’n</td>
</tr>
<tr>
<td></td>
<td></td>
<td>bůjkaa ‘money’</td>
<td>bůjkó’</td>
<td>bůjkaa’</td>
<td>bůjkoo</td>
<td>bůjkulú</td>
<td>bůjkux</td>
<td>bůjkala</td>
<td>bůjkù’n</td>
</tr>
<tr>
<td>2</td>
<td>L</td>
<td>a’gu ‘woman’</td>
<td>a’giu’</td>
<td>a’gia’a’</td>
<td>a’giu</td>
<td>a’giulú</td>
<td>a’giux</td>
<td>a’gia</td>
<td>a’giù’n</td>
</tr>
<tr>
<td></td>
<td></td>
<td>i’ka ‘skunk’</td>
<td>i’kiu’</td>
<td>i’ka’a’</td>
<td>i’koo</td>
<td>i’kiulú</td>
<td>i’kiux</td>
<td>i’kia</td>
<td>i’kiù’n</td>
</tr>
</tbody>
</table>

5. Conclusion

The autosegmental analysis for noun inflection has been shown to account systematically for the various patterns of both segments and tone. Further, the same basic analysis will extend to other categories within Malinaltepec Tlapanec and was shown to be easily adapted to cover Acatepec Tlapanec noun inflection as well. All of these patterns were very difficult to account for when attempting to analyze the morphology and tone separately or when assuming tones are fixed. The ability within the framework of Autosegmental Phonology to treat tone and nasalization and glottalization as autosegments, which can remain after segmental material is lost and subsequently re-link, allows a coherent analysis for the language with a simple underlying representation for each morpheme.

References


9 This form has a final low tone in the unpossessed form but patterns as a high-toned root for the possessed forms.


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The Morphology of Zapotec Pronominal Clitics

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1. Introduction

All Zapotec languages appear to show an alternation between full NP subjects of verbs and clitic subjects, at least for some persons. Subject clitics do not cooccur with a postverbal, non-pronominal subject.

Consider the following examples from San Dionicio Ocotepec Zapotec (SDZ), one of the Valley Zapotec languages:

(1) Ú-dáw rée=bíiny gēhēht.
    com-eat pl=person tortilla
    'The people ate tortillas.'

(2) Ú-dáw=rēhby gēhēht.
    com-eat=3p tortilla
    'They ate tortillas.'

(3) *Ú-dáw=rēhby rée=bíiny gēhēht.
    com-eat=3p pl=people tortilla
    'The people they ate tortillas.'

Like many Zapotec languages, SDZ does have a construction in which a full noun phrase appears at the left periphery of the clause, coreferential with a clitic pronoun. In previous work (Broadwell 2002), I have argued that these are external topics adjoined to the CP node:

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1 I thank Lee Bickmore, Pamela Munro, and Andrew Spencer for helpful comments and discussion. Special thanks to Luisa Martínez, who provided all the SDZ data discussed here. A considerably longer version of this paper is available at http://www.albany.edu/anthro/fac/broadwell.htm

The orthography for SDZ is adapted from the practical orthographies for other Zapotec languages spoken in the Valley of Oaxaca. In the SDZ orthography symbols have their usual phonetic values, with the following exceptions. <x> = /y/ before a vowel and /j/ before a consonant, <xh> = /j/, <dx> = /dʒ/, <ch> = /tʃ/, <ç> = /k/ before back vowels, <çu> = /k/ before front vowels, and <eh> = /e/. Doubled vowels are long. SDZ is a language with four contrastive phonation types: breathy <V>, creaky <V'V>, checked <V'>, and plain <V>.

Glosses use the following abbreviations: 3 = 3rd person (ordinary), 3p = 3rd person plural, 3a = 3rd person animal, 3i = 3rd person inanimate, 3r = 3rd person respected, aff = affirmative, det = determiner, com = completive aspect, con = continuative aspect, cop = copula, neg = negative, p = possessed, pl = plural.
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(4) Juáñy, ū-dáw=bi gēhēht. 'Juan, he ate tortillas.'
Juan com-eat=3 tortilla

Nonetheless, it is certainly true that clitics and full NPs are in complementary distribution in postverbal position.

2. A syntactic approach to the clitic pronouns

In an important paper on Zapotec pronouns, Marlett (1993) presents a straightforward account of this complementarity between full NPs and clitic pronouns. In his account, the clitic pronouns are generated in the same syntactic position as the full NPs, but are phonologically dependent on the preceding word.

Thus the tree structures for (1) and (2) above might be as follows:

\[
\begin{array}{c}
S \\
V \\
NP \\
Ū-dáw \\
\text{com-eat} \\
\text{réé=blíny} \\
gēhēht \\
tortilla \\
\end{array}
\quad
\begin{array}{c}
S \\
V \\
NP \\
Ū-dáw \\
\text{com-eat} \\
=řehby \\
3p \\
gēhēht \\
tortilla \\
\end{array}
\]

The =řehby morpheme is just like a syntactic word, but it attaches itself to the preceding word in the phonology.

In addition to the clitic forms of the pronouns, SDZ also has independent forms, as in the following examples:

(5) a. Ū-náá Juáñy lá’ā=řehby. 'Juan looked at them.'
       com-look:at Juan det=3p

       b. *Ū-náá Juáñy=řehby.
            com-look:at Juan=3p

(6) a. Ū-zíi’ Juáñy rrēhgāl pájrr lá’ā=řehby. 'Juan bought presents for them.'
       com-buy Juan present for det=3p

       b. *Ū-zíi’ Juáñy rrēhgāl pájrr=řehby.
            com-buy Juan present for=3p

Here, the independent form of the pronoun is found by adding the the determiner lá’ā to the clitic form, and the clitic form is ungrammatical.

Though Marlett’s (1993) account is not completely explicit on the conditions under which the determiner appears, the following outline seems to accurately portray his view:
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(7) a.) Clitics like =rehy are syntactically and prosodically dependent pronouns.

   b.) As syntactically dependent words, these pronouns require adjacency to a projection of the head of the phrase.

   c.) As prosodically dependent words, the clitics require a preceding host of the right etymological type. Borrowed words are not of the right etymological type.

If either of the conditions in (b) or (c) is not met, then the determiner là `á is inserted to provide an acceptable host for the clitic. For example, in (5), the clitic would not be adjacent to the head of the phrase (which is V, not NP). Therefore condition (b) fails to hold, and the clitic needs an inserted determiner to serve as its host. In example (6), the clitic would be adjacent to the head of the phrase (P), but because the preposition pàjrr `for` is borrowed from Spanish, it is not of the right etymological type. It thus cannot host the clitic, and once again, the determiner is inserted to serve as host.

I'll call this a syntactic account of the clitics, since it assumes that clitics are generated by the syntax, just like other words, and that they are attached to their hosts via a phonological process. This account is appealing in its simplicity and its use of independent parameters of phonological and syntactic dependency. However, in this paper I would like to suggest that this approach faces a number of problems which limit its success when applied to SDZ. In particular, I will argue that clitic pronouns show sensitivity to a wider range of features than has been so far realized. The features that are relevant include person, animacy, and part of speech. I will suggest that when the full range of data is considered, the resulting paradigm is best treated as a sort of morphological paradigm, where pronominal clitics are added by a morphological component (Anderson 1996, Stump 2001, Legendre 2000a,b, Spencer 2001).

3. Background

3.1 Independent pronouns and their semantics

Table 1 shows the independent forms of the pronouns in SDZ. Where two forms appear, the first is found in stressed position and the second in unstressed positions:²

² SDZ has two underlying tone levels tones (H, L) and two contour tones (HL, LH), as well as underlying toneless stems. In this table and the next table, the independent and clitic pronouns are shown with their underlying tones, and toneless syllables have no tone mark. The surface realization of toneless syllables is dependent on interaction with the other tone rules of the language.
The Morphology of Zapotec Pronominal Clitics

<table>
<thead>
<tr>
<th></th>
<th>singular</th>
<th>plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>nàà’</td>
<td>dáánùùn</td>
</tr>
<tr>
<td>2nd ordinary</td>
<td>líí’</td>
<td>là’ât</td>
</tr>
<tr>
<td>2nd formal</td>
<td>gyèhbù</td>
<td>gyèhbtù</td>
</tr>
<tr>
<td>3rd ordinary human</td>
<td>là’ehby, lèh’ehby</td>
<td>là’arahrby</td>
</tr>
<tr>
<td>3rd respected human</td>
<td>là’ab</td>
<td>là’rab</td>
</tr>
<tr>
<td>3rd reverential</td>
<td>là’âñi’</td>
<td>là’ârhni’</td>
</tr>
<tr>
<td>3rd male to male</td>
<td>là’xrá’</td>
<td>là’rehxrá’</td>
</tr>
<tr>
<td>3rd animal</td>
<td>là’am</td>
<td>là’âram</td>
</tr>
<tr>
<td>3rd inanimate</td>
<td>là’ehn, lèh’ehn</td>
<td>là’ârehn</td>
</tr>
</tbody>
</table>

As can be seen in this table, the third person forms of the pronouns all begin with some form of là’â, as does the 2nd person ordinary plural. Là’â also occurs as an independent determiner used with focussed noun phrases.

The 2nd person ordinary vs. formal distinction resembles the Spanish tú/Usted distinction. The formal pronouns appear to consist of an additional morpheme gyèhb followed by the clitic forms of the ordinary 2nd person singular (=â) and plural (=tù).

The respected pronouns are typically used for adult humans older than the speaker, and ordinary pronouns for those of about the same age or younger. In some narratives, however, respected and ordinary pronouns serve to differentiate between two characters of similar ages – in a way roughly equivalent to ‘the younger one’ and ‘the older one’.

Reverential pronouns are used for talking about a class of things that might be approximately described as ‘holy’ or ‘heavenly’, which includes dead people, the saints, angels, God, Jesus, or statues of the saints in a church. It does not appear to include any living humans. It does not include items such as the sun, the moon, water, tejate, or tortillas (as reported for San Lucas Quiavini Zapotec by Munro and Lopez (1999)).

Male to male pronouns are used by males talking about other males, primarily those the same age or younger than the speaker. My primary consultant for SDZ is female, so she does not volunteer these forms. However, she will use such pronouns in quoting male speakers, and will supply them in elicitation contexts. Male speakers may also use regular human pronouns in referring to other males, but understanding the social/contextual/discourse factors involved in the alternation awaits future study.

Animal pronouns are used for living animals only – dead animals are referred to with inanimate pronouns. Animal pronouns are not used for babies and children (as in San Lucas Quiavini, Munro and Lopez 1999); ordinary human pronouns are used to refer to babies and children.

3.2 Clitic pronouns
The clitic forms of the pronouns are as shown in table 2:
Table 2

<table>
<thead>
<tr>
<th></th>
<th>singular</th>
<th>plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>=â’</td>
<td>=nú, =n, =ân</td>
</tr>
<tr>
<td>2nd ordinary</td>
<td>=ù</td>
<td>=tù, =t, =ât</td>
</tr>
<tr>
<td>2nd formal</td>
<td>=gyèhbu</td>
<td>=gyèhbtù</td>
</tr>
<tr>
<td>3rd ordinary human</td>
<td>=bi, =by, =ehby</td>
<td>=rehby</td>
</tr>
<tr>
<td>3rd respected human</td>
<td>=ba, =b, =ab</td>
<td>=rab</td>
</tr>
<tr>
<td>3rd reverential</td>
<td>=ni’</td>
<td>=réhni’</td>
</tr>
<tr>
<td>3rd male to male</td>
<td>=xrà’</td>
<td>=réhxrà’</td>
</tr>
<tr>
<td>3rd animal</td>
<td>=ma, =m, =am</td>
<td>=ram</td>
</tr>
<tr>
<td>3rd inanimate</td>
<td>=ni, =ny, =ehny</td>
<td>=rehny</td>
</tr>
</tbody>
</table>

Several clitics vary in their realization depending on the phonology of the preceding word. Briefly, the =CV form is found after a consonant and either =VC, =C, or =Cy is found after a vowel.

4. Problem one – etymological sensitivity to the host

4.1 Environments for clitic pronouns

The SDZ clitic pronouns are used in a variety of syntactic contexts – as subjects and objects of verbs, as objects of prepositions, and as the restriction of a quantifier:

(8) B-gwíî=by Juàâny                com-see=3    Juan
      ‘He saw Juan.’

(9) B-gwíî=by=mà                    com-see=3=3a
    ‘He saw it (animal).’

(10) lè’en=rehny                     in=3pi
     ‘in them’

(11) Tyóóp=ráb  ù-qui’n=ráb  bèh’l.
     two=3rp     com-eat=3pr    meat
     ‘Two of them ate meat.’

Marlett’s (1993) account predicts that the clitic form will be used if the pronoun is adjacent to the head of the phrase and the phrase is of the right etymological type.

An apparently identical clitic =ni’ is also used for reflexive possessors, but I will not discuss it in this paper.

The verb root in this example is /-qui’n/ ‘to eat’ which is more polite than /-dåw/ ‘to eat’ seen in previous examples. Because the subject here is referred to with a respected pronoun, it is more appropriate to use the polite form of the verb.
4.2 Etymological sensitivity in verbs and prepositions

The etymological condition is that the clitic host must count as a ‘native’ Zapotec word. Borrowed Spanish words which serve as verbs and prepositions generally cannot host clitics. Let us examine the prepositions first. It is generally true that borrowed prepositions require the independent pronouns, while native prepositions require the clitic forms:

(12) Ú-lù’ù Juáñy géhèht lè’èn=rèhny/*lè’èn là’à=rèhny.
    com-put Juan tortilla in=3pl in det=3pi ‘Juan put the tortillas in them.’ 6:168

(13) Ú-zíí’ Juáñy rrèhgaål pàjrr là’à=rèhby/*pàjrr=rèhby
    com-buy Juan present for det=3p for=3p ‘Juan bought presents for them.’ 6:169

Here the native preposition lè’èn ‘in’ is followed by the clitic pronoun, while the borrowed preposition pàjrr ‘for’ is followed by the independent pronoun.

As one might expect, there is occasionally some inconsistency between the actual etymology of the word and its treatment in the lexicon. For example, xparrt ‘in place of’ is treated like a native Zapotec word for the purposes of the clitic pronouns, though it is originally borrowed from Spanish parte. Zi’cy ‘like’ is a native Zapotec word, but it is treated like a non-native for the purposes of this (and other) rules.

(14) xparrt=bi
    in:place:of=3 ‘in his/her place’

*xparrt lèh’=èhby
    in:place:of det=3

(15) zi’cy lèh’=èhby ‘like him/her’
    like det=3

*zí’cy=bi
    like=3

The situation with verbs is somewhat more complex. We may distinguish two types of verbal borrowings in SDZ. Both involve a Zapotec verb (typically rìûny ‘to do/make’) which serves as the head of the verbal expression.

In Type I borrowings, the verb and the borrowed element are distinct words, which are generally separated from each other by the subject. In such cases, the verb is a complex made up of two parts – the Zapotec rìûny ‘to do/make’ and a borrowed Spanish word, which may be etymologically a noun, verb, or adjective.

In Type II borrowings, a borrowed Spanish adjective element has been incorporated into the
George Aaron Broadwell

Zapotec verb, and the two form a single word, which is the causative of that adjective.  

(16) a.) B-êény Juáñy prôméhéhs là’à=réhby  
com-make Juan promise det=3p  
‘Juan promised them.’

b.) B-êény-mùràâd Juáñy lèh’=éhn.  
com-make-purple Juan det=3i  
‘Juan made it purple.’

Note the word order difference between the two types. In Type I, the Spanish element intervenes between the subject and object. In Type II borrowing, both the subject and the object follow the complex of Zapotec verb + borrowed adjective.

In SDZ, we find etymological sensitivity with object clitics only in type I borrowings. Consider the following:

(17) B-êény Juáñy prôméhéhs là’à=rèhbby.  
com-do Juan promise det=3p  
‘Juan promised them.’

*B-êény Juáñy prôméhéhs=rèhbby.  
com-do Juan promise=3p

(18) B-êény cùràndéhéhr liimp là’à=rèhbby.  
com-do healer curing det=3p  
‘The healer cured them.’

*B-êény cùràndéhéhr liimp=rèhbby.  
com-do healer curing=3p

In SDZ, all type I borrowings show this pattern. The object in such cases must be expressed by an independent pronoun, because the preceding word is not of the right etymological type. The subject in all these cases follows a native Zapotec verb, so it shows normal cliticization:

(19) B-êény=bí prôméhéhs là’à=rèhbby.  
com-make=3 promise det=3p  
‘He promised them.’

In contrast, type II verbal borrowings do not appear to show etymological sensitivity to the etymology of the host, and subject clitics freely attach to the preceding V+adj unit

(20) B-êény-sàlàâd=à lèh’=éhn.  
com-make-salty=1s det=3i  
‘I made it salty.’

---

5 A different range of verbs show type II (incorporated) borrowings in San Lucas Quiavíní Zapotec (Munro and Lopez 1999). However, the SDZ equivalents of the forms cited in Munro and Lopez are all type II borrowings.
The Morphology of Zapotec Pronominal Clitics

(21) B-çény-mùràåd=bí lèh'=èhn.
    com-make-purple=3 det=3
    'S/he made it purple.'

For verbal borrowings of this sort, the subject appears as an ordinary clitic.

It seems that the best account of this difference distinguishes the subject and object clitics according to their etymological sensitivity. Note that in the type I borrowings, it is the object clitics which follow the borrowed element, while in the type II borrowings, it is the subject clitics. Thus the correct generalization is that subject clitics will attach to a verb of any etymological type, but object clitics will only attach to a native verb.

4.3 Etymological insensitivity with other parts of speech

The etymological sensitivity just discussed is restricted to the clitics that appear on verbs and prepositions. Although the clitics on nouns are apparently identical, they happily attach to borrowed Spanish nouns. There are two subcases – in the first, the clitic is the possessor of the noun, and in the second, it is the subject of a nominal predicate:

(22) a.) x-tiiw=à
    p-uncle=1s
    'my uncle'

b.) x-máchèhèhd=à
    p-machete=3ref
    'my machete'

(23) X-tiiw=à, gùríéhéñgw=bà
    p-uncle=1s gringo=3r
    'My uncle, he is a gringo.'

(24) Rricw=tú
    rich=2p
    'You (pl.) are rich.'

As these examples show, there is no problem in attaching clitics to borrowed Spanish nouns.

Adjectives and quantifiers also show no effects for borrowed vs. native words. Clitics attach to both without difficulty. In the first case, the clitic serves as subject of a predicate adjective. In the second case, it serves as the restriction of a quantifier.

(25) a.) Giíby=bà.
    stingy=3r
    'He is stingy.' NATIVE

b.) Máál=bà.
    bad=3r
    'He is bad.' BORROWED
    'El es malo.'

(26) a.) tšùù'=ràb
    ten=3pr
    'ten of them' NATIVE

b.) mìîi=ràb
    'a thousand of them' BORROWED
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thousand=3pr ‘mil de ellos’

The problem for a theory of the pronominal clitics is how to account for the fact that the clitics are sensitive to the native/borrowed status of the host only when attached as objects of prepositions or verbs. The clitics don’t show sensitivity to borrowed status when attached to nouns, adjectives, or quantifiers, nor when appearing as the subject of a verb. How could we state a rule of determiner insertion that was sensitive to distinctions like this?

5. **Problem 2 – Object clitics are a subset of subject clitics**

A second problem is that only a subset of the clitics listed can appear as the objects of verbs. They are the following:

(27)  
=ma  

3rd person, animal’

=xrà’  

3rd person, male to male’

=ni  

3rd person, inanimate’

=ni’  

3rd person, reverential’

=rehby  

3rd person plural, ordinary’

=rab  

3rd person plural, respect

=réhni’  

3rd person plural, reverential’

=réhxrà’  

3rd person plural, male to male’

=ram  

3rd person plural, animal’

=rehny  

3rd person plural, inanimate’

Note that the two most common singular pronouns for humans, =ba ‘3rd person, respected’ and =bi ‘3rd person, ordinary’ do not appear on the list, though their corresponding plurals do. Consider the following contrast:

(28)  
*B-gwíi=ât=bà.
com-see=2p=3pr

‘You (pl). saw him/her (respected).’

(29)  
B-gwíi=ât=ràb.
com-see=2p=3pr

‘You (pl). saw them (respected).’

We should also note here that clitics marking the object of a verb are restricted to the subset listed in (27) above. However, the clitics marking the object of a preposition are not restricted in this way. The full range of prepositional objects may be expressed by a clitic:

(30)  
cueh’=éhby
beside=3

cueh’éh=à
beside=1s

‘beside him/her’

‘beside me’

The problem for a syntactic approach to the clitics is how to account for when the determiner
The Morphology of Zapotec Pronominal Clitics

là'á is inserted and when it is not inserted. How could we state a rule that obligatorily inserts the determiner before =bi ‘3rd person (ordinary)’ when it is the object of a verb, but not when it is the object of a preposition?

6. Problem 3 – Object clitic impose restrictions on the subject
Another problem is that most object clitics impose restrictions on the subject. They may only be used if the subject is pronominal. Consider the following examples, which show that both fronted and in-situ non-pronominal subjects are incompatible with object clitics.

(31) a.) *Juáñy b-gwí=ràb.
     Juan com-see=3a
     ‘Juan saw them (respected).’

     b.) *B-gwí Juáñy=ràb.
     com-see Juan=3a

(32) a.) TJuáñy b-gwí là'á=ràb.
     Juan com-see det=3pr
     ‘Juan saw them (respected).’

     b.) TB-gwí Juáñy là'á=ràb.
     com-see Juan det=3pr

As these examples show, use of the object clitic is banned for a non-pronominal subject, even if the object clitic would be adjacent to the verb due to the fronting of a prominent subject.6

Object clitics may also not be used if the subject is an interrogative pronoun, though the clitic would also be adjacent to the verb in these instances:

(33) a.) ¿Túú ù-náá là'=ám?
     who com-look:at det=3a
     ‘Who looked at it (animal)?’

     b.) *¿Túú ù-náá=ám?
     who com-look:at=3a

The problem for the syntactic approach is finding a way to state the rule of determiner insertion before object clitics that is sensitive to the fronted, pronominal, and/or interrogative status of the subject.

7. Problem 4 – The object clitics =ni and =ma
Among the object clitics, =ni ‘3rd person inanimate’ and =ma ‘3rd person animal’ have distributions which are different than other clitics. Both appear in cases where they are not adjacent to the head of the phrase. Consider (34a) and (34b), where the object clitics follow the

---

6 Here I will call the fronted subject ‘prominent’, without committing myself to which discourse function it plays. Fronted subjects appear to be topical in some instances, focal in others. See Broadwell (2002) for more discussion.
subject. In contrast, other object clitics do not appear in this position, as (35a) and (35b) show.

(34) a.) B-gwíí Juáñy=ni.  
    com-see Juan=3i  
    'Juan saw it (inanimate).'</n
b.) B-gwíí Juáñy=mà.  
    com-see Juan=3a  
    'Juan saw it (animal).'</n
(35) a.) *B-gwíí Juáñy=rèhby.  
    com-see Juan=3p  
    'Juan saw them.'</n
b.) *B-gwíí Juáñy=xrà'.  
    com-see Juan=3m  
    'Juan saw him.'</n
=ni and =ma also share the property of attaching to non-native hosts. Consider the following examples which show that =ni and =ma may attach to Spanish borrowings. In this respect they differ from other object clitics, such as =rehby '3rd person plural ordinary'.

(36) a.) R-ùûny Juáñy prōmēhêhs=ni.  
    hab-do Juan promise=3i  
    'Juan promised it (inan.).'

b.) B-èëny Juáñy prōmēhêhs=mà.  
    com-do Juan promise=3a  
    'Juan promised it (animal).'</n
c.) *R-ùûny Juáñy prōmēhêhs=rèhby.  
    hab-do Juan promise=3p  
    'Juan promised them.'</n
The distribution of =ni '3rd person inanimate' is also significantly freer than other object clitics (including the =ma '3rd person animal' object clitic) in one other way. =ni is unique among object clitics in that it may appear on a verb with a fronted or interrogative subject. Consider the following examples, which contrast =ni '3rd person inanimate' with =ma '3rd person animal' and =rehby '3rd person plural ordinary':

(37) a.) Juáñy ú-zíî'=iny.  
    Juan com-buy=3i  
    'Juan bought it (inanimate).'</n
b.) *Juáñy ú-zíî'=àm.  
    Juan com-buy=3a  
    'Juan bought it (animal).'</n
c.) *Juáñy ú-náà=rèhby.  
    Juan com-look:at=3p  
    'Juan looked at them.'</n
(38) a.) ¿Túú ú-náà=èhny?  
    who com-look:at=3i  
    'Who looked at it (inanimate)?'
b.) *¿Túú úmerá=ম?
    who com-look:at=3a
    ‘Who looked at it (animal)?’

c.) *¿Túú úmerá=rehby?
    who com-look:at=3p
    ‘Who looked at them?’

All of the (b) and (c) sentences above would be grammatical if we used the independent forms là’arehby and là’ám instead of the clitics =rehby and =ma. However, the distribution of =ni is not completely unrestrained. It still fails to attach to a borrowed preposition:

(39)  *cùn=ni
     with=3i
     cùn lèh’=èn
     with det=3i
     ‘with it’

In the syntactic approach, what are the features of =ni and =ma that make insertion of the determiner unnecessary in most environments that require the determiner for all other clitics? Why is insertion of the determiner obligatory after borrowed prepositions but not after borrowed verbs? How can we account for the difference between =ni and =ma?

8. Problem 5 – Variation between full and clitic forms

SDZ allows both the full and clitic forms of the object pronouns. This variation appears in every context where object clitics may appear.

(40)  a.) B-gwí=át=ম.
     com-see=2p=3a
     ‘You (pl). saw it (animal).’

b.) B-gwí=át là’=ম.
     com-see=2p det=3a

In this respect, the object clitics are rather different from the subject/possessor clitics. For a subject/possessor, if the clitic form is available, then the independent form is ungrammatical or marginal:

(41)  a.) x-pèh’cw=bí
     p-dog=3
     ‘his/her dog’

b.) *? x-pèh’cw lèh’=éhby
    p-dog  det=3

(42)  a.) Ú-daw=bí.
     ‘S/he ate.’
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com-eat=3

b.)*? Ū-dâw lêh²=ühby.
   com-eat det=3

This is as we would expect if the determiner is only inserted as a last resort. Yet the object clitic and object independent pronoun do not show a similar complementarity. Both are fully acceptable – if anything, my consultant tends to volunteer the independent pronoun more frequently.

The syntactic approach to the clitics treats insertion of the determiner as a “last resort” mechanism, which supplies clitics with a host when no other host is available. But for the examples just discussed, there is a perfectly acceptable host for the clitic, and in fact the clitic form is grammatical. So why should speakers resort to the insertion of a determiner when a shorter, simpler, clitic form is possible?

9. Toward a paradigm-function solution
Recent realizational approaches to morphology have addressed the issue of clitic placement in some detail, taking as a starting point the idea that clitics are like affixation applied to phrases, rather than to words. The affixed material is added by a set of rules in a morphological component (Anderson 1992, Stump 2001). I will adopt the formalisms of Stump’s Paradigm Function Morphology here.

In the following pages, I will outline a morphological approach to the clitics and argue that it avoids many of the difficulties of the syntactic approach.

9.1 Features
The following chart shows the feature assignments I will assume:

<table>
<thead>
<tr>
<th>Feature</th>
<th>Num:Sg</th>
<th>Num:Pl</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>=à’</td>
<td>=nú, =n, =àn</td>
</tr>
<tr>
<td>2, Ordinary</td>
<td>=ù</td>
<td>=tú, =t, =ât</td>
</tr>
<tr>
<td>2, Formal</td>
<td>=gyèhbù</td>
<td>=gyèhbtú</td>
</tr>
<tr>
<td>3, Animate, General, Ordinary</td>
<td>=bi, =by, =ehby</td>
<td>=rehby</td>
</tr>
<tr>
<td>3, Animate, General,</td>
<td>=ba, =b, =ab</td>
<td>=rab</td>
</tr>
<tr>
<td>Male</td>
<td>=xrà’</td>
<td>=réxhrà’</td>
</tr>
<tr>
<td>3, Animate, Restricted, Male-</td>
<td>=ní’</td>
<td>=réhni’</td>
</tr>
<tr>
<td>3, Animate, Restricted,</td>
<td>=ma, =m, =am</td>
<td>=rám</td>
</tr>
<tr>
<td>Inanimate</td>
<td>=ni, =ny, =ehny</td>
<td>=réhny</td>
</tr>
</tbody>
</table>

We also need a small number of additional features. First is a feature for the clitic hosts:

(43) Native = {Yes, No}
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Second, we need the standard grammatical functions (SUBJ, OBJ, POSS, ...) and the feature PRED for both clitics and hosts. PRED is merely the semantic value assigned to a particular word. For example, the word Juan has the feature [PRED ‘Juan’] and the word gehèht has the feature [PRED ‘tortilla’]. We can use the PRED feature to distinguish pronouns, whose reference is determined in discourse, by the feature [PRED ‘pro’].

9.2 Realization rules
Using these features, the morphological rule that adds the =rehby clitic for subjects of a verb can be formalized as follows:

\[(44) \quad R_1 \{\text{SUBJ: 3PI, Animate, Gen, Ord, ‘pro’} \} \{\text{[V]}\} \Rightarrow =\text{rehby}\]

A rule of this sort is called a realization rule.

Decoding the formalism, rule \(R_1\) says a verb with a 3rd person plural animate, general, ordinary pronoun subject adds an affix =rehby. The subscript 1 identifies the rule block within which the morphemes applies (here the first rule block).

Using this formalism the complete set of realization rules is as follows:

| \(R_1 \{\text{SUBJ: 1Sg, ‘pro’}\} \{\text{[V]}\} \Rightarrow =\text{a}’\) | \(R_1 \{\text{SUBJ: 1Pl, ‘pro’}\} \Rightarrow =\text{nù}\) |
| \(R_1 \{\text{SUBJ: 2Sg, Ord, ‘pro’}\} \{\text{[V]}\} \Rightarrow =\text{ù}\) | \(R_1 \{\text{SUBJ: 2P, Ord, ‘pro’}\} \{\text{[V]}\} \Rightarrow =\text{tù}\) |
| \(R_1 \{\text{SUBJ: 2Sg, Form, ‘pro’}\} \{\text{[V]}\} \Rightarrow =\text{gyèhbtù}\) | \(R_1 \{\text{SUBJ: 2Pl, Form, ‘pro’}\} \{\text{[V]}\} \Rightarrow =\text{gyèhbtù}\) |
| \(R_1 \{\text{SUBJ: 3Sg, Animate, Gen, Ord, ‘pro’}\} \{\text{[V]}\} \Rightarrow =\text{bi}\) | \(R_1 \{\text{SUBJ: 3PI, Animate, Gen, Ord, ‘pro’}\} \{\text{[V]}\} \Rightarrow =\text{rehby}\) |
| \(R_1 \{\text{SUBJ: 3Sg, Animate, Gen, Resp, ‘pro’}\} \{\text{[V]}\} \Rightarrow =\text{ba}\) | \(R_1 \{\text{SUBJ: 3PI, Animate, Gen, Resp, ‘pro’}\} \{\text{[V]}\} \Rightarrow =\text{rab}\) |
| \(R_1 \{\text{SUBJ: 3Sg, Animate, Restr, Male, ‘pro’}\} \{\text{[V]}\} \Rightarrow =\text{xhrà’}\) | \(R_1 \{\text{SUBJ: 3PI, Animate, Restr, Male, ‘pro’}\} \{\text{[V]}\} \Rightarrow =\text{xhrà’}\) |
| \(R_1 \{\text{SUBJ: 3Sg, Animate, Restr, Rever, ‘pro’}\} \{\text{[V]}\} \Rightarrow =\text{nì’}\) | \(R_1 \{\text{SUBJ: 3PI, Animate, Restr, Rever, ‘pro’}\} \{\text{[V]}\} \Rightarrow =\text{rehni’}\) |
| \(R_1 \{\text{SUBJ: 3Sg, Animate, Restr, Animal, ‘pro’}\} \{\text{[V]}\} \Rightarrow =\text{ma}\) | \(R_1 \{\text{SUBJ: 3PI, Animate, Restr, Animal, ‘pro’}\} \{\text{[V]}\} \Rightarrow =\text{ram}\) |
| \(R_1 \{\text{SUBJ: 3Sg, Inan, ‘pro’}\} \{\text{[V]}\} \Rightarrow =\text{ni}\) | \(R_1 \{\text{SUBJ: 3PI, Inan, ‘pro’}\} \{\text{[V]}\} \Rightarrow =\text{rehny}\) |
9.3 Rules of referral

What of the realization rules that add affixes to other parts of speech? One might think that we would need separate rules for objects of verbs, prepositions, quantifiers, and nouns, adding considerable redundancy to the system.

For example, it might appear that we need a rule like the following:

\[(45) \quad R_{II} [OBJ: \text{3PI}, \text{Animate}, \text{Gen}, \text{Ord}, \text{‘pro’}] ([V [Native: \text{Yes}, \text{SUBJ:Non-Interr}, \text{‘pro’}]) \rightarrow \text{rehby}\]

But there is a problem with this rule. Its seems to treat as accidental the fact =rehby is the realization for both Subjects and Objects that are 3rd person, Animate, General, Ordinary, ‘pro’.

Here we can use an innovation in realizational approaches to morphology – rules of referral (Zwicky 1985, Stump 1993). These rules say that instead of independently stating a morphological rule for every feature combination, we can have some feature combinations defined as yielding a result which is identical to that of some other rule.

For instance, in Spanish the 2nd person formal is always identical to the 3rd singular. In such a case, we do not need a distinct rule for 2nd person formal. Instead, we may have a rule of referral like the following:

\[(46) \quad R_{\{\text{SUBJ: 2SG}, \text{Formal}\}} (\text{Verb, } \Phi) = R_{\{\text{SUBJ: 3SG}\}} (\text{Verb, } \Phi)\]

This rule says that anytime we encounter a verb with a 2nd person singular formal subject, we find the affix by looking at the result of 3rd person singular, keeping all other features \(\Phi\) (tense, aspect, mood, etc.) constant.

Using this approach, the rules for adding affixes corresponding to possessors, objects of prepositions, and restrictions of quantifiers can all refer back to the rule for subjects:

\[\begin{align*}
(47) \quad & R_{I\{\text{POSS}\}} (\text{Noun, } \Phi) = R_{I\{\text{SUBJ}\}} (\text{Verb, } \Phi) \\
(48) \quad & R_{II\{\text{OBJ}\}} (\text{Prep \{Native: Yes\}, } \Phi) = R_{I\{\text{SUBJ}\}} (\text{Verb, } \Phi) \\
(49) \quad & R_{I\{\text{RESTRICTION}\}} (Q, \Phi) = R_{I\{\text{SUBJ}\}} (\text{Verb, } \Phi)
\end{align*}\]

These three rules tell us that there is complete identity between the affixes marking subject, possessor, object of a preposition, and restriction of a quantifier.

Note that a nice result of this approach is that objects of prepositions can be specified to get the same set of affixes as the subjects of verbs. There’s no need to have all OBJ grammatical relations trigger the same kind of morphology.

To return to the case of objects of verbs, here we see only partial identity between the two sets, since most subject clitics are not available as object clitics. We can specify the partial identity with the following rules of referral:

---

7 For expository reasons, I have made some slight simplifications to Stump’s original formalism.
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(50) $R_{II \{OBJ: \text{3pl}, \text{`pro'}\}} ([V \text{Native:Yes, SUBJ:Non-Interr, `pro'}, \Phi]) = R_{I \{SUBJ \text{3pl, `pro'}\}} (\text{Verb, } \Phi)$

(51) $R_{II \{OBJ: \text{3sg}, \text{Animate, Restricted, `pro'}\}} ([V \text{Native:Yes, SUBJ:Non-Interr, `pro'}, \Phi]) = R_{I \{SUBJ: \text{3sg, Animate, Restricted, `pro'}\}} (\text{Verb, } \Phi)$

The first rule of referral says that all 3rd person plural object clitics are identical to the subject clitics with the same features. The second rule says that 3rd person singular, animate, restricted clitics are identical to the subject clitics with the same features.

The 3rd person inanimate object clitic =ni and the animal clitic =ma are special cases, since they do not have exactly the same set of restrictions to native hosts, pronominal subjects, and non-interrogative subjects which are found with other object clitics. We can state their realization rules as follows:

(52) $R_{II \{OBJ: \text{3sg, Animate, Restricted, Animal, `pro'}\}} ([V \text{SUBJ:Non-Interr}, \Phi]) = R_{I \{SUBJ: \text{3sg, Animate, Restricted, Animal, `pro'}\}} (\text{Verb, } \Phi)$

(53) $R_{II \{OBJ: \text{3sg, inan} \}} (V, \Phi) = R_{I \{SUBJ\}} (\text{Verb, } \Phi)$

(52) is the rule of referral for the animal clitic =ma, and it says that the 3rd singular object clitic denoting an animal is identical to the subject clitic with the same features. This rule states that the verbal host of the clitic must have a non-interrogative, but it does not include the requirement of a native host and a pronominal subject which are found with other restricted clitics. Because (52) is a more specific rule than (51), it takes precedence over it.

(53) is the rule for inanimate objects, and it lacks all three restrictions typical of other object clitics, appearing on loan words, with non-pronominal subjects, and with interrogative subjects. Note, however, that this rule only applies to objects of verbs. When =ni is the object of a preposition, it follows the ordinary realization rule for other objects of prepositions, and resists attachment to a non-native host.

9.4 Exponence, alignment, and paradigm functions

These realization rules merely tell us which affix is added, without giving us the position of the affix. Stump's (2001) Paradigm Function morphology used realization rules that performed both functions. However, in the revision called Generalized Paradigm Function Morphology, which is advocated in Spencer (2003), and Luis and Spencer (to appear), there is a convincing argument that the identity of an affix (its exponence) ought to be separated from the placement of the affix (its alignment). This is due to the fact that identical affixes may sometimes show up in more than one position. Object clitics in Spanish, for example, precede finite verbs and follow non-finite verbs (the so-called "Tobler-Mussafia law").

Separating exponence from placement allows the same affix to appear in different positions, since alignment constraints may be sensitive to other morphological or syntactic features in the clause.

A paradigm function consists of three things - a specification of the stem and features to
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which the morphology applies, a statement of how the morphology is realized (the exponence), and a statement of the position of the morphology (the alignment).

So the paradigm function that adds the =rehby subject clitic to the verb bgwii ‘saw’ can be specified as follows:

\[ \text{For } \Phi = \{ \text{SUBJ:3PI}, \text{Hum}, \text{Animate}, \text{Non-Gen}, \text{Ord, ‘pro’}\} \]
\[ \text{PF} \left( \text{bgwii}, \Phi \right) = \text{def} \begin{align*}
\text{a. stem} & \quad \text{stem (gwii, } \Phi) \\
\text{b. exponence} & \quad R_1 \{ \text{SUBJ: 3PI, Anim, Gen, Ord, ‘pro’} \}
\text{c. alignment} & \quad \text{ALIGN (=rehby, L, V, R)}
\end{align*} \]

Unpacking the formalism, this function says that in order to add the morphology for a 3rd, Pl, Animate, General, Ordinary pronominal object to the verb stem gwii ‘see’, we do the following:

a.) pick the ordinary stem form gwii (i.e., not some irregular stem)
b.) get the morphology which the realization rule yields for this combination, namely =rehby, c.) and align the left edge of =rehby with the right edge of the verb.

Since the placement of the affix =rehby is determined by an alignment constraint, this constraint can interact with other constraints in the system.

Most of the other subject and object clitics in the system will have a paradigm function like that shown in (54). That is, the ordinary verb stem is selected, and the result of the realization rule is aligned with the verb.⁸

The prominent exceptions are the 3rd person inanimate object clitic =ni and the 3rd person animal object clitic =ma. As previously discussed, these clitics may attach to words other than verbs. Recall the following examples:

\[ \begin{align*}
\text{a.) B-gwii Juáñy=ni.} & \quad \text{‘Juan saw it (inanimate).’} \\
\text{com-see Juan=3i}
\end{align*} \]
\[ \begin{align*}
\text{b.) B-gwii Juáñy=ma.} & \quad \text{‘Juan saw it (animal).’} \\
\text{com-see Juan=3a}
\end{align*} \]

We can account for this by proposing slightly different alignment constraints for these clitics. The rule which adds the =ni clitic to the verb stem gwii ‘see’ is as follows:

\[ \text{For } \Phi = \{ \text{OBJ: 3Sg, Inan, ‘pro’}\} \]
\[ \text{PF} \left( \text{bgwii}, \Phi \right) = \text{def} \begin{align*}
\text{a. stem} & \quad \text{stem (gwii, } \Phi) \\
\text{b. exponence} & \quad R_1 \{ \text{OBJ: 3Sg, Inan, ‘pro’} \}
\text{c. alignment} & \quad \text{ALIGN (=ni, L, Word, R)}
\end{align*} \]

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⁸ Some Zapotec verbs do show irregular stems for the 1st person singular and/or plural, but I will not pursue that point here.
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The alignment constraint in this case simply says that =ni aligns to the right edge of some word. Unlike other subject and object clitics in the system, it is not constrained as to the part of speech of its host.

The alignment constraint for the animal clitic =ma is somewhat more complex. There are two subcases to be considered. In first case, the subject is a pronominal clitic and =ma aligns with the verbal host of this clitic. In the second case, the subject is the subject noun phrase, and =ma aligns with the noun.

However, the animal clitic =ma is not possible with a verb that has a fronted or interrogative subject, or with a complex post-verbal subject:

(57) a.) *Juáñy  ú-zífí’=àm. Juan com-buy=3a
    ‘Juan bought it (animal).’

b.) *¿Túú  ú-zífí’=àm? who com-buy=3a
   ‘Who bought it (animal)?’

(58) *Ú-zífí’  x-náán Juan=ma. com-buy p:mother  Juan=3a
    ‘Juan’s mother bought it (animal).’

The correct generalization can be stated as follows: =ma aligns with a constituent which contains phonological material corresponding to the subject of the sentence.

Lexical-Functional Grammar (Bresnan 1982, 2001, Dalrymple 2001) provides a simple way to refer to such a constituent. Constituent structure (c-str) is the representation of overt phrase-structure constituents, and functional structure (f-str) is an order-free representation of predicate-argument structure. The function N maps elements in c-structure to a corresponding element in f-structure. So the element or elements which map to the SUBJ are those for which the function N (SUBJ) holds true.

Using this notation, we can state the paradigm function for the animal clitic as follows:

(59) For \( \Phi = \{OBJ: 3\text{Sg}, \text{Animal}, \text{‘pro’}\} \)

\[
\begin{align*}
\text{PF} (X, \Phi) & =_{\text{df}} \begin{cases} 
\text{a. stem} & \text{stem} (X, \Phi) \\
\text{b. exponence} & R \{OBJ: 3\text{Sg}, \text{Animal}, \text{‘pro’}\} \\
\text{c. alignment} & \text{ALIGN} (=ma, L, \text{Word}_N \text{(SUBJ)}, R) 
\end{cases}
\end{align*}
\]

The alignment constraint here says that the left edge of =ma aligns with the right edge of a word, all or some of which corresponds to the subject. In this case of a verbal host, the preceding subject clitic corresponds to the SUBJ function; in the case of a subject NP, this constituent corresponds to the SUBJ function.

9.5 Optionality of object clitics
As we have seen, if the morphology yields a possible affix for some argument, then this affix is generally preferred over use of an independent pronoun:
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(60) a. Û-dâw=bí.
    com-eat=3

    ‘S/he ate.’

b.)*? Û-dâw lêh’=éhby.
    com-eat det=3

We can formalize this observation by using a constraint *STRUC, which penalizes (unnecessary) syntactic structure.

(61) *STRUC  Avoid syntactic structure.

Since the (a) alternative above uses a single word to express the content of the clause, while the (b) alternative uses two words, (b) violates *STRUC. If we rank the constraint *STRUC higher than the alignment constraint for the affix =bí, then we get a tableau like the following:

<table>
<thead>
<tr>
<th></th>
<th>*STRUC</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. )=Û-dâw=bí</td>
<td></td>
</tr>
<tr>
<td>com-eat=3</td>
<td></td>
</tr>
<tr>
<td>b. Û-dâw lêh’=éhby</td>
<td>*</td>
</tr>
<tr>
<td>com-eat det=3</td>
<td></td>
</tr>
</tbody>
</table>

However, when we turn to object clitics the situation is more complex. Here, both the morphological and syntactic expression of pronominal objects is acceptable:

(62) a. B-gwíi=ât=mà.
    com-see=2p=3a

    ‘You (pl). saw it (animal).’

b. B-gwíi=ât lâ’à=m.
    com-see=2p det=3a

    ‘You (pl). saw it (animal).’

Within the logic of Optimality Theory, this implies that there must be some disadvantage to object clitics which outweighs. One possibility is the approach suggested by Trommer (2003), where he posits a constraint COHERENCE, which penalizes candidates where a word agrees with more than one argument. I will formulate this as follows:

(63) COHERENCE (1) – A word must agree with at most one argument.

There is a presumably a family of such constraints with different weights – COHERENCE (1) specifying at most one agreement, COHERENCE (2) specifying at most two agreements, and so on. Overt agreement with more than three arguments is quite rare in the world’s languages, so it may be that COHERENCE (3) is nearly always undominated.

Candidates like (62a) above involve two agreement morphemes – one for the subject and one
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for the object.

If we allow the constraint COHERENCE (1) to have an equal weight to *STRUC, then we can get the desired result:

<table>
<thead>
<tr>
<th></th>
<th>*STRUC</th>
<th>COHERENCE (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.  ngữ-û̂̂=â̂̂̂=â̂̂̂̂</td>
<td></td>
<td></td>
</tr>
<tr>
<td>com-see=2p det=3a</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>b.  ngữ-û̂̂=â̂̂̂̂=mà</td>
<td></td>
<td></td>
</tr>
<tr>
<td>com-see=2p det=3a</td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>

10. Conclusion
The morphological approach to clitics outlined in this paper overcomes many of the problems associated with the syntactic model, which we must recognize as too simplistic to account for the full range of the data.

This morphological account is certainly more descriptively adequate, in that it allows the analyst to specify sensitivity to a wide range of syntactic, morphological, and etymological features that are relevant to the choice between independent and clitic pronouns in SDZ. The increase in descriptive adequacy is, of course, largely due to the increased formal power of these kinds of morphological rules plus the possibility of ranking alignment constraints.

I believe that the increase in formal power seems justified by the complexity of the data, and similar conclusions have been reached by researchers looking at clitics in other languages (e.g. Legendre 2000a on Romanian; Legendre 2000a, Spencer 2001 on Bulgarian.) The data do not yield to a simple syntactic solution, and we are led to conclude that Zapotec pronominal clitics show the sort of complexity typically associated with morphological paradigms.

References

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Concomitance in Huave

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1. The Huave and their language
Huave is a genetically isolated language spoken in four main variants by approximately 14,000 persons\(^1\) settled in the south-eastern part of the State of Oaxaca, between the mouth of the Tehuantepec River and the border of the State of Chiapas. From west to east there are four main Huave villages: San Mateo (SMo), Santa Maria (SMa), San Dionisio (SD) and San Francisco (SF). All of them include in their name the specification “del Mar,” and Huaves are frequently called mareños ‘from the seaside’. This ethnic denomination, the same as Huave, is perceived by most young persons as derogatory terms, so that in recent years in SMo the independent 1\(^{st}\) plural inclusive pronoun itoots\(^2\) (konaits in SF) ‘all of us’ has been selected as the ethnic self-reference name. Similar motivations led to an increasingly accepted use of the SMo expression ombeayiüts (umbeyajts in SF) ‘our mouth’, to refer to the Huave language itself. In the first and in the third village (SMo and SD), but particularly in the first one, the Huave language is used in daily life. According to the 2000 Census, 2,300 speakers (approximately one sixth) declared to be monolingual (INEGI 2004: 24). In the second and in the last village (SMa and SF) widespread bilingualism with Spanish has led local Huave varieties to obsolescence. At present they are spoken mostly by elders who do not have many chances to transmit their native language to young generations. Linguistic differences among the four main varieties are not insignificant: their phonetics, phonology, morphology, syntax, as well as discourse forms, differ quite sharply from one village to the other.

In this paper we will focus on the SMo variety studied in the past mostly by missionary linguists who produced, among other works, a dictionary (Stairs and Stairs 1981, quoted as SS) and a grammar (Stairs and Hollenbach 1981). Another linguist (Suárez 1975) made available, in an historical-comparative perspective, some data from the other three varieties of Huave. However, many linguistic dimensions, ranging from phonetics to discourse patterns, are still waiting to be dealt with by researchers.

During the last fifty years a few person wrote, only for personal use, some accounts. Recently, a set of these texts, written by a local native speaker (Olivares, w. d.) has been published by one of us (Cuturi 2003) as part of an anthropological monograph.

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1 13,678 according to the 2000 census, with an average 1,55% of annual increase (INEGI 2004: 16).
2 We adopt here the San Mateo writing convention where \(\dot{u}\) represents a high central-back vowel, and the other symbols (such as \(\ddot{j}\)) are used with a phonological value similar to that of standard Spanish writing, although, as for \(\ddot{j}\), the sound it represents in Huave is less strongly articulated from the Spanish standard.
Some salient phonological aspects of SMo variety are: two series of non-vocalic segments one plain and the other palatalized, the presence of pre-nasalized segments, a vowel system with five articulatory positions, each one with lengthening opposition, a pervasive system of vowel harmony, presence of tone with a very low functional load, stress frequently (but not always) falling on the final syllable (Suarez 1974, Pike and Warkentin 1961, Noyer 1992).

Word order is right-branching and basically VOS. The clause is head-marking and its structure is mostly accusative. Increasing bilingualism with Spanish has led to a high degree of variation in basic word order, and at present it is frequent to hear sentences produced with a SVO order. A large set of roots, many of them with a CVC structure, are verbo-nominal (frequently with “adjectival” derivations), while another large set (mostly plant and animal nouns), are exclusively nominal. We do not find any adjectival root but rather nominal derivations that refer to qualities. There are a few roots that can be considered adverbials and several that are indexicals: these include a set of eight independent pronouns, with one 1PL inclusive (quoted above) and one exclusive pronoun, and two pronouns 1+3 and 2+3, some pronominal forms which are tripartite along a scale of proximality, such as aaga...kam ‘this here’ to aaga... kiin ‘that there,’ and two grammaticalized prepositions, such as ti-(ul|uÝ) ‘spatial location’ (LOC) and wux ‘space (LOC), temporal and some logical relations of co-occurrence (REL),’ as the one in (6) ‘by radio....’ Both can have a sentence-final use, almost an adverbial one, as is exemplified in sentences (16) and (48) below.

Beyond the five inherently plural pronominals, and a few demonstratives (DEM), as aag/ajk-tuÝ, only a reduced set of nouns (mostly those referring to humans and to some parts of human body) can carry a pluralizing prefix or suffix (mon-, -tuÝ).

Case is almost totally absent as only one mark (-V) can be interpreted as a case mark and it occurs on the nominative forms of each one of the six 1 and 2 (SG and PL) independent pronouns (-e in xik-e ‘I,’ but -a in ikon-a ‘you (PL)’ and of the demonstrative aag-(a). Most morphological information is concentrated in the verb forms, where roots are modified by prefixes, suffixes and two infixes. Pronominal subject is always coded in the verb form, while direct and indirect pronominal object can be also cross-referenced on the verb. Tense and aspect (and only with limited presence, mood) are mostly (but not always) coded through grammaticalized auxiliary forms prefixed to the verb root. These are: Ø, for present reference, -l- for reference to ‘accomplished, past’ t/a (as in la-jaw-as ‘I saw’), la- for ‘complete, recent’ t/a, ap- for ‘unrealized, future’ t/a (as in ap-ma-jaw ‘s/he will see,’ that can carry also a prescriptive value), t(ing)ia(-l) ‘while, durative, in progress’ aspect. Some adverbial forms, such as aliun ‘still’ are also used in aspectually ‘continuative’ verbal forms. Person markers, different from independent pronouns, can either precede (as in sa-jaw ‘I see’ and in sa-na-jaw ‘I will see’), or follow (as –as ‘1,’ in la-jaw-as above) the verb root, and in some cases can be incorporated into the forms of the above mentioned t/a markers. Subordinate verbal forms, characterized by prefixed nasal consonants (m-, n-), are highly frequent not only because they occur obligatorily

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3 In our analysis there is good evidence to single out the preposition as ti-, as in ti kambaj ‘in the village’, while –ül is the determiner –al, whose vowel underwent the SMo phonological change *a > ü; -ül derives from îül ‘ground, down’.

4 A phonological rule, very productive in Huave morphophonology, has to do with the moras: (-) (V)VV C[-son] # > VVj C[-son] + Suf: aag > ajk-tuÝ and a-kiîub > a-kiîjp-tuÝ. This change is different from the one enacted by the inserting of the morpheme –j “ergative mark”.

5 Young speakers quite frequently dismiss the –V mark of nominative case, producing actually an independent pronoun at the indirect case; this is clearly exemplified by the self-reference term, the independent pronoun ikoots, assumed by them to be a nominative form, while by older speakers it is perceived as an indirect pronoun.
after t/a prefixes (as in ap-ma-jaw above ‘s/he will see’) and after auxiliary and modal verbs, but also because they connect verbal clauses, to express in this way chains of logical and syntactic relations, such as circumstance and amin⁶.

(1)  kiür i-saj ndo-t wüx ma-ndíüm me-kiitib m-iüün
   ‘Go to tell (him) if by chance he wants you to come with him’

2. Concomitance relations

In this paper we study the linguistic representation of several ‘concomitance’ relations in Huave. In a functional-typological perspective, in which a functional domain organizes a linguistic description, we adopt the framework developed by Christian Lehmann and Yong-Min Shin (forthcoming). The two authors distinguish seven relevant participant relations inside the functional domain of concomitance, a subdomain of the functional domain of participation. Lehmann and Shin refer “to a set of concepts and operations situated at the cognitive level which are manifested in the structure of particular languages via such typological concepts as comitative, instrumental, etc.” (Lehmann and Shin, forthcoming, p 7).

The background of the perspective adopted here is provided by the empathy hierarchy (Kuno 1987), similar to the “animacy hierarchy” proposed by Comrie (1981, Ch. 9) in which at least seven different levels or degrees of empathy are recognized: starting from the closest SAP group, the second level is the non-SAP (3rd person and part of the 1pl, depending on the person pronouns present in each individual language). The third level is provided by the human/non-human opposition, while the fourth by the opposition between this level of animate beings and that of inanimate entities. At a fifth level individual objects are opposed to substances or mass. The sixth level is provided by the opposition between reference to objects or substance/mass and to their location. Finally, at a seventh level of the empathy hierarchy the opposition between an entity and a proposition is included.

A perspective on involvement in the action and control on it is also very important for concomitance relations. Involvement and control are gradient hierarchies that usually extend

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⁶ The morphemic and lexical glosses represent an intermediate level of detail, with several approximations: for instance, both a-, aag and aaga are glossed “DET” (Determiner), while in a more detailed analysis the difference among the three forms should be pointed out (from a “simple” to an emphatic determiner); a verb-nominal root such as -kiitib/-kiitip- which occurs in several examples is glossed either “displace with” or “be with”, although it is clear that it assumes several other meanings, such as “to take”; a noun such as ombas is glossed “body”, but its meaning is very complex and this gloss represents only a small part of that complexity. Some morphemes need “complex” morphemic glosses: for example under past (PST) and future (FUT) tense morphemes. The first (ta-) carries a “complex” gloss with a person gloss (2, 3...) preceding the tense gloss, because the person semantic definition is part of the tense mark; when ta- is associated to 1S and 1PL exclusive (EX), however, there is no need of a “complex” gloss, as in these two cases the person morpheme (-Ya) shows at the end of the verb form and the gloss is put under it. As for the future (FUT) something opposite happens as we find “complex” glosses in 1S and 1P (EX), because the person morpheme sa- “displaces” or substitutes the future mark (ap-) which characterizes the other persons of the same tense. Abbreviations used: 1 = 1st singular; 2 = 2nd singular; 3 = 3rd singular; ABS = Absolutive; ADJ = Adjective; AG = Agent; ANM = Animate; APAS = Antipassive; CAUS = Causative; CLS = Close; CMP = Comitative; COM = Comitative; CTF = Centrifugal; CTP = Centripetal; DEM = Demonstrative; DET = Determiner; DIR = Directional; DIST = Distant; EXC = Exclusive; FUT = Future; GNR = Generalizer; IMP = Imperative; INCL = Inclusive; IND = Indexical; INT = Interrogative; NEG = Negative; NMR = Nominalizer; OBJ = Object; OBL = Oblique; PL = Plural; PN = Pronoun; POS = Possessive; PRG = Progressive; PST = Past; PSV = Passivizing mark (infix); QST = Question; RCP = Reciprocal; REL = Relational (wüx only); RFL = Reflexive; RND = Round; S = Singular; SBJ = Subject; STA = Static; SUB = Subordinate; VCH = Valence Changing.
from a central participation (a situation core), in the perspective selected by the speaker to depict a situation, to the peripheral participation in the same situation. Situations “are constituted by a set of entities, called participants, which are assembled around an immaterial center called the situation core” (Lehmann and Shin, forthcoming, p. 7). Along this dimension we should distinguish an experiencer, a recipient/addresssee, or goal, an emitter/source, a beneficiary/place, and concomitance relations. This is a very relevant hierarchy for Huave speakers.

As has been shown, starting from Seiler 1974, concomitance is a conceptual network that any language has to build on. As is well-known, the analysis of the Tool (TL) and Companion (CM) relations was confused in the past by claims such as that by Lakoff and Johnson (1980) who proposed a «metaphor of the companion» to explain the fact that in most European languages one single case relator, such as with, mit, avec, con, is used to codify both relations. In recent years a good deal of work has been done, in particular by a research team led by Thomas Stolz (Bremen, Germany), and it has been shown that the European type (called by Stolz and associates the “coherent” type) is found only in a minority of the languages of their substantial worldwide sample, while most languages codify TL and CM relations through two different forms. Some other languages, a minority indeed, have been found to follow more complex patterns, called “mixed pattern”. Huave should be included in this last group of languages. A full control is exerted either by a member of the closest SAP group (1s and 2s) in establishing a CM relation with a human (or even an animate) inside or outside that group, or by a human controlling an inanimate object, as in the TL relation. These participant relations form a continuum in terms of the empathy hierarchy as well as of the control hierarchy. According to Lehmann and Shin concomitance includes seven participant relations, viz. Partner (PR), Companion (CM), Tool (TL), Material (ML), Vehicle (VL), Manner (MR), and Circumstance (CE).

The same authors identify seven types of syntactic strategies employed in codifying concomitant relations, viz. Concomitant predication (Cp), Adpositional marking (Am), Case marking (Cm), Verb derivation (Vd), Incorporation (In), Conversion (Cv), and Lexical fusion (Lf). Each one of the fourteen languages taken into account in Lehmann and Shin’s study implement two or more of the above strategies. Furthermore, out of the 49 theoretically possible combinations of the seven participant relations with the seven coding strategies, ten have not been found in any one of the languages studied. For instance, in Yucatec Maya, that we point out here as the only Mesoamerican language in their sample, one coding strategy, Am, is widely used to codify all the seven participant relations; two other strategies, In and Lf, are used to codify TL relations, In to codify VL, and Lf PR and MR. An important dimension that must be taken into account is that of the degree of grammaticalization and lexicalization of each one of the syntactic codings.

In Huave, four strategies are implemented: Am, Cp, Cv and Lf. Due to the space limit, in this paper we will outline in some detail the first two and we will only mention, with a few examples each, the remaining two. A more extended discussion of Cv and Lf would lead into an extended discussion of Huave lexicon.

Although we believe that in general terms a correct expositive order would start from relations where human participants play the central role, viz. PR and CM, and proceed towards the abstract relations as MR and CE, in the following section, to make our presentation easier to follow, taking into account Huave peculiarities, we prefer the expositive order moving from less

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7 Although Stolz (1996) includes Huave among the languages that make a plain distinction between CM and TL, probably misled by the data available through Stairs and Stairs (1981), and Stairs and Hollenbach (1981).
to more prototypical forms of concomitance. So, we will start from the codification of the TL and ML relations (2.1.) moving from these to the VL relation (2.2.). At that point we move on to the CM and PR relations (2.3.). After this subsection we include a set of examples on food preparation and description (2.4.), a sub-area of concomitance that in SMo Huave presents some interesting peculiarities. In each subsection we will include a paragraph to discuss the codification of the "WITHOUT" relations, i.e. the absence of a possible or expected concomitance relation. Such relation puts some interesting challenges to Huave speakers, mostly to those of them who are bilingual with Spanish. In 2.5. we will briefly discuss some data of the MR and CE relations. In the final section (3.) we present a synthesis of our findings.

2.1. Tool (TL) and Material (ML): shared Am and Cp
In SMo Huave TL and ML relations are codified mostly through the Am strategy. No fully grammaticalized preposition is used to codify these relations, but rather a form quite close to grammaticalization, n-aag, that we analyze as the demonstrative (DEM) aag, (probably in the oblique case: not aag-a, nominative case) preceded by the “nominalizer” (NMR) n-. Naag usually precedes a non-human or an inanimate object, providing a nominalized emphasis to the concomitant relation the agent (AG) establishes with it.

2.1.1. Tool (TL)
2.1.1.1. Adpositional marking (Am)
Naag is used when the TL is a part of the human body as, almost prototypically, the hand:

(2) mea w-an ne-jew ap-me-ndeak-iw mbich n-aag-an owix nej-iw
    all-ABS NMR-deaf FUT-SUB-speak-3PL but NMR-DEM-ABS arm/hand 3-PL
    ‘All deaf persons speak but only with their hands’

(3) i-wüüch n-aag ngot
    2-blow NMR-DEM stick
    ‘Blow (him) with a stick’

(4) sa-ndok n-aag xa-ndok
    1-fish NMR-DEM 1/POS-fishing net
    ‘I fish with my fishing net’

In few, mostly lexicalized, cases wüü, with a REL more than LOC value, is used to codify some TL relations:

(5) xik-e sa-ndok aag-an wüü tarrüy
    1-SBJ 1-fish DEM-ABS REL casting net
    ‘I fish only with the casting net’

Perhaps under the influence of bilingualism with Sp. (that, as a “coherent” language has con as a multi-purpose preposition), n-aag can be used to codify relations that can be interpreted as at half way between a TL and a Companion (CM) relation. An animate being as a dog can be referred to in such an intermediate role, even if its participation in human activities is not frequent among the Huave:
(6) *sa-na-sap* pixix *n-aag* xa-pet
   1/FUT-SUB-catch duck NMR-DEM 1/POS-dog
   ‘I will go to hunt ducks with my dog’

2.1.2. Material (ML)
In cases where there is not a clear-cut distinction between ways of codifying TL and ML relations *naag* codifies the last, as in:

(7) *ta-xembe-as* xa-pet *n-aag* yow
   PST-wash-1 1/POS-dog NMR-DEM water
   ‘I washed my dog with water’

*Naag* codifies most, but not all, ML relations:

(8) *ta-rang* tey *n-aag* opang xiül a *Ben*
   PST-make mask NMR-DEM bark tree DET Benigno
   ‘Benigno made a mask with a tree bark’

(9) *Müm Tine* ta-jüy *mi-meed* nej *n-aag* ni-ndil-aran jaünch
   ‘Lady Justina wove her *huipil* with hand-spun thread’

(10) *ta-nchom* a cruz *n-aag* chicot iüt a *Chey*
    3/PST-paint DET cross NMR-DEM muddy-reddish earth DET José
    ‘José painted the cross with reddish mud’ (SS: 36)

In (8), as no verb such as “to cut, to carve” exists in Huave, that meaning is provided by the verb *–rang* with the generic meaning “to do, to make”, combined with the reference to the material used (bark tree) and the result of the action (a mask). Not so in (9) and (10), where *–jüy* ‘to weave’ and *–nchom* ‘to paint’ have much more focussed meanings, complemented by the explicit reference to the materials employed.

2.1.3. “WITHOUT”
The Spanish preposition *sin* ‘without’, together with several others, found its way into Mesoamerican Indigenous linguistic use, probably since early contact days (Suárez 1983). Also in SMo everyday speech “WITHOUT” is often codified through Sp. *sin*. However, in several cases, to express the absence of a usually assumed concomitance relations a set of linguistic devices is implemented. In several cases, absence of TL/ML relations can be expressed through different constructions and/or rhetoric devices by speakers who refuse to use Sp. *sin*. In the most common of these constructions the Verb *–jiür* ‘to have’ follows NEG:

(11) *Xowan a-pal a ombüüm nawiig ngo ma-jiür nekiandeay*
    Juan 3-close DET covering paper NEG 3/SUB-have glue
    ‘Juan seals up the envelope without any glue’
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This way of expressing the absence of a TL or ML reveals, as expected, a proximity with a possession relation, the same expressed in positive terms to codify relations that in several SAE languages take advantage of the WITH preposition:

(12)  

\[
\text{a maxey a-jiür soots}
\]

DET man 3-have moustache

'The man with moustaches...'

In other cases, even when the idea of absence of possession is implied, other, more complex, devices are implemented. To say that somebody left for a trip "WITHOUT" having any money, a rhetoric device such as a question and an answer was used in a narrative produced by a consultant:

(13)  

\[
\text{ta-mb Latiük; ngineay ta-mb? ngo ma-jiür tomiün}
\]

3/PST-go Tehuantepec; how 3/PST-go? NEG 3/SUB-have money

'He went to Tehuantepec; how did he go? He does not have any money'

2.1.2.  Conversion (Cv) and Lexical fusion (Lf)

Some examples of Cv and many of Lf strategies are found in the codification of TL and ML relations. However, when we watch at the Cv strategies, we must be very careful about the Verb-Nominal roots. So, in (4) above we find -ndok glossed both 'to fish' as a Verb and 'fishing net' as a Noun, so that -ndok could be interpreted as an example of Cv, but we prefer to consider it as one of the many cases of Verb-Nominal roots that show up in their multiple lexical realizations. In the same way, we have -rants 'strainer, filter' and (a)-rants 'to strain, to filter', -jimb 'to sweep' and ni-jimb 'broom', -ndil 'to spin' (in (9) above) and ni-ndil 'spindle'.

Some verbs lexicalize the TL used to perform a specific action: -ntsom-tsom 'to cut with a sow'; -jeng 'to cut with a hook'; another verb of the same semantic area, -jok 'to cut wood', lexicalizes the ML being cut, implying at the same time the TL used: an ax or at least a machete; in a similar way -peed 'to cut flowers or fruits' implies the use of a knife or of scissors. In another area of activities -peat 'to weave, to braid, to plait, to intertwine', lexicalizes the ML being used: the dry palm leaves intertwined to build the roofs.

Some verb roots lexicalize body parts as the TL of the action: -kuūch 'kick (with the foot)', -kuūch tiūt 'press, squeeze (with the foot)', -kūtich 'to bite (with the teeth) without the aim of eating'; -peand 'squeeze, pinch, press with the hand'; in some cases even the position of the body part used in the action is lexicalized, as, for instance, in -anotot tiūt 'to carry something in the hand with the arm straight down'.

As for ML, the verbs -jūy and -nchom found in (9) and (10) above, imply the use of threads and a hand loom (the first) and some coloring material and some tool to smear it on a surface, as it means not only 'to paint', but also 'to stain, to spot'.

2.2.  Vehicle (VL)

2.2.1.  Adpositional marking (Am)

Vehicles can be perceived, and codified, as special types of instruments; for instance, in several European languages "WITH" prepositions are used to codify VL relations. In SMo Huave the two basically locative prepositions mentioned above, ti-(ūl) and wūx, are alternatively used to codify VL relations:
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(14) oxeq sa-na-mb Sevesend sa-mb ti-ül mëx
tomorrow 1/FUT-SUB-go Juchitan 1-go LOC-DET canoe
‘Tomorrow I will go to Juchitan by bus’

(15) tim ta-mb-as Latiük sa-mb wëx xe-bisiklet
yesterday PST-go-1 Tehuantepec 1-go REL 1/POS-bicycle
‘Yesterday I went to Tehuantepec by bicycle’

In (14) ti-(ül), expresses the conception of the canoe, as a “container”, while in (15) wëx expresses the perception of the bicycle as a vehicle that somebody “rides”, as a horse. In questions about the vehicle someone came in, such as “how did you come?”, ti-ül is the commonly used preposition, because the most unmarked assumption is that one came in a “container” as a bus. In the story told by the same consultant of example (13) we find:

(16) kwa-ne ir-iümb ti-ül
what-INT 2-come LOC-DET
‘How did you come?’

2.2.2. Concomitant predication (Cp) and Conversion (Cv)
In some cases a human being can assume the role of a VL for another being, for instance, when s/he carries a chicken. In these cases verb roots such as -kitük and -joy are used. However, in these cases the way in which something is carried is usually made clear and some verbs derived from Conversion are used: one example is provided by -pech tiüüt ‘to carry somebody, or something, on the shoulders’ (a-pech); another verb lexicalizes a sort of “meta-vehicle” relation: -mbej ‘carry something on the neck on the top of another burden’. While the first verb lexicalizes a human as a VL, the second, that implies also a basic “human” meaning, is frequently employed to refer to an over loaded bus or truck.

2.2.3. Lexical fusion (Lf)
While in many languages we find several examples of Lf, usually verbs such as “ride (a horse)” or “sail (in a boat)”, codifying a VL relation, in SMo Huave the only verb of this type is -jüy ‘to walk’ (found in (9) with the meaning ‘to weave’, probably by metaphorical extension, as the thread “walks” through the weft).

2.2.4. “WITHOUT”
To codify the idea of the absence of a VL, usually two sentences are needed: the first carries the absolutive mark -an, ‘only’ and the second one the NEG, as in (17):

(17) Xowan a-mb a-ndok a-jüy-an ti-ült; ngo na-mb ti-ül mëx
Juan 3-go 3-fish 3-walk-ABS LOC-ground; NEG 3/SUB-go LOC-DET canoe
‘Juan goes to fish only walking; he does not go by canoe’

2.3. Companion (CM) and Partner (PR)
As we have seen, the three Concomitance relations discussed above, TL, ML and VL involve, as obvious, mostly inanimate entities, some animate non-human participants or parts of the human body.
Partner (PR) and the Companion (CM) are Concomitance relations in which mostly human or
at least animate beings must be involved (as in 6) above. A basic distinction between “AND”
and “WITH” languages has been made by some linguists. This reflects on the symmetry, or
asymmetry, found in different languages in codifying PR and CM relations. SMo Huave
definitely joins the set of “WITH” languages, and it has no parathetic conjunction such as “AND”
(nor any disjunction such as “OR”). As a consequence, the expression of PR relations in Huave
discourse is much rarer, and difficult, than that of CM relations. The basic point is that relations
must be centered around a referential core (or “pivot”) that assumes the agency and the control
on the relation. So we will discuss first the codification of the CM relations and only marginally
PR relations.

2.3.1. CM
In SMo Huave, CM relations are coded basically through three main strategies: two of them
through Am strategies (ANAAG and AWEAAG types) and one through a Cp strategy (-KIIÜB
type). Lexical fusion (Lf) and conversion (Cv) strategies play also important roles.

The first two types on one side, and the third, on the other, occupy two different levels in the
grammaticalization scale, while each one of them codifies three different levels of agency and
control in the CM relation. Each one of the three types is selected by speakers on the base of a)
which Speech Act Participant(s) (SAP) is/are “concomitant” with whom, b) the level of agency
of the core (“pivot”) of the comitative relation, and c) the presence/absence of displacement or
movement.

The first type, ANAAG is the most restrictive of the three, as it codifies a face-to-face
interaction inside the SAP group, with the speaker or the addressee as the core, or “pivot”, of the
relation: 1S + 2(P); 1S + 3(P) and 2S + 3(P), all three highly marked as for agency and control.
Relations centered on 1P or 2P are codified with the KIIÜB type, as we will see below.

The second type, AWEAAG, codifies the relations external to the closest SAP group and as
such, it is much less marked as for agency and control: in a sense it codifies relations where
“control”, or responsibility, is much less relevant (3S/P + 3S/P).

The third type, the Cp -KIIÜB, a verb-nominal root, is fully flexible and as such it can carry a
set of morphological marks so that it codifies with a relatively high definition a large set of CM
relations, as well as the relative agency and responsibility of their participants. It can cover the
following CM relations: 1S + 3P; 1S + 2P; 2S + 3P; 2S + 2P; 1(3)P + 2P; 1(3)P + 3P; 2P + 3P;
3P + 3P. This type is also used to codify displacement or movement in a CM relation.

Each one of the three types, but particularly the last one, assumes, as we will see in the
following examples, diversified forms. While the two Am types, can occur in two forms each
(with their plural forms anaŋkâw and aweiŋkâw, respectively), the third, -KIIÜB, can occur in
at least ten derived forms. In all, as many as approximately 15 forms codify CM relations.

2.3.1.1. Am
2.3.1.1.1. The ANAAG type
It is easy to observe the similarity of ANAAG and naag, which codifies TL and ML relations. We
tentatively interpret the initial morpheme (a-, shared with the a-we-aag) as an agency mark (AG)
preceding the nominalized demonstrative n-aag, as ANAAG implies some degree of agency,
connecting the core referent with another human, or at least with an animate being.

There is some degree of variation among SMo speakers for the use of a-n-aag. Everyone
accepts its use when the core of the CM relation is 1S (the speaker); most elder speakers,
however, use it also when the core is 2S, i.e. they use a-n-aag when the pivot is one of the two closest SA Participants, connecting in this way a SAP core with a 3rd person human participant. Those speakers who reject the use of a-n-aag to codify a CM relation between 2 and 3 persons use the –KlUB type (2.3.1.2.1.). Usually a-n-aag is followed by a pronoun or a noun, but it has also an adverbial use, and as such it can be used in a sentence-final position (as in (18)):

(18) xik-e sa-na-jluy a-n-aag ik pero ik-e la-ngo-me-amb
1-SBJ 1/FUT-SUB-stay AG-NMR-DEM 2/OBL but 2-SBJ CMP-NEG-2/SUB-go
wux ombas mi-ntaj ap-me-jluy a-n-aag xik
LOC body 2/POS-wife FUT-2/SUB-stay AG-NMR-DEM 1/OBL
‘I will stay with you, but you will not go to have relations with your wife; you will stay with me’ (Olivares, w.d.)

(19) i-nganeow a-n-aag ti-ul no-ik wax
2-drink AG-NMR-DEM LOC-DET one-RND cup
‘You drink (with him) from one (single) cup’

(20) sa-ndeak a-n-aag
1-speak AG-NMR-DEM
‘I speak with him/her’

A sentence such as (21) conveys an emphatic and angry attitude of the speaker:

(21) nej sa-ndeak a-n-aag!
3 1-speak AG-NMR-DEM
‘I speak with him/her!’

(22) sitel tea-xom (aaga nux) kyaj ap-me-saj me-xood a-n-aag
if 2/PRG-find (DEM girl) IND FUT-2/SUB-tell 2/SUB-rest AG-NMR-DEM
‘If you find a girl, you will tell her that you will rest with her’ (Cuturi 2003: 116)

(23) i-t a-n-aag Dinis
2-eat(IMP) AG-NMR-DEM Dionisio
‘Eat with Dionisio!’

The importance of the SAP core (“pivotal”) reference is stressed by the rejection of a sentence such as:

(24) *nej üe-t a-n-aag xik
3 3-eat AG-NMR-DEM 1/OBL
‘He eats with me’

Non-human animates can be referred to either as “instruments”, if not exactly as “Tools” (TL) of an action, or rather as CM: if someone goes out with his dog without any plan of engaging it in an activity such as hunting (as in 6), the CM, rather than TL component in the relation between the human and the dog prevails:
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(25) ta-mb-as Gatapan a-n-aag xe-pet
    1/PST-go-1 Huazontlan AG-NMR-DEM 1/POS-dog
    ‘I went to Huazontlan with my dog’

The use of the pluralized form a-n-ajk-iw is perfectly accepted by some SMo (elder?) speakers, while others (mostly young ones) ascribe its use to SMa and SD varieties, but exclude its use from a “correct” use of the SMo variety.°

(26) ta-ndeak-as a-n-ajk-iw
    PST-speak-1 AG-NMR-DEM-3PL
    ‘I spoke with them’

2.3.1.1.2. The AWEAAG type

This type codifies mostly “Companion” relations among 3rd persons, i.e., relations in which the members of the closest SAP group are not involved. As for a-n-aag, we tentatively assume that the DEM aag is preceded by an AG morpheme (a-) followed by –w- interpreted as a Centrifugal (CTF) morpheme: *a-w-a-aag > a-w-e-aag (?). The presence of this morpheme only suggested by us, as it could mark a relation “out” of the speaker’s control or out of reach for his/her agentivity. This a dimension is very important for SMo Huave speakers. In most of its uses AWEAAG implies a relation between two persons:

(27) ta-jlüy no-p miim nata-jaaj a-kül a-we-aag no-p nine nench
    3/PST-stay one-ANM lady old-woman 3-live AG-CTF-DEM one-ANM little boy
    ‘There was an old lady; she lived with a little child’ (Cuturi 2003: 231)

(28) no-p nipilan na-jneaj omeaats naxey ngo ma-jküzü a-we-aag algane
    one-ANM person ADJ-good heart man no 3S/SUB-be upset AG-CTF-DEM anyone
    ‘A person (to be elected should be) kind-hearted, a man not upset with anybody’
    (Mikwal iüt 2001: 7)

As ANAAG, also AWEAAG is used adverbially in a sentence-final position:

(29) a-nganeow a-we-aag
    3-drink AG-CTF-DEM
    ‘He drinks with another one’

(30) ta-piüng aaga najtaj para ma-rang-iw no-ik gusto ma-jlüy a-we-aag
    ‘The woman told (the man) to do something pleasant together’ (Cuturi 2003: 114)

With a sentence as (29) the speaker means that two persons are drinking, each one on its own. To convey the meaning that more than two persons are drinking from the same cup (or glass) a form

° Some elders volunteered on this sentence the observation that the persons spoken with are a little removed from the speaker. Such a “space” or “distance” dimension deserves further research, as this observation could suggest that in Huave a distinction could be found out between close and distant location between the participants in a CM relation, as in sentences (56)-(58) below, where the relation “be upset with somebody” is expressed.

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such as:

(31)  
a-nganeow-úw  
3-drink-PL  
‘They drink together’

must be used. If a person speaks with a group, understood as another entity, the plural form of AWEAAG is used:

(32)  
a-ndeak a-we-ajk-úw  
3-speak AG-CTF-DEM-3PL  
‘He speaks with them’

A construction such as *andeakúw aweajkúw ‘they speak together (with them)’ is rejected: this relation (3P+3P) must be codified through the -KIIÜB type (see 2.3.1.2.1.).

In some cases aweaag (but, of course, never anaag) can be used for CM relations in which not human animates are involved:

(33)  
a-meay a-we-aag a miüs a pet  
3-sleep AG-CTF-DEM DET cat DET dog  
‘The dog sleeps with the cat’

In some cases either a-n-aag or a-we-aag are used with the verb root -ngoch “to meet, to contact, to be in front of”, to refer to spatial limits or borders, or to a more or less proximal contiguity between both static and moving objects. An example of “static” contact, with a 1S core is provided by:

(34)  
xik-e sa-ngoch a-n-aag xa-koj sa-ngoch a-n-aag calle  
1-SBJ 1-contact AG-NMR-DEM 1/POS-brother 1-meet AG-NMR-DEM street  
‘(My house) borders on my brother’s house and on the street’

An example of a similar use of aweaag, with 3S core is:

(35)  
aag agüy sa-niüng nganüy a-ngoch a-we-aag-an a-niüng xa-koj  
DET IND 1/POS-place now 3-meet AG-DEM-ABS 3/POS-place 1/POS-brother  
‘(This is) my house now is just in front of that of my (older) brother’s’ (SS: 41)

One example of non-“static” contact is provided by:

(36)  
kos na-pak a-kwiü a kamion, a-ngoch a-we-aag ali-no-ik  
because ADJ-be strong 3-run DET bus 3-meet AG-CTF-DEM DET-one-JOINT  
‘The car crashes with another one because it speeds’

2.3.1.2. Cp
2.3.1.2.1. The -KIIÜB type
Movement, or displacement, is an important, but as we will see below, not exclusive dimension
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in the use of the third type, -KIiUB. We suggest that the basic meanings of -KIiUB are: ‘to move, with, to displace with’, implying a shared aim among the agents acting together, and also, even if in a relation of asymmetrical agency, ‘to take away somebody’. The following sentences provide some examples of -KIiUB used with these meanings. Usually a directional, either centripetal (CTP) or centrifugal (CTF), accompanies -KIiUB, and the translation we provide is, respectively, either “to come with” or “to go with”:

(37) t-iün na-kiiüb
3/PST-DIR/CTP 1/SUB-move with
‘I came with him’

(38) ngo na-yaag ombas-üw mon-xey i-kiüjp-an-üw m-iün kyaj
NEG 1/SUB-know body-PL PL-sir 2-move with-2PL-3PL SUB-DIR/CTP ÌND
‘I don’t know these men you came with’

(39) ta-mb-as-an na-kiüjp-an Latiük, ndoj
PST-DIR/CTF-1-1PL/EXC 1/SUB-move with-1PL/EXC Tehuantepec after
ta-ndilil-üs-an
PST-come back-1-1PL/EXC
‘We (excl.) went together to Tehuantepec and later we came back (together)’

Examples of -KIiUB expressing a relation of asymmetrical agency, ‘to take away somebody’, are:

(40) sa-kiüü-raa-b ma-mb ti-ül manchüük
1-move with-(VCH?) SUB-DIR/CTF LOC-DET prison
‘Somebody takes me away (forcibly) to the prison’

In the above sentence -r(aa) - is a valence-changing infix: it changes the syntactic function of the Verb-initial 1S morpheme sa- from subject to object. In the two sentences below, - KIiUB is used with a similar meaning, with different degrees of asymmetrical agency:

(41) Teat Beto ta-mb ma-jan xik xa-niüng na-kiiüb /
Mister Beto 3/PST-DIR/CTF 3/SUB-take 1/OBJ 1/POS-place 1/SUB-move with /
ta-kiüjp-as ma-mb ti-ül plas
PST-move with-1S SUB-DIR/CTF LOC-DET market
‘Mister Beto came (from his place) to my place to pick me up for the two of us to go to the market’

(42) Teat Beto ta-mb ma-jan xik xa-niüng ma-kiiüb
1/OBL (SUB-matter NEG 1/SUB-want but PST-go-1)
‘Mister Beto came (from his place) to my place to pick me up (I went, but without participation)’

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The last sentence implies that the speaker joined Beto without any special involvement or agency. The two forms of -kiiub in (41) and (42) show the important difference between the 1S subordinate marker na- and the 3S subordinate marker ma-. The difference is one of perspective, as in SMo Huave the use of a 3rd person agent is possible only to convey the meaning that the speaker does something together with somebody else without any special involvement or will, something like a passive or subordinate participation. In some cases, displacement can be understood also in its time dimension, as in:

(43)  
la-me-ngoch  i-wix  me-kiiub  mi-noj  nganuy  
CMP-2/SUB-cross 2/POS-hand 2/SUB-be with 2/POS-husband now  
lai-mbas  me-kiiub  
CMP-3/SUB-take 2/POS-body 2/SUB-move with  
‘You already married with your husband; now get acquainted with him’

In (43) the first occurrence of -kiiub is glossed ‘be with’, the second ‘move with’; quite often indeed -kiiub does not convey any meaning of displacement, in these cases the core of its meaning is that of the asymmetry of the agency: an action is led by somebody and is not parthetically shared among the participants. In the following examples -kiiub is used with its static meaning:

(44)  
sa-ndeak  na-kiiuwp-uw  
1-speak 1/SUB-be with-3PL  
‘I speak with them’

(45)  
ap-m-uet-iits  ma-kiiuwp-ajts-uw  
FUT-SUB-eat-1PL/INC SUB-be with-1PL/INC-3PL  
‘We (inc.) will eat with them’

In several uses of -kiiub the prefixed person mark refers to the agent (the core of the action), while the suffix(es) refer(s) to the person(s) with whom the action is realized.

(46)  
ndot  na-tsoj-on  na-kiiuwp-an  aaga  nipilan  kyaj  
if 1/SUB-fight-1PL/EXC 1/SUB-be with-1PL/EXC DEM people IND  
ap-ne-tam  xiyay tomiin na-ndroch-ey-on  wix  
FUT-SUB-need much money 1/SUB-loose-RFL-1PL/EXC REL  
‘If we (excl.) fight with those people there, we should expect to loose much money in the fight’

Static relations of contiguity among inanimate entities can be codified through -KIIUB as well:

(47)  
al-ma-kiiub  manguix  kyaj  aaga  xor  
STA-3/SUB-be with baking surface IND DET pan  
‘The pan is close the comal (baking surface)’
2.3.1.2.2. Non-human participants and inanimate entities
The following is a sentence parallels (6), but in place of naag, –kiüb is used to codify a fully CM relation with an animal:

(48) sa-na-sap pixix na-kiüb xα-pet
1/FUT-SUB-catch duck 1/SUB-move with 1/POS-dog
‘I will go to hunt ducks with my dog’

If somebody means that he will go somewhere taking his bicycle with him on its wheels (but not riding it) kiüb is used:

(49) tim ta-mb-as Latiük ta-kiüj-p-as xα-bisiklet
yesterday PST-DIR/CTF-1 Tehuantepec PST-move with-1 1/POS-bycycle
‘Yesterday I went to Tehuantepec with my bycycle’

In case he is going to carry his (seriously broken) bycycle, say, on his shoulder, the verb -j-o-y ‘to carry, to bring’ is used, preceded by the DIR -mb-:

(50) oxep sa-na-mb Gatapan sa-na-joy xα-bisiklet
tomorrow 1S/FUT-SUB-DIR/CTF Huazontlan 1S/FUT-SUB-carry 1S/POS-bycicle
‘Tomorrow I will carry my bycycle to Huazontlan’

In some cases, as when the reference is to an object ritually carried, as the holy candles by the Alcalde judges we find an emphatic use of –kiüb referring to the village authorities, who walk togethere, while the verb -j-o-y- is used as in (50):

(51) nej-iw teat Alcalde kyaj a-kiüb-kiüj-p-üw ma-mb
3-PL mister judge IND 3-move with-move with-3PL SUB-DIR/CTF
ingow-iw nej-iw a-joy-iw ma-mb nangaj kandeal
in place of-3PL 3-PL 3-carry-PL SUB-DIR/CTF holy candle
‘The Alcalde judges go, each one with his substitute, bringing with them the holy candles’ (Mikwal iüt, 2001: 11)

In this sentence we find a reduplicated form of –kiüb with a distributive meaning: ‘each one going with (his own)’.
-Kiüb- shows up also in serial constructions, that we cannot analyze here, such as:

(52) oxep i-ji-m-iün üüch a-kiüb machat a-kiüb üech
tomorrow 2-carry-SUB-DIR/CTP 3/give 3-move with machete 3-move with ax
‘Tomorrow come with the machete and the ax’

where -ji- is a variant of the form -j-o-y- occurring in (50) and (51).

2.3.1.4. Some “special” or apparent, CM relations
To express a psychological state such as “to be upset with somebody”, only marginally related to concomitance, a construction with the verb –jaw “to see” is used:
(53) \(\text{na-j-küy} \quad \text{ma-jaw} \quad 	ext{xik} \quad 	ext{ta-tsamb} \quad \text{xik} \quad \text{a pet}\)
NOM-RFL-be upset 3/SUB-see 1/OBJ 3/PST-bite 1/OBJ DET dog
‘Upset with me the dog bite me’

Another way to express the same meaning is likely to be a calque from Sp. *enojarse con* ‘to be upset with’: the comitative adposition *anaag* is used (introducing a fully coded concomitance relation):

(54) \(\text{sa-j-küy} \quad \text{a-n-aag} \quad \text{a} \quad \text{Dinis}\)
1-RFL-be upset AG-NMR-DEM DET Dionisio
‘I am upset with Dionisio’

2.3.2. Partner relations (PR)

2.3.2.1. Cp

As already stated, in the basic distinction between “WITH” and “AND” languages, Huave goes with the first group. Plain conjunction is totally missing under any possible form: independent, prefixed or suffixed to a complex form. So, the codification of a relation conceived of as one of full parity is completely absent. Reference to a core or pivot is needed to talk about either an action or a state of things, and a form of the verb –*küüb*, glossed in these cases as “be with”, inevitably shows up:

(55) \(\text{sa-na-tepe-aiw} \quad \text{ningüy} \quad \text{nej-iw teat} \quad \text{Xowan ma-küüb}\)
1/FUT-SUB-greet-3PL IND/CLOSE 3-PL mister Juan 3/SUB-be with
\(\text{müm Blanca mi-ntaj} \quad \text{nej}\)
lady Blanca 3/POS-wife 3
‘I will greet here Mr. Juan and his wife Ms. Blanca’

2.3.2.2. Lf

A basic coding of human co-presence is found in the four plural (not 3rd person) pronominal forms: *ikora*, *xikona*, *ikona* and *ikootsa*. The last one has been mentioned above, in 1. as the 1PL form with the most inclusive meaning, ‘all of us’ (usually the Huave people). This form, as well as the first and the third, is based on the forms *ik* ‘2’, while the second one, on *xik* ‘1’; –*or*, –*on*, and –*oots*, are the same pronominal endings of the corresponding verbal forms.

There are, however, at least three numeral pronouns (plus the forms derived from them) based on numerals for “two”, “three” and “four”, that codify a parity relation between two or among three and four persons. In (56) we find a form derived from *ipüe* ‘both of them’, preceded by a possessive prefix; in this sentence the difference between the codification of a PR and a CM relation plays a central role:

(56) \(\text{wüx} \quad \text{ta-ndaab} \quad \text{a} \quad \text{ijüm} \quad \text{ta-ndeow-iw} \quad \text{m-ipüe} \quad \text{a} \quad \text{pore naxey}\)
REL PST-burn DET house PST-die-PL POS/3-DUAL/PN, DET poor man
\(\text{ma-küüb} \quad \text{mi-ntaj} \quad \text{nej}\)
3/SUB-be with POS/3-wife 3
‘When the house burnt, both the poor man and his wife died’ (SS: 96)
2.3.2.3. Some special PR relations
Some reciprocal and/or symmetrical actions, as well as simultaneous actions, can be codified
taking advantage of the same numeral pronouns; in (57) the reciprocal ending –a-yej modifies
–kitūb, to convey the meaning that a man and a woman decided to stay together as a couple:

(57) ta-kitūb-ayej
    PST-be with-RCP/3PL
    ‘They stayed together’

A metaphor (possibly coined by a Missionary) a-ngoch owix literally ‘to cross hands’, means ‘to
marry’, occurs in (43) followed by a form of –kitūb. The same metaphor can be also followed by
aweaaq as in:

(58) a-ngoch owix a-we-aag
    3-contact arm/hand AG-CTF-DEM
    ‘Cross (their) hands’

The opposite action, ‘to split, to separate’, not necessarily a reciprocal one, to be expressed needs
a more elaborate construct, where –kitūb- is used:

(59) ta-kweat-ayej ma-kitūb mi-noj nej
    PST-leave-RCP/3PL 3/SUB-be with 3-husband 3
    ‘(She) and her husband separated’

Sentence (53) (and (54) as well) provide examples of two ways of expressing the psychological
state of “being upset with somebody”. When the same attitude is shared by two persons, only a
form of the verb –j-kūy followed by the reciprocal ending can be used:

(60) a-j-kūy-ayej nej-aw-ayej
    3- RFL-be upset-RCP 3-PL-RCP/3PL
    ‘They are upset one with the other’

In (61) the same reciprocal ending follows the numeral pronoun ijpūej, to convey the meaning of
two agents acting simultaneously:

(61) ta-xom-iw ijpūe-yej wūx
    PST-see-PL DUAL/PN-RCP/3PL LOC
    ‘They both saw (it) at the same time’

The same meaning of a simultaneous action is conveyed by the reciprocal ending:

(62) wūx t-ajlos a pet al-e-amb-iw kyaj a-jaw-ayej alos
    REL PST-thrown DET dog DUR-DIR/CTF-PL IND 3-see-RCP/3PL thrown
    ‘When sombody threw (a stone) at a dog they were walking and saw at the same
time that it had been hit’
Reflexive (RFL) verbal forms are used in many cases with a reciprocal meaning of parity:

(63)  
\[ sa-na-sojnung-ay-on \]  
FUT-SUB-meet-RFL-1/2  
'We (incl.) will meet'

2.4. Food preparation and description
Linguistic coding of several aspects of food preparation and description deserves a special treatment because, as it will be clear in this section, ML (in this specific discourse area "ingredients"), a few TL and some special "Companion" (CM) relations are coded, taking advantage of the linguistic strategies already described, as well as of others, which are peculiar to this discourse area. Beyond the Am strategies already presented above under 2.2. and 2.3., we find some other strategies, basically Cp ones, in which either "putting" or 'adding' (-yak) some ingredient is made explicit in referring to food preparation or a sort of peculiar CM relation is codified in a specific way (ind 'want') in food description.

2.4.1. Food preparation
\( Ti-(u)l \) is used in talking about food preparation ("confective" according to Lehman and Shin, forthcoming) to express an asymmetric relation (typical of a "WITH" language as Huave) between two ingredients. When two different ingredients are mentioned, stressing their co-presence without assuming any reciprocal interdependency, -kiitub, in this case "to be with", can be used, as in (64) where a female consultant describes the way she prepares a local dish (meink) of fish and corn:

(64)  
\[ sa-ol ti-ul aaga ajtsaj piid na-kiitub a kants \]  
1-mix LOC-DET DET corn mass epazote 1/SUB-be with DET chilli  
'I mix in the corn mass epazote (Chenopodium ambrosioides) with chilli'

The above mentioned verb -yak 'to put' or 'to add' is used when two ingredients are fully visible in the final product:

(65)  
\[ kawul sa-na-rang najngow na-loy kuet sa-na-yak ten \]  
later 1/FUT-SUB-do fish soup ADJ-dry fish 1/FUT-SUB-put plum  
'Later I will prepare a soup of dry fish and plums'

2.4.1.1. Cv and Lf
Materials (ML, in this case, "ingredients") used in a food preparation process are implied through Lf in some verb roots such as: -pants 'to fry' (usually in pork's fat, more recently in oil); -jongoy 'to boil water'; -xeng 'to boil (eggs?)' and, in a less explicit way, a-kuul-kuku 'to boil (beans, corn...)' (possibly an onomatopoetic form).

Examples of tools (TL) 'converted' into a process are found also in food preparation: pow 'oven' -pow 'to bake'.

2.4.2. Food description
Some forms already mentioned above, are used to codify ML relations in food description. One of these forms is NAAG:
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(66) *peats a-rang-ïch n-aag ajisaj*
tortilla 3-make-PAS NMR-DEM corn mass
‘Tortillas are made of corn mass’

In some cases a use of *AWEAAG*, only remotely understandable as a comitative in this context, can be heard, as in the following sentence uttered by a child while observing with enthusiasm the cake prepared by his mother:

(67) *pan mol a-we-ajk-ïw pasas!*
bread outsider AG-CTF-DET-3P raisins
‘Bread with raisins!’

In this case the presence of the raisins in the bread is fully visible. In other cases, however, the presence of an ingredient can be perceived only through tasting the food or knowing about it from somebody else. In these cases we find another use of the verb *jiïr*, as in:

(68) *sa-na-nganeow chokoluet a-jiïr canela*
1/FUT-SUB-drink chocolate 3-have cinamoon
‘I will drink chocolate with cinamoon’

When the reference is to some basic, starchy, foods, (mostly tortillas) locally hardly thought of without some accompanying, a specific invariable modal form, *ind* ‘(to) want’ is used, preceding this second food:

(69) *sœe-t peats ind tixem*
1-eat tortilla (it) wants shrimp
‘I eat tortilla with shrimp’

2.4.2.1. Cv and Lf
No example of Cv was found as for food description, while, as it can be expected, there are several of Lf, at least in the obvious sense that under one single food name several combined ingredients are referred to. In some, more interesting cases, such as *najngow* ‘soup, broth’ (in (65), where plums, bananas, plantains or other fruits are mentioned as its ingredients, it is understood that the “soup” is basically a fish soup, i.e., its main ingredient (ML) is fish.

2.4.3. “WITHOUT”
In the context of food description, “WITHOUT” is expressed through forms of the verbs *-yak* (already found in 2.3.4.1.) or *jiïr* “to have” (already found to codify the same absence of relation), preceded by a negation:

(70) *sa-na-nganeow café ngo na-yak ingan*
1/FUT-SUB-drink coffee NEG 1/SUB-put sugar
‘I will drink coffee without sugar’

2.5. “Manner” (MR) and “Circumstance” (CR) relations
Huave speakers express both relations through some emphatic strategies or making explicit the
logical relations: the first strategy takes advantage of the absolutive suffix –an, ‘only’, used to codify several types of these relations:

(71)  

\[ ta\text{-ndeak castille a-}{}^\text{ngiay-an wùx a radio} \]

3/PST-speak Spanish 3-listen-ABS REL DET radio
‘S/he (learnt to) speak Spanish only listening the radio’

The second strategy takes makes explicit the relation linking two events:

(72)  

\[ Teat Pol ta-sap nop xikwùw kos ta-yak xiüt \]

Mister Hipolito PST-catch one (ANM) deer because PST-put string
‘Mister Hipolito caught a deer pulling a string out (in the bush)’

3. Conclusions and Synthesis

In SMo Huave the codification of TL, ML, VL and CM relations takes advantage of different strategies: Am (tii(-ül), wùx, naag. ANAAG and AWEAAG), Cp (-KIIUB, -joy, -yak, -jiùr, -ind, -ol), some of these used in referring to food preparation and description, Cv (-pech tiüt, ndok, to mention only two out of several Cv-derived verbs) and Lf (several verbs and at least six personal independent pronouns, including numeral pronouns).

In a “WITH” language as Huave, the PR relation is poorly represented, if not totally absent. As it should be clear, we claim that its marginality in Huave derives from the emphasis on “WITH” asymmetrical relations. Even the personal pronouns xikona, ikona and ikootsa and ikora must be analyzed as representing each one much more a CM than a PR relation, as they are built on the base of the two 1 and 2 independent pronouns, xik and ik with the suffixes –or-, -(o)ots-, and –or- (the same present as the corresponding suffixes of verbal forms). As for MR and CE relations, both almost marginal in SMo Huave discourse, their scarcity is due, in our opinion, to the “analytic” attitude that characterizes Huave everyday rhetoric and discourse.

Case marking (Cm), Verb derivation (Vd) and Incorporation (In) are strategies not implemented in Huave. So, out of 28 theoretically possible codifications of the seven relations taken into account, we found 18 of these, with several relations codified, as we have seen, through a set of possible strategies as well as differentiations in the same strategy. We think that the most interesting among these differentiations or splits is the one that opposes ANAAG and AWEAAG as Am strategies for CM relations. Table 1 synthesizes the data presented here:
Concomitance in Huave

**TABLE 1.**

<table>
<thead>
<tr>
<th>Coding Strategies</th>
<th>Concomitance Relations</th>
<th>VL</th>
<th>TL</th>
<th>ML</th>
<th>CM</th>
<th>PR</th>
<th>MR</th>
<th>CE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Am</td>
<td>ti(-il) wüx</td>
<td>n-aag wüx</td>
<td>n-aag</td>
<td>anaag aweaag</td>
<td>kos</td>
<td>wüx</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cp</td>
<td>-kiitü -joy</td>
<td>-yak -jiür</td>
<td>-kiitü -ind- -jiür -ol</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cv</td>
<td>-pech tiüüt</td>
<td>-ndok -tsom -jeng -pow</td>
<td>-jok -peat</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lf</td>
<td>-jüy kuiüuch</td>
<td>nchom xik-on-ik-on-/or/-ots</td>
<td>ijpuej -ye -an</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In the sample analyzed by Lehmann and Shin (forthcoming) the authors did not find any example of Lf strategy codifying ML and CM relations. As for this last codification, we suggested that some independent pronouns are lexicalizations of CM relations, so we include them as codifications of an otherwise empty combination. As it should be expected, however, most of the forms of the Am and Cp rows (excluding from this generalization -ind- and -jiür) are much more frequently used than those of the Cv and Lf rows. Cv examples provided in Table 1, as well as in the sentences, are intended to be mere examples of a quite pervasive lexical process.

Overall, SMo Huave presents quite a rich figure. Not so, as much as we know, the other three main varieties of the language. SMo codification of concomitance relations is likely to be more complex than that of several other languages of the Mesoamerican linguistic area. Most existing grammars do not describe in any detail the strategies of codifications of these relations. An exception is provided by the description provided by Lehmann and Shin (forthcoming) of concomitance in Yucatec Maya.

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The Nature of the Standard of Comparison in San Lucas Quiavini Zapotec Comparatives

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1. Introduction
Consider the following comparative sentences in San Lucas Quiavini Zapotec (SLQZ):\(^4\)

(1) Zyéeiny-ru’ li’eb b-zii’ Li’eb cah Rodriiegw.
   MUCH\(^5\)-ER\(^6\) book perf-buy Felipe than Rodrigo
   ‘Felipe bought more books than Rodrigo.’

(2) Nsehe’s-ru’ r-uhny Beed zéei’ny cah nih r-ralloh Lia Paamm.
   fast-ER hab-do Pedro work than hab-think Ms. Pam
   ‘Pedro works faster than Pam thinks (he does).

(3) Zyuia’il-ru’ Lia Oli’eb loh Rodriiegw.
   tall-ER Ms. Olivia than Rodrigo
   ‘Olivia is taller than Rodrigo.’

In each of these sentences, the SLQZ expression corresponding to English than - that is, the expression used to introduce the standard of comparison - is different. The goal of this paper is to provide an analysis of these various expressions.

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\(^1\) I would like to thank my primary SLQZ consultant, Rodrigo Garcia, for providing me with this data. I would also like to thank Pamela Munro for her input about the issues I discuss her as well as for proofreading my SLQZ spelling. Any errors are of course my own responsibility.

\(^2\) Unless otherwise stated, the SLQZ data taken from Galant (1998) or from the collective field notes of the UCLA SLQZ group 1994-1999.

\(^3\) SLQZ is spoken in southern Mexico, mostly in the state of Oaxaca, and belongs to the Valley Zapotec group within Zapotecan family, which in turn belongs to the Otomomanguean stock.

\(^4\) In this first section, I gloss any word or expression that naïvely occurs in the same slot as English than as ‘than’. Later, I adjust these glosses to reflect the discussion at hand. Note that there are also constructions in which an SLQZ word seems to be translatable as ‘than’ but which due to space considerations are not discussed here.

\(^5\) I gloss zyéeiny as MUCH, although it corresponds to either much or many in English, as long as the noun it modifies is non-liquid, non-gas. See Galant (1998) for more details regarding this quantifier.

\(^6\) I gloss the suffix -ru’ as ‘ER’ meaning that this is the morpheme in comparisons of inequality that roughly means ‘more’. For a more detailed analysis of this morpheme, see Galant (1998).
2. **The particle *cah***
What is perhaps the most common comparative particle in SLQZ is *cah*, which can be followed by a variety of overt constituent types. I discuss instances in which *cah* is not followed by an overt clausal predicate, a construction which I call Comparative Ellipsis (CE), in §2.1, and in §2.2, I discuss instances in which *cah* is followed by an overt clausal predicate.

2.1 **Comparatives which *cah* is not followed by an overt clausal predicate**
First I present various constituent types not containing an overt clausal predicate that may follow the particle *cah*, and then I discuss the nature of this construction.

2.1.1 **Types of constituents that may follow *cah* in this type of construction**
Some constituent types that may follow the particle *cah* in are noun phrases, prepositional phrases, and adverbs.

2.1.1.1 **Cah followed by a noun phrase**
A noun phrase that follows *cah* may be either a lexical noun, as in (4) and (5), or an independent pronoun,\(^7\) as in (6):

(4)    \(\text{Rh-zh:u'nny-ru'}\) Li'eb *cah* Rrodriégw.
        hab-run-ER Felipe than Rodrigo
        ‘Felipe runs more than Rodrigo.’

        fast-ER hab-sew pl. person woman than pl. girl
        ‘The women sew faster than the girls.’

(6)    Zyeeiny-ru' bÊ:ãady b-da'uw-a' *cah* jlu'.
        MUCH-ER chapulin perf-eat-1sg than you.inf.sg.
        ‘I ate more chapulines than you.’

In terms of grammatical function, a noun phrase that follows *cah* may be a subject, as in (7) and (8), a direct object, as in (9) and (10), an indirect object, as in (11) and (12), a locative, as in (13) and (14), or a directional, as in (15).\(^8\)

[subject]
(7)    Connte'emm-ru' n-u' Jwaany *cah* Wsee.
        content-ER neut-be Juan than José
        ‘Juan is more content than José.’

\(^7\) See Munro, López, et al. (1999) for a discussion of SLQZ pronoun morphosyntax.
\(^8\) In SLQZ, case is not overtly marked on lexical NP’s or independent pronouns, so I define the syntactic functions of NP’s that follow *cah* [in boldface] as being the same as the NP’s preceding *cah* whose functions they parallel [underlined]. There are cases in which the syntactic function of the NP following *cah* is ambiguous, since in such cases, there is more than one NP in the main clause whose function it could parallel, but in each case I have only indicated one interpretation, for the sake of illustrating a particular grammatical function. Also, note that some dative, locative and directional expressions in SLQZ do consist of an appropriate preposition followed by an NP, some examples of which are included below in the section on PP’s.
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(8) Zyēeiny-ru’ me’s b-zēhnny cah studya’ann.
MUCH-ER teacher perf-arrive than student
‘More teachers arrived than students.’

[direct object]
(9) Zyēeiny-ru’ bēe’cw w-nnâa-â’ cah bu’uhdy.
MUCH-ER dog perf-see-1sg than chicken
‘I saw more dogs than chickens.’

(10) Zyēeiny-ru’ mu’ully r-âa’p-ēng cah amiegw.
MUCH-ER money hab-have-3sg than friend
‘He has more money than friends.’

[indirect object]
(11) Zyēeiny-ru’ rrega’ll b-dēēi’dy-a’ Li’eb cah Rrodriiegw.
MUCH-ER present perf-give-1sg. Felipe than Rodrigo
‘I have more presents to Felipe than to Rodrigo.’

(12) Zyēeiny-ru’ rrega’ll r-dēēi’dy Rrodriiegw ra studya’ann cah nâa’.
MUCH-ER present hab-give Rodrigo pl. student than 1sg
‘Rodrigo gives more presents to the students than to me.’

[locative]
(13) Zyēeiny-ru’ ra rye’enngw n-u’ yu’ cah apartame’enn.
MUCH-ER pl. American neut-be house than apartament
‘More Americans live in a house than in an apartment.’

(14) Zyēeiny-ru’ (ra) wnnaâa’ n-u’ Lohs Aa’nngl cah Sann Lu’ue.
MUCH-ER pl. woman neut-be Los Angeles than San Lucas
‘There are more women in Los Angeles than in San Lucas.’

[directional]
(15) Zyēeiny-ru’ būunny a gweh Las Vegas cah Ldûu’ah.
MUCH-ER person already perf.go Las Vegas than Oaxaca
‘More people have gone to Las Vegas than to Oaxaca.’

2.1.1.2 Cах followed by a prepositional phrase
The particle caх can also be followed by a prepositional phrase, whether the preposition is native (16) or borrowed (17):
[native preposition]

   MUCH-ER knife perf-throw-1sg face9 Rodrigo than face Felipe
   ‘I threw more knives to Rodrigo than to Felipe.’

[borrowed prepositions]

17. Jo’oz-ru’ n-yieny-èng ewèhnn dii’zh rèe’ cah sihnng dii’zh-ag.
   good-ER neut-sound-3sg with word this than without word this
   ‘This sounds better with this word than without this word.’

2.1.3 Cah followed by an adverb

Lastly, cah may be followed by an adverb, as in (18) and (19):

   pizza good-ER perf-eat-1sg now than then
   ‘I ate better pizza this time than last time.’

   long-ER perf-sleep-1sg today than yesterday
   ‘I slept more today than yesterday.’

2.1.2 Discussion of this construction

Here I classify this construction, discuss the nature of cah, and analyze the syntax involved.

2.1.2.1 Classification of this construction

In all of the cases presented in §2.1.1, what follows cah is a single, non-predicate constituent of
what could be a covert clause paralleling the main clause. Such constructions are roughly
compatible with a class of “particle comparatives” (Stassen, 1985), characterized as follows:

20. Characterization of Stassen’s (1985) particle comparatives:
   a. the standard of comparison is introduced by some invariant element,
      called a particle
   b. the NP constituent that follows the particle has derived case - it receives
      the same case as the NP in the main clause whose function it parallels

Note that since lexical NP’s and independent pronouns in SLQZ do not show overt
morphological case, there is no overt morphological proof that this construction in SLQZ
actually fits Stassen’s category of particle comparatives. Nevertheless, given the parallelism in
syntactic function between the NP’s in the main clause and the standard of comparison in SLQZ,

9 From this point on, I gloss loh as ‘face’, since that is perhaps its most literal translation, although cf. Lillehaugen
   (2003).
A complication is that Stassen does not discuss cases in which something other than an NP follows the comparative particle. However, it seems natural to expand Stassen’s category of particle comparatives to include any comparatives in which what follows is an adjunct or argument that parallels a corresponding constituent in the main clause in syntactic function.

I will simply refer to this expanded category of comparatives as Comparative Ellipsis.

2.1.2.2 What is cah?
Here I discuss both the potential origin of cah and its synchronic syntactico-semantic status.

2.1.2.2.1 Arguments in favor of cah being a Spanish borrowing
According to Munro, Lopez, et al. (1999), cah is a borrowing from Spanish, namely que, a claim supported by several arguments.

First of all, cah and que are fairly similar in phonetic shape. In fact, cah occurs in free variation with queh, whose phonetic shape is even more similar to Spanish que.

Secondly, the equivalent to cah in the Spanish translation of all of the sentences given so far is que, as seen in the following two examples:

    ‘The women sew faster than the girls.’
    Las mujeres cosen más rápido que las muchachas. [Spanish]

(22) Zyèeiny-ru’ bx:àady b-da’uw-a’ cah liu’.
    ‘I ate more chapulines than you.’
    Yo comí más chapulines que tú. [Spanish]

In fact, in addition to free variation between cah and queh, two other variants freely vary with these two – cahno and quehno – which both seem parallel to the Spanish variant que no which occurs in some dialects:

(23) Zyèeiny-ru’ rrega’ll b-déèi’dy-a’ Li’eb cah Rrodriiegw.
    ‘I gave more presents to Felipe than to Rodrigo.’

(24) Zyèeiny-ru’ rrega’ll b-déèi’dy-a’ Li’eb cahno Rrodriiegw.
(25) Zyèeiny-ru’ rrega’ll b-déèi’dy-a’ Li’eb queh Rrodriiegw.
(26) Zyèeiny-ru’ rrega’ll b-déèi’dy-a’ Li’eb quehno Rrodriiegw.

(27) Le di más regalos a Felipe que no a Rodrigo. [ok in some Span. dialects]

Third, if cah were a native SLQZ word, and in particular, a native SLQZ preposition, it could not be followed by an independent pronoun - instead it would be followed by clitic pronouns, as seen with the native SLQZ preposition de’s in the following sentences, which must be followed by a clitic pronoun (28), rather than an independent pronoun (29):
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(28) De’ts-a’ zuu me’es.
back-1sg neut.stand table
‘The table is behind me.’

(29) *Dehts nàà’ zuu me’es.
[nàà’ is the 1st sg. independent pronoun]

Hence, cah cannot be a native SLQZ preposition, although it could be a non-native preposition, since pronominal complements of SLQZ non-native prepositions are realized as independent pronouns, as in (30), not as clitics:

(30) Z-yàall-a’ cèhmn la’anng.
def-come-1sg with 3sg
‘I came with him.’

Since Spanish que is not usually analyzed as a preposition, but rather, as a conjunction,¹⁰ it would be desirable to prove that SLQZ cah is a conjunction, rather than a preposition.

For one thing, note that there are cases of conjunctions borrowed from Spanish, not only prepositions, thus showing that cah could in principle be a conjunction:

cèhmn [<Sp. como]¹¹ = ‘as, since, because’
(31) Cèhmn r-ap-ëng múuully,
since hab-have-3sg money...
‘Since he has money,...’
[cf. Sp. Como tiene dinero,...]

dèhsdeh [<Sp. desde] = ‘from the time that’
(32) Dèseh b’ichi’ih n-a’c-a’ r-inàall-a’ x:ta’ad-a’ dàany.
since small neut-be-1sg hab-go.with-1sg poss-father-1sg mountain
‘From the time that I was little I went with my father to the mountain.’

pahr [<Sp. para] = ‘to, for’
(33) Pahr cye’t bùunny n-àa pelo’t-ag.
for pot.play person neut-be ball-this
‘This ball is for people to play with.’

Moreover, there are actually specific arguments against cah being a preposition in SLQZ. To start with, prepositions in SLQZ can only take an NP complement, not a PP complement, but we saw above, in (16)-(17), that cah can be followed by a PP. In addition, SLQZ prepositions can pied-pipe, as seen below in (34)-(36), whereas cah cannot:

¹⁰ I use the word ‘conjunction’ here to refer collectively to all of these expressions which might be traditionally regarded as subordinators and those which might be traditionally regarded as coordinators. Cf. Galant (1998) for a further discussion of this matter.
¹¹ Etymology, translation, and examples (but not glosses) for this sentence and the following two are from Munro, López, et al. (1999).
(34) Tu pahr b-zii’ Li’eb guehs?
who for perf-buy Felipe pot
‘Who did Felipe buy a pot for?’

(35) Tu cwe’eh zugwa’ah Jwaany?
who side is.standing Juan
‘Who is J. standing next to?’

(36) Xi cuahnn b-cwåå’ Jwaany ca’rt?
what with perf-write Juan card
‘What did J write the card with?’

Lastly, native SLQZ preps can be stranded as long as the anaphoric pronoun nii’ is suffixed to them, as in (37), but cah may not be stranded:

(37) Tu zugwa’ah Jwaany cwe’eh-nii’?
who is.standing Juan side-anaph
‘Who is J. standing next to?’

Hence, it is reasonable to conclude that cah is not a preposition, just as Spanish que is not, thus strengthening the claim that cah is a borrowed form of Spanish que.

2.1.2.2.2 Arguments against cah being a Spanish borrowing
Despite these arguments in favor of cah being a borrowing of Spanish que, there are some potential problems with this analysis.

Firstly, cah is not phonetically identical to, although it is similar to, Spanish que. It would be more plausible to suggest this borrowing, despite the difference in phonetic shape, if there were other clear cases of borrowings of Spanish /e/ to SLQZ /a/, but there don’t seem to be any.

Furthermore, although cah and queh are apparently in free variation, cah seems much more common in the data than queh. If they are truly the same underlying element, it is suspicious that one occurs much more often than the other.

Moreover, although there is some overlap in distribution with respect to the use of que in Spanish comparatives and cah in SLQZ comparatives, this overlap is incomplete—there are comparatives in SLQZ that use cah for which the equivalent in Spanish does not use que, as discussed in section 1.2 below.

Note also that cah is not used in non-comparative SLQZ sentences that correspond to non-comparative Spanish sentences that use que:

(38) Nnah Li’eb zyuùa’ll-a’.
said Felipe tall-1sg
‘Felipe said that I’m tall.’

(39) Felipe dijo que soy alto. [Spanish]

12 This example as well as the following two (other than glosses) were very generously given to me by Pam Munro.
(40) R-rallù-a’ n-za’c n-àa Li’eb. hab-think-1sg neut-good neut-be Felipe ‘I think Felipe’s nice.’

(41) Pienso que Felipe es simpático. [Spanish]

(42) R-càa’z-a’ liu’ y-gu’ty-u’ bzhny. hab-want-1sg 2.inf.sg. irr.-kill-2sg. mouse ‘I want you to kill the mouse.’

(43) Quiero que mates al ratón.

Finally, although cah freely varies with queh in comparative sentences in SLQZ, there are other cases of queh in SLQZ, such as in the expression dehqueh, that are definitely borrowed from Sp. que but which cannot alternate with cah:

\[ \text{dehqueh} [\text{but presumably not dehcah?}][<\text{Sp. de que}]^{13} \]

(44) B-ëi’ny-ëng combenseer n-àa’ dehqueh g-a’c-a’ me’s. perf-do-3sg convince neut-be that pot-be-1sg teacher ‘He convinced me to become a teacher.’

(45) N-àann Rro’d dehqueh Gye’eihlly y-tòo’ x:ca’rr-nli’. neut-know Rodrigo that Mike perf-sell poss-car-anaph ‘Rodrigo knows that Mike will sell his car.’

2.1.2.2.3 Conclusion about the status of cah as a borrowing of Spanish que
Given that there are good arguments for and against the claim that cah is a borrowing of Spanish que, it appears that further research is necessary in order to decide this issue definitively.

Further evidence in favor of cah as a borrowing of Spanish que could include: (i) historical Zapotec data showing a similar construction in which some element phonetically similar to Spanish que is used either to the complete exclusion of, or much more often than, an element phonetically similar to modern SLQZ cah; and/or (ii) clearcut examples of Spanish borrowings in SLQZ in which a Spanish /e/ has been borrowed as an SLQZ /a/.

On the other hand, support for a native source for cah, or a syncretism of a native source with Spanish que, would be suggested by instances, in SLQZ, in other modern Zapotec languages and/or in historical variants of Zapotec, of lexical items phonetically similar to SLQZ cah with a syntactic function, as well as semantic import, if any,\(^{14}\) compatible with their being a source or cousin of SLQZ cah.

2.1.2.3 Syntax of constituent introduced by cah
I propose that the constituent introduced by cah in SLQZ comparatives without any overt clausal predicate is actually clausal in nature, albeit with most elements covert, and sentences

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\(^{13}\) Etymology, translations, and examples, but not the gloss, from Munro, López, et al. (1999).

\(^{14}\) I discuss what such a syntactico-semantic role should be below.
with such constituents have a structure along the lines of one sub-type of Stassen’s (1985) “conjoined comparatives” involving adversative coordination.

2.1.2.3.1 Stassen’s conjoined comparatives (1985)
Stassen’s conjoined comparatives are exemplified in the following examples (pp. 184-185):

ABIPON:
(46) Negetink chik naâ, oagan nihirenak la naâ.
    dog not bad, yet tiger already bad
    ‘A tiger is more ferocious than a dog.’

DAKOTA:
(47) Mastingcala king waste, tka singthela king sice.
    rabbit the good but rattle-snake the bad
    ‘The rabbit is better than the rattle-snake.’

In each of these sentences, the element that conjoins the two clauses is also used to conjoin clauses in non-comparative sentences, as seen in (48) and (49), respectively:

ABIPON:
(48) Eneha klatum-keen evenek, oagan netachkaik.
    he maybe beautiful yet bashful
    ‘He is beautiful, but nevertheless bashful.’

DAKOTA:
(49) ‘Iyaye-waci, tka oyuspapi.
    want-go-3sg but catch-3sg.acc.-3pl
    ‘He wanted to flee, but they caught him.’

Stassen (p.44) further subclassifies the conjoined comparative sentences in these two languages into the two following types:

(50) conjoined comparatives in which the two clauses “contain antonymous predicates”
    (Stassen’s type 5A), schematically: A is X, B is -X (-X is antonym to X)

(51) conjoined comparatives in which the two clauses “exhibit a positive-negative polarity”
    (Stassen’s type 5B), schematically: A is X, B is not X

The Abipon comparative (46) is an example of a conjoined-comparative exhibiting positive-negative polarity, since the same predicate, naâ ‘bad’, is used in both clauses, the difference being that the first clause also has the negative element chik ‘not’. On the other hand, the Dakota comparative (47) is an example of a conjoined-comparative exhibiting antonymous predicates, since the predicate waste ‘good’, in the first clause, has the opposite denotation of the predicate sice ‘bad’, in the second clause.
2.1.2.3.2 Application of Stassen to SLQZ cah comparatives without overt clausal predicate

Even though SLQZ comparatives with cah not followed by an overt clausal predicate may be classified, on the surface, as instances of particle comparatives, I propose that they are structurally conjoined comparatives, and since the constituent introduced by cah is not followed by any overt predicate paralleling the compared predicate in the main clause, it would be difficult to reconstruct a covert antonymous predicate, so I will assume that SLQZ has the subtype of conjoined comparative in which there is positive-negative polarity between the two clauses.

Therefore, the following SLQZ sentence in (7), repeated here as (52), may be thought to have the schematic interpretation given in (53):

(52) Connte’enn-ru’ n-u’ Jwaany cah Wsee.  
    content-ER neut-be Juan than José  
    ‘Juan is more content than José.’

(53) Juan is content, but not José.

The claim that the second clause in such comparatives is covert has support in non-comparative structures exhibiting the phenomenon of stripping deletion:

Stripping:

(54) phenomenon in which all but one contrastive constituent of the second clause, plus optionally a polarity-indicating element such as also or but, are covert

Stripping is exemplified in the schematic interpretation given for (52) in (53) as well as in the following sentence in English:

(55) Pam is tall, but not Bill.

Furthermore, Stassen himself proposes a connection between particle comparatives and conjoined comparatives:

Regarding the...class of Particle Comparatives,...their occurrence must be understood on the basis of a diachronic process of syntactization....Furthermore,...the coordinate status of the comparative clause in these languages is gradually undermined by the operation of a downgrading process. As a result, the comparative construction loses its semantic transparency to a greater or lesser extent. The comparative in these languages may thus eventually be reanalysed as a new, independent construction type. Alternatively, the comparative construction may come to be fitted into the mould of a construction type that already exists in the language...For some languages, “a coordinate input-structure consisting of two positive sentences seems to be the appropriate hypothesis. In other languages, the coordinate input-structure must be thought of as being more complex. Some of the languages at issue seem to have a negative sentence in their input-sentence; this may (but does not have to) lead to the incorporation of the negative element into the comparative particle. (p. 221).

One potential problem is the fact that although stripping does occur in non-comparative sentences in SLQZ, the word cah does not occur in such constructions, but rather, the Spanish loan word pehr is used, as shown in the following example:

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(56) R-rallù-a’ n-za’c n-àa Li’eb pehr Usee tée’bag.
    hab-think-1sg neut-nice neut-be Felipe but José not
    ‘I think Felipe’s nice, but not José.’

Perhaps cah or some other form containing the same morpheme was used historically before
the introduction of pehr. Alternatively, it is possible that this type of ellipsis was not possible in
non-comparative sentences in SLQZ before contact with Spanish. Data from other modern
Zapotec languages and from historical Zapotec documents may shed further light on this matter.

Despite this potential problem, the fact that cah has two allomorphs which incorporate
Spanish no, namely cahno and queno, as seen above in (24) and (26), does lend support for my
claim that the cah constructions studied in this section involve conjoined clauses with positive-
negative polarity. Further support for this polarity would be provided by examples where
negative polarity items are licensed after cah, suggesting a direction for future research.

2.2 Comparatives in which cah is followed by an overt clausal predicate: Null
Complement Anaphora and Comparative Deletion

SLQZ also has comparatives in which cah is followed by a clausal predicate. In such cases, there
must be an intervening nih, a relative pronoun that also occurs in non-comparative sentences:

(57) B-zèhnnny bùunny nih n-u’ Ldùu’ah.
    perf-arrive person rel. neut-be Oaxaca
    ‘A man who lives in Oaxaca arrived.’

(58) Li’eb r nih b-déêi’dy Lieeb studya’ann n-u’ rèe’.
    book rel perf-give Felipe student neut-be here
    ‘The book that Felipe gave to a student is here.’

2.2.1 Data

In the simplest case of cah followed by nih, nih follows cah directly:

(59) Nsche’s-ru’ r-uhny Beed zëé’i’ny cah nih r-ralloh Lia Paamm.
    fast-ER hab-do Pedro work than rel hab-think Ms. Pam
    ‘Pedro works faster than Pam thinks (he does).’

(60) Zyèeiny-ru’ ca’rr b-dii’by Li’eb cah nih r-zí’llàà’z-u’.
    MUCH-ER car perf-wash Felipe than rel hab-think-2sg
    ‘Felipe washed more cars than you think (he did).’

---

15 SLQZ also allows Comparative Subdeletion, which due to space limitations I do not discuss here. I refer the interested reader to Galant (1998) for the relevant data.
16 It appears in certain other constructions in which it is less obviously a relative pronoun, but it does appear to primarily function as a relative pronoun.
17 In amount comparisons, there is overt material which can intervene between cah and nih, but due to space limitations I do not discuss such constructions here. I refer the interested reader to Galant (1998) for the relevant data.
The two preceding sentences are examples of null complement anaphora, but cah nih may also be used with comparative deletion, a construction in which the standard of comparison contains an almost complete clause within the standard of comparison - the only covert element is the constituent that parallels the head of comparison in the main clause:

(61) Zyēēiny-ru’ b-ziii’ Beed cah nih b-to’o’ Lia Paamm. MUCH-ER book perf-buy Pedro than rel perf-sell Ms. Pam ‘Pedro bought more books than Pam sold.’

(62) Zyēēiny-ru’ ca’rr b-dii’by Li’eb cah nih b-dii’by Rrodriiegw.\(^{18}\) MUCH-ER car perf-wash Felipe than rel perf-wash Rodrigo ‘Felipe washed more cars than Rodrigo washed.’

2.2.2 Analysis of cah nih
It is worthwhile to explore whether the cah found in the cah nih constructions is the same as the cah discussed earlier. There is evidence both for a unified analysis and a split analysis.

2.2.2.1 Evidence in favor of a unified analysis
There are several points in favor of a unified analysis for both types of constructions, some of which are: (1) both words occur only in comparatives, (2) both words freely vary with queh and are plausibly both a borrowed form of Spanish que, (3) both words are used to introduce a standard of comparison, (4) neither instance of cah can be pied-piped or stranded, hence, neither one appears to be a preposition, and (5) both instances of cah have allomorphs that end in no, which seems to be a borrowing of Spanish no.

2.2.2.2 Evidence in favor of a split analysis
Despite evidence in favor of a unified analysis, there are some reasons to favor a split analysis. First of all, as we have seen earlier, cah without nih may not be followed by a predicate, whereas cah nih must be followed by a predicate. Secondly, some other languages, such as Spanish, use different words for each of these two usages of cah, respectively:

(63) Pedro es más alto que yo. [que w/ non-clausal standard of comparison] vs.

(64) Pedro es más alto de lo que piensas. [de followed by relative clause standard of comparison]

\(^{18}\) Sentences like (62), in which the main verb is repeated within the standard of comparison, are actually dispreferred in comparison with a similar CE construction, probably due to some general tendency towards repeating as little as necessary in the standard of comparison:

Zyēēiny-ru’ ca’rr b-dii’by Li’eb cah Rrodriiegw. MUCH-ER car perf-wash Felipe than Rodrigo ‘Felipe washed more cars than Rodrigo’

Nevertheless, the sentence above in (62) is grammatical.
It is precisely the type of structure as seen in the Spanish example in (64) that seems to be involved in SLQS comparative sentences with nih, given that nih appears almost exclusively in relative clauses and cah nih comparatives in SLQZ.

2.2.2.3 Conclusions about cah nih construction
I analyze the construction containing cah followed by nih as involving a degree relative (Galant (1998)), although the degree element is covert. Thus, in an SLQZ sentences such as (59), repeated here as (65), the schematic interpretation is as in (66):

(65) Nsehe’s-ru’ r-uhny Beed zëëi’ny cah nih r-ralloh Lia Paamm.
    fast-ER hab-do Pedro work than rel hab-think Ms. Pam
    ‘Pedro works faster than Pam thinks (he does)’

(66) Pedro works faster than the degree to which Pam thinks that he works fast.

2.2.2.4 Reconciling cah and cah nih
Stassen (1985) actually provides a framework within which one can reconcile the differences between the conjunction-type structure of cah comparatives and the relative clause type structure of cah nih comparatives. He claims that in a historical process of “syntactization” from coordinate-type comparatives to particle comparatives, some language have incorporated both elements of coordination and elements of relative clause formation:

[Some]...languages must be assumed to have a coordinate input-structure with quantification over events; in these languages, signs of relativization (typically manifested in the form of the comparative particle) can be traced...there are some languages (viz. English...) in which both an underlying negation and an underlying existential quantification must be assumed for the coordinate input-structure of the comparative construction (pp. 221-222).

3. Comparatives with lohoh
As we saw in the Introduction, some comparatives in SLQZ include neither cah nor cah nih, but rather, lohoh.

3.1 Data
In comparisons with lohoh, lohoh may be followed only by an NP, either a lexical NP, as in (67), or a clitic pronoun, as in (68), but not by an independent pronoun, as in (69):\(^\text{19}\)

(67) Zyuua’ll-ru’ Lia Oliieb loh\(^\text{20}\) Rrodriiegw.
    tall-ER Ms. Olivia face Rodrigo
    ‘Olivia is taller than Rodrigo.’

\(^\text{19}\) Note that this construction is mainly limited to those comparatives in which the compared property is an adjective, although there are some exceptions, such as (71). Note also that for a given sentence that uses this construction, the variant with cah is always available, as far as I can tell. For examples, cf. Galant (1998).
\(^\text{20}\) This is the phrasal allomorph of lohoh.
(68) Banguual-ru’ n-a’c-u’ lù-a’.
old-ER neut-be-2sg face-1sg
‘You are older than me.’

(69) *Banguual-ru’ n-a’c-u’ loh nàa’.
old-ER neut-be-2sg face 1sg
‘You are older than me.’

3.2 Analysis
Although the surface distribution lohoh partially overlaps with that of cah, lohoh is a preposition,21 whereas cah is not. Some pieces of evidence that support this claim include: (1) lohoh can only be followed by an NP, not by a PP or nih plus a clause, (2) if lohoh is followed by a pronominal NP, the NP is manifested as a clitic, not as an independent pronoun, as seen in (68) vs. (69) above, (3), lohoh can pied-pipe, as seen in (70) and (71) below, and (4) lohoh can be stranded with the anaphoric clitic -nii’, as seen in (72) and (73) below:

[pied-piping]
(70) Tu loh zyuú‘ll-ru’ Jwaany?
who face tall-ER Juan
‘Who is Juan taller than?’

(71) Tu loh r-zh:ùu’nny-r-u’?
who face hab-run-ER-2sg
‘Who do you run more than?’

[preposition stranding]
(72) Tu zyuú‘ll- ru’ Jwaany loh-nii’?
who tall-ER Juan face-anaph
‘Who is Juan taller than?’

(73) Tu r-zh:ùu’nny-ru’ loh-nii’?
who hab-run-2sg face-anaph
‘Who do you run more than?’

Comparatives with lohoh appear to fall into Stassen’s “adverbial type” of comparatives, in particular, a neutralized locative/allative subtype, since lohoh, in addition to literally meaning ‘face’, can mean ‘on’, as in (74), or ‘to’, as in (75):

(74) Li’ebr zùub loh me’es.
book neut.sit face table
‘There’s a book on the table.’

21 See Lillehaugen (2003) for an analysis of words like lohoh which are sometimes used as body parts and sometimes used as prepositions.
(75) B-cwaa-a’ Jwaany pelo’t loh Beed.  
    perf-throw-1sg Juan ball face Pedro  
    ‘Juan threw the ball to Pedro.’

Thus, the schematic interpretation of an SLQZ comparative with *loho* such as (3), repeated here as (76), seems to be as in (77), with no conjunction structures or degree relatives involved:

(76) Zyuu’a’ll-ru’ Lia Oliieb loh Rrodriiegw.  
    tall-ER Ms. Olivia face Rodrigo  
    ‘Olivia is taller than Rodrigo.’

(77) Olivia is tall(er) [in comparison] to Rodrigo.

4. Conclusions

In this paper, we have seen the following with respect to the syntax of the standard of comparison in SLQZ comparisons of inequality.

In SLQZ comparatives that include the word *cاه* not followed by *nih*, what follows *cاه* is typically an NP but may also be some other adjunct or argument to an understood elliptical predicate. In such a construction, *cاه* behaves like a conjunction rather than a preposition, and is very plausibly a borrowing of Spanish *que*. The historical development of this construction may involve the syntacticization of an adversative-coordination type comparative, either borrowed as such from Spanish or developing as such in SLQZ.

The comparative construction in which *cاه* is followed by *nih* is somewhat different. Both instances of *cاه* appear to be conjunctions rather than prepositions, but *nih* can and must be followed by an overt clausal predicate. This construction appears to involve a degree relative although the historical development of this construction may actually involve the syntacticization of an adversative-coordination type comparative, either borrowed as such from Spanish or developing as such in SLQZ, with some degree of convergence with relative clause structures.

Lastly, the comparative particle *loho*, which may only be followed by an NP, definitely behaves as a native preposition. Since it cannot be followed by anything clausal, its interpretation is probably something akin to ‘in comparison to’. The fact that it is mostly limited to comparison in which the comparative property is an adjective warrants further investigation.

Some future goals suggested by this paper are to (i) explore similarities and differences between the studied elements and other prepositions and subordinators in SLQZ, and (ii) acquire more data in other varieties of Zapotec, including historical varieties to better understanding of comparative types in Zapotec in general.

References


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An Ethnopoetic Approach to a Copala Triqui Myth Narrative

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1. Introduction
The theogony myth of the Sun and the Moon has been a familiar hallmark of Copala Triqui culture since its publications in 1899 by Valentini and in 1945 by Monzón. In 1977 Barbara Hollenbach, writing under the pen-name Elena, transcribed and translated four speakers’ versions of the Sun and the Moon for the Mexican folklore journal Tlalocan. However, one of the principal shortcomings of the Tlalocan edition, but not necessarily of Hollenbach’s own analysis, is that, despite the meticulous parsing for each of the four texts, they are presented in lengthy paragraph blocks, as if these oral texts were spoken like segments of written prose. Such a format would seem to undermine the poetic aspects of the spoken texts themselves although poetic features like parallel syntactic structures are still readily apparent. The following paper is a preliminary ethnopoetic analysis of the Sun and Moon myth, which will illustrate significant poetic and linguistic features of the Sun and Moon with selections from a newly recorded version of the myth. These features will then be compared to similar uses of poetic structure in other Mesoamerican languages, to better locate the Sun and Moon within the larger family of Mesoamerican literature.

2. Source Text
This paper is based on transcriptions of approximately seven minutes of text from a thirteen-minute recording of the Sun and Moon, narrated in Copala Triqui by Román Vidal López on September 23, 2003. Transcription and translation of the available text were facilitated with Mr. Vidal López’s assistance from October 2003 to March 2004. Mr. Vidal López excluded self-interrupted errors in the narration, so while the transcript is not a complete representation of the entire text segment, it benefits from the speaker’s own redaction. I have translated the verbs with the consistency for tense that Mr. Vidal López used for translating the narrative in English and Spanish, given that occasionally the Triqui aspect and the English tense do not seem to correspond. During the course of the transcription, Mr. Vidal López also included phrases or tones that were not originally recorded in the narrative but were meant to be, and these are indicated in parentheses in the present text examples. These examples are marked for their positions on the recording by minutes and seconds. I used PRAAT version 4.2.08 to determine pitch and tone contours from the recording. I assume responsibility for any errors in transcription or translation.
3. Phonemics and Orthography
Triqui belongs to the Mixtecan branch of the Oto-Manguean language family (Rensch 1976:184), and Copala Triqui is the dialect spoken in the vicinity of San Juan Copala in western Oaxaca, Mexico. Copala Triqui, like most Oto-Manguean languages, is tonal (Rensch 1976:51ff.), so one of the primary considerations for an adequate orthographic representation of the language is the indication of tone. Copala Triqui tone occurs across a five-tiered pitch spectrum. The pitch tiers for (1) are adapted from the averages of Hollenbach’s data (1984: 73):

(1)

<table>
<thead>
<tr>
<th>Tier</th>
<th>Pitch (Hz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>88</td>
</tr>
<tr>
<td>2</td>
<td>98</td>
</tr>
<tr>
<td>3</td>
<td>117</td>
</tr>
<tr>
<td>4</td>
<td>131</td>
</tr>
<tr>
<td>5</td>
<td>159</td>
</tr>
</tbody>
</table>

The tones occurring at tiers 1, 2, and 3 are fairly leveled and follow the same numeration. Tone 4, however, is voiced as a slight rise between tiers 3 and 4, and Tone 5 is even more markedly inclined, rising from tier 3 to 5. The other rising tone occurs between tiers 1 and 3, and is so designated as \( \text{13} \). Two tones are falling, both from the initial tier 3: the tone falling to tier 2 is ascribed a \( \text{32} \) tone, and the more sharply falling tone to tier 1 is ascribed as \( \text{31} \). The following eight tones are thereby represented: 1, 2, 3, 4, 5, 13, 32, 31 (Hollenbach 1984:67,83). They are indicated for each syllable as superscript, e.g. /ʃkuu\(^{3}\)/ or /xcuu\(^{5}\)/ ‘animal’.

The consonants listed in (2) below, not including Spanish loan consonants like [p] and [b], are represented in the Copala Triqui phonemic system. Orthographic indications (\( \Rightarrow \)) are given for those consonants and clusters not already represented with their respective IPA symbols.

(2)

<table>
<thead>
<tr>
<th>Labials</th>
<th>Dentals, Alveo-palatal</th>
<th>Velar</th>
<th>Labio-velar</th>
<th>Laryngeal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alveolars</td>
<td>Stop</td>
<td>k &lt;qu&gt; &lt;ç&gt;, k(^w) &lt;cu&gt;,</td>
<td>g &lt;gu&gt; &lt;ç&gt;, g(^w) &lt;g(^d)&gt;</td>
<td>? &lt;’&gt;</td>
</tr>
<tr>
<td></td>
<td>Fricative</td>
<td>β &lt;v&gt;</td>
<td>s, z</td>
<td>$ &lt;ç&gt;</td>
</tr>
<tr>
<td></td>
<td>Affricate</td>
<td>ð(^s) &lt;tz&gt;, ð(^t) &lt;ch&gt;,</td>
<td>d(^3) &lt;dy&gt;,</td>
<td>ð(^s) &lt;chr&gt;</td>
</tr>
<tr>
<td>Nasal</td>
<td></td>
<td>m</td>
<td>n</td>
<td></td>
</tr>
<tr>
<td>Glide</td>
<td></td>
<td>y</td>
<td></td>
<td>w &lt;h(^u)&gt;</td>
</tr>
<tr>
<td>Liquid</td>
<td></td>
<td>r, l</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The orthographic representation for /k/ will be <ç> when preceding the vowels {a, o, u} and <qu> when preceding {e, i}. Similarly, the representation for /g/ will be <ç> when preceding {a,
An Ethnopoetic Approach to a Copala Triqui Myth Narrative

{o, u} and <gu> when preceding {e, i}. Several consonant clusters occur in the language, and these are represented with the corresponding orthography for each consonant, as in (3) below.

(3)  
/šk^a^2ā^2^3/  \textit{<xrcu^a^2 an^j>}  ‘our grandmother’

Copala Triqui has five phonemic vowels: {a, e, i, o, u}. They occur as oral vowels, and, aside from /e/, can also be nasalized. Nasalized vowels appear as <V-n>, where the <n> is understood to be the nasalizing attribute but is not intended to be pronounced as a consonant. Long vowels are written as vowel pairs, as (4) illustrates.

(4)  
/īsūū/  \textit{<chruun^j>}  ‘tree/wood’

In this instance the vowel is not only long but also nasalized—so represented with the <n> at the coda of this syllabic morpheme. Hollenbach (1984) provides a developed analysis of the phonetic and tonal systems of Copala Triqui.

For my text translations I will use the abbreviations listed in (5) below:

(5)  
\begin{tabular}{ll}
V & vowel \\
3 & third-person \\
sg & singular \\
M & masculine \\
Ve & verb \\
S & subject \\
PP & prepositional phrase \\
quant & quantifier \\
conj. & negative \\
comp. & completive \\
cont. & continuative \\
pot. & potential \\
pl. & plural \\
intens. & intensifier \\
decl. & declarative \\
dem.adj. & demonstrative adjective \\
\end{tabular}

4. Ethnopoetics in the Sun and the Moon Text

Any initial discussion of the function of poetics in language must begin with the principle that language is not solely a mechanism for the communication of information, but that language is a cultural practice that may entail multiple, even if implicit, dimensions: these can include socially organized interactions, culturally informed presuppositions, and emotionally affective intentions. The latter category is especially relevant for any discussion of the relationship between poetics and language.

Spoken language has numerous strategies for conveying the emotional import, or Jakobson’s “emotive function,” behind an utterance, particularly with recourse to phonetic modifications to

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certain morphemes—especially those modifications that do not affect their referent. Jakobson ([1960]1999) used the example of lengthening the /u/ in the English *biinin* for emphasis without changing the phonemic aspects of the word, and a similar phenomenon seems to occur in the *Sun and Moon* text when the “Hero Twin” boys are filling a deer hide with stinging animals. In two consecutive phrases, the word *xçuusuu* ‘animal’ is lengthened, which I have attempted to convey by extending the number of vowels. One of my two interpretations of this phenomenon relies on contextual analysis. This vowel prolongation could be emphasizing the plurality of (stinging) animals that the two Hero Twins are inserting into the skinned deer hide, which I propose as one of two possible interpretations for this poetic strategy. The other possible interpretation for the prolonged vocalization of *xçuusuu* is that the speaker was at the time using the vowel as a filler to maintain the discursive flow of the narrative as he searched for the next part of the story, to avoid a gap in the narrative that could be interpreted as a break before the next major episode of the myth.

Another interesting aspect of “emotive function” in Copala Triqui is its effect on pitch. One line in the narrative, diagrammed in (6), is raised approximately 30 Hz above the regular pitch levels used in Mr. Vidal López’s speech, but the tonal contours are nonetheless consistent at this elevation. Pitch levels, given in Hertz, are approximated for each Triqui word.

(6) 10:40-10:44

| 182.6- | 145.5- | [unclear] | 156.3- | 155.3- | 140.6- | 146.5-173.3; | 117.7- |
| 142.3 | 178.9 | 127.8-162.3 | 162.0 | 185.4 | 172.2 | 129.7-118.1 | 106.7 |

**PURELY ROCK HOT HIT (cont.) pl. UPON UPON DRAGON AND entirely of hot rocks they struck upon, upon the dragon.**

The section between *nanj* and the first instance of *xraa* in this line is raised in both pitch and speed, for it is spoken in 1.2 seconds. A pause of 0.5 seconds stands between the two utterances of *xraa* ‘upon’ in this line, and by the second utterance of *xraa* the pitch for each following syllable has reverted to a level closer to those in the regular patterns of Mr. Vidal López’s narrative. The purpose of this elevation is still unclear, but it appears to be emphatic, which would suggest that pitch and tone in this text are subject to factors of intonation. The influences of intonation on surface tones have been documented in other Oto-Manguean languages like Mezquital Otomi (Wallis 1968).

Arguably the most salient feature of ethnopoetics in many—if not indeed perhaps all—languages is repetition of at least one linguistic feature, to structure the organization of the spoken narrative into parallel groups of lines. The features to be used in repetition may vary in different languages according to the available linguistic resources. In the present version of the *Sun and Moon* myth, a prominently repeated element is word order, notably at the clause level. The example in (7) illustrates the consistency in word order with which several of the clauses are grouped together.
An Ethnopoetic Approach to a Copala Triqui Myth Narrative

(7) 8:29-8:33

ga$^2$ nee$^2$ ca’anj$^3$ (yo$^1$) ca’mit$^{32}$
AND:THEN GO (com.) 3sgS SPEAK (com.)
And then (she) went and spoke,

a$^3$huaj$^3$ yo$^1$ o$^2$ qui$^{32}$
CALL (cont.) 3sgS ONE MOUNTAIN

she called at one mountain,

a$^3$huaj$^3$ yo$^1$ o$^3$ qui$^{32}$ ne$^2$
CALL (cont.) 3sgS OTHER MOUNTAIN AND

she called at another mountain,

cu$^3$ chi$^{32}$ yo$^{11}$ qui$^{32}$ i$^3$ chij$^3$
ARRIVE (com.) 3sgS MOUNTAIN SEVEN

Till she arrived to the seventh mountain.

Four observations should be made on this portion of the text. The first is that the latter three lines are consistent for the referent pronoun yo$^1$ after each verb and the location of the action at a mountain, which suggests that these three lines should be read as a triplet. The word order for the second to fourth lines can be outlined as in (8).

(8)
Line 2 Ve$^1$-S-quant$_1$-PP-conj.
Line 3 Ve$^1$-S-quant$_2$-PP-conj.
Line 4 Ve$^2$-S-PP-quant$_3$

The second observation is of an especially interesting distinction between the tones of the /o/ vowel in the quantifier position for the second and third lines. In the second line, this vowel carries Tone 2, referring to ‘one’ mountain, whereas in the third line the vowel carries Tone 3, changing its meaning to ‘another’ mountain. This would indicate that the current protagonist, Grandmother Ca’aj, is repeating the same action of ‘calling’, in an active progression from mountain to mountain. The third observation is that two changes from the second and third lines have occurred in the fourth. The first and most salient change is in the verb occupying the clause-initial position; this has changed from a$^3$huaj$^3$ ‘call’ to cu$^3$ chi$^{32}$ ‘arrived’. The second change in this last line involves the ordinal used to specify the mountain, and the ordinal has additionally moved to the position after qui$^{32}$ instead of preceding it, as in the previous two lines. What is also worth noting is that, although the numerical adjective i$^3$ chij$^3$ could be glossed as ‘seven’, its meaning can represent the ordinal form, i.e. ‘seventh’, when it occurs in a subsequent relative clause (Hollenbach 1992: 279). Finally, the fourth observation is that the third line of this proposed triplet lowers the tone for yo$^1$ from 3 to 1. This is noteworthy because the process of lowering the tone for the subject pronoun in the third line of a triplet may be a narrative pattern; it occurs again in the third line of the line triplet proposed for (9) below. Whether this pattern is significantly regular in the narrative will require further investigation.

I am convinced that the selection in (7) is a solid example of the operation of Jakobson’s “principle of equivalence” in poetics. That patterns within a poetic genre can be said to be “repeated” at all implies that some aspect within one segment of the text is equivalent to the
same aspect in other segments. Using the current selection, the following syntactic pattern could be interpreted as equivalent among the latter three lines of (7): Verb-\textit{yo}^{3}\textit{-quij}^{32}, with a quantifier appearing on either side of \textit{quij}^{3}. The fact that the initial verb is switched from \textit{a}^{3}\textit{huaj}^{3} to \textit{cu}^{3}\textit{chi}^{3} in the fourth line is significant because it reflects, as I contend, Jakobson’s “axes of selection and combination.” This “axis of selection” refers to the existence of a position within a repeating pattern for which a specific linguistic resource is selected to occupy. In other words, the “verb” position at the introduction of each line may be presupposed, and the specific verb \textit{a}^{3}\textit{huaj}^{3} is deliberately selected for the second and third lines to describe the particular action that Grandmother Ca’aj, the referent of the pronoun \textit{yo}^{3}, is meant to perform in that clause. For the final line the verb \textit{cu}^{3}\textit{chi}^{3} is likewise selected to occupy the same syntactic position, though occupied by a verb different from the former. Similar instances occur elsewhere in the text, as illustrated in (9), describing the moon’s ambulation.

\begin{enumerate}
\item \text{14:22-14:30} \\
\text{che}^{4} \text{ da}^{2} \text{ zuun}^{3} \text{ va}^{2} \text{ o}^{2}\text{ra}^{3} \text{ chee}^{4} \text{ zo}^{13} \text{ (ni}^{2} \text{ gan}^{13}\text{)} \\
\text{FOR THIS} \text{ THERE:} \text{ HOUR} \text{ WALK (cont.)} \text{ 3sgM} \text{ ALL:} \text{ NIGHT}
\end{enumerate}

\text{For this reason, there are hours during which he walks (all night),}

\begin{enumerate}
\item \text{va}^{2} \text{ o}^{2}\text{ra}^{3} \text{ ni}^{2}\text{ naj}^{3} \text{ zo}^{3} \\
\text{THERE:} \text{ HOUR} \text{ REST (cont.)} \text{ 3sgM}
\end{enumerate}

\text{there are hours during which he rests,}

\begin{enumerate}
\item \text{va}^{2} \text{ o}^{2}\text{ra}^{3} \text{ naj}^{4} \text{ zo}^{1} \\
\text{THERE:} \text{ HOUR} \text{ LAG (cont.)} \text{ 3sgM}
\end{enumerate}

\text{there are hours during which he lags,}

\begin{enumerate}
\item \text{naj}^{4} \text{ zo}^{13} \text{ do}^{1} \\
\text{LAG (cont.)} \text{ 3sgM} \text{ [unclear]}
\end{enumerate}

\text{he lags,}

\begin{enumerate}
\item \text{va}^{2} \text{ o}^{2}\text{ra}^{3} \text{ ni}^{3} \text{ xrgun}^{32} \text{ za}^{13} \\
\text{THERE:} \text{ HOUR} \text{ neg.cont.} \text{ ILLUMINATE (cont.)} \text{ WELL}
\item \text{yaj}^{3} \text{ zo}^{13} \text{ do}^{3} \\
\text{DO, MAKE (cont.)} \text{ 3sgM} \text{ neg.}
\end{enumerate}

\text{there are hours during which he does not make light well at all.}

The first three lines of (9) are especially suggestive of a line triplet structure, with the same clause \text{va}^{2} \text{ o}^{2}\text{ra}^{3} preceding a Ve-S sequence with a different verb for each respective line. In (7) and (9), each respective verb is combined with the remaining elements of its respective phrase, in a manner that makes sense for the speaker or audience. This is the “axis of combination” along which the selected items are set. As Jakobson argued, \textit{equivalent} items must be selected from linguistic resources and combined into meaningful patterns: such is the function of poetics.

Another interesting pattern in the narrative can be sketched as AB / BC / ABC. A clear instance of this pattern appears in (10).
(10) 9:41-9:48

\[
g a^2 n e^2 \quad n a^3 d o^{13} \quad n i^3 \quad y o^{13} \quad x r c o o^{32} \quad n e^2 \]

AND:THEN SEEK (cont.) 3sg CHERIMOYA AND

Then they sought a cherimoya,

\[
x r c o o^{32} \quad c o^2 t o j^{32} \quad n e^2 \]

CHERIMOYA SLEEP (pot.) AND

a sleep-inducing cherimoya,

\[
 n a^3 d o^{13} \quad n i^3 \quad o^2 \quad x r c o o^{32} \quad c o^2 t o j^{32} \quad n e^2 \]

SEEK (cont.) 3sg ONE CHERIMOYA SLEEP (pot.) AND

They sought a sleep-inducing cherimoya.

In this moment, the two boys are looking for a type of cherimoya whose consumption induces sleep, which in the first line is simply identified as \(x r c o o^{32}\). In the second line the focus shifts from the boys’ searching action to the fruit itself, which is specified as a type that induces sleep. The third line includes the noun phrase introduced from the previous line into the complete clause. The structure, then, can be organized as (A) the boys searching for (B) the fruit which (C) causes sleep. This structure is then told in the AB / BC / ABC pattern. A similar instance appears in (11).

(11) 11:18-11:25

\[
c u^3 n a n^3 \quad n d o^3 \quad r o^{32} \quad n e^2 \quad a^2 \]

RUN (pot.) intens. BOTH AND decl.

"We will both run hurriedly"

\[
 c a^2 n o^2 \quad n d a a^{13} \quad q u i j^{32} \quad y o^{1} \quad n e^1 \]

ARRIVE UNTIL MOUNTAIN dem.adj. AND (pot.)

"until we arrive at that mountain,

\[
c u^3 n a n^3 \quad n d o^3 \quad r o^{32} \quad c a^2 n o^2 \quad r o^{32} \quad n d a a^{13} \quad q u i j^{32} \quad y o^{1} \quad n e^1 \]

RUN (pot.) intens. BOTH ARRIVE BOTH UNTIL MOUNTAIN dem.adj. AND (pot.)

"we will both run hurriedly until we both arrive at that mountain."

Here the pattern unfolds as (A) the boys agree to race to (B) the mountain, and then by the third line they state (A) and (B) together in a single sentence.

The Sun and Moon myth can be divided into smaller “blocks” of text. By “blocks” I do not refer to the paragraph format of Tlatocan, but the term should instead convey the sense of the mythical narrative’s constituent parts, assembled from lines and groups of lines, as Dell Hymes (1996) has suggested of oral narratives in general. One way to consider the groupings of lines.
into larger units of discourse, which for the case of this myth would correspond with episodic events, is by the presence of markers that additionally group the lines into larger episodes, and these episodes can be separated through boundaries delineating the text.

One of the lexical items that I propose as helping to separate narrative events is the compound verb *na' vij' ra'*, which Mr. Vidal López offered as literally *terminar de pensar*, or idiomatically ‘finally deciding to act’. This verb occurs twelve times in the narrative, and in each case to introduce a new episode of the narrative. The presence of this verb phrase indicates that its subject is about to undertake a critical action, motivating a series of consequential events. Four of the twelve instances involve an action performed by Grandmother Ca'aj, and seven instances introduce actions planned by the twin boys. In one other instance, it introduces the decision made by a fly to inspect whether the dragon had indeed been slain. An additional phrase that deserves brief mention is *vee' daa' neel* ‘one more time’. This is the only apparent mention of the phrase in the text selection, but it is critical because it introduces a major episode of the text, namely Ca'aj's journey to the seven mountains to look for her husband, the deer. Further research may test my hypothesis that certain morphemes are both semantically and structurally critical for the performance of Copala Triqui myth.

5. Myth as a Copala Triqui Speech Genre

A *genre* can be defined as a type of social language constituted from linguistic forms, emotional affect, discursive content, and other elements recognized as culturally appropriate for specific social situations and between the appropriate set of speakers (Chouliaraki and Fairenough 1999: 56-59, 64). A genre is thereby a distinct configuration of both linguistic and cultural resources, and, as James Gee (1999) has emphasized, these configurations are integrally linked to the performance of social roles or identities. The myth should therefore be understood as the product of a specific social language. Such a definition for “social language” suggests that the features particular to the genre of myth make cultural sense when this language is uttered by the qualified speaker and under the proper social setting. It may well be argued that Mr. Vidal López's own attention to maintaining the genre-specific features of this myth in his version of the text is connected to his personal commitment to the communal maintenance of Copala Triqui customs and language in the immigrant setting.

Furthermore, social languages tend to follow “collocational patterns” (Gee 1999:29-30), meaning that social languages are often organized around sets of distinct linguistic and cultural phenomena, which in turn contribute to the production of the speaker's identity, and its concomitant social relationships, through the *performance* of the given social language. The language in Mr. Vidal López's version of the *Sun and the Moon* has several collocational features that, when integrated together, contribute to the separation of this genre from more “mundane” modes of speech, a relationship that John du Bois has elaborated on the practice of ritual speech. One such feature is use of the pronoun *yo* $^{3}$: when it refers to Grandmother Ca'aj, Mr. Vidal López translated it as 'she'. In conversational Copala Triqui, however, *yo* $^{3}$ is a deictic meaning ‘that’, but it cannot be used for ‘she’; the conventional pronoun for the third-person singular feminine is *no* $^{3}$. Mr. José Fuentes, another Copala Triqui speaker, even argued that the translation of *yo* $^{3}$ as 'she' is wrong. This observation invites the research question of how well another speaker would be able to transcribe and translate this text, considering the linguistic “peculiarities” it is using.

Another compelling feature of the language in Mr. Vidal López's version of the *Sun and the Moon* myth is that $^{3}$, a morpheme otherwise used in quotidian discourse as a sentence-terminal

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declarative, is notably rare in the narrative, though it does terminate the first line in (11). This observation is especially noteworthy because the same declarative \( a^2 \) is ubiquitous as a sentence terminal in all four renditions of the myth transcribed in Hollenbach (1977). The present text also contains phrases that otherwise surface in contracted forms in conversational Triqui, like the phrase cu'\( n \)un\( d a^2 \)\( n \)i\( ^3 \) 'all'. Contemporary conversational speech contracts this phrase into cu\( n \)un\( d a^2 \) ni\( ^3 \). The non-contracted (or perhaps less contracted?) form of the expression is used in the mythical narrative as an indication that myth possesses a language that is not of quotidian speech, just like the social situations in which these myths are told. These introductory remarks on the 'collocational' features of Copala Triqui myth should promote further investigation on the linguistic resources available in Copala Triqui and on which speech genres they are more preferentially or even uniquely used.

6. Ethnopoetics in Mesoamerican Literature
Since the pioneering ethnopoetic works of scholars like Angel María Garibay Kintana, Dell Hymes, and Dennis Tedlock, many non-Western languages, especially Native American languages, have become more frequently transcribed with sensitivity to the poetic nuances that may structure certain genres and even help to define them (Hymes 1996: 166). This procedure has offered a profound service to Mesoamerican literature because it has helped to elucidate the poetic rhythms and patterns through which indigenous culture is expressed through oral and occasionally literary genres. This part of the paper will focus on examples from Mesoamerican texts, namely Mexica Nahuatl poetry and the K'iche' Maya epic of the Popol Vuh.

The poetry of Mexica or the so-called "Classical" dialect of Nahuatl is well-known for its rhythmic structure and meter. Garibay Kintana's commentary on Nahuatl poetry uses the sample verse (Garibay K. 1965: xxxiii, xxxvii), which I have transliterated and translated in (12):

\[
\text{(12)} \\
\text{/noyollo itek k'\text{w}eponi/} \quad \text{'within my heart blooms} \\
\text{/in k'\text{i}k\text{a}fot\text{j}iITT ewaya/} \quad \text{the flower of songs, ehuaya'}
\]

Nahuatl poetics could innovate syllabic clusters like /e.wa.ya/ that have no semantic meaning aside from the purpose of a phonetic "filler" allowing both lines to share the same number of syllables, in this case eight. Mexica Nahuatl poetry strongly emphasized the use of meter as a criterion for its "principle of equivalence," recalling Jakobson (1999), and the arrangement of rhythm was facilitated with the natural patterns of stress in Nahuatl, to suggest patterns of alternation between "strong" and "soft" voices (Garibay K. 1965: xxxvii).

Perhaps the clearest example of the "principle of equivalence" in Mexica Nahuatl poetics is the genre of difrasismo, a style of spoken metaphor that describes its referent concept through a pair of complementary phrases (Garibay K. 1965: xxvii f). A metaphor for "my nourishment" was /in no-coit\( j \)-ka, in no-neew-ka/ "that which I have for my sleep, that which I have for my waking" (Carochi 2001: 192-193). These two phrases can refer respectively to the meals of dinner and breakfast, and although these meals occur at the opposite ends of the day, by their juxtaposition they encompass the totality of the food that one eats through the course of one's day, and by extension, of one's life. The two phrases are equivalent in grammatical construction: the subordinator /in/ precedes an abstract verbal nominalization, possessed with the first-person singular prefix /no-/. The difrasismo was usually grammatically equivalent between its two (or occasionally three) complementary phrases, and so the axes of selection and combination

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operated through this structural constraint, as well as through cultural constraints on the extent of metaphorical reference. Although the Copala Triqui *Sun and Moon* myth is more literal in its language than the metaphor-laden genres of Nahuatl poetry and *difrasismo*, I believe that the rhetorical and poetic genres of Nahuatl share significant similarities with the Copala Triqui mythical genre, particularly in the rhythm and complementarity of the spoken lines. To further relate the *Sun and Moon* myth to Mesoamerican literature, I will conclude with some comments on another Mesoamerican myth, the *Popol Vuh*.

Dennis Tedlock’s 1985 edition of the *Popol Vuh*, the epic cosmogony myth of the K’iche’ Maya, is an exemplary model for the translation of Mesoamerican mythology into a written poetic format. Tedlock’s representation of the myth succeeds because of his meticulous attention to the poetic structure overlaying the course of the text in the original K’iche’. Tedlock’s endnotes provide commentary on the poetic features of the myth’s narrative discourse. The text commentary describes, for example, several instances from the remarkable number of parallel structures running through the text, featuring consistent patterns of grammar and semantics within each group of lines. Numerous parts of the text are grouped into pairs of complementary phrases, and Tedlock indents them into small block paragraphs to highlight their structure as distinct from that of the surrounding text.

Arguably the most prominent similarity between the cosmogonies of the *Sun and the Moon* and of the *Popol Vuh* is the presence of the Hero Twin protagonists. Many of their actions are used as “mythical precedents” to explain the current human and environmental situation. As in many Native American myths, the Hero Twins are also necessary agents for *gigantomachy*, the slaying of great monsters threatening the cosmic or social order, like the great serpent of the *Sun and Moon* (Hollenbach 1977: 142-143) and the crocodilian Zipacná in the *Popol Vuh* (Tedlock 1985: 97-99). Ultimately, in both the *Sun and Moon* and the *Popol Vuh* the Hero Twins transform into the sun and moon. These parallels in the Copala Triqui and K’iche’ Maya myths are substantial enough to conclude that such folkloric elements have been diffused between Oaxaca and Guatemala and elsewhere in Mesoamerica. Indeed, Hollenbach (1977: 124 n4) commented on the similarities that the Copala Triqui myth bears with other versions printed in *Tlalocan*, notably among other Oto-Manguean languages like Chinantec (Carrasco and Weitlaner 1952), Chatino (Cicco and Horcasitas 1962), and Zapotec (Stubbefield and Stubbefield 1969). However, what has been missing from this consideration of cultural diffusion is an analysis of the features that are *unique* to the Copala Triqui versions, a subject for further investigation.

7. Conclusions
Although this paper has had recourse to four minutes of the entire 13-minute *Sun and Moon* tale narrated by Román Vidal López, this portion of the text has nevertheless yielded a significant number of linguistic features that I have proposed are either structuring the narrative or presenting the narrative in such a way that speakers can separate its language from that used in more quotidian discourses in Copala Triqui. The use of *yo* instead of *no* to refer to a female character in the *Sun and the Moon* indexes the “antiquity” of the tale and perhaps even its “authenticity” as a cultural product of San Juan Copala, as Du Bois (1986) has suggested of the culturally recognized “archaic” elements of ritual speech in other Mesoamerican languages like K’iche’ and Tzeltal. Myth, like all genres, is a *social* language, meaning that language use is intimately tied to aspects of identity “performance” and social relations.

This paper has principally focused on the patterns of discourse and the presence of grammatical items that are structuring the *Sun and Moon* narrative into its constituent units. I
have argued, for instance, that the compound verb na³ vij³ ra⁴ has the sense of ‘deciding to act’, in which case it is behaving like a line-initial verb phrase, but it is more specifically placed at the beginnings of major narrative events, to introduce a new part of the narrative and to tag its separation from the preceding text. Likewise, many of the lines can be perceived as occurring in couplets or triplets, based on the parallels in syntax even when one or two of the elements may vary. In other cases, the lines are in almost complete repetition, excluding one or two words.

The present analysis corroborates Hymes’s contention that an ethnopoetic approach to oral texts must include analytical units comprised of groups of lines, and not simply on a line per line basis. A recent observation I have made on the structure of the myth is that not only are lines and clauses showing degrees of equivalence and repetition, but these patterns seem to be occurring even at the level of the narrative episodes themselves. Susan Perdomo translated a prior excerpt from the same text that includes the journey of Grandmother Ca’aj from mountain to mountain until she reaches the seventh, in order to provide tortillas for her husband—this sequence of events is comparable to the episode presented in (7). Such episodic parallels would suggest that the analytical units may have to extend beyond lines or even groups of lines, to larger units of narrative.

The Sun and Moon myth told by Mr. Vidal López additionally contains several prosodic features that have not been addressed here but invite further research. While in this paper I have discussed repeating structural patterns in the narrative, I did not develop on the function of verb reduplication in the narrative, which in Copala Triqui “signals continuation, repetition, or intensification of a predicate” (Hollenbach 1974: 176). The Sun and the Moon ultimately merits a multi-dimensional linguistic analysis, from its morphemes to its larger narrative units, in order to provide a more complete overview of its complexities, as well as its relations to similar features in other representatives of Mesoamerican literature. Such an approach could improve the modes of written representation that have been used for Copala Triqui myth, in order to better locate this narrative amidst the “classics” of Mesoamerican mythology and poetry.

8. Acknowledgments
I am indebted to Mr. Román Vidal López, who volunteered his time to review the present Sun and Moon excerpt with me and provide valuable guidance for both the transcription and translation of his recorded text. This paper would not have been possible without his indefatigable assistance. I also acknowledge Mr. José Fuentes, another Copala Triqui speaker, for his comments on the grammaticality of the text. Other scholars to whom I owe special acknowledgment for their input are Kosuke Matsukawa, Susan Perdomo, and George Aaron Broadwell.

References


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Zapotec Grammar Without Tears
(except perhaps for the grammarian)

PAMELA MUNRO
UCLA

1. Introduction and background
In this talk I’ll present some of the wonders of the grammar of Valley Zapotec and describe the problems I’ve encountered in my work describing these for an ongoing pedagogical grammar project.1

As participants in the COOL conference were well aware, many linguistic and ethnic groups are represented in Oaxaca. (One interpretation of their distribution is given in Map 1 on the next page.) Each of the groups on the map is a language family, not a single language; most of them include a sizeable number of distinct languages. According to the Ethnologue (Grimes and Grimes 2003), the Zapotec family (which is connected with Chatino and, more distantly, with many of the other groups in Map 1 as part of the Otomanguean stock) includes 58 mutually unintelligible languages.

“Valley Zapotec” (Ethnologue code ZAB) is spoken about where the word “Zapotec” appears on Map 1 (next page), in the northwest Tlacolula District of Oaxaca, which is southeast of the capital, Oaxaca City, as well as by perhaps 5000 immigrants to the Los Angeles area (Felipe H. Lopez, personal communication; for some ethnographic background, see Lopez and Munro 1999). The name Valley Zapotec is potentially confusing, since the Valley of Oaxaca and even the smaller Tlacolula Valley cover a considerably wider area than that where the language I refer to here as Valley Zapotec is spoken. However, the Ethnologue’s name, “Guelavía Zapotec”, seems inappropriate, since it singles out just one of many pueblos where the language is used. (For some discussion of the differences among San Lucas Quiavín’ Zapotec, San Juan Guelavía Zapotec, and Tlacolula de Matamoros Zapotec, see section 3 below and Munro 2003a.)2

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1 The pedagogically oriented work described here is funded by a Department of Education Title VI grant “San Diego Consortium: NRC and FLAS”, subcontract to UCSD (Charles L. Briggs, PI), subcontract to UCLA (Pamela Munro). Earlier work on Valley Zapotec has been funded by the Chicano Studies Research Center, Department of Linguistics, and Academic Senate of UCLA; by the UCMexus Foundation, and by NSF. I am particularly grateful to my co-authors on the pedagogical project, Brook Lillehaugen and my longtime collaborator Felipe H. Lopez, but many others (most mentioned in the text or listed in the references) have contributed through their work on Valley Zapotec or other Zapotec languages. Special thanks to Brook Lillehaugen, Olivia Martínez, and wonderful audiences at UCSB and COOL for their very helpful comments.

2 As noted in the text below, I use the abbreviations SLQZ (for San Lucas Quiavín Zapotec), SJGZ (for San Juan Guelavía Zapotec), and TMZ (for Tlacolula de Matamoros Zapotec) to identify these different varieties of Valley Zapotec. Other abbreviations are introduced in section 4.
Pamela Munro

Map (1) Linguistic Groups in Oaxaca, Mexico. (By Felipe H. Lopez)

People at UCLA have been working since 1993 with different varieties of Valley Zapotec (in the sense I use the name here), especially those spoken in the pueblos of San Juan Guelavía, San Lucas Quiaviní, Santa Ana del Valle, and Tlacolula de Matamoros (see Map 2 (next page); cf., e.g., Munro 1995, Galant 1998, Lee 1999, Munro and Lopez et al. 1999, Méndez [Martínez] 2000, Esposito 2002, Lillehaugen 2003, etc.). Work by other scholars (especially Ted and Kris Jones for San Juan Guelavía Zapotec, Kristine Jensen de López for San Marcos Tlapazola, and George A. Broadwell for Santa Ana del Valle) and our work with speakers from other pueblos has also informed the research. I refer to each of these varieties as “languages”; differences between pueblos (in all areas of grammar) can be considerable.

The current status of these languages ranges from fairly secure (San Lucas Quiaviní Zapotec has the largest percentage of native speakers of any Valley community (98.1%; Smith Stark 1994)) to seriously endangered (there are no speakers of Tlacolula Zapotec under 50 (Brook Lillehaugen, personal communication)). Even in San Lucas, however, the language is threatened: at any time, probably 25% or more of the town’s population is working in Los Angeles where, typically, their children do not learn the language.

Currently, work is in progress (under contract from UCSD, in collaboration with Brook Danielle Lillehaugen and Felipe H. Lopez) on a pedagogical grammar of Valley Zapotec, creating which has revealed many complex and unexpected analytical problems. Cali Chiu?: A Course in Valley Zapotec is the first pedagogical work ever on Valley Zapotec (other than Jones et al. 1999, a short alphabet book for San Juan Guelavía Zapotec). The book has a general Valley focus, but of necessity presents mainly the language of San Lucas Quiaviní (and to some degree Tlacolula), hereafter SLQZ. (Our title, Cali Chiu?, means ‘Where are you going?’, a standard greeting in Valley Zapotec.) It presents grammatical background along with readings, dialogues, and other supplementary material, all designed to be used in conjunction with conversationally oriented classroom instruction.
Map (2) The area around Tlacolula de Matamoros, northwest Tlacolula District, Oaxaca. (From Garcia García, et al., n.d.)

In the remainder of this paper I’ll discuss a number of issues in Zapotec grammar and how we are handling them for the Cali Chiu? project, for which 20 of 24 planned lessons have been drafted so far. As anyone who has tried to prepare such a grammar knows, this is an enormous juggling act because of the interdependence of so many features of the language. Although SLQZ has already received a fair amount of attention from theoretical linguists, describing its grammar for learners requires a completely different approach.

2. Phonology and orthography
Ornography has been a concern since Lopez and I began our work in 1993 (recently, cf. Munro and Lopez 2003, Munro 2003a, Munro 2003b, as well as work by Martínez, e.g. in preparation). I will introduce the phonology of SLQZ using the “academic” orthography of Munro and Lopez et al. (1999).

2.1. Consonants
The consonants of SLQZ (in Table 1) are similar to those of other Valley Zapotec languages.
Pamela Munro

(Several languages have lenis affricates corresponding to the fortis ones in Table 1; Jones and Knudson (1977) also report a retroflex fortis affricate for San Juan Guelavía Zapotec (SJGZ).)

Table (1) The consonants of SLQZ.

<table>
<thead>
<tr>
<th></th>
<th>labial</th>
<th>den-alv</th>
<th>alv-pal</th>
<th>retroflex</th>
<th>velar</th>
</tr>
</thead>
<tbody>
<tr>
<td>fortis stop</td>
<td>p</td>
<td>t</td>
<td></td>
<td></td>
<td>c / qu [k]</td>
</tr>
<tr>
<td>lenis stop</td>
<td>b</td>
<td>d</td>
<td></td>
<td></td>
<td>g / gu [g]</td>
</tr>
<tr>
<td>fortis affricate</td>
<td>ts</td>
<td>ch [tʃ]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>fortis fricative</td>
<td>f</td>
<td>s</td>
<td>x [ʃ]</td>
<td>x: [ʃ]</td>
<td>j [x]</td>
</tr>
<tr>
<td>lenis fricative</td>
<td>z</td>
<td>zh [ʒ]</td>
<td></td>
<td>zh: [ʒ]</td>
<td></td>
</tr>
<tr>
<td>lenis nasal</td>
<td>m</td>
<td>n</td>
<td></td>
<td></td>
<td>ng [ŋ]</td>
</tr>
<tr>
<td>fortis nasal</td>
<td>mm</td>
<td>nn</td>
<td></td>
<td></td>
<td>nng (fortis [ŋ])</td>
</tr>
<tr>
<td>lenis lateral</td>
<td>l</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>fortis lateral</td>
<td>ll</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>flap (lenis?)</td>
<td>r</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>trill (fortis?)</td>
<td>rr</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>glide (lenis)</td>
<td>w</td>
<td></td>
<td></td>
<td></td>
<td>y</td>
</tr>
</tbody>
</table>

Zapotec languages generally contrast fortis and lenis obstruents and sonorants. Fortis obstruents are voiceless. Lenis obstruents are canonically voiced but may devoice in many positions. Fortis consonants are longer in duration than the corresponding lenis consonants. The lenis-fortis contrast in sonorants is an unusual feature, but bears an insignificant functional load. The alveopalatal-retroflex distinction seems similarly unimportant, with virtually no minimal contrasts. However, the r-rr distinction is important, and particularly salient for Spanish speakers. Although it is not clear that rr is in fact a unit phoneme outside of loanwords, rr occurs in native words as a cluster of r plus r, in clear contrast with a single r. F and j occur primarily in loans.

2.2. Vowels

The languages of the Tlacolula Valley have very complicated vowel systems, with vowels differentiated not only in terms of quality but also by phonation and tone, with vowels of different phonation types often occurring together in a single syllable.\(^3\)

Most languages have vowels of six qualities, a e i o u and high back to central unrounded [u / i], which we write as ê; SLQZ has ten diphthongs, ai au ei eu ia ie iu ua ue êï.

Most languages have four phonation types.\(^4\) Vowels may be modal (plain, written with a plain vowel in the academic orthography, e.g. a), creaky (written with a vowel with a grave accent, e.g. ă), checked (postglottalized, written with a following apostrophe (usually a straight

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\(^3\) The analysis outlined here is essentially that of Munro and Lopez et al. (1999), which Felipe Lopez and I worked out with helpful input from Matthew Gordon, Jie Zhang, and others, to whom we are most grateful.

\(^4\) In addition to the phonation types described in the text, there may be a fifth phonation type (represented as âa in Table 2 below), which we currently refer to as "funny phonation". Our representation of this vowel type as a sequence of creaky plus plain vowels reflects Felipe Lopez's intuition but does not correspond fully with instrumental data, which nonetheless supports characterizing this vowel type as nonmodal and distinct from the other SLQZ phonation types.
rather than "smart" apostrophe), e.g. a'), or breathy (written with a following h, e.g. ah).5 (The
glottal stop (') and h that occur orthographically as elements of these complex vowel types are
not considered to be consonant phonemes in our analysis.)

SLQZ tone can be specified as level high, level low, rising, or falling. The tone melodies on
SLQZ vowel complexes in final syllables of lexical items are derived from the number and pho-
nation type of a syllable's complex of up to three (or, in certain citation forms, four) vowels
rather than representing primary contrasts (in other words, a given vowel complex always has the
same tone, and there are no tone contrasts on instances of the same vowel complex).

Table 2 (next page) presents the 27 phonation/tone types that may occur in SLQZ on
monophthongal syllables, most of which have direct analogues in other Valley Zapotec languages
(additional patterns are used only on diphthongs). The first column presents the type of vowel
complex (single checked vowel, sequence of two modal vowels, etc.), shown schematically with
the vowel a. The second column gives an example. The third tells the tone associated with each
pattern. Tone is not otherwise marked, since the tone associated with any given vowel complex
is always the same. There are three or more different vowel complex types for each of the four
different tones, which supports the claim that phonation sequence rather than tone is basic.

As the examples suggest, a monosyllabic word in SLQZ has the canonical shape
CCGVVVCCG, where C = any consonant, V = any vowel (i.e. a, ã, ah, a'), and G = the glide y
or (more rarely) w. (A surprisingly large number of words end in final -y.) Word-finally, VVVV
may also occur (I have sometimes referred to the final V in such sequences as "extrametrical"). A single V is the only obligatory element of the template, but vowel-initial words are quite rare.

2.3. Orthography

Valley Zapotec has an enormously complex phonological system, for which two different ortho-
graphies have been used in published work (there is still no standard):

• One, used by Ted Jones and his colleagues in their translation of the New Testament (Liga
Bíblica 1995), does not represent every contrast in all dialects of Valley Zapotec, and simplifies
its representation of other contrasts: the vowel of a given monophthongal syllable may be written
in one of only five ways. This system is thus not appropriate for full documentation and it can be
difficult to be sure how to write a given word, but it has been more or less successfully learned
by a number of readers.

• The other, used in Tables 1-2, is an "academic" system that distinguishes every vowel contrast
in the language. Several native speakers have learned to read and write fluently with this system,
and non-speakers familiar with the system can use it to accurately transcribe new words and read
them back later. However, even trained linguists familiar with the system may have trouble re-
calling some certain aspects of it. Other speakers' reaction to this orthography has been fairly
strongly negative: the system is seen as too complex and too hard to learn.

5 SJGZ is described as not having contrastive breathy vowels (Jones and Knudson 1977; Ted Jones, personal com-
munication), although the language does have many phonetically breathy vowels (Olivia Martínez, personal com-
munication). The SJGZ vowels that correspond to phonemic breathy vowels in other Valley Zapotec languages have
a distinctive low tone and seem likely to be different in phonation from modal vowels, though this hypothesis awaits
instrumental confirmation. I will not review here all the differences between the description of SLQZ presented here
and the description of SJGZ phonology in Jones and Knudson (1977), prepared after 13 months' fieldwork by Jones
(1977: 180). One difference is that Jones and Knudson analyze SJGZ as having three contrastive level tones (with-
out presenting any minimal sets) and briefly mention the possibility of mid-to-high contours before lenis consonants
or finally; however, they give only two-way minimal sets. Jones and Knudson also suggest that certain vowel types
corresponding to some we represent as sequences of different phonation types may be conditioned.
Table (2) _SLQZ_ vowel complexes and associated tones.

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Example (from Munro and Lopez et al. 1999)</th>
<th>Tone</th>
</tr>
</thead>
<tbody>
<tr>
<td>a'</td>
<td>cha't 'kiss'</td>
<td>high</td>
</tr>
<tr>
<td>aa</td>
<td>syudaa 'city'</td>
<td>high</td>
</tr>
<tr>
<td>ah</td>
<td>zah 'grease'</td>
<td>low</td>
</tr>
<tr>
<td>ahaah</td>
<td>lohoh 'face'</td>
<td>low</td>
</tr>
<tr>
<td>àà</td>
<td>dàany 'mountain'</td>
<td>low</td>
</tr>
<tr>
<td>a'a'</td>
<td>da'ad 'father'</td>
<td>rising</td>
</tr>
<tr>
<td>a'aa'</td>
<td>gami'ilzh 'blouse'</td>
<td>rising</td>
</tr>
<tr>
<td>ãaa'</td>
<td>ãaa' 'yes, that's right'</td>
<td>rising</td>
</tr>
<tr>
<td>ãaa'</td>
<td>nnàaan 'mother'</td>
<td>rising</td>
</tr>
<tr>
<td>aha'</td>
<td>rlahat 'gets unloaded'</td>
<td>falling</td>
</tr>
<tr>
<td>a'ah</td>
<td>cu'uhb 'tejate'</td>
<td>falling</td>
</tr>
<tr>
<td>a'ahah</td>
<td>gdahlgulgilhzh 'sickness'</td>
<td>falling</td>
</tr>
<tr>
<td>a'aha</td>
<td>Byu'uahu 'young person from Mitla'</td>
<td>falling</td>
</tr>
<tr>
<td>a'ãã'</td>
<td>zhi'iilzh 'pineapple'</td>
<td>falling</td>
</tr>
<tr>
<td>a'ãã'</td>
<td>zhi'ililly 'sheep'</td>
<td>falling</td>
</tr>
<tr>
<td>a'ahah</td>
<td>gyibzhilhilhy 'type of bamboo'</td>
<td>falling</td>
</tr>
<tr>
<td>a'ãã'</td>
<td>ca'ãa' 'will stroke'</td>
<td>falling</td>
</tr>
<tr>
<td>ãã'</td>
<td>rcãa'z 'wants'</td>
<td>falling</td>
</tr>
<tr>
<td>ãaa'</td>
<td>dãa'ah 'petate'</td>
<td>falling</td>
</tr>
<tr>
<td>ãã'a</td>
<td>zhi'iiny 'son'</td>
<td>falling</td>
</tr>
<tr>
<td>ãã'a</td>
<td>mnnããñ' 'woman'</td>
<td>falling</td>
</tr>
<tr>
<td>ãã'ah</td>
<td>rewaãã'ah 'thows'</td>
<td>falling</td>
</tr>
<tr>
<td>aah</td>
<td>baahly 'flame'</td>
<td>falling</td>
</tr>
<tr>
<td>a'</td>
<td>baxaa't 'toad'</td>
<td>falling</td>
</tr>
<tr>
<td>a'ah</td>
<td>baa'ah 'earlier today'</td>
<td>falling</td>
</tr>
<tr>
<td>a'åã'</td>
<td>yaa'at 'up'</td>
<td>falling</td>
</tr>
<tr>
<td>aã'ah</td>
<td>rlooo'oh 'floods'</td>
<td>falling</td>
</tr>
</tbody>
</table>

In _Cali Chin_?, however, we have adopted a new minimalist system for writing Valley Zapotec that uses no apostrophes, accents, postvocalic h's, or repeated identical vowels in single morphemes. (Repeated vowels are used in certain inflected verb forms, as described in section 5 below.) Consonant representations are simplified by omitting the colon indicating retroflex and writing lenis and fortis sonorants the same, as in the headings for the columns in Table 3 (next page), which presents some minimal sets. Significantly, speakers will often observe that words in minimal sets like these are (or should be) "spelled the same". Despite the inevitable homographies of this system, the native speakers who have tested materials in the new orthography have little trouble reading: context seems to provide enough cues to aid in determining which of several homographs is used in a given passage, though of course the system could not represent

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6 A recurring question is that of what spelling should be used for zh/zh'. We use zh, but the Jones and Church orthography uses ll (reflecting a common Oaxacan pronunciation of Spanish /y/).
Table (3) Some contrastive sets for Valley Zapotec vowels (from SLQZ), with column headings in the Cali Chiu? orthography and pronunciation guides in square brackets.

<table>
<thead>
<tr>
<th>tone</th>
<th>bel</th>
<th>gyla</th>
<th>na</th>
<th>nda</th>
</tr>
</thead>
<tbody>
<tr>
<td>high</td>
<td>[Be'll] 'Abel'</td>
<td>[gyiia] 'will go home'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>low</td>
<td>[beel] 'fish'</td>
<td>[gyiah] 'rock'</td>
<td>[nah] 'now'</td>
<td>[nnah] 'says'</td>
</tr>
<tr>
<td>falling</td>
<td>[gyla] 'agave root'</td>
<td>[nàa] 'is'</td>
<td>[ndaa] 'sensitive'</td>
<td></td>
</tr>
<tr>
<td>falling</td>
<td>[gii'ah] 'will drink'</td>
<td></td>
<td>[nda'ah] 'had been poured'</td>
<td></td>
</tr>
<tr>
<td>falling</td>
<td>[bèel] 'naked'</td>
<td>[nàa'ah] 'heavy'</td>
<td>[nda'a'ah] 'had broken'</td>
<td></td>
</tr>
<tr>
<td>falling</td>
<td>[bèel] 'meat'</td>
<td>[nnàa'ah] 'hand'</td>
<td>[nda'aa'] 'hot'</td>
<td></td>
</tr>
</tbody>
</table>

Lecsyony (lessons) 1-4 of Cali Chiu? introduce the language and its sound system. We present phonation using the following symbols: P = plain (modal) vowel, B = breathy vowel, C = checked vowel, and K = creaky vowel. This allows referring to the lines in Table 3 above, for example, as PPP (a pattern used only for diphthongs), C, B, BB, KP, CB, PCB, KKC, KC, KCB, and PKC. (This approach is a notational variant of the system used in the first column of Table 2, of course, but it seems to make the discussion clearer, and it has facilitated the presentation of some generalizations about phonation changes in inflection.)

3. Pronouns

An important area in which speakers routinely notice differences in the speech of other pueblos is the system of third person pronouns (cf. Munro 2002). Table 4 below presents the third person singular pronominal clitics in three Valley languages, SLQZ, San Juan Guelavía Zapotec (SJJZ), and Tlacolula de Matamoros Zapotec (TMZ), each of which shows a different set of six categories of deixis and respect. 7 (With the plural pronouns, each language has 12 third person categories in all.)

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7 The SLQZ forms are slightly adapted from Munro (2002) and the SJJZ is from Jones and Church (1985). Thanks to Brook Lillehaugen for the TMZ data, and to Brook Lillehaugen and Olivia Martinez for other helpful input. The SLQZ and TMZ data are presented in the academic orthography of Munro and Lopez et al. (1999), while the SJJZ follows the orthography of Jones and Church (cf. section 1). Here and below = indicates a clitic boundary.
Table (4) Third person singular pronominal clitics in three Valley Zapotec languages.

<table>
<thead>
<tr>
<th>San Lucas Quiaviní</th>
<th>San Juan Guelavía</th>
<th>Tlacolula de Matamoros</th>
</tr>
</thead>
<tbody>
<tr>
<td>=ihny / =ni'i'</td>
<td>=ny</td>
<td>=ni'</td>
</tr>
<tr>
<td>reverential</td>
<td>honorific</td>
<td>reverential</td>
</tr>
<tr>
<td>=éhb</td>
<td></td>
<td>=ba</td>
</tr>
<tr>
<td>formal</td>
<td></td>
<td>respectful</td>
</tr>
<tr>
<td>=ahzh:</td>
<td>=ll / =ll+</td>
<td>male &gt; male</td>
</tr>
<tr>
<td>respectful</td>
<td>=b / =b+</td>
<td>familiar</td>
</tr>
<tr>
<td></td>
<td>=by</td>
<td>child</td>
</tr>
<tr>
<td></td>
<td></td>
<td>=by</td>
</tr>
<tr>
<td>=éng</td>
<td></td>
<td>child</td>
</tr>
<tr>
<td>proximate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>=ih</td>
<td></td>
<td></td>
</tr>
<tr>
<td>distal</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>=ni</td>
<td>=ni</td>
</tr>
<tr>
<td></td>
<td>inanimate</td>
<td>inanimate proximate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>=na</td>
</tr>
<tr>
<td></td>
<td></td>
<td>inanimate distal</td>
</tr>
<tr>
<td>=éhmm</td>
<td>=m / mi</td>
<td>=mma</td>
</tr>
<tr>
<td>animal/child</td>
<td></td>
<td>animal</td>
</tr>
</tbody>
</table>

In Munro (2002) I argued that the SLQZ pronouns reflect a hierarchy of respect, as diagrammed in Table 5:

Table (5) A hierarchical diagram of the SLQZ third person singular clitic pronouns.

```
Reverential
(=ihny/=ni')

Formal (=éhb)

Respectful (=ahzh:)

Proximate (=éng)  Distal (=ih)

Animal (=éhmm)
```

Each of these SLQZ pronouns can be used to refer to an adult human, as shown in the example sentences in Table 6 on the next page, though most of them have other uses as well. (Only the formal and respectful pronouns are used solely to refer to for adult humans.)

This hierarchy is flexible: in a single discourse, speakers can move up or down the scale with reference to the same individual, depending on changes in empathy and point of view, while the deictic pronouns may be used to show psychological as well as physical closeness or distance (Munro 2002).
Table (6) Examples of SLQZ third person singular clitic pronouns (in Cali Chiu? orthography).

| REVERENTIAL | Bgutjiny conejw. “He (a specially revered adult, a saint, or God) killed the rabbit” |
| FORMAL       | Bgutyëh conejw. “He (an adult accorded special respect who would be addressed with a formal pronoun) killed the rabbit” |
| RESPECTFUL   | Bgutjazh conejw. “He (a normally respected adult familiar to the speaker [who is most likely male]) killed the rabbit” |
| PROXIMATE    | Bgutjëng conejw. “He (a non-Zapotec or someone especially familiar to the speaker, nearby) killed the rabbit” |
| DISTAL       | Bgutyih conejw. “He (a non-Zapotec or someone especially familiar to the speaker, farther away or out of sight) killed the rabbit” |
| ANIMAL       | Bgutjëm conejw. “He (an animal, child, or disrespected adult) killed the rabbit” |

In Cali Chiu? we introduce only the SLQZ pronouns in the text, though there will be notes on other systems at the end of the book. Presenting pronoun use poses numerous pedagogical challenges and some terminological problems.

In addition to the complex set of third person pronouns mentioned above, for example, SLQZ has formality oppositions in second person pronouns as well, plus first person pronouns, as shown in Table 7:

Table (7) SLQZ non-third person clitic pronouns.

| =a’ first person singular | =èhnn first person plural |
| =ìuu’ second person singular informal | =ahd second person plural formal |
| =yuu’ second person singular formal | =yùad second person plural formal |

We thought it would be confusing to use the term “formal” for both second and third person forms, so we decided to re-name the third person formal pronouns (in the terminology of Table 6) “respectful”. This, of course, meant that the third person respectful pronouns (in the terminology of Table 6) needed a new name. Finding a suitable one was very difficult, but we have settled on “familiar”. Thus, two of the six third person pronouns have different names in Cali Chiu? from their names in the previous literature on SLQZ.

We have introduced the pronouns gradually. Singular proximate and distal pronouns were introduced in Lecsony 7; first person singular and second person singular informal pronouns in Lecsony 8; second person formal pronouns, respectful (old “formal”), plural proximate and distal, first person plural, and second person plural informal pronouns in Lecsony 9; animal pronouns in Lecsony 11; and familiar pronouns in Lecsony 17; we plan to introduce reverential pronouns (and the reverential idioms based on them) in Lecsony 21.

We originally planned to delay the introduction of the formal pronouns till we realized that they were needed for students to be able to address their teacher! A pedagogical advantage of these forms is that they involve less morphological irregularity than every other pronoun.

4. Repetition and binding
Several Zapotec languages are well known for using repetition where other languages would use anaphoric pronouns (Black 2000, Lee 2003). SLQZ uses the repetition construction for reflex-
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ives, for example, as in (1-3) (given in the academic orthography):⁸

(1) B-gu'ty=ėng la'anng. ‘He killed himself’ (also: ‘He killed him’)
    perf-kill=3s.prox pron.3s.prox

(2) Zhii wxi'ihny g-ũu'ny=ũu' sacrificaar lu'.
    tomorrow evening irr-do=2s.inf sacrifice pron.2s.inf
    ‘Tomorrow evening you are to sacrifice yourself’
    (from a retelling of “The Story of Mezcal” by Silvia Lopez)

(3) Jwaany b-guhty Jwaany. ‘Juan killed himself’ (also: ‘Juan killed Juan’)
    Juan perf-kill Juan

Repetition is also used in expressing anaphoric possession:

(4) B-tōo'=ėng x:=-ca'rr=ėng. ‘He, sold his car’
    perf-sell=3s.prox poss-car=3s.prox

(5) B-tōo' Jwaany x:=-ca'rr Jwaany.
    perf-sell Juan poss-car Juan
    ‘Juan, sold his (own) car’ (also, ‘Juan sold Juan’s car’)

These examples demonstrate that SLQZ is a VSO language (though as (3) indicates a focused constituent may appear before the verb). Pronominal subject clitics (cf. section 3) must appear in the normal subject position following the verb. Verbs have prefixed aspect markers (cf. section 5 below). The language follows a consistent verb-initial typology: thus, possessors (nouns or clitic pronouns) follow possessed nouns (which, when alienable, have a possessed prefix x:-).

An ordinary pronoun cannot show coreference with a noun argument in the same clause:

(6) *Jwaany b-guhty la'anng. *‘Juan killed himself’ (ok as: ‘Juan killed him’)
    Juan perf-kill pron.3s.prox

(7) *B-tōo' Jwaany x:=-ca'rr=ėng.
    perf-sell Juan poss-car =3s.prox
    *‘Juan, sold his (own) car’ (ok as: ‘Juan, sold his car’)

SLQZ has one true anaphor, the clitic =nii’, which can be used in a paraphrase of (5):

(8) B-tōo' Jwaany x:=-ca'rr=nii'. ‘Juan sold his (own) car’
    perf-sell Juan poss-car =anap

These repetition constructions exemplified above are interesting and challenging to linguists,

but this feature has proven to be one of the easiest complexities to implement in Cali Chiu. Despite the claims of universal grammar, I think if you just tell people that this is the way the language does it, they will believe you (and not whine for reflexive pronouns). We'll see.

5. Verb conjugation and inflection (and noun paradigms)
Zapotec languages do not have tense marking per se, but rather have verb forms differentiated for "aspect", a category that can express various tense-aspect-modality oppositions. Most verbs have six or seven different aspecral forms, as exemplified in (9) for two verbs (using the aspect terminology of Munro and Lopez et al. (1999)):

(9) Habitual: ra'ahcw 'puts on (a shirt)' rzh:ùu'ñny 'runs'
Perfective: gwù'ah'rt 'put on... bzh:ùu'ñny 'ran'
Irrealis: ga'acw 'will put on... yzh:ùu'ñny 'will run'
Subjunctive: nya'ahcw 'if... ) had put on... nzh:ùu'ñny 'if...) had run'
Progressive: eaya'ahcw 'is putting on...' cæzh:ùu'ñny 'is running'
Definite: za'ahcw 'will surely put on...' xùu'ñny 'will surely run'
Neutral: naa'cw 'is wearing...'

In most analyses the Habitual stem is taken as basic (the r- Habitual prefix is the most regular aspect prefix, and the Habitual form is most commonly listed in dictionaries); we translate the Habitual with a third person singular present form. For these two verbs the unprefixe3 forms ("bases" in the CC terminology, listed here in <s>) are <a'ahcw> and <zh:ùu'ñny>. The two paradigms in (9) illustrate several irregularities of Valley Zapotec verb conjugation:

- aspect prefixes may vary from verb to verb (generally consonant-initial bases like <zh:ùu'ñny> work in a more regular fashion than vowel-initial bases like <a'ahcw>)
- the phonation of the base may change from one aspect to another (e.g. the Irrealis and Neutral of 'puts on a shirt')
- the base may suppletive in some aspects (e.g. the Perfective of 'puts on a shirt')
- the prefix and the initial consonant of the base may coalesce (e.g. the Definite of 'runs')

SLQZ has a great many irregular verbs. (10)-(11) below provide some more examples of Habitual, Perfective, and Irrealis stems of SLQZ verbs. Those in (10) are regular, while those in (11) illustrate different patterns of irregularity.

(10)  
<table>
<thead>
<tr>
<th></th>
<th>Habitual</th>
<th>Perfective</th>
<th>Irrealis</th>
</tr>
</thead>
<tbody>
<tr>
<td>'gives'</td>
<td>rdèèñdy</td>
<td>bdèèñdy</td>
<td>ydèèñdy</td>
</tr>
<tr>
<td>'spills'</td>
<td>rech</td>
<td>brech</td>
<td>yrech</td>
</tr>
<tr>
<td>'stings, pokes'</td>
<td>rgùad</td>
<td>bgùad</td>
<td>ygùad</td>
</tr>
</tbody>
</table>

---

9 This section and the presentation in Cali Chiu? owe something to almost everyone who has written on Zapotec, but those who have influenced my thinking most include Chris Adam, Argelia Andrade, Olivia Martínez, and Natalie Operstein. Previous work and discussion with Silvia Lopez was especially helpful.
10 Lee (1999) discusses the syntax of tense in SLQZ.
11 My collaborator Felipe Lopez was charmed when he realized (early in our joint work) that his language had more irregular verbs than Spanish!
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<table>
<thead>
<tr>
<th>Habitual</th>
<th>Perfective</th>
<th>Irrealis</th>
</tr>
</thead>
<tbody>
<tr>
<td>'bathes'</td>
<td>ra'ahz</td>
<td>gwa'ahz</td>
</tr>
<tr>
<td>'calls'</td>
<td>rbu'uuhzh</td>
<td>bree'ihzh</td>
</tr>
<tr>
<td>'crosses'</td>
<td>rdëë'dy</td>
<td>bdëë'dy</td>
</tr>
<tr>
<td>'does'</td>
<td>ruenhy</td>
<td>bëënhy</td>
</tr>
<tr>
<td>'grabs'</td>
<td>rënnu'az</td>
<td>mënnu'az</td>
</tr>
<tr>
<td>'hugs'</td>
<td>rguëë'ez</td>
<td>bëë'ez</td>
</tr>
<tr>
<td>'pierces'</td>
<td>rguad</td>
<td>bëad / bëlad</td>
</tr>
<tr>
<td>'puts on (pants)'</td>
<td>rbëë'cy</td>
<td>bëë'cy</td>
</tr>
<tr>
<td>'scratches'</td>
<td>rguununny</td>
<td>bëuununny</td>
</tr>
<tr>
<td>'sings'</td>
<td>ruu'ill</td>
<td>bë'ill</td>
</tr>
<tr>
<td>'sucks'</td>
<td>rguu'u'b</td>
<td>bëu'u'b</td>
</tr>
<tr>
<td>'tells'</td>
<td>re'ihpy</td>
<td>—</td>
</tr>
</tbody>
</table>

The greatest irregularities in verb conjugation, however, occur when pronominal subject clitics are added to the base.

- verb bases (especially vowel-final ones) may combine in unpredictable ways with following pronominal clitics (especially vowel-initial ones)

There are 19 forms of every Zapotec verb in every aspect: the bare stem, shown above, which is used with noun subjects, and 18 forms with different clitic subject pronouns attached. Often these combinations are phonetically unpredictable (I'll illustrate this shortly), with the first person plural form most likely to be irregular and third person plural and second person formal forms most regular. Moreover, sometimes the base changes with different pronoun subjects:

- verbs may have special bases used only with certain pronominal subjects

For example, some vowel-initial bases add a d in the perfective and all first person plural subject forms. (12) illustrates changes in the <a'nnyy> 'sits on (something on the ground), pillows his head on', with no suffix and with the clitic subjects =a' 'I' and =ëhn 'we'. The base in each stem in (12) is boldfaced, with the added d's underlined:

(12)  

<table>
<thead>
<tr>
<th>Habitual</th>
<th>1sg subject</th>
<th>1pl subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>unsuffixed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perfective</td>
<td>bdëë'nyy</td>
<td>bgëë'nyy</td>
</tr>
<tr>
<td>Irrealis</td>
<td>gëë'nyy</td>
<td>gëë'nyy</td>
</tr>
<tr>
<td>Subjunctive</td>
<td>nyëë'nyy</td>
<td>nyëë'nyy</td>
</tr>
<tr>
<td>Progressive</td>
<td>cayëë'nyy</td>
<td>cayëë'nyy</td>
</tr>
<tr>
<td>Definite</td>
<td>zëë'nyy</td>
<td>zëë'nyy</td>
</tr>
</tbody>
</table>

12 Some verbs, like 'tells', are defective for certain stems. Significantly, though, while re'ihpy 'tells' has no Perfective in SLQZ, it has an irregular imperative, gwu'ahits. Normally the Valley Zapotec imperative is expressed with the Perfective — and gwu'ahits is the Perfective of TMZ 'tells'.

13 Incidentally, some younger speakers have generalized the paradigm for some of these verbs, using the "d-base" (as we refer to it in Cali Chiu?) in all forms.
The most irregular verbs in Zapotec are ‘go’ and ‘come’. ‘Goes’ (13) is somewhat irregular with almost every subject and has an irregular first person plural subject base <yoo’>. ‘Comes’ (14) has irregular bases in both first persons, singular <yàa’l>, plural <yoo’p>.

<table>
<thead>
<tr>
<th>(13)</th>
<th>unsuffixed</th>
<th>1sg subject</th>
<th>1pl subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>Habitual:</td>
<td>ri’hah</td>
<td>ri’a’</td>
<td>ryoo’nn</td>
</tr>
<tr>
<td>Perfective:</td>
<td>gwe’h</td>
<td>gwa’a’</td>
<td>byoo’nn</td>
</tr>
<tr>
<td>Irrealis:</td>
<td>chi’la</td>
<td>cha’a’</td>
<td>choo’nn</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(14)</th>
<th>unsuffixed</th>
<th>1sg subject</th>
<th>1pl subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>Habitual:</td>
<td>ri’e’d</td>
<td>ryàa’lla’</td>
<td>ryoo’pèhn</td>
</tr>
<tr>
<td>Perfective:</td>
<td>bl’e’d</td>
<td>byàa’alla’</td>
<td>byoo’pèhn</td>
</tr>
<tr>
<td>Irrealis:</td>
<td>gyìe’d</td>
<td>gyàa’lla’</td>
<td>gyoo’pèhn</td>
</tr>
</tbody>
</table>

Nouns do not have aspect prefixes, but vowel-final possessed nouns exhibit the same types of alternations as vowel-final stems when followed by pronominal clitics.

In Cali Chiu?, we have introduced verb irregularity gradually. The minimalist orthography means that there is a lot of homography in conjugated verbs, making pronunciation guides especially important. We began with all regular consonant-initial and consonant-final bases, with only very simple alternations in prefixes -- the change from Perfective b- to m- before n in ‘grabs’ in (11), for example, is rule-governed and is presented in Lecsyony 6, when the Perfective was introduced.

Here is how we’ve introduced other verb irregularities: Lecsyony 10 introduces the Irrealis and a few verbs with regular Irrealis forms; Lecsyony 11, the concept of irregular verbs with paradigms like those for ‘sucks’ and ‘hugs’ in (10); Lecsyony 12, ‘does’ and the concept of vowel-initial bases; Lecsyony 13, inflection with vowel-final stems; Lecsyony 14, possession and the inflection of vowel-final possessed nouns; Lecsyony 15, base-changing verbs (including d-base verbs like that in (12)); Lecsyony 16, vowel-initial bases; Lecsyony 17, ‘goes’ and andative verbs (which include an incorporated ‘go’ verb); Lecsyony 19, ‘be’; and Lecsyony 20, ‘comes’ and venitive verbs (with include an incorporated ‘come’ verb). Forms of many of the verbs named here appear in dialogues and readings long before they are explicitly discussed in the grammar sections, of course.

Representing inflection orthographically can present difficult problems, as illustrated in (15-16) below. We decided (after some agonizing) to write clitics consisting simply of vowels (first person singular –a [=a’], second person singular informal –u [=u’], third person singular distal –i [=ih]) whenever they appear after vowel-final stems, even when they do not add a syllable or create a new contrast. For example, (15) shows that when a vowel-initial clitic is added to a verb ending in a checked vowel plus a breathy vowel, the breathy vowel drops and the clitic is added as a separate syllable (the syllable boundary is represented in the bracketed pronunciation guide with a hyphen, but is not shown in the spelling):

(15) rgwii [rgwi’-ih] < [rgwi’ih] (rgwi) plus [=ih] ‘he (distal) looks’

But this is relatively straightforward. (16a-c) are trickier cases, in which the vowel sequences in inflected forms are pronounced the same as certain uninflccted forms that are (by our rules) written differently (because they are monomorphic).
(16a) *risti* [rihst{l}i] < *risti* [rihst{l}] plus -l [=ih] ‘he (distal) gets up’
  — but cf. *zhizh* [zhil{zh}i] ‘pineapple’

(16b) *racnaa* [rahcnaa] < *racna* [rahcnah] plus -a [=a'] ‘I hurt’
  — but cf. *na* [nnaa] ‘hand’

(16c) *reulo* [reulo] < *reulo* [reuloh] plus -u [=u'] ‘you (informal singular) take care of’
  — but cf. *bto* [bt{ō}o] ‘type of plant used as soap’

Of course, such problems arise in any orthography where spelling sometimes represents morphology rather than (strictly) pronunciation (for example, in the use of –s to represent all English plural endings, even those pronounced with [z]). But they are troubling.

The inflectional material that has been most difficult to present is exemplified in Table 6:

Table (6). Paradigms of *rgue* “cusses” and *rgue* “hauls”.

<table>
<thead>
<tr>
<th><em>rgue</em> [rguē] “cusses”</th>
<th><em>rgue</em> [rgueh] “hauls”</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>rgueën</em> [rgue{ēn}] :: Rguen. “We cuss.”</td>
<td><em>rguen</em> [rguen] :: Rguen nyis. “We haul water.”</td>
</tr>
</tbody>
</table>
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The table compares full paradigms of two homographous vowel-final verbs: the examples show clearly how difficult inflectional paradigms in Valley Zapotec can be, since although orthographically things may look very regular, in terms of pronunciation they are not. The interaction of vowel-final stems with vowel-initial clitics, presented mainly in Leccyony 13, has been the most difficult part of Cali Chiu? to present.

In the course of this work, we have discovered a number of regularities and subregularities in the data that allow formulation of strategic heuristics to help students to guess what form a verb will take with a particular subject. Hopefully, learning about Valley Zapotec conjugation will not be completely impossible for students!

6. Supplementary material
Brinton and Wong (2003) presents a variety of inspiring ways to use "authentic materials" in the less commonly taught languages classroom. Unfortunately, such materials just aren't available for Valley Zapotec. There are no printed Valley Zapotec weather reports, transportation schedules, recipes, print media, maps, comics, political cartoons, brochures, product labels, magazine pictures, postcards, greeting cards, or menus. There are also (very surprisingly) no Valley Zapotec songs.

6.1. Potential authentic materials
It is difficult to find appropriate materials that include written Valley Zapotec, because the language has been written so seldom. Figure 1 presents one candidate, my collaborator Brook Lillehaugen's personalized license plate (intended to say 'my Mini' in Valley Zapotec), with the possessed noun prefix x- [x:-] and the first person singular clitic =a [=a']:

Figure (1). One authentic material? Brook Lillehaugen's license plate ('my Mini').

However, Felipe Lopez could not figure out what this was supposed to say at first (perhaps because mini doesn't display appropriate loan phonology), so it certainly cannot be presented as representative Zapotec.

Community efforts like that in Figure 2 (a headline in a Tlacolula community magazine, appearing over an article written in Spanish) are certainly authentic, but typically include idiosyncratic spelling or actual mistranscriptions: should these be used in class?
Figure (2). Headline from El Tlacolulense (published in Tlacolula de Matamoros): 'word of the elder'.

The Valley Zapotec orthography is not widely standardized, so sh would be another logical alternative to our x. In TMZ, however, the phrase in Figure 2 should be dizh xten bingul: the sound at the end of the first word is lenis (zh), the sound at the beginning of the second word is retroflex (x or sh), and speakers feel that 'old (person)' is one word.

In Cali Chiu? we will be including excerpts from existing (hence, "authentic") texts (the narratives in Lopez and Munro, eds., the Universal Declaration of Human Rights, the Christmas story, a few traditional stories, and several other texts) as supplementary readings.

6.2. Lessons from Blal Xte Tiu Pamyêl
In addition, Lopez and I have also written an "inauthentic" story of mystery and intrigue, Blal Xte Tiu Pamyêl (‘Señor Pánfilo’s Blal’).

Figure (3). A blal (precolombian Zapotec figurine) from the Museo Regional de Oaxaca. (From http://www.surf-mexico.com/states/Oaxaca/Oaxaca/oaxcity_exconvent.htm.)
Lillehaugen suggested that all self-respecting introductory language texts need a continuing story, preferably a mystery, with a chapter at the end of every unit.)

*Blal Xte Tiu Pamyël* is the story of a brother and sister, Lia Len (Elena) and Bed (Pedro) Morales, who come to live in Santa Monica with their father, Chicew (Chico), a waiter who originally entered the US illegally, while their mother, who speaks no English or Spanish, stays in San Lucas to care for her dying mother. On a school field trip to the Museum of Man in San Diego, they see a *blal* (pre-columbian figurine, like that in Figure 3 on the next page) that looks exactly like one their next door neighbor in San Lucas, Tiu Pamyël (Señor Pánfilo), had dug up in his field (a common occurrence in the Tlacolula Valley). Later, on a visit back home, they discover additional identical *blals* in a Oaxaca City antiquities shop and the Regional Museum of Oaxaca – although Tiu Pamyël, they learn, still has his own *blal*.

Eventually, Lia Len and Bed help the police build a case against Raúl Alba, an art forger wanted by Interpol. All the *blals* turn out to be copies except the one Alba had sold to the Museum of Man, which Tiu Pamyël decides to donate to the museum. Most of the story is told in emails between Lia Len and her friends Lia Glory (Gloria) and Lia Tyen (Cristina), Bed and his friend Mzh (Tomás), and Chicew and their uncle Rony (Jerónimo), an assistant archeologist at the Oaxaca Museum.

Working on this story is one of the hardest (but most rewarding) things I’ve ever done, but has taught me a huge amount I might never have otherwise learned about Zapotec grammar. Assisting Lopez with the translation was difficult but fun, but what is especially challenging is putting each chapter of the story into the context of the lessons that precede it. It’s hard to coordinate vocabulary and level, and each chapter requires extensive notes on new constructions. A recurring issue has been avoiding the excessively difficult verbs ‘come’ and ‘go’, some forms of which have had to be introduced as vocabulary items in early chapters of the story.

The repetition construction discussed in section 4 above has proven to be very useful for handling anaphoric possessive situations in our story. Pronouns can’t be coreferential to noun phrases in the same clause, and the anaphoric clitic –nil‘ (8) is not introduced until *Lecsyony* 14, but it’s fairly easy to present the possessive constructions using repetition. Examples like (17-18) are judged just as natural, even in a narrative context, as examples with pronouns, however, so we have made extensive use of such constructions. Coreferential items are underlined in (17-18):

(17) Buny San Luc Lia Len. per na Santa Mony nu Lia Len.
    person San Lucas Ms. Elena but now Santa Monica live
    Ms. Elena

  Ricy nune Lia Len bzyan guny Lia Len
  there live-with Ms. Elena opposite.sex.sibling younger Ms. Elena

  cuan x-tad Lia Len.
  and poss-father Ms. Elena

‘Elena is a San Lucas person, but now she lives in Santa Monica. She lives there with her younger brother and her father’ (*Blal Xte Tiu Pamyël*, part 1)

(These and the later examples taken from the story are given in the *Cali Chiu*? orthography; each
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of the story's nine chapters includes a pronunciation guide, with a recording read by Lopez.)

(18) X-nan Lia Len cuan Bed. Bied Lia Zhuan, b-yan
poss-mother Ms. Elena and Pedro Señora Ms. Juana perf-stay

San Luc cuan x-nan-mam Lia Len cuan Bed. tyen
San Lucas with poss-mother-gr.parent Ms. Elena and Pedro because

uas r-acxu x-nan-mam Lia Len cuan Bed.
very hab-get.sick poss-mother-gr.parent Ms. Elena and Pedro

'Elena and Pedro's mother, Señora Juana, stayed in San Lucas with their grandmother, because their grandmother was very sick' (Blal Xte Tiu Pamyēl, part 1)

Some things in the story, of course, are so complex that they must just be treated as idioms, at least till the students learn a great deal more, such as the following thought of Chiecw's:

(19) Zicy na estad re axta ni queity r-aly re z-ale
thus cop state this even rel neg hab-be.born here def-be.able

g-ac gobernador.
irr-become governor

'In this state, even someone who was not born here can become governor'
(Blal Xte Tiu Pamyēl, part 2)

The story provides an important exemplification of cultural values. For example, when Bed writes to Mazh, telling him that the family has gone to Oaxaca for his grandmother's funeral, he says

(20) Cwa Dyoz x-nan-mam=a.
perf.take God poss-mother-gr.parent=1s

'God took my grandmother' (Blal Xte Tiu Pamyēl, part 4)

Students thus discover that it would be completely inappropriate (even, impossible) for anyone, even a teenage boy, even someone who was not very religious, to say boldly 'My grandmother died'.

There are many things to learn about the use of personal names in Zapotec. The title Lia (glossed in (17-18) as 'Ms.') is used before the name of any girl or woman in almost every context, with other titles (such as Bied, in (18)) used to show greater respect to senior women. (Bied, translated here as 'Señora', is literally 'aunt'; the corresponding respectful male title is Tiu, which also means 'uncle'.)

Surnames are very seldom used in Zapotec conversation. Our dictionary lists e.g. Moraaly (Moraly in the Cali Chiu? orthography) 'Morales', but this is not used as an ordinary surname (rather, it seems to be something like a nickname). Further, consider sentence (21):

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(21) Teiby gyizh ni la Raul Alba, uas zyeiny blal r-ap=i
one city.guy rel be.named Raul Alba very many blal hab-have=dist

lainy x-tyend=i.
in poss-store=dist

'A city person who's named Raúl Alba, he has a whole lot of blals in his store'
(BlaI Xte Tiu Pamyēl, part 6)

In the initial draft of our story, the evil proprietor of Alba’s Antiquities in the tourist district of Oaxaca City was identified only as Señor Alba. In translating (21) (from the original English “This gyizh Señor Alba has loads more blals at his store,” in an email from Lia Len to Lia Glory), however, Lopez realized that Alba had to have a first name. The usual way to say ‘Señor’, Tiu, is used only with first names and wouldn’t be appropriate in any case for Lia Len to use in referring to a nasty non-Zapotec. But ‘a city guy named Alba’ didn’t work here — we were forced to give the character a first name. (Assimilated loans in Zapotec have typically undergone considerable phonological reshaping. In the story, we write unassimilated words like this character’s name in italics.)

I couldn’t figure out why the original sentence was not translatable, but Olivia Martínez pointed out that standard Spanish similarly does not allow a simple sentence with llamarse ‘call oneself, be named’ with a surname but not a first name:

(22) Se llama *(Raúl)* Alba.

Since the relative clause in (21) is referring to a Spanish name, with Spanish name structure, it makes sense that the Spanish construction might have influenced the Zapotec. Indeed, there are many other such cases of such influence — although Zapotec has also, we believe, influenced the Spanish spoken in Oaxaca (but that’s a story for another time).

7. Admonition

Writing pedagogical materials is an amazing challenge, because it forces you to consider how to deal with difficult issues that linguists are normally able to ignore or mention only briefly in footnotes. It’s a lot of fun, and very satisfying, and it will teach you an amazing amount. Do it, guys!

References

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Spanish Loanwords and the Historical Phonology of Zaniza Zapotec

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1. Introduction
The variety of Zapotec (Zaniza Zapotec, abbreviated ZZ) described in this paper is spoken in the town of Santa María Zaniza, Sola de Vega, Oaxaca. ZZ belongs, together with better known Texmelucan Zapotec (= TZ), to the Papabuco sub-branch of Zapotec. Unlike some Valley and Northern varieties of Zapotec, in which written documents were produced since the sixteenth and seventeenth century, respectively, none of the Papabuco languages is known to have been written before the end of the nineteenth century or the beginning of the twentieth. The earliest sources (Peñafiel n.d. and Belmar 1901) document the last of the known varieties of Papabuco, Elotepec Zapotec. Given the lack of early records in the Papabuco languages, the information about their earlier historical stages and the chronological order of their sound changes has to be derived from comparative reconstruction and Spanish borrowings.

The shape of the earliest loanwords shows that Spanish vocabulary began to be borrowed by the varieties of Papabuco since the time of the earliest contact at the beginning of the sixteenth century; the borrowing has continued to be active to this day. Vocabulary borrowed at different historical epochs belongs to different semantic spheres and shows an increasing degree of tolerance towards Spanish grammar and phonemics. Thus, while the earliest borrowings are adjusted to the phonologies of the respective languages, are restricted for the most part to the sphere of religion, calendar, government and economy, and do not include categories interfering with native grammatical structure (i.e., verbs and prepositions), more recent loans include unadapted elements of Spanish phonology (such as the phoneme /l/, consonant clusters and polysyllabic words), and display greater semantic and grammatical variety.

One of the most important features of Spanish loans that allows their stratification in the recipient languages has to do with changes undergone by the phonological system of Mexican Spanish since the time of the earliest contact. Of these, the ones that left traces in the phonology of ZZ (and Zapotec in general) are the merger of apico-alveolar /ʃ/ (orthographically s, ss) with /s/ (orthographically c, ç, z), the backing of /ʃ/ (orthographically x, j, g̃/e, i) to /ʃ/, and the gliding of /k/ (orthographically h) > /l/.¹ The

¹ Other changes in Spanish phonology that occurred during the same period, such as the devoicing of /y/ prior to the velarization of /ʃ/, are irrelevant as their borrowing pattern in ZZ is independent of their voicing in Spanish.
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The presence of these diagnostic sounds in loanwords allows their division in ZZ into up to three chronological layers. An additional basis for the chronological division of Spanish loans is provided by the specifics of their adaptation to ZZ phonology; both kinds of sound correspondences are diagnostic from the viewpoint of the relative chronology of borrowing. Some of the most important sound correspondences that may be used in stratifying Spanish loanwords in ZZ are presented in table (1).

(1) Diagnostic sound correspondences between Spanish and ZZ

<table>
<thead>
<tr>
<th>Spanish phoneme</th>
<th>Period 1 ZZ correspondence</th>
<th>Period 2 ZZ correspondence</th>
<th>Period 3 ZZ correspondence</th>
</tr>
</thead>
<tbody>
<tr>
<td>/ʃ/ /ʝ/</td>
<td>zh /ʒ/</td>
<td>-g-</td>
<td>j /h/</td>
</tr>
<tr>
<td>/ʃ/ elsewhere</td>
<td>x /ʃ/</td>
<td>j /h/</td>
<td></td>
</tr>
<tr>
<td>/s/ /z/</td>
<td>z</td>
<td>s</td>
<td></td>
</tr>
<tr>
<td>/ʒ/ /ʝ/</td>
<td>zh /ʒ/</td>
<td>s</td>
<td></td>
</tr>
<tr>
<td>/ʒ/ elsewhere</td>
<td>x /ʃ/</td>
<td>s</td>
<td></td>
</tr>
<tr>
<td>/ʎ/</td>
<td>ly /ʎ/</td>
<td>y</td>
<td></td>
</tr>
</tbody>
</table>

The stratification of loanwords that contain diagnostic sounds can be used to determine the relative chronology of native post-sixteenth century sound changes. This, in its turn, furnishes additional cues for the chronological stratification of the borrowed vocabulary. The treatment of the earliest loans also allows us to determine the phonemic shape of the borrowing language (in this case, ZZ) at the time of contact. However, it must be stressed that the sound correspondences in table (1) point to a relative rather than absolute chronology of borrowing, and that the time limits of any two diagnostic sound changes may not coincide, which naturally affects the temporal assignment of the borrowed items. For example, the treatment of ñ in Sp compañero ‘companion’ > ZZ. kumyer assigns this borrowing to the earliest period from the viewpoint of the treatment of ñ (> y), but to a later period from the viewpoint of that of k before o, u in atonic syllables (cf. 2.5 and 2.8).

In the remainder of this paper I will examine the borrowing pattern of a selected number of Spanish consonants whose treatment in the earlier stratum of loans is indicative of the elements that were present in sixteenth-century ZZ but have since been modified. Early loans are identified on the basis of the diagnostic sound correspondences cited in table (1) as well as on language-internal evidence.² On the basis of the observations that follow, I will try to reconstruct the consonant inventory of ZZ at the time of first contact with Spanish. For the historical reconstruction of Proto-Zapotec (= PZ) phonology I will refer to Benton (1988) (abbreviated JB) and Kaufman (1994) (abbreviated TK); the reconstructed forms are cited from the latter source. TZ data are from Speck (1978). ZZ forms are cited in a practical orthography (see (2)), and the rest in the orthography of the original publications.

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² Based on my on-going study of ZZ and Papabuco historical phonology.
2. The data
The present-day ZZ consonant system is as shown in (2). Throughout the paper, I will use a practical orthography in citing ZZ forms; the phonemic value of the practical orthography signs, when not obvious, is indicated below.

(2) ZZ consonants

<table>
<thead>
<tr>
<th>Labial</th>
<th>Alveolar</th>
<th>Postalv</th>
<th>Retroflex</th>
<th>Palatal</th>
<th>Velar</th>
<th>Glottal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stops</td>
<td>p</td>
<td>t</td>
<td></td>
<td>k, kw</td>
<td></td>
<td>g, gw</td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>d</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affricates</td>
<td>ty /tʃ/</td>
<td>dy /dʒ/</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fricatives</td>
<td>(ʃ)³</td>
<td>s</td>
<td>x /ʃ/</td>
<td>tx /ʃ/</td>
<td>j, jw</td>
<td>/h, hʷ/</td>
</tr>
<tr>
<td></td>
<td>z</td>
<td>zh /ʒ/</td>
<td>dx /z/</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nasals</td>
<td>m</td>
<td>n</td>
<td></td>
<td>ny /ɲ/</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liquids</td>
<td>l, r</td>
<td>ly /ʎ/</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glides</td>
<td>w</td>
<td></td>
<td></td>
<td></td>
<td>y</td>
<td></td>
</tr>
</tbody>
</table>

In the vowel system, a distinction is made between plain, checked and (plain) nasalized vowels (see (3)). ā and ĩ occur in native words and old borrowings; ō, ĕ, ü occur in recent Spanish loans.

(3) ZZ vowels

\[
\begin{align*}
  i/i^{'}/i & \quad u/u^{'}/(u) \\
  e/e^{'}/(e) & \quad o/o^{'}/(o) \\
  a/a^{'}/a & \quad
\end{align*}
\]

2.1. ZZ tx /ʃ/
Although in present-day ZZ this is a fricative, the combined evidence of comparative reconstruction and loanword phonology points to its affricate character (= /tʃ/) at the time of the earliest contact. The PZ correspondence of ZZ tx is reconstructed as a geminate affricate by both JB and TK, cf.:

(4) *ttz (TK) ~ *cch (JB) > ZZ tx, as in *ok+ tzepE ‘to frighten’ > ZZ txib

The affricate value is preserved in TZ, as shown in (5):

(5) ZZ watx = TZ wāč ‘dry’

The post-contact age of the shift /ʃ/ > /ʃ/ is also assured by the treatment of Sp /ʃ/ in the earliest loanwords, in which it was borrowed as an affricate that later fricativized along with the reflexes of PZ *ttz (*cch):

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³ In Spanish borrowings only.
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(6) Sp *chivo ‘goat’, *cuchi ‘pig’ > ZZ *chib, *kutx

Deaffrication of /ʃ/ is no longer operative in ZZ. In recent borrowings, Sp /ʃ/ is borrowed without modification, cf.:

(7) Sp lechuga ‘lettuce’ > ZZ letyug

All this leads us to reconstruct the sixteenth-century affricate value /ʃ/ for the present-day ZZ fricative tx /gs/.

2.2. ZZ ty /ʃ/

PZ correspondence of this phoneme is reconstructed as a geminate stop *tty:

(8) *tty > ZZ ty, as in *k-tyoppa ‘two’ > ZZ tyup

TZ reflex of *tty is a stop (cf. *k’up ‘two’), and the evidence of early loanwords indicates that at the time of early contact with Spanish ZZ ty was likewise a stop. This is shown by the fact that in the early borrowings ZZ ty is never used to render Sp /ʃ/. Instead, it is used to render Sp /ʃ/ and /l/ before front vowels, which means that these were close enough to the state of this phoneme in sixteenth-century ZZ. Sometime later, ty developed into an affricate both in native and in borrowed vocabulary, as shown in (9):

(9a) Sp /ʃ/ as i:  tinta ‘ink’, machete > ZZ tyin, mariy, where ty is /ʃ/
(9b) Sp /ʃ/ as i:  tienda ‘shop’ > ZZ tyen /ʃ/, where ty is /ʃ/

In more recent borrowings, Sp /ʃ/ and /l/ before front vowels are borrowed without modifications:

(10a) Sp Enrique, Mateo > ZZ tik, tew
(10b) Sp tiempo ‘time’ > ZZ tyem, where ty is /ʃ/

The evidence in 2.2 suggests a stop value, possibly /l/, for sixteenth-century ZZ ty.

2.3. ZZ dy /dʒ/

ZZ dy, the non-initial lenis counterpart of ty, likewise had a stop value in the sixteenth century. PZ correspondence of this phoneme is reconstructed as an alveolar stop *ty:

(11) *ty > ZZ dy, as in *ni:tyi7 ‘mother’s milk’ > ZZ *nidy

TZ preserves the stop character of *ty (cf. *nig ‘milk’). The stop value of dy in 16th-c. ZZ follows from its being used to render Spanish /dj/ and /dl/ before /i/, cf.:

(12a) Sp dj: dios ‘god’ > ZZ dyuZH
(12b) Sp d’l: sandia ‘watermelon’ > ZZ xindyi

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Sometime after the sixteenth century, *dy became an affricate in native and borrowed vocabulary. It is interesting to note that PZ *k before etymological front vowels gave the same result as *ty when, after its palatalization, *k found itself before a back vowel (see (13)). The fronting of palatalized velars in the context of back vowels seems to be a general characteristic of Papabuco. For example, palatalized velars in TZ (which are distinct phonemes in that language) are fronted before round vowels (Speck 1978: 21-22).

(13a) *ty > ZZ dy, as in *ni:tyi7 ‘mother’s milk’ > ZZ nidy (cf. TZ níg)
(13b) *k/ _e, i > ZZ dy, as in *kesa ‘corn plant’ > ZZ dyaz (cf. TZ g’èz)

2.4. ZZ _j/h/ and _jw/h”/

ZZ _j and _jw are confined to medial position. _j is the result of PZ intervocalic geminate *kk except before *u(7) (14a), and _jw, which is found in three native words, is the monophonemic reduction of the rare final syllable *-ku(7) (14b).

(14a) *akka ‘to be possible’ > ZZ aj
(14b) *p- e7kku7 ‘dog’ > ZZ bejw

The earliest treatment of Sp intervocalic /k/ and the final syllable /ko/ shows that the Spanish velar was at first identified with native lenis stop:

(15a) Sp vaca ‘cow’ > ZZ bag
(15b) Sp banco ‘bench’ > ZZ båw

In a chronologically later layer of loans, Sp intervocalic /k/, sometimes preceded by a /s/, began to be rendered by the fortis velar stop and hence treated parallel to the reflexes of medial *kk (16a-b). Spanish final syllable -sco at this later stage was, in its turn, treated parallel to *-ku(7), i.e. reduced to monophonemic jw (16c).

(16a) Sp Lucas > ZZ luyj
(16b) Sp Francisco > ZZ sij
(16c) Sp Francisco > ZZ sijw
(16d) Sp loco ‘crazy’ > ZZ loj

The loanword loco has been supplied above (in (16d)) for the evidence it provides for the relatively late date of the weakening of *kk and *-ku(7) to _j and _jw, respectively. This

---

4 *k was fronted before e if, after causing its palatalization, e was backed under the influence of a back vowel in the following syllable (as in *kèsa > *g’èza > *g’azà > dyaz); however, the backing of e was blocked by intervening plosives. *k of the Potential marker *ki (> gi) was palatalized when it was added to vowel- or y-initial verb stems with back vowels, such as dyub ‘mount’, dyo ‘sting’, and dyaj ‘become’ (semi-anachronistically, *ki-ub, *ki-yo, and *ki-yaj, respectively). Notice the lack of palatalization in words such as *kè: tìyu ‘hole’ > gedy (where the backing of e is blocked by dy) and *gi-yed ‘to come (Potential)’ > ged (the stem vowel is non-back).

5 _jw is considered a phoneme rather than a cluster because medial clusters are disallowed by ZZ phonology. A similar reasoning applies in the case of kw and gw (see section 2.6).

6 The treatment of Spanish -co in early loans is completely parallel to that of PZ *-ku(7), cf. *ke:7ku ‘river’ > ZZ dyaw and the discussion in 2.5.
loan lacks the expected features of early borrowings (o > u; l > lyl_o, u; -co > jw), which places it at a later period in comparison with Lucas (where l > lyl_u) and Francisco (where -sco > -jw). The fact that the final syllable of loco does not develop into jw means that the -o > -w rule has already been replaced by the later rule that requires final vowels to be dropped. However, the fact that /k/ has developed to j means that the fricativization of fortis medial k was still operative in ZZ at the time it was borrowed, i.e. fairly recently. In contrast to the earlier pattern, present-day Sp -/k/- is borrowed without modifications:

(17) Sp banco ‘bank’ > ZZ banka

The loanword evidence discussed in this section indicates that at the time of the earliest borrowings PZ intervocalic *kk was still a fortis velar stop, and *-kku(ʔ) a biphonemic sequence. This means that the plain and labialized glottal fricatives were not yet present in the phonemic system. Moreover, as a consequence of their multiple reflexation (as g, j, k and w, jw, j, k, respectively), it is possible to divide Spanish loanwords that contain intervocalic /k/ and the final syllable /ko/ into several chronological strata.

2.5. *k/ -o, u in unstressed syllables
Early adaptation of Spanish words in -co discussed in the preceding section is part of a more general process whereby *k is deleted in unstressed syllables when followed by round vowels:

(18a) Pretonic: PZ *ko- (marker of the Completive aspect, a proclitic) > ZZ u or w
(18b) Posttonic: PZ *ke:7ku ‘river’ (stressed on the initial syllable) > Z dyaw

The post-conquest date of this change is assured by the treatment of post-tonic /ko/, /go/ in early borrowings:

(19a) Sp banco ‘bench’ > ZZ bāw
(19b) Sp trigo ‘wheat’ > ZZ triw

Unfortunately, examples of pretonic /ko/, /go/ are lacking since in the earliest stratum of loans pretonic syllables (or at least vowels) were often dropped (cf. Tomás, camisa ‘shirt’, escaño ‘bench with a back’ > mazh, mizh, xkay). The reduction of the lenis velar before o, u ceased to be operative early enough, as is apparent from the adaptation of compañero (20): although this loanword shows the early change Sp ŋ > ZZ y, the velar is preserved.

(20) Sp compañero ‘companion’ > Z kunyer

2.6. ZZ kw /kʷ/ and gw /gʷ/ZZ kw, which occurs only initially, corresponds to PZ cluster *kp:

(21) *kpeła ‘cornhusk’ > Z kwal
As mentioned in 2.5, in the earliest loans pretonic vowels (in some cases, the entire syllables) were dropped, cf.:

(22) escaño ‘bench with a back’ > xkay

The treatment of Sp caballo in (23) shows that the initial sequence /kb/, which resulted from the loss of the pretonic vowel, developed into kw just as PZ *kp:

(23) Sp caballo ‘horse’ > Z kwey

It is possible, based on the evidence of this loanword, that at the time of contact ZZ still had a consonant cluster rather than a unitary phoneme in place of kw. Unfortunately, caballo is the only loan that contains the sequence /kb/, and the possibility that the labial glide in ZZ reflects the fricative pronunciation of Spanish intervocalic /b/ cannot be ruled out.

ZZ gw /gʷ/, which likewise occurs only initially, is also a derived phoneme; in contrast to kw, however, it cannot be identified with a single source in PZ. Although the support of Spanish loanwords is lacking in the case of gw, structural considerations make it likely that it, like its current fortis couterpart kw and the fricative jw may not yet have been phonemic at that stage.

2.7. ZZ ly /l/.

The straightforward PZ source of ZZ ly is word-initial geminate *ll (24a). (24b) shows that the normal treatment of word-medial reflexes of *ll is different and coincides with that of *l (24c):

(24a) *llaka7 ‘leaf’ > ZZ lyag
(24b) *p+ ella ‘fish’ > ZZ bal
(24c) *ty-e:7lu ‘night’ > ZZ ral

As shown in (25a-b), ly also results from palatalization of *l in a variety of environments:

(25a) ZZ ly < *l/_e, i, u, as in *lu:7te7 ‘tongue’ > ZZ lyux
     *lityi ‘house, home’ > ZZ lidy
(25b) ZZ ly < *l/i, o, u, as in *xila7 ‘wing’ > ZZ xily
     *ko-lana ‘hare’ > ZZ uylan

The treatment of Sp l in similar environments shows that the conditioned palatalization of *l is a post-contact phenomenon:

(26a) ZZ ly < Sp ll/ o, u, as in Sp lomo ‘back of animal’ > ZZ lyum-titx
     Sp Lucas > ZZ lyuj

7 kw and gw are analyzed as phonemes because the only initial clusters allowed in ZZ (mb, ng, ngw, ndy) have a nasal as the first element, and also because three-member clusters, which ngw would be is gw is considered bi-phonemic, are disallowed. A similar reasoning applies in the case of jw (see section 2.4).

8 The animacy marker of the ZZ proto-form for ‘hare’ (*ko-) differs from that posited by TK (*pi-).
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(26b) \(ZZ\ l_y < Sp\ l/i,\ e,\ u_-,\ as\ in\ Sp\ Manuel > ZZ\ wely\)
    \(Sp\ mula\ 'she-mule' > ZZ\ nu\_ly\)
    \(Sp\ vigilia > ZZ\ bixily\)

The treatment of \(Sp\ l\) in \(caballo\ (> ZZ\ kwey)\), on the other hand, seems to indicate that at the time of its borrowing \(ZZ\) did not yet have an equivalent sound, which resulted in the rendering of \([\Lambda]\) as a palatal glide. This, and the post-contact conditioned palatalization of \(Sp\ l\) make it possible that in pre-contact \(ZZ\) fortis \(l\) had not yet developed into a palatal sound and still contrasted with the lenis \(l\) in length rather than place of articulation.

2.8. \(ZZ\ ny /p/\)
The straightforward \(PZ\) source of \(ZZ\ ny\) is fortis \(*nn:\)

(27) \(*nn > ZZ\ ny,\ as\ in\ *(xi+)\ nn\_a\ 'red' > ZZ\ nya\)

\(ny\) also resulted from a number of conditioned palatalizations and assimilatory changes (28a-c):

(28a) \(ZZ\ ny < *n/-_e,\ i,\ as\ in\ *nesa\ 'road' > ZZ\ nyez\)
    \(*pani\ 'wake\ up' > ZZ\ bany\)
(28b) \(ZZ\ ny < *n/i_-,\ as\ in\ *pc\_ sina7\ 'mouse' > ZZ\ biziny\)
(28c) \(ZZ\ ny < *l/-_in,\ ni,\ as\ in\ *linV7\ 'year' > ZZ\ nya'n\)
    \(*la\_:7ni\ 'belly; inside' > ZZ\ nyeny\)

Since \(Sp\ n\) formed part of this process (see (29a-b)), the conditioned palatalization of \(n\) must have been a post-contact phenomenon. The characteristics of loanwords that show the palatalization of \(n\) (such as the non-lenition of \(p\) in \(panela\) and the preservation of the pretonic syllables in \(panela,\ tom\_in\) and \(bot\_on\)) indicate that this process was operative until fairly recently.

(29a) \(ZZ\ ny < Sp\ n/-_e,\ i,\ as\ in\ Sp\ panela\ 'sugar\ loaf' > ZZ\ pinyal\)
    \(Sp\ dnima\ 'spirit' > ZZ\ anym\)
(29b) \(ZZ\ ny < Sp\ n/i,\ u_-,\ as\ in\ Sp\ tom\_in\ '(name\ of\ a\ coin)' > ZZ\ timiny\)
    \(Sp\ bot\_on\ 'button' > ZZ\ muntuny\)

At the same time, the palatalization of \(n\) seems to have begun after the first contact with Spanish: during the period of the earliest borrowings, \(ZZ\) did not yet possess a palatal nasal and substituted Spanish \(\hat{n}\) with the palatal glide:

(30) \(Sp\ \hat{n} > ZZ\ y,\ as\ in\ Sp\ pa\_no\ 'cloth, kerchief, shawl' > ZZ\ bay\)
    \(Sp\ esca\_no\ 'bench\ with\ a\ back' > ZZ\ xay\)
    \(Sp\ compa\_no\_r\_o\ 'companion' > ZZ\ kumyer\)

From the above discussion it follows that at the time of first contact with Spanish \(ZZ\) fortis \(nn\) was not yet palatalized and was still opposed to its lenis counterpart by length
rather than place of articulation. That it differed in length from Sp n is clear from the fact that the latter was always rendered in ZZ as lenis:

(31) Sp n > ZZ n, as in Sp semana ‘week’ > ZZ ximan
   Sp banco ‘bench’ > ZZ bāw

2.9. ZZ o, o’

o, o’ are rare in the native ZZ vocabulary. They may result from several PZ sources:

(32a) *aw > ZZ o, as in *lawo ‘face, eye’ > lo
(32b) *o7 > ZZ o’, as in *lo7o ‘fence’ > ZZ lo’
(32c) *e7 > ZZ o’, as in *e7 ‘drink’ > ZZ o’

In the sixteenth century, however, o was so alien to the phonemic system of the language that Sp o was invariably rendered by u or w:

(33) Sp mozo ‘servant’, chocolate, trigo ‘wheat’ > ZZ muz, txulad, triw

Although the reason for this substitution may be simply the rarity of o in native vocabulary, it is also possible that o was not yet part of the phonemic system.

3. Conclusion

The loanword evidence examined in sections 2.1 through 2.9 allows us to reconstruct different sixteenth-century values for modern ZZ tx, ty, dy, j, jw, fy, and ny. It is also likely that kw, gw (and o’)) were not yet phonemic in 16th-c. ZZ. The inventory in (34), which reflects these adjustments, represents the possible state of the pre-contact ZZ consonant system.

(34) Pre-contact ZZ consonants

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<td>Glides</td>
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A comparison of the reconstructed ZZ inventory with that of modern TZ (in (35)) shows that the two are much more similar to each other than each of them to the modern ZZ inventory in (2). This points to the relatively conservative character of the TZ consonant system as compared to that of ZZ, which is of importance for a comparative study of Papabuco and Zapotec as a whole.
Natalie Operstein

(35) TZ consonants

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Acknowledgment

I wish to thank Derek C. Carr for his valuable comments.

Abbreviations

JB  Benton (1988)
PZ  Proto-Zapotec
Sp  Spanish
TK  Kaufman (1994)
TZ  Texmelucan Zapotec
ZZ  Zaniza Zapotec

References


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The Grammaticalization of Relational Nouns in Zoogocho Zapotec

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1. Introduction
The grammaticalization of prepositions from relational nouns (body part terms for human and animal bodies used in spatial description) is an issue which has received a great deal of attention from descriptive and comparative linguists. In Zoogocho Zapotec, human body part terms form a nascent grammatical category which has not undergone the amount of semantic bleaching (abstraction) which has occurred in many languages (members of this class are mostly still not used in a grammatical sense, which, as we will see, is a major defining criterion for the category of preposition), and which is not uniform in the status of its members. Some body part nouns do have generalized locative uses; yet even in these cases there is still both the potential for interaction with the base metaphorical system and the canonical, fixed use which makes them differ from locative prepositions in a language like English, or the varieties of Valley Zapotec discussed in Lillehaugen (2003) and Munro (2002).

Furthermore, while it is given that arbitrary, language-specific categories are necessary, it is also necessary to acknowledge that forms which straddle these arbitrary categories exist and provide a description of them. Such a multi-factorial approach, as explicitly taken by Comrie (1989) in his discussion of definitions and categories and adjectival and substantival properties of Russian numerals, which can be used to ‘establish criteria that correlate with the focal values’ (ibid. 107) of clearly definable categories, will also enable the description of the ‘continuum separating those prototypes from one another, much as with colour terms, even though here we are clearly dealing with grammatical categories’ (ibid. 109). The grammar will therefore be both static, and ‘emergent’ in the sense of Hopper (1987). In this paper, I will attempt to describe the extent to which relational nouns as a lexical class have been grammaticalized and what the basis for that grammaticalization is and also where select individual lexical items which are difficult to categorize fall on the cline and what the reasons for their positions are.

2. Initial description and textual exploration of relational nouns in Zoogocho Zapotec.
The primary body part terms used as relational nouns are: ni ‘foot, below’; yichgh ‘head, above’; dxoalao ‘face, around’; kwit ‘side, beside’; lee ‘belly, middle’; lho ‘intestines, inside’; kwitee

1 First and foremost, the author would like to thank the community of San Bartolomé Zoogocho for their help and understanding. I would especially like to thank Alberta Martinez Marcial for her patient instruction. The members of my doctoral committee, Bernard Comrie, John A. Hawkins, and Pamela Munro, deserve much gratitude for having worked through various unpolished versions of this paper. I would also like to thank Brook Lillehaugen for stimulating discussions and gracious sharing of her work. Any errors are obviously my own.
'middle of side'; dxoa 'mouth, in front of'; lao 'eye, in front of, to'; kuzhe 'back, behind'; and zan 'buttocks, below'. I have examined and quantified their various uses, which will be enumerated shortly, based on a corpus of over 2000 clauses. I looked at their primary use as body part terms, as in (1) and (2) below.

(1) gw-e-le'i-kse=do² dxoalao=be' do gxe do pot-freq-see-emph=2sgexp face=3inf indef tomorrow indef wizhge day_after_tomorrow
'You will see his face tomorrow or the day after tomorrow.'

(2) na' zha yeshe ye nia=dxo and stat.prick thistles foot=1plinc1
'And the thistles pricked us in the feet.'

I examined their use when used to describe a part of an item as in (3) and (4) below.

(3) na' b-zu=e' yetgha dxoa trapish=en' and comp-put=3f cane mouth mill=det
'And they put the sugar cane in the mouth of the mill.'

(4) za b-zu=e' azulejo yichgh=en' na'
just comp-put=3f tile head=3inan demdiff
'He had just put tiles on the roof (its head).'

I also inspected their use when used to describe a location in relation to a part of an item (5, 6).

(5) na g-loo=be=ba' lho danh
now comp-insert=3f=3an inside geninan
'She put it in it.'

(6) nak g-on=to y-e-dxogh=to yichgh=e' how pot-do=1plinc1 pot-freq-exit=1plinc1 head=3f
'How are we going to do it so that we leave there by his head?'
(This was taken from a text in which children are instructed in a traditional dance, 'La danza de los tigres', and in which they are going to exit the stage by someone's head. Thus, it is in an extended relation to the body part.)

² I used the following abbreviations: 1sg=first person singular, 1sgf= first person singular fast speech form, 1plinc1=first person plural inclusive, 1plexcl=first person plural exclusive, 2sg=second person singular, 2sgexp=second person singular experiencer, 3an=third person animal, 3f=third person formal, 3inan=third person inanimate, 3inf=third person informal, and=andative, clinan=inanimate classifier, clsm=small classifier, comp=complete aspect, cont=continuative aspect, demdadv=demonstrative adverb, demdiff=distal demonstrative, det=determiner, dir=directional, emph=emphatic, freq=frequentative, geninan=inanimate generic noun, indef=indefinite, poss=possessive, pot=potential, stat=stative. The following glossing conventions are used: (=) is used for clitic boundaries, (-) is used for word-internal morpheme boundaries, (,) is used for suppletive forms, and ( ) is used when one Zoogocho Zapotec lexeme corresponds to multiple English lexemes.
I also looked into those cases where, instead of just marking a location in relation to a part, it marked a more general location.

(7)  
\[
\begin{array}{ll}
    b-e-zhinh=be' & lao \quad xa-xna=be' \\
    \text{comp-freq-arrive}=3\text{inf} & \text{face} \quad \text{father-mother}=3\text{inf} \\
    \end{array}
\]
\text{"She arrived in front of her parents."}

(8)  
\[
\begin{array}{ll}
    dx-bezh-ks=a=nda' & lao \quad dio \\
    \text{cont-cry-emph}=1\text{sg}=1\text{sgfsf} & \text{face} \quad \text{god} \\
    \end{array}
\]
\text{"I cried in front of god."}

I attempted to find instances in which the body part term could potentially be deemed to be a grammatical preposition, and found none. In all cases, the use of \textit{lao} in constructions such as (9) and (10) is constrained to situations where the object of the relational noun is either directly in face-to-face contact or metaphorically in face-to-face contact. The term \textit{lao} and all other body part terms do not have abstract dative-like uses, as will be seen below in section 6.

Body part terms can also quite frequently become parts of noun-noun collocations which have fixed meanings, as in the following.

(9)  
\[
\begin{array}{ll}
    b-e-z=e' & zgh-ed=e' \\
    \text{comp-freq-go}=3f & \text{kapiya chi=e'} \quad \text{da} \\
    \text{comp.and-arrive}=3f & \text{clinan} \\
    \text{zoa} & \text{dxoa bla'oo} \\
    \text{stat.stand} & \text{mouth zapote} \\
    \end{array}
\]
\text{"She left and went to her chapel which is at Zapotesmouth (a location in the village)."}

Finally, I examined the incorporation of body part terms into verbs, quite common both within Otomanguean and crosslinguistically. Some of these uses are relatively transparent, as in (10).

(10)  
\[
\begin{array}{ll}
    \text{to bi kuna'd chi=a'} & 0-zhiaha-lao=be' \\
    \text{one clsm in\_law of}=1\text{sg} & \text{pot-go-eye}=3\text{inf} \\
    \end{array}
\]
\text{"One of my in laws went in front."}

The repetition of \textit{lao} in (11) is used as a means of specifying location.

(11)  
\[
\begin{array}{ll}
    0-zhia-lao & meka=n' \quad lao=a' \\
    \text{pot-go-face} & \text{Mika=det \_eye}=1\text{sg} \\
    \end{array}
\]
\text{"Mika went in front of me."}

There are also other transparent uses such as (12).

(12)  
\[
\begin{array}{ll}
    \text{kabi} & 0-sue=dxo \quad 0-za-nia=dxo \\
    \text{neg} & \text{pot-handle}=1\text{plincl} \quad \text{pot-walk-foot}=1\text{plincl} \\
    0-shinh=dxo & \text{tlaclui}=le \\
    \text{pot-arrive}=1\text{plincl} & \text{Tlacolula=dir} \\
    \end{array}
\]
\text{"We aren’t going to handle walking to get to Tlacolula."}
The meaning of these incorporated roots can become quite opaque as in (13), which also exemplifies the use of *lao* in phase verbs.

(13) na' ze-lao g-lez=en demdist stat.stand.eye comp-stand_up=3inan
    'There it stopped (standing).'

I noted each instance of the each of the body part terms I have been discussing in a corpus of over 2000 clauses. I classified each instance according to the criteria I have just discussed (bp=body part, p=part of object, loc=locative in relation to an object, rel=more generalized relational, prep=prepositional with grammatical uses, n=bp=noun body part compound, v+bp=verb+body part compound) in an attempt to determine the degree to which both each individual item and the group as a whole had been grammaticalized.

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<tr>
<td><em>kwit</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7</td>
</tr>
<tr>
<td><em>lee</em></td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td>11</td>
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<tr>
<td><em>kwitlee</em></td>
<td>1</td>
<td></td>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10</td>
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<tr>
<td><em>dxoa</em></td>
<td>2</td>
<td>7</td>
<td>3</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td>13</td>
</tr>
<tr>
<td><em>zxan</em></td>
<td>2</td>
<td>2</td>
<td>16</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td>30</td>
</tr>
<tr>
<td><em>kuzhe</em></td>
<td>5</td>
<td>10</td>
<td>8</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>24</td>
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<tr>
<td><em>lao</em></td>
<td>2</td>
<td>6</td>
<td>20</td>
<td>24</td>
<td></td>
<td></td>
<td></td>
<td>35 87</td>
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<tr>
<td><em>lho</em></td>
<td>2</td>
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<td>5</td>
<td>26</td>
<td>2</td>
<td></td>
<td></td>
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<tr>
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<td>79</td>
<td>65</td>
<td>0</td>
<td>3</td>
<td>37</td>
<td>250</td>
</tr>
</tbody>
</table>

As seen in the chart above, *lao* is used by far the most of any of the body part terms currently in use, thereby confirming other studies of body part terms in Zapotecan languages. Furthermore, it is used less referring to the body part and more referring to a location. It is by far the most grammaticalized of any of the body part terms. Next was *lho* followed by *zxan* and *kuzhe*. Note that these are the next most grammaticalized members of this set, and their predominance in this study is probably a result of this. It would seem that it is much rarer to talk of body parts than it is to talk of locative relations. Furthermore, it would appear, however, that *nia* and *dxaalao* were among the least grammaticalized elements of this set, followed by *yichgh*, *kwitlee*, *dxoa*, and
finally *lee*. With respect to their uses, it is hard to claim any real generalizations. It was very difficult differentiating between locations and relations. This is something which needs to be cleared up in the future. The SBZZ body part terms do indeed show the range of variation which one would expect from a lexical class which was in the process of being grammaticalized.

3. **The cognitive development of body part terms in Zoogocho Zapotec**

Heine et al. (1991) list the following stages as a typical conceptual path through which body parts develop into spatial concepts in African languages. This is meant to model the cognitive development from concrete object to spatial description, and is not meant to represent categorial changes.

\begin{center}
(14) \\
<table>
<thead>
<tr>
<th>STAGE</th>
<th>CONCEPTUAL DOMAIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Body part of X</td>
</tr>
<tr>
<td>I</td>
<td>Subpart of X, spatially defined</td>
</tr>
<tr>
<td>II</td>
<td>Space as part of and adjacent to X</td>
</tr>
<tr>
<td>III</td>
<td>Space Adjacent to X</td>
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<tr>
<td></td>
<td>OBJECT</td>
</tr>
<tr>
<td></td>
<td>OBJECT/SPACE</td>
</tr>
<tr>
<td></td>
<td>SPACE/OBJECT</td>
</tr>
<tr>
<td></td>
<td>SPACE (ibid. 130)</td>
</tr>
</tbody>
</table>
\end{center}

All of these stages are present in Zoogocho Zapotec, as seen below.

\begin{center}
(15) **Stage 0:** 
(a) nadxen 0-sala \ yichgh=to \ ka’ 
  afterwards pot-throw_back head-1plexcl demadv
  ‘Afterwards we will throw our heads back like this.’ 

(b) za b-zu=e’ \ azulejo yichgh=en \ na’ 
  just comp-put=3 tile head=3inan demdist
  ‘He had just put tiles on the roof (its head).’

**Stage I:**
(c) nak g-on=to \ y-e-dxogh=to \ yichgh=e’ 
  how pot-make=1plexcl pot-freq-exit=1plexcl head=3f
  ‘How are we going to do it so that we leave there by his head?’

**Stage II:**
(d) to gonh pintw zoa \ yichgh=en \ na’ 
  one bull spotted stand head=3inan demdist
  ‘One spotted bull is standing there in front of it.’
\end{center}

It will be useful to first discuss the morphological mappings which occur in the use of body part terms as locative expressions. To begin with, the basic model is indeed that of the human body, as mentioned by MacLaury (1989) for Ayoquesco Zapotec. Novel body part terms based on terms for an animal’s body are for the most part resoundingly rejected by native speakers\(^4\). Objects described in relation to animals can use the canonical orientation of the animal as a

\[\text{footnote:}^3\] Once again note that this is from a task in which speakers were asked to describe scenes to each other (the man and tree task) and in which there is a bull in front of a cart. The front of a cart is its head, and thus the present description.

\[\text{footnote:}^4\] For example some words, such as *xkogoba* ‘its neck’ cannot be used in describing objects at all, whereas other terms such as *xbanhen* ‘its tail’ can only be used in very restrictive environments (in one case, to describe a single gully coming off of a ravine).
model for the description. For example, the word kuzhe can refer either to a human back or to an animal back. As humans canonically are upright and their back is behind their point of view, the generalized use of kuzhe in describing spatial relations refers to things which are behind other things (with in front of and behind defined either in reference to the speaker or to a reference point like the door of a house). In contrast, an animal is canonically on all fours and as such its back is upwards. Thus things that are on an animal’s back will be described as being kuzhe=ba’ ‘on its back’ as in example (16). Note first that this is an instance of Stage 1 above, and furthermore that one would not be able to say this in any other way using the body part terms. (All of the other terms would potentially be ambiguous.)

(16) to=ba’ dxi kuzhe=ba=n’
one=3an stat.sit back=3an=det
‘One of them is on the other’s back.’

The human model is predominant and is even used in most cases describing animals, as in the following.

(17) na’ pshina’ yixe=n’ zeghe=ba’ dx-zxlonhgh=ba’
and deer wild=det comp.go=3an cont-run=3an
kuzhe=ba’
back=3an
‘...and the deer went running behind it(a dog).’

It is also important to acknowledge that the model of the human body, when metaphorically mapped to objects in this construction is often mapped in an incomplete fashion. When I was first attempting to learn about the use of relational nouns, I asked one of my teachers if I could describe some crows on top of a tree as being yichgh yag ‘head of tree’, and was told that that would be impossible given that ‘trees do not have heads’. As it turns out, a large part of the problem was with the choice of tree. It was a pine tree and as such one would describe those crows as being zxine yag ‘nose of tree’ or punt che yag ‘point of the tree’. One could potentially say yichgh yag if they were above the tree, but that was still deemed to be odd and it would be better to say lao yag ‘eye tree’ or one of the other two options discussed above.

In a similar vein, one can see body part terms which are not normally used in locative constructions being used in locative constructions for individual lexical items. As an example of one such extension, take the word for ‘nose’, zxin= just mentioned in the previous paragraph. In San Bartolomé Zoogocho, many of the traditional sandals or yelh come to a point in the front, like a pair of cowboy boots. When one is describing that part one can use the phrase zxin yelh ‘nose of sandal’. One can then use that term to describe something which is on top of that area or directly in front of it. Now, interestingly, when one puts a sandal up on its nose (holding it there, of course), and something is below the nose, one can still say that it is zxin yelh. Similarly, if the sandal is placed on its back, and something is either suspended above it or put on the tip of the shoe one can still say zxin yelh.\(^5\) This term goes through all of the cognitive stages which Heine defines.

\(^5\) Of course, one could potentially say zxan yelh ‘under the sandal’ or yichgh yelh ‘above the sandal’ to describe either of these situations as well.
(18) STAGE CONCEPTUAL DOMAIN
0: Body part of X OBJECT
(a) dx-ak=d’a’ zxiin=a’ OBJECT/SPACE
cont-feel=1sg nose=1sg
‘My nose hurts.’
I: Subpart of X, spatially defined
(b) puntiagud n-ak zxiin yelh
pointy stat-be nose sandal
‘The point of the sandal is pointy.’
II: Space as part of and adjacent to X SPACE/OBJECT
(c) dxi to caj yes zxiin yelh
stat.sit one box cigarettes nose sandal
‘A pack of cigarettes is on/in front of the sandals.’
III: Space Adjacent to X SPACE (Heine et al. 130)
(d) zehe to yishe zxiin yelh
stat.hang one paper nose sandal
‘A piece of paper is hanging above the sandal.’

These last two points, on the potential novel locative uses of body part terms and of the limitations to the application of body part terms to certain lexical items, indicate that the metaphorical system is very active in the grammar of body part terms in Zoogocho Zapotec. The final point which I will discuss here with respect to the conceptual origin and limitations of relational nouns is the issue of canonical relations or intrinsic reference. Certain items, such as the shoes which have just been described, or, for example a leaf which has a pronounced curve and a spine, like a banana leaf, have parts that are typically labeled in a certain, invariant way.

For example the banana leaf, *lahaga yelha*\(^6\), can be described as having a front and a back, labeled *lhee lahaga* ‘stomach leaf/front of leaf (without spine)’ and *kuzhe lahaga* ‘back leaf/back of leaf (with the stem running down the leaf)’. Once it is so labeled, things described with respect to the leaf will always refer to these parts, regardless of the orientation of the leaf. If the leaf is placed on top of a package of cigarettes with the stem-side down, and one asks where the cigarettes are, they will be described as being *kuzhe lahaga*. Similarly, if the smooth side is placed down on top of the cigarettes, the cigarettes will be described as being *lhee lahaga*. Once again, the use of other body part terms is possible, but these are what I was told were preferable.\(^7\)

4. The lexical classification of body part terms
I will attempt to discuss ways in which one might go about classifying the body part terms we saw above. To begin with, note that nouns and prepositions form a continuum, with nouns as described above on one end of the continuum, and prepositions as described above on the other

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\(^6\) I will refer to it as *lahaga* ‘leaf’ and not specify that it is a banana leaf, as it is redundant.

\(^7\) Note as a point of comparison, in English, if one is describing an object with respect to a person who was standing with their side facing the speaker, to say that that object was *behind* someone could mean two things: it could mean that it was behind the person with respect to the speech act participants, or it could mean that it was to the rear of the person (at the person’s back). In Zoogocho Zapotec, one would preferably say *kuzhe* ‘behind the person’ preferably for those instances where the item was at the person’s back, as it does not have the generality which English *behind* has. There has been a great deal of work done on absolute versus relative systems for spatial descriptions at the Max Planck Institute for Psycholinguistics in Nijmegen and elsewhere. (See Levinson (1996) among others.)
end of the continuum. As an initial approach, one might consider this continuum to be something like the following.

(19) nouns locational adverbs relational nouns prepositions

Returning now to Comrie’s discussion of defining categories in terms of prototypes, I will attempt to come up with a multi-factorial chart by examining definitions of nouns and prepositions which have been arrived at and then positing them as being on either end of the continuum. This section owes a great deal to the discussions in Heine et al (1991), Hollenbach (1990, 1995), Lillehaugen (2003), and MacLaury (1989).

The nominal criteria which will be considered are the following: possession, cooccurrence with demonstratives, ability to be the sentential subject either with or without being possessed, ability to be modified by an adjective, and quantification. The last three are a bit tricky. While they make sense in Heine et al.’s discussion of Hausa, there are some inherent difficulties in the case of Zoogocho Zapotec. To begin with, when used as parts of the body, these nouns are always possessed, so whether or not they are able to be the subject without taking genitival modification is a moot point as they will always take genitival modification.

One issue which might be considered again at this junction is the issue of metaphor in the grammaticalization of body part terms. When used metaphorically, the original characteristics of a set of source concepts will not necessarily transfer to the target domain. Thus, one would potentially be remiss to say, in a discussion of the metaphorical transfer from the human body to locative constructions, that because a certain thing which might have been able to be said about the human body cannot be said in the locative construction that this means that one a priori claims that two different lexical classes exist. Metaphorical mappings are not one to one, onto mappings (otherwise known as isomorphisms), to use the mathematical terms. There are likely to be some semantic cooccurrence restrictions on the interaction of the source and target domains of any metaphorical mapping, and one should not be surprised if a mapped term does not have all the properties of the original. For example, while one may talk of the foundations of a theory and one might construct a theory like a building, one generally does not construct tall theories (Lakoff and Johnson 1985).

In a similar vein, I should note that, when used to describe location, it is very difficult to come up with contexts where relational nouns can be described with adjectives. It is questionable whether relational nouns could be modified in this way at any of the points in their historical, cognitive, and linguistic development. If one considers the discussion above on metaphor theory, it would be a case where one does not map all of the elements or potential combinations of a source domain to a target domain. The test is, however, very useful in determining whether a relational noun/preposition still can be used nominally, as all of the relational nouns can, by themselves, be used with adjectives when being used as body parts or parts of an object. Similar difficulties exist for the quantification of relational nouns.

The prepositional criteria I will consider are: prenominal position, expression of a relation between one or more noun phrases and each other or the predicate, and freedom of application. Finally, I will distinguish between prepositions which can take pronominal clitics and prepositions which cannot.

The following are the main groupings of lexical items that I will be testing.
(20) I. Body part terms used to label parts of the human body
   yichgh=a’
   head=1sg
   ‘my head.’

II. Body part terms used to describe parts objects
    zxan yishe
    buttocks quern
    ‘bottom of the quern’

III. Body part term used to describe part of and space adjacent to an object.
    nak g-on=to y-e-dxogh=to yichgh=e’
    how pot-make=1plexcl pot-freq-exit=1plexcl head=3f
    ‘How are we going to do it so that we leave there by his head?’

IV. Locations
    lizh=a’
    poss.house=1sg
    ‘my home’

V. Body part terms used to describe locative relations (Body part locatives)
    zxan mes=en’
    buttocks table=det
    ‘below the table’

VI. Locative prepositions not related to body part terms
    ladgho nia=be’
    between foot=3inf
    ‘between his feet’

VII. Relational prepositions
    lenh=a’
    with=1sg
    ‘with me’

I will be testing the following criteria. Property A, a nominal property, is whether the item can be the sentential subject.

(21) (a) nala nia=be’
    stat.hang foot=3inf
    ‘His feet hung.’

(b) *nala lenh=a’
    stat.hang with=1sg
    *‘With him hung.’

Property B, also a nominal property, is whether an item can be modified by an adjective.

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8 Note that, among the word types are being tested, all of them with the exception of some of the locations and some of the non-body part prepositions must be possessed in order to use them as a well formed complement.
9 Interestingly, although the possessive preposition by itself cannot act as the sentential subject, if it is followed by a determiner it can. *nala chi’a’, (ok) nala chi=a’=n ‘mine hung’
B. Adjective
(a) yichgh zxen chi=a’
    head big of=1sg
    ‘my big head’
(b) *gadxol zxen nia=be’
    between big foot=3inf

Property C, yet another nominal property, deals with whether a particular lexical item can be quantified.

C. Quantification
(a) chupe ni=a’
    two foot=1sg
    ‘My two feet’
(b) *chupe gadxol bedo¹⁰
    two between Pedro

The next two criteria which will be tested are actually irrelevant, given the post nominal syntactic structure of demonstratives and determiners. Unfortunately, due to the post-nominal placement of demonstratives and determiners, one cannot know what is being modified, i.e. whether it is the whole PP or RelNP or whether it is the noun.

D. Demonstrative
lizh=o’
poss.house=2sg demdist
‘Your house there’

E. Determiner marker
yezh=en’
town=det
‘the town’

The next criterion which will be tested will be whether a pronominal clitic can attach to the lexical item. Most of the lexical items which are being discussed will be positive for this test.

¹⁰ I have collected data like the following:
(A) lho chupe shaa dao
    inside two casserole dim
    ‘inside two little casserole’
(B) chupe lho shaa dao
    two inside casserole dim
    ‘inside two little casserole’

Note that this is for the most grammaticalized of the putative relational nouns. Also, note that neither of these means ‘the two insides of the little casserole’. Otherwise, constructions like this are unheard of. However, I will be forced to put a ? in the box corresponding to relational nouns for this criterion until I have more data.
(26) E. Pronominal clitics
(a) ladgho=dxo
   between=1plincl
   ‘between us’
(b) trasde neto
   behind 1plexcl
   ‘behind us’
(c) *trasde=to
   behind=1plexcl

The next criterion I will test, a property of prepositions, will be if the particular lexical item will be able to be inserted into a sentence whose core argument structure is already filled.\footnote{For example, an intransitive verb for which there is already a subject.}

(27) G. Freedom in syntax
(a) sh-cho=a’
    cont-cough=1sg
    ‘I coughed.’
(b) *sh-cho=a’ bedo
    cont-cough=1sg Pedro
    ‘I coughed Peter.’
(c) sh-cho=a’ galha bedo
    cont-cough=1sg near bedo
    ‘I coughed near Peter.’
(d) sh-cho=a’ lizha=a’
    cont-cough=1sg house=1sg
    ‘I coughed in my house.’
(e) sh-cho=a’ yezh=en’
    cont-cough=1sg town=det
    ‘I coughed in town.’
(f) sh-cho=a’ lao=o’
    cont-cough=1sg eye=2sg
    ‘I coughed in front of you.’
(g) b-id=a’
    comp-come=1sg
    ‘I came.’
(h) b-id=a’ zxghozxo
    comp-come=1sg Zoogocho
    ‘I came to Zoogocho’
(i) *b-id=a’ bedo
(j) b-id=a’ lao bedo
    comp-come=1sg eye pedro
    ‘I came to Peter.’

Examples (g) through (j) show that directional verbs do not necessarily require a prepositional complement, but can take more general locations as well. The final test which I
will apply will be whether the lexical item, in expressing a relation between two items, expresses an intrinsic relationship as described above.

(28)  
I. Intrinsic  
(a) kuzhe bedo  
back Peter  
‘at Peter’s back’ (no matter what orientation Peter has to a speech act participant)  
(b) trasde bedo  
behind Peter  
‘behind Peter’ (could vary depending on Peter’s positions with respect to the speaker or hearer, much like English prepositions)

Taking these lexical groupings and grammatical criteria, I arrived at the following table.

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<th></th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
<th>V</th>
<th>VI</th>
<th>VII</th>
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</tbody>
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(A + means that a particular criterion was successfully tested, a - means that the test was not successful, +/- means that a particular group of lexical items varied, a ? means that the data was inconclusive, and a * means that a particular test was inapplicable.)

Items which are used to describe a part of space adjacent to an object seem to pattern both like nouns and like prepositions. While it would appear that body-part terms used to describe locative relations pattern more closely with prepositions, it must also be noted that they also pattern with nominal locations. One possibility, as mentioned above is that the metaphorical extension, possible before a change of category has taken place, applies only to a limited portion of the source domain. All of this is what one would expect for a transitional lexical class. It will

\[12\] In contrast with Tlacolula Zapotec as described in Lillehaugen (2004), it appears that body part locatives can be modified, and used without further specification as in the following:

\begin{quote}
  nia gashe che mes-en’ dxi to be’ko’ 
  foot yellow of table-det stat.stat one dog
  ‘The dog is sitting at the yellow leg of the table.’
\end{quote}

Note that the addition of the adjective requires that the alienable possession construction is used, as described in Sonnenschein (2004).
be useful to compare briefly, the situation in Zoogocho Zapotec with the situation in Valley Zapotec, a language grouping in which relational nouns have been much more grammaticalized.

5. **Comparison with Valley Zapotec**

In this section, I will briefly compare my findings in Zoogocho Zapotec with what has been said about ‘The Categorial Status of Body Part Prepositions in Valley Zapotec’, a 2003 UCLA Master’s Thesis by Brook Lillehaugen. In this insightful work, Ms. Lillehaugen comes up with a variety of compelling reasons to consider the body part terms in Valley Zapotec to be prepositions, and not relational nouns. Her data compares nicely with what has been discussed so far. I have paraphrased her main reasons for considering these terms to be prepositions in Valley Zapotec as the following.

(29) a) Their ability to be used with intransitive verbs, where normal NP’s lack that ability (Lillehaugen 2003:14).
   b) The fact that certain verbs (especially positional verbs) require body part prepositions (and not just any body part term but only those are grammaticalized) as complements to express the ground (ibid. 17).
   c) The fact that body part prepositional phrases enters into coordinate structures with other prepositional phrases (ibid. 18).
   d) The fact that certain uses of body part terms are infelicitous as descriptions of parts of objects but can be used as prepositions with those same objects (ibid. 18-19).
   e) The fact that no novel body part terms can be extended to become prepositions (ibid. 20).
   f) The fact that when parts of objects are named in Valley Zapotec languages, these names do not correspond to locative descriptions (ibid. 20-22).
   g) The fact that the canonical orientation of an object does not seem to affect locative constructions (ibid. 22-23).
   h) The fact that certain structures are structurally ambiguous (ibid. 23-24).
   i) The fact that directional verbs require prepositional complements (ibid. 25).

Note that, with respect to her first argument, intransitive verbs in SBZZ can also take locations, both relational nouns and non-relational nouns. Her second argument also does not apply to SBZZ locative verbs, as they can either take body part nouns (and novel body part terms as well), demonstratives, or can appear bare. I have no data on her third argument at this point. Her fourth argument is partially valid for SBZZ body part terms; however, in those cases where the body part terms are infelicitous, most speakers do prefer to use other ways of describing the location without using the infelicitous terms. Her fifth argument is not valid at all for SBZZ. Novel body part terms can be extended in Zoogocho Zapotec. Her sixth argument is also not valid for SBZZ body part terms as when they are used to name parts of objects, this naming can then be extended to locative descriptions. With respect to her seventh argument, it is definitely the case that in SBZZ the canonical orientation of an object affects the way in which location is described.

Her eighth argument deserves a bit more explanation. Consider the data she bases this on.

129
(30)  Nàa’ ca-cwaÌ=a’ làa’iny yudòòo’. (San Juan Guelavia Zapotec)
     I PROG-paint=1s in church
     ‘I am painting in the church.’
     ‘I am painting the inside of the church.’ (Her 16) (ibid. 24)

Compare also the following data from Heine, Claudi, and Hunnemeyer (Heine et al. 135).

(31)  me-kpo       e-me
     1sg.see  3sf.POSS-IN
     (i) ‘I saw its interior’
     (ii) ‘I saw inside it.’ (Their 8c) (ibid. 135)

There is similar evidence from Zoogocho Zapotec as well, such as (34)

(32)  sh-na=ba     kuzhe=ba
     cont-look=3an behind/back=3an
     ‘It1 is looking at its2 back’
     ‘It1 is looking behind its2.’

Heine et al. analyze this as being ‘an inherent characteristic of transitional stages in
grammaticalization: when a new structure (i.e., an adverbial morphosyntax in this example) is
introduced, the old structure (a nominal morphosyntax) is generally still in use, the result being
overlapping’ (ibid. 135-136). One might therefore consider this a similar case. Finally, her ninth
argument is not valid for Zoogocho Zapotec body part terms. As has been seen above, verbs like
go and come in Zoogocho Zapotec, which encode directional information do not necessarily
require a prepositional complement.

Another argument which Pamela Munro has used to claim the San Lucas Quiavini Zapotec
word for face, loh, to be a preposition (Munro 2002:23), are its non-locative uses, as in (33)-(35).

(33)  Loh    Jwaany  b-zi=a’=ih.    ‘I bought it from Juan’
     face/from Juan  perf-buy=1s=3s.prox (her 52)

(34)  B-zhùù’azh=a’  guèht  loh  bèè’cw.  ‘I tore up the tortilla for the dog’
     perf-tear=1s tortilla face/for dog (her 53)

(35)  Zyuùa’Il=ru’  Rrodriegw  loh  Lia  Oliieb
     tall=more Rodrigo face/than Ms. Olivia
     ‘Rodrigo is taller than Olivia’ (her 54) (ibid. 23)

In Zoogocho Zapotec, there are no such dative uses. Based on these comparisons, I feel
confident in saying that the corresponding terms in Zoogocho Zapotec are not prepositions, but
are rather something else, something I will label ‘relational nouns’.

6. Conclusion
In conclusion, I have found that, while they are definitely a separate lexical class from garden
variety nouns, the lexical class I have been calling body part locatives and will now call
relational nouns are also distinct from prepositions in the language. That they share adverbia
morphosyntax is unimportant. I consider the semantic and cross-linguistic generalizations to
have shown a nascent lexical class, and one which fits in its own well defined point on the noun-
preposition continuum, and shares many qualities with non-body part, non prepositional locatives. Comparison both within the Zapotec language family and outside the family leads me
to call these terms ‘relational nouns’, being careful to keep in mind that they form a chain, as
described in Heine et al. (1991) and are definitely being grammaticalized on their way towards
being prepositions, but have not yet arrived there.

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Tlapanec Cases

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1. Introduction

In this paper I shall argue that the Azoyú variety of Tlapanec (me³pədʰ) has a system of four grammatical cases. Three of these behave much like cross-linguistically well-known cases: the Ergative, Absolutive, and the Dative. The fourth, however, is a novel grammatical case for which I have had to coin a neologism: the Pegative. This encodes an actor involved in an event which also involves a Dative-like undergoer. The motivation for this paper is that the Tlapanec case system is unusual in three respects: (1) the case markers attach to the predicate, (2) the Ergative is morphologically unmarked, (3) the inventory includes the novel Pegative case.

2. Typological profile

By way of a brief typological profile the following characteristics may be highlighted. Tlapanec exhibits a VAO basic word order with the possibility of fronting A or O in a topicalization construction. The language is head-marking, and predicates inflect for aspect, polarity, and person while nouns may inflect for person of possessor. An agentive-patientive distinction is expressed by the presence vs. absence of a specialized set of agentive prefixes: ta- (and allomorphs) in second person singular and u- in the plural (Wichmann 1996). There are seven tones: high (H), mid (M), low (L) and four contour tones (HM, MH, ML, LM), and all are found in both lexical and grammatical contexts although the contour tones rarer so than level tones in the lexical domain. Predicates agree with their arguments in animacy and the argument structure is dependent on whether the predicate takes one inanimate argument (I), an animate and an inanimate argument (AI), two animate arguments (AA), two animate and an inanimate argument (AAI), or three animate arguments (AAA). There are two interlaced hierarchies which together determine the argument structure. One is the animacy hierarchy: animate < inanimate. The other is the role hierarchy: actor < undergoer < theme. For AI and AAI verbs the animate participant(s) will always rank higher than the inanimate participant on the role hierarchy. The highest-ranking third person animate participant on the role hierarchy is cross-referenced on the verb for a given vs. new distinction, which bears some resemblance to both obviation and switch-reference (Wichmann 2004). The nearest documented equivalent of this system in an Otomanguean language is what has been described as “third” vs. “fourth” person for Chinantec (Foris 2000). This distinction is also expressed by pronouns, possessed nouns, and numerals, which are all elements that behave morphologically, although not syntactically, like predicates. There are no

1 I would like to acknowledge brief comments from Denis Creissels which induced me to (try to) strengthen some of my arguments regarding the status of the Tlapanec morphological markers as case markers.
passive or antipassive constructions in the language, the nearest equivalents of passives being resultantives or impersonals. Thus there are no arguments for positing grammatical relations in Tlapaneč. There are no adjectives in the language, property concepts being expressed by stative verbs. Apart from a highly productive iterative derivation, the synchronically identifiable derivational morphology is largely restricted to some non-productive causative prefixes.

3. The morphology of case marking

Azoyú Tlapaneč verbs fall into four different morphological classes identified by patterns of suffixation. Sample paradigms of each are given below. The stative verb ‘to be tall’ is only inflected for person, the other three verbs are additionally inflected for aspect by means of the imperfective prefix na-

(1) Examples of four different Tlapaneč verbal paradigms

<table>
<thead>
<tr>
<th></th>
<th>‘to throw down’ (tr)</th>
<th>‘to be tall’</th>
<th>‘to cover’ (tr)</th>
<th>‘to pass, cross’ (intr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>na-hiitonLMgULM</td>
<td>ς₁^Ldu₂PLM</td>
<td>na-kO^LMgaLM</td>
<td>na-no^Mhgo₂PL</td>
</tr>
<tr>
<td>2</td>
<td>na-la-hiitonLM</td>
<td>ς₁^Ldar₂PLM</td>
<td>na-la-kO^LMgaLM</td>
<td>na-la(-no^Mhga)ML</td>
</tr>
<tr>
<td>3N</td>
<td>na-hiitonLM</td>
<td>ς₁^Ldar₂PLM</td>
<td>no-kO^Lmgo₁HM</td>
<td>na-no^MhgoML</td>
</tr>
<tr>
<td>4i</td>
<td>nu-hiitonLMgULM=lu₂M</td>
<td>ς₁^Ldar₂PLM=lu₂M</td>
<td>nu-kO^LmgaLM=lu₂M</td>
<td>na(u(-)no^Mhga)PL=lu₂M</td>
</tr>
<tr>
<td>4x</td>
<td>nu-hiitonLMgULM=lo₂P</td>
<td>ς₁^Ldar₂PLM=lo₂P</td>
<td>nu-kO^LmgaLM=lo₂P</td>
<td>na(u(-)no^Mhga)PL=lo₂P</td>
</tr>
<tr>
<td>5</td>
<td>nu-hiitonLMgULM=la₂P</td>
<td>ς₁^Ldar₂PLM=la₂P</td>
<td>nu-kO^LmgaLM=la₂P</td>
<td>na(u(-)no^Mhga)PL=la₂P</td>
</tr>
<tr>
<td>6N</td>
<td>nu-hiitonLM</td>
<td>ς₁^Ldi₂PLM</td>
<td>no-kO^LmgaLM</td>
<td>na(u(-)no^Mhga)PL</td>
</tr>
</tbody>
</table>


(2) Case markers of monopersonal verbs

<table>
<thead>
<tr>
<th></th>
<th>Ergative</th>
<th>Absolutive</th>
<th>Pegative</th>
<th>Dative</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-Ø</td>
<td>-u?</td>
<td>-u/-o</td>
<td>-u?/-o?</td>
</tr>
<tr>
<td>2</td>
<td>-Ø</td>
<td>-i/-a?</td>
<td>-a/-i</td>
<td>-a?</td>
</tr>
<tr>
<td>3N</td>
<td>-Ø</td>
<td>-i/-a</td>
<td>-u/-o</td>
<td>-u/-o</td>
</tr>
<tr>
<td>4-5</td>
<td>-Ø</td>
<td>-a?</td>
<td>-a/-i</td>
<td>-a?</td>
</tr>
<tr>
<td>6N</td>
<td>-Ø</td>
<td>-i</td>
<td>-a/-i</td>
<td>-u</td>
</tr>
</tbody>
</table>

2 "N" stands for "new" and contrasts with "G" for "given" and is, as mentioned in section 1, similar in many respects to obviation (and to a lesser degree to switch reference). Although morphologically the New form is more basic, I normally use as citation form the third person singular Given, the reason being that this form can constitute a whole sentence in itself, whereas the N form must be followed by an overt mentioning of the pivot argument of the verb. The G form is derived from the N form by tonal affixation and, for verbs subcategorizing for the Ergative, additionally by a suffix -i which merges with the stem vowel.
The four classes are not arbitrary, but are defined by suffixed markers in which the categories of person and case are fused. In (2) I have extracted the suffixedes in question.

In standard definitions of case (e.g., Blake 2001) it is either overtly stated or (more commonly) implicitly assumed that case marking is a phenomenon restricted to nouns. Potential candidates for case markers found on verbs are customarily described under other rubrics—as pronominal agreement markers or valency-affecting derivational morphemes such as applicatives. Since the Tlapanec markers listed in (2) are neither just pronominal agreement markers nor valency-affecting derivational morphemes we do not have to deal with the issue of whether such kinds of elements are best seen as pertaining to a grammatical category of case or not. Nevertheless, we briefly return to the question towards the end of this section. The argument that the Tlapanec markers are really case markers has two parts. One part consists in arguing that they are not something else and another part in arguing that they resemble case marking functionally. Each will require a rather extensive discussion.

As to the first part of the argument, the only other potential candidate for a function of the Tlapanec markers is person marking. Clearly this is part of their function, but I would argue that it is not their main function. If we look at one of the paradigms in (1) above, for instance that of the stative verb ‘to be tall’, we see that tonal patterns contribute to person marking also. In ‘to be tall’ LM tone indicates non-third person and HM indicates (new) third person. In spite of the homophonies causing neutralization of first and second person and of singular vs. plural, tonal affixation must be considered the prime locus of person marking in the sense that this is the only part of the morphology that specializes in person marking only. Neutralization caused by homophonies are in some cases disambiguated by agentive prefixes (when present), but these are not primarily person markers. Similarly, neutralization may also be disambiguated by case markers, but again these are not primarily person markers only. Finally, as seen in the paradigms in (1), the affixal machinery is supplemented by the enclitics =luʔ\(^M\), =loʔ\(^L\), and =laʔ\(^L\), which specialize in distinguishing among plural speech act participants, and for agentive verbs also by the prefixes ta- (and allomorphs) in the second person singular and u- in the plural (among the examples ‘to be tall’ is patientive, ‘to throw down’ and ‘to cover’ are agentive, and ‘to pass cross’ may be treated as either agentive or patientive). While contributions to person marking are made by four different parts of the morphology (agentive prefixes, tonal affixation, case markers, plural SAP enclitics) I would argue that the locus of person marking is tonal affixation. One argument is that tonal affixation has no other associated function than person marking. Another argument is that in the case of verbs subcategorizing for the Ergative the marker is zero, so in this case it is clear that tonal affixation is the main responsible for marking the person category. A third argument is the independence of case markers and tonal affixation, which is best appreciated in the complex paradigms of the bipersonal transitive (AA, AAI or AAA) verbs. For lack of space, however, these paradigms cannot be illustrated and discussed here.

Taken together, the three arguments just given show that the Tlapanec markers are not fundamentally something else, such as person markers. Potentially one might argue that since they attach to the predicate they cannot be case markers, but must be something else. Such a potential complaint must be discarded too. It is by now well known (Nichols 1986) that

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3 Suárez (1983: Section 4.2, esp. p. 127) treats the corresponding paradigms in Malinaltepec Tlapanec as paradigms essentially marking arbitrary verb classes. He labels the paradigms (or sets of “desinences”) D1-D7. His “D7” corresponds to the Azoyú Ergative paradigm, his “D1-D3” are allomorphs corresponding to the Azoyú Absolutive, his “D5-D6” are allomorphs corresponding to the Azoyú Pegative, and finally his D4 corresponds to the Azoyú Dative.
languages preferentially either mark relations between a head and a dependent within a phrase on the head, on the dependent or on both, that is, in three different possible ways, so there is no a priori reason to assume that the category of case could not also be expressed either on the head, the dependent, or both in different languages.

We may now turn to the second part of the argument for the status of the Tlapanec markers, the one that concerns their functional similarity to case markers. Blake’s definition, according to which case is a category which “marks the relationship of a noun to a verb at the clause level” (Blake 2001: 1), provides a suitable starting point. The definition, however, conflates formal and functional characteristics by presupposing that case marking requires a noun to be present in the clause. In a situation of head-marking, where case is marked on the verb and where the referential status of pronominal markers obliterates the need for overt noun phrases except when new participants are introduced, case does not necessarily mark “the relationship of a noun to verb”. Rather, what is more generally true of case marking is that it signals the relationship of a participant to a predicate at the clause level. As we deal with the morphosyntax of the Tlapanec markers and their semantics in the following two sections, we shall see that their function is precisely to signal such relationships. The question could be raised whether the argument for the status of the Tlapanec markers as case markers has consequences for general, morphosyntactic typology. Does it imply, for instance, that we should generally treat verbal applicative affixes or nominal possessive affixes as case markers? I would argue that it is impossible to give a general answer, since it is necessary to address such questions taking into account language-specific facts regarding how the markers in question pattern within the morphology as a whole. For instance, in a language where an applicative marker is paradigmatically aligned with markers for causative, passive, and the like, it would be more appropriate to treat the marker as a valency-changing marker than, say, a Dative case marker. And it would be inappropriate to treat nominal possessive affixes as Genitive case markers unless they are formally distinct from and form a paradigmatic set with other core case markers.

4. The mechanisms of case assignment

Verbs assigning the Absolutive are intransitive, including stative verbs. Verbs assigning the Ergative and Pergative are transitive, and verbs assigning the Dative may be either transitive or intransitive. Furthermore, the Dative is used for marking nominal possession, as demonstrated in the following paradigms:

(3)  

\[
\begin{array}{ccc}
bi^M_1^M ‘day’ & i^M_1^M ‘basket’ & mi^M_1^M ‘shadow’ \\
1 & i^M_1^M & mi^M_1^M = \text{‘my day / basket / shadow’} \\
2 & i^M_1^M & mi^M_1^M = \text{‘your... etc.’} \\
3G & i^M_1^M & mi^M_1^M = \text{add } = lu^M_1^M = lo^M_1^M, = la^M_1^M \\
4S & i^M_1^M & mi^M_1^M = \text{add } = lu^M_1^M = lo^M_1^M, = la^M_1^M \\
6G & i^M_1^M & mi^M_1^M = \text{add } = lu^M_1^M = lo^M_1^M, = la^M_1^M \\
6N & i^M_1^M & mi^M_1^M = \text{add } = lu^M_1^M = lo^M_1^M, = la^M_1^M \\
\end{array}
\]

The use of the Dative for marking possession is not uncommon cross-linguistically.

Events that involve just one animate participant are thus classified linguistically into four different kinds corresponding to the four different case assignments.
**Tlapanec cases**

When there are two animate arguments one will be the agent and the other the patient or one will be the source/stimulus and the other the recipient. (I use terms for semantic roles in a broad sense that does not imply strict conformity to semantic criteria of assignment). Corresponding to these two fundamental types of relations there are two types of paradigms for dipersonal verbs (i.e. verbs taking two animate arguments, either AA or AA1⁴), which are shown in (4) below. Verbs involving the agent-patient relation are organized in an ergative pattern since the Absolutive endings refer to the patient. For the source/stimulus-recipient relation the organization is split ergative in the person dimension. When no third person singular recipient is involved, the verbs take the Dative endings, referring to the recipient. (One exception to this is the marker -e? for third person given acting on first person. This marker is in a sense not truly part of the paradigm since third person given is derived from first person new by tonal affixation or, in the case of verbs subcategorizing for the Ergative, a suffix -i, in addition to tonal affixation. That is, the new/given distinction is also formally an outgrowth on the third person new form, not an integrated part of the person paradigm as a whole.) When a third person singular recipient is involved, the verbs take the Pegative case endings referring to the source/stimulus.

(4) Case markers of monopersonal and dipersonal verbs

<table>
<thead>
<tr>
<th>Monopersonal verbs</th>
<th>Dipersonal verbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Person</td>
<td>Absolutive</td>
</tr>
<tr>
<td>1</td>
<td>-u?</td>
</tr>
<tr>
<td>2</td>
<td>-a?/-i?</td>
</tr>
<tr>
<td>3</td>
<td>-a/-i</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>4-5</td>
<td>-a?</td>
</tr>
<tr>
<td>6</td>
<td>-i</td>
</tr>
</tbody>
</table>

To summarize, the inflection of dipersonal verbs expressing the agent-patient relation is organized in an ergative fashion, whereas the inflection of dipersonal verbs expressing the source-recipient relation is organized in a split ergative fashion in the person dimension such that a third person singular recipient triggers nominative-accusative pattern, whereas combinations

⁴ Tripersonal (AAA) verbs are derived from the dipersonals by adding a suffix -i indicating the presence in the argument structure of an animate theme.
not involving a third person singular recipient trigger an ergative pattern.

5. The semantics of case assignment
Here follow a few examples of monopersonal verbs that assign each of the four cases.

(5) Some verbs subcategorizing for the four different cases

ERGATIVE  
na-\textsuperscript{M}\textit{rdi}\textsuperscript{H} ‘s/he is sowing it’
na-\textsuperscript{M}\textit{hwe}\textsuperscript{H} ‘s/he is selling it’
na-\textsuperscript{M}ka\textsuperscript{M}\textit{wi}\textsuperscript{H} ‘s/he is hiding it’
na-\textsuperscript{M}\textit{ke}\textsuperscript{H} ‘s/he is smoking/burning it’
na-\textsuperscript{M}\textit{mbi}\textsuperscript{H} ‘s/he is roasting something’

ABSOLUTIVE  
\textsuperscript{M}ba\textsuperscript{H} ‘s/he is alone’
\textsuperscript{M}da\textsuperscript{H} ‘s/he smells bad’
\textsuperscript{M}hka\textsuperscript{M} ‘s/he is hung up’
\textsuperscript{M}na\textsuperscript{M}my\textsuperscript{M}hwi\textsuperscript{M} ‘s/he is worrying’
\textsuperscript{M}na-\textsuperscript{M}wa\textsuperscript{M}pd\textsuperscript{H} ‘s/he has time’

PEGATIVE  
\textsuperscript{M}ger\textsuperscript{M}do\textsuperscript{H} ‘s/he has (something)’
\textsuperscript{M}na-\textsuperscript{M}ka\textsuperscript{M}u\textsuperscript{H} ‘s/he is skinning it’
\textsuperscript{M}na-\textsuperscript{M}m\textsuperscript{M}ndu\textsuperscript{H} ‘s/he is seeing it’
\textsuperscript{M}na-\textsuperscript{M}\textit{y\textsuperscript{M}u}\textsuperscript{H} ‘s/he is putting it out’ (e.g. light)
\textsuperscript{M}na-re\textsuperscript{M}ko\textsuperscript{H} ‘s/he is blocking it’ (e.g. road)

DATIVE  
\textsuperscript{M}ba\textsuperscript{M}o\textsuperscript{H} ‘s/he is nude’
\textsuperscript{M}na-\textsuperscript{M}mbi\textsuperscript{M}\textit{yu}\textsuperscript{H} ‘s/he is called (something)’
\textsuperscript{M}na\textsuperscript{M}ndo\textsuperscript{H} ‘s/he wants it’
\textsuperscript{M}na-\textsuperscript{M}hmy\textsuperscript{M}yu\textsuperscript{H} ‘s/he is using it’
\textsuperscript{M}na-\textsuperscript{M}ka\textsuperscript{M}nu\textsuperscript{H} ‘s/he is given it’

The five verbs in each category have been selected somewhat randomly from much longer lists. My lists of verbs that assign the Pegative is the shortest, with around 50 items. Verbs assigning the Dative number around a 100, and for the other two cases there are several hundred examples.

Ergative and Pegative, on the one hand, and Absolutive and Dative, on the other, make distinctions regarding agency, Ergative or Pegative being assigned to actors and Absolutive or Dative to undergoers. (I have based the term ‘Pegative’ on the Greek Μηγη, which means ‘origin, source, emanation, etc.’ to provide a name for a case that proto-typically refers to a giver as opposed to a recipient). The main semantic parameter that is involved in distinguishing the two different kinds of actor and the two different kinds of undergoer seems to be one of the degree of impact of the action, that is, an effectedness/affectedness parameters. For verbs assigning the Pegative the effect generally seems to be lower than for verbs assigning the Ergative. Often the undergoer is only partially affected. Thus, ‘to sow’, ‘to sell’, ‘to hide’, ‘to smoke’, ‘to roast something’ have a direct impact and/or involve the undergoer as a whole, whereas ‘to have’, ‘to skin’, ‘to see’, ‘to put out’, ‘to block something’ imply a lesser or partial effect. The verbs assigning the Absolutive often describe more permanent states than verbs.
Assigning the Dative. Thus there is a mirror relationship where Ergative-Absolutive are each other's opposites just like Pegative-Dative are each other's opposites. The relationships are summarized in (6).

(6) Semantics correlates of Tlapanec case assignment

<table>
<thead>
<tr>
<th>MACRO-ROLE</th>
<th>ACTOR</th>
<th>UNDERGOER</th>
</tr>
</thead>
<tbody>
<tr>
<td>E/(A)FFECTEDNESS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIGH</td>
<td>ERGATIVE</td>
<td>ABSOLUTIVE</td>
</tr>
<tr>
<td>LOW</td>
<td>PEGATIVE</td>
<td>DATIVE</td>
</tr>
</tbody>
</table>

Obviously these semantic characterizations must remain approximations. That some semantic factors are clearly involved in case assignment even if the distinctions are often blurred is only what we might expect from a case-marking system, however. Apart from the added piece of inventory, the Pegative, the system does not diverge functionally to any great degree from commonly attested systems. The following quote from Barry Blake should help to support this observation as well as to introduce some additional characteristics of case marking systems which will shed light on the Tlapanec facts (for 'accusative' substitute 'absolutive').

The accusative is a syntactic case which can encode a variety of semantic roles, but one could take the central and defining function to be that of encoding the affected patient of activity verbs. The dative is likewise a syntactic case that can encode a variety of roles, but I would suggest that its central function is to encode entities that are the target of an activity of emotion. Traditional definitions refer to the entity indirectly affected as opposed to the entity directly affected, which is encoded by the direct object (at least in the active). The accusative and the dative may be in syntagmatic contrast or in paradigmatic opposition. With verbs like Latin dare ‘to give', mostrare ‘to show' and mandare ‘to entrust', the two cases are in syntagmatic contrast with the accusative encoding the entity that is directly affected in the sense that it is moved or transferred to new ownership and the dative encoding the sentient destination, the one to whom the transfer is directed (Blake 2001: 144).

When we include dipersonal verbs in the discussion, the Tlapanec case system begins to show its dynamicity and more parallels with other case systems turn up.

Dipersonal verbs take either Absolutive or Dative/Pegative (the latter being subjected to a split pattern in the person dimension, as explained above). Below I give the full list of the Dative-assigning dipersonal verbs that I have recorded along with a partial list of Absolutive-assigning dipersonals. The undergoer-participant cross-referenced on the verb is always the indirectly or partially affected animate argument. Although one should remember that Tlapanec does not have grammatical relations, the system may essentially be equated with primary object languages (Dryer 1986), which rank indirect objects higher than direct objects for purposes of cross-referencing.
Examples of case-assignment of dipersonal verbs

ABSOLUTIVE
- kugraM adH ‘to lock up someone’
- ciH hpaH ‘to hug someone’
- nduM taaH ‘to spit on someone’
- l- giriH ‘to put someone’
- guhpraL? dH ‘to kick someone’
- hmarM wiH ‘to greet someone (by caressing)’
- hm? daH ‘to shoot someone’
- hpaL? aH ‘to put someone inside’
- hrpsiL? gwiH ‘to shake someone’
- htaM ngH ‘to turn someone over’
- htuM wiH ‘to grab someone’
- hngM wiH ‘to protect, take care of someone’
- kaiM wiH ‘to hide someone’
- maM hngadLM ‘to move someone’
- M? ciH ‘to buy someone’
- ciM hiH ‘to make someone stand up’
- eumwaH ‘to bathe someone’
- i? yaH ‘to kill someone’
- kuH ‘to push someone’
- tuH ‘to make someone numb’
- tgeH waH ‘to measure or weigh someone’
- nguH wadH ‘to sell someone’

DATIVE
- ro? oH ‘to bind someone’
- ru? uM? hH ‘to climb onto someone [restricted to third person]’
- ndia? oH ‘to give someone a sign of impeding death’
- nuH ‘to give (something) to someone’
- niM yuH ‘to leave someone’
- njaM uH ‘to listen to, obey someone’
- ra? nuH ‘to meet someone’
- reM koH ‘to block, ward off someone’
- re? yoH ‘to answer someone (something)’
- l- skoH ‘to chase away someone’
- sng koH ‘to teach someone something’
- edaM hmuH ‘to show someone something’
- tuH ‘to tell someone something’
- skoH ‘to mount (as a copulating animal)’
- na-te? yoH ‘to borrow (something) from someone’
- ne? doH ‘to load (e.g. an animal) (with something)’
- ?yoH ‘to see someone’
- ngi? tuH ‘to wait for someone’
- mba? yuH ‘to sell (something) to someone’

There are several examples where one and the same verb may assign different cases. One
example is the verb ‘to sprinkle’ which includes among its instantiations\(^5\) the three forms illustrated in (8).

(8)  
\begin{align*}
&a. \text{ [Monopersonal, Ergative]} \quad \text{[Monopersonal, Ergative]} \\
&\text{na-ndre}^H h\text{-m-e}^H \quad i^M y^M a^M \\
&\text{IPFV-sprinkle-3G.ERG water} \\
&\shorttext{S/he is sprinkling water.}' \\

&b. \text{ [Monopersonal, Pegative]} \quad \text{[Monopersonal, Pegative]} \\
&\text{na-ndri}^H h\text{-m-u}^H \quad i^M y^M a^M \quad i^M n\text{-u}^M \quad _a^M b^L \quad _a^M b^L \\
&\text{IPFV-sprinkle-3G.PEG water} \quad \text{face-3N.DAT}^6 \quad \text{man} \\
&\shorttext{S/he is sprinkling water on the face of the man.}' \\

&c. \text{ [Dipersonal, Absolutive]} \quad \text{[Dipersonal, Absolutive]} \\
&\text{na-ndri}^H h\text{-m-a}^H \quad i^M y^M a^M \\
&\text{IPFV-sprinkle-3G>3ABS water} \\
&\shorttext{S/he is sprinkling water on her/him.}' \\
\end{align*}

The monopersonal, Ergative-assigning instantiation \(-\text{ndre}^H h\text{me}^H\) means ‘to sprinkle something’ (8a). The Ergative case implies an Absolutive-like undergoer. In contrast, the monopersonal, Pegative-assigning instantiation \(-\text{ndri}^H h\text{mu}^H\) means ‘to sprinkle something onto something’ (8b). It acquires this meaning not because there is some valency-augmenting mechanism and/or external possession involved but because the Pegative actor implies a Dative-like undergoer, that is, a partially affected undergoer. In (8c) we see a dipersonal instantiation.

There are several examples of verbs whose instantiations respectively assign Absolutive and Ergative case. The difference is one of transitivity, but again not induced by a valency-changing process but rather by the semantics of the cases, which dictate that monopersonal verb assigning the Absolutive can only be intransitive and a monopersonal verb assigning the Ergative can only be transitive. Some pairs are shown in (9).

(9) Examples of pairs of instantiations of AI verbs that assign Absolutive vs. Ergative case

\begin{align*}
&a. \text{-\text{hpa}}^M a^M \quad \text{‘to stick one’s head out’} \quad \text{[Monopersonal, Absolutive]} \\
&\text{-\text{hpa}^M e^H \quad \text{‘to throw something inside’}} \quad \text{[Monopersonal, Ergative]} \\

&b. \text{-\text{hmi}^H d^H \quad \text{‘to burst’}} \quad \text{[Monopersonal, Absolutive]} \\
&\text{-\text{hme}^H d^H \quad \text{‘to make something burst’}} \quad \text{[Monopersonal, Ergative]} \\
\end{align*}

\(^5\) I use ‘instantiation’ because it is not clear that there is an underived base form from which other forms are derived. Instead, verbs may be seen as being based on general, abstract templates of which the various inflectional forms are instantiations.

\(^6\) Dative-marking here does not signal a relation between ‘face’ and the predicate ‘to sprinkle’, but rather the relation between the possessed item, ‘face’, and the possessor, ‘man’. The verbal argument is the whole noun phrase ‘the man’s face’.
Pairs of instantiations taking respectively an Absolutive and a Dative human undergoer should exist. For instance, we would expect to find a difference between, say, ‘to instruct someone’ (Absolutive) as opposed to ‘to teach someone something’ (Dative). Due to my relatively recent discovery of how the Trapanac case system works, I have not recorded several such instances. The only example in my corpus is unfortunately not very clear since I was told that the semantics of the two forms were identical, and at the time of elicitation I was not yet aware of the fundamental grammatical difference. The pair is cited in (10).

(10) Example of a pair of instantiations of an AA verb that assign Absolutive vs. Dative case

- ka\(\text{an}^{\text{a}}\text{ci}^{\text{b}}\) ‘to hurry someone up’ [Dipersonal, Absolutive]
- ka\(\text{an}^{\text{a}}\text{co}^{\text{b}}\) ‘to hurry someone up’ [Dipersonal, Dative]

Possibly the second member of the pair, - ka\(\text{an}^{\text{a}}\text{co}^{\text{b}}\), means ‘to hurry someone up with respect to some chore’ whereas the first, - ka\(\text{an}^{\text{a}}\text{ci}^{\text{b}}\), just means ‘to hurry someone up.’ This and similar examples constitute an area of future research.

6. Typological parallels to the Ergative vs. Negative distinction

Although it has not been possible to find direct parallels to the peculiar Trapanac distinction, phenomena are described in the literature which are somewhat similar. Blake (1977: 16-17) cites the following pair of sentences from Alawa (eastern Arnhem Land, Australia):

(11) a. lilm\(\text{i}\) tjaw a-gata\(\text{n}\) aka-yi
    man feel he-was.doing fish-DAT
    ‘The man was feeling for fish.’

b. lilm\(\text{ri}\) tjaw a-gatan-nada aka
    man-ERG feel he-did-it fish
    ‘The man caught some fish.’

According to Blake’s source for the data, Sharpe (1970: 48), the formal contrast exemplified by the two sentences (Nominal-Nominal in 11a vs. Ergative-Objective in 11b) serves to distinguish between an activity that has not attained its goal and one that has. This distinction overlaps semantically with the Trapanac distinction between an activity where the undergoer is only partially or to a lesser extent affected and an activity where the undergoer is fully or to a greater extent affected. In Galgadungu a similar formal distinction as in Alawa signals a difference between “an action that is being directed towards a goal as opposed to one that has been successfully carried through” (Blake 1977: 17). Again this overlaps semantically with degrees of affectedness/effectedness.

Oceanic languages would be a place to search for phenomena similar to the Australian cases cited, cf. the Samoan example cited by Primus (1999: 76) from Cook (1991: 79). For lack of sufficient information towards the full interpretation of the example I do not discuss it further.
Tlapanec cases

What is interesting about the example is not only the semantic overlap but also that the encoding of the actor covaries with the encoding of the undergoer to express the distinction, just like in the Tlapanec case. A major difference, of course, is that Alawa or Galgadungu do not have a grammatical case specializing in marking the opposition to the Dative like the Tlapanec Pégative.

The reason why it has so far not been possible to find direct typological parallels to the Pégative probably relates to the peculiar Tlapanec system in which (1) case is marked on the predicate, (2) only one argument per clause is cross-referenced for case, and where (3) this argument must be animate. In such a system, the presence of a Dative-like inanimate undergoer can only be signalled indirectly, by assigning the animate actor a case that implies such an undergoer. In normal case marking systems it is possible to assign case to several participants— including inanimate ones. In such a system there is no motivation for having the encoding of the actor co-vary with that of the undergoer. The assignment of Dative case, marking a lowered degree of affectedness or recipient-like status of the undergoer, will automatically imply a correspondingly lowered degree of effect or a source/stimulus-like status on the part of the actor.

7. A note on “marked absolutive”

It is a well-known fact that markedness relations in case systems are generally such that the morphologically and functionally unmarked member tends to be the nominative in accusative languages and the absolutive in ergative languages. The morphological markedness relation was first formulated by Greenberg (1963: 75) as his Universal 38 (“where there is a case system, the only case which ever has only zero allomorphs is the one which includes among its meanings that of the subject of the intransitive verb”) and the observation has been elaborated upon in Dixon (1994: 63-96). While marked nominative systems are not uncommon in Africa (e.g., Creissels 2004) very few exceptions to the generalization have emerged with regard to languages that have ergative-absolutive alignment. One language reported to exhibit a case of marked absolutive is Nias, an Austronesian language (Brown 2001). Closer to home, Foris (2000: 254) has noted that the relation between the Ergative paradigm and the Absolutive paradigms in Sochiapan Chinante is such that the Absolutive is marked. Foris (2000: 7) explicitly points out that this represents a typological rarity.

This finding raises a number of typological and historical issues. We might ask, for instance, whether there are common denominators among languages having marked Nominative (primarily found in Northeast and Southern Africa and within the Yuman family) and those having marked Absolutive. We might also ask how marked Nominative or marked Absolutive systems come about or disappear and whether they are genetically stable features or fleeting phenomena. Such issues far exceed the scope of this paper. But they deserve to be mentioned as perspectives that emerge if my hypothesis, that Tlapanec may be said to truly have a case system, holds.

8. Conclusion

In the above I have argued that the Azoyú Tlapanec verbal suffixes corresponding what is described by Suárez (1983) for the Malinaltepec variety as essentially just arbitrary verb class markers are best treated as case markers. My arguments were, first, that the markers are not basically person markers although this is one part of their function. Secondly, I tried to demonstrate that case assignment operates on a semantic basis quite similar to what is standardly
expected from a case system even if it has some structural peculiarities—including a type of case apparently not attested in other languages, namely the case for which I have coined the term Pegative. One of the striking parallels to cross-linguistically common case systems is that the Dative is involved in marking possession. Moreover, I showed that one and the same verb may assign different cases, something which indicates that the system indeed marks different relations between predicates and arguments at the clause level as do case marking system universally. Thus the system is of grammatical importance and is far from just being a way of grouping different verbs into different classes, as suggested in previous analyses. Finally, I looked briefly at typological parallels to the opposition Ergative-Absolutive vs. Pegative-Dative and to the morphologically unmarked status of the Ergative, two features that stand out as unusual. As it turns out, both have parallels or near-parallel in other languages.

References

Tlapanec cases

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An Analysis of Amuzgo Nominal Tone

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1. Introduction
This paper\(^1\) presents an analysis of Amuzgo nominal tone based on the behavior of stem tones when a noun is suffixed by a singular possessor\(^2\). The addition of a possessor suffix to a noun may not only result in a different tone pattern for the noun stem, but the final syllable may also change in its controlled/ballistic status. To account for the full distribution of patterns seen in the Amuzgo data, I propose an autosegmental analysis which includes floating tones for the stems and possessor suffixes. This analysis is based on a two-tone system underlyingly, with the mid tones being derived. In addition, I propose that the distinction between controlled and ballistic syllables is that ballistic syllables have a floating low tone.

All data are from Xochislahuaca Amuzgo (XA), a language spoken by about 20,000 people in the southeastern part of the state of Guerrero, and were collected by Amy Bauernschmidt and Marjorie Buck from the early 1950’s to 1976 when they lived in Xochislahuaca and worked with numerous speakers. A full phonological description of XA is available in Bauernschmidt 1965 where she states that the three basic tones of XA are H (1), M (2) and L(3). There is also a HL down glide and the up glides LM and MH. As shown in (1), tones are affected by the controlled or ballistic status of the syllable, resulting in eleven tone patterns. There are two different patterns for a HL down glide in controlled syllables; only one in ballistic syllables. A LM up glide does not occur in ballistic syllables.

(1) Tone patterns by syllable type in XA

![Diagram of tone patterns]

In XA, the controlled/ballistic contrast has been written as a contrast in length. For example, *xjo* 'machete' is a ballistic form and is written with a single vowel. *Tsjo* 'pitcher', on

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\(^1\) I am grateful for Cheri Black’s comments on earlier drafts of this paper.

\(^2\) Plural possessor suffixes are not included at this time because of insufficient data at my disposal.
the other hand, is a controlled form and is written with a double vowel. Under an autosegmental analysis, however, all syllables in XA have just one tone-bearing unit (TBU).

2. **Nouns and possession**

There are two classes of nouns in XA: those which may exist NP-finally as free forms and those which are obligatorily possessed (i.e. are followed by the possessor NP). (2) shows that the addition of a possessor suffix to a noun may not only result in a different tone pattern for the noun stem, but the syllable may also change in its controlled (C) or ballistic (B) classification.

(2) **Sample paradigms for noun possession**

<table>
<thead>
<tr>
<th>Gloss</th>
<th>Free form</th>
<th>1s -ya/-a</th>
<th>2s</th>
<th>3s</th>
<th>Possessed</th>
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<tr>
<td>mouth</td>
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<td>'ndyoya</td>
<td>'ndyo'</td>
<td>'nom</td>
<td>'ndyoo</td>
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<td></td>
<td></td>
<td>H</td>
<td>B</td>
<td></td>
<td>H</td>
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<td>tsjoya</td>
<td>tsjo'</td>
<td>tsjom'm</td>
<td>tsjoo'</td>
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<td>C</td>
<td>B</td>
<td></td>
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<td>xjo'</td>
<td>xjoom'm</td>
<td>xjo'</td>
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<td>ty'iu'</td>
<td>tyjea'</td>
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<tr>
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<td>HL</td>
<td>M</td>
<td></td>
<td>LM</td>
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<td>tsei'snda'a</td>
<td>tsei'snda'</td>
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<td>H</td>
<td>C</td>
<td></td>
<td>HL</td>
</tr>
</tbody>
</table>

<sup>3</sup> Allomorphs are conditioned by the presence of an immediately preceding glottal stop; -ya follows an open syllable, and -a follows a syllable-final glottal stop.

<sup>4</sup> Only tones pertaining to stem-final syllables are relevant.
2.1 Observations from the data
Observations from the table in (2) include:

- A noun which bears [H] tone is always ballistic when a singular possessor suffix is added. When suffixed with 2s, the tone may or may not change to [HL].
- A noun which bears [L] tone may or may not have an up glide in its 1s or 2s form. If the up glide is present in its 1s form, the syllable is controlled. Even when an up glide is present in 2s forms, the syllable of the stem is always ballistic.
- A noun which bears [M] tone may have an up glide in its possessed form.
- Forms bearing a 2s possessor suffix are always ballistic.
- Except for those stems which bear [H] tone, forms with the 3s possessor suffix are always controlled.
- Free forms are sometimes ballistic and sometimes controlled, but their corresponding possessed form is always controlled.

2.2 Observations from other Otomanguean languages
Several observations may be made based on patterns in other Otomanguean languages:

- Noun phrases end with a down glide. Pike (1948: 95) describes a regular process in Huautla Mazatec in which nonpersonal (i.e. unpossessed) nouns end with a down glide. He states that nonpersonal nouns are characterized by the fact that “all of them except those having lexical toneme 4 are followed by a syntactic down glide when they constitute a close-knit noun phrase”.
- Certain morphemes bear a floating tone. For example, a floating H tone has been posited for the 1s suffix in Sierra Juárez Zapotec (Bickmore and Broadwell 1998) and floating tones are present in possessor suffixes in Ayautla Mazatec.
- A syllable-final glottal stop is associated with a H tone. Rensch (1976: 110), for instance, makes the observation that morphemes which end with a glottal stop in proto-Popolocan correspond with morphemes in Mazatec that bear H tone.

3. Re-analysis of basic tones with a new definition for “ballistic”
In other Otomanguean languages such as Mazatec and Tlapancé (Black, this volume), independent nouns are characterized by a word-final down glide. I am assuming that in languages where this down glide is realized, a L tone links to the final tone of the noun phrase and I suggest that although there are no phonetic word-final downglides in Amuzgo (with the exception of [HL]), the L tone which is present at the end of independent nouns in other Otomanguean languages is also present in Amuzgo. The difference is that in Amuzgo, the L tone does not link; it is left floating.

I propose that XA has a constraint against floating tones linking and that it is precisely this floating L tone that makes a syllable “ballistic”. At least two of the phonetic features associated with ballistic syllables in Amuzgo (post-syllabic aspiration and a sudden drop after the intensity

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3 My husband, Larry, and I have been living in Ayautla and studying Mazatec since September of 1998 under the auspices of S.I.L.
6 Autosegmental Phonology (Goldsmith 1979, 1990) provides the framework for allowing tones to act independently of segments and is crucial to this analysis.
7 This leads to the hypothesis that all Otomanguean languages that have a constraint against floating L tones linking will have a ballistic/controlled contrast.
peak (Mugele 1982:12)), may be accounted for by the presence of a L tone. Also, Rensch (1976:173) claims that ballistic syllables are a reflex of syllables in Proto Otomanguean which had a coda *h, a fact which would also be consistent with the presence of a L tone.

3.1 Free forms and their surface tones
If a floating tone is present following all independent nouns (‘free forms’ in these data), why is it that not all of them are ballistic? Free forms which are controlled fit into two groups:

1. those which bear [H] tone, and
2. those which have surface M tone but pattern as MH in all three persons.

What is there about these two groups that is different from the other forms? In Ayautla Mazatec, if an independent noun is followed by a floating H tone, the normal NP-final down glide is not realized. The word-final floating L undergoes Final L Stray Erasure when it follows a floating H.

(3) Final L Stray Erasure: Floating L → Ø / Floating H _ #

I propose that the same process takes place in Amuzgo as well. What had been analyzed as a H tone would actually be an underlying floating H which causes Final L Stray Erasure. (Stems which are controlled in their free form and follow the same tone patterns as tyuuaa ‘land’ would also be analyzed as having an underlying floating H as would tsei’sndaat ‘scapula’.)

Once a floating L has undergone Final L Stray Erasure, a floating H tone may link to the TBU of its own morpheme. In (4), tsjoo ‘pitcher’ is given as an example of a noun with an underlying floating H and a surface H tone.

(4) pitcher end of NP
    tsjoo underlying tones
    H L
    \ H
    H
    Final L Stray Erasure
    H linking

I suggest that nouns such as tyuuaa ‘land’ have a linked L as well as a floating H. In XA, a floating H may link to a TBU that bears no more than one tone, so the floating H links with the underlying L to form an up glide. Then a rule of Glide Neutralization applies in which a LH up glide goes to M at the end of a noun phrase.

(5) Glide Neutralization: LH → M / _ \NP

The derivation for tyuuaa ‘land’ is given in (6):
I claim that the underlying tone structure for the final syllable of *tei'sndaa* ‘scapula’ is H, floating H. This sequence of H tones is a violation of the Obligatory Contour Principle (OCP) (McCarthy 1986) which is repaired in XA by having a H tone following a linked H change to L.

The derivation for *tei'sndaa* ‘scapula’ follows in (8):

By postulating an underlying H-floating H tone pattern, the instances of [HL] which occur in controlled syllables but not in ballistic syllables may be accounted for. Since a noun with a surface M tone may change to having [H] or tonal up glides in possessive constructions, it would appear to be less problematic if H and L are posited as the underlying tones of the nouns involved. The upglide [LM], for example, would be /LH/. The surface M tone would be generated by a rule of Glide-final H Lowering which states that the H tone in an underlying LH tone glide goes to M when the TBU to which it is linked is not noun phrase final. Its application would result in the proper surface tone for possessed forms with [LM] tone such as *tyje* ‘little brother’.

(9) Glide-final H Lowering: 

\[
\text{TBU}^* \text{NP} \\
/| \\
H \rightarrow M / L_-
\]
Nouns with a posited underlying L tone (e.g. *xue 'embroidered tunic') or H tone (e.g. *sta 'forehead') have surface M tone. They are both ballistic in their possessed form, so under this analysis they have a floating L tone also, as shown in (11) and (12). They undergo Neutralization Before Floating L which states that a tone will neutralize when there is a floating L in its morpheme. This rule applies to an underlying H tone only when it is linked to a word-final TBU. L tones are not restricted.

(10) Neutralization Before Floating L (morpheme-internal): \[ T \rightarrow M / \_ \text{ Floating L} \]

(11) embroidered tunic

\[
\begin{array}{c}
\textit{xue} \\
\text{L} \quad 1 \\
\text{M} \quad 0 \\
\end{array}
\]

underlying tones

Neutralization Before Floating L

(12) forehead

\[
\begin{array}{c}
\textit{sta} \\
\text{H} \quad 1 \\
\text{M} \quad 0 \\
\end{array}
\]

underlying tones

Neutralization Before Floating L

I am suggesting that *tscwii 'breast' and the nouns that pattern like it are underlingly toneless, but they have a preceding floating H. A preceding floating H may also link to a TBU in its own morpheme, but only if it will not be the last tone of the word. When a preceding floating H is prevented from linking, it still affects the default L tone by raising it to M.

(13) L Raising After Floating H: \[ L \rightarrow M / \text{ Floating H } \_ \]

(14) breast

\[
\begin{array}{c}
\textit{tscwii} \\
\text{H} \\
\text{H} \quad L \\
\text{H} \quad M \\
\end{array}
\]

underlying tones

L by default

L Raising After Floating H

Nouns that pattern with *xjo 'machete' have no underlying tone. They receive a L tone by default, as shown in (15).
3.2 Evidence for a two-tone system

By combining a two-tone analysis for XA and the floating L definition for “ballistic” both the surface tones in free and obligatorily possessed forms and their ballistic or controlled nature may be accounted for. The proposed underlying tones along with an example of each are summarized in (16).

<table>
<thead>
<tr>
<th>Surface Tone</th>
<th>Underlying Tone</th>
<th>Example Noun</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>Ø Floating H</td>
<td>'ndyoo</td>
</tr>
<tr>
<td>HL</td>
<td>H Floating H</td>
<td>tseiβsnðaaβ</td>
</tr>
<tr>
<td>M</td>
<td>L Floating H</td>
<td>tyuαa'</td>
</tr>
<tr>
<td></td>
<td>L Floating L</td>
<td>xue</td>
</tr>
<tr>
<td></td>
<td>H Floating L</td>
<td>sta</td>
</tr>
<tr>
<td></td>
<td>Floating H Ø</td>
<td>tswii</td>
</tr>
<tr>
<td></td>
<td>Ø Floating L</td>
<td>sto</td>
</tr>
<tr>
<td>L</td>
<td>L</td>
<td>nçwâ'</td>
</tr>
<tr>
<td>LM</td>
<td>LH</td>
<td>tyjee</td>
</tr>
</tbody>
</table>

A two-tone system is supported in Rensch (1976: 126) where he generates the three levels of present-day Amuzgo from underlying H and L tones. Also, a two-tone analysis of XA tone is supported by how tones are assigned to borrowed words. Borrowed words with penultimate stress have tone pattern H L with H tone on the stressed syllable. In these cases, there is a distinct lack of the expected default M tone.

(17) **cuento** ‘story’ → **cwento**

(18) **abuela** ‘grandmother’ → **wela**

(19) **silla** ‘chair’ → **sula**

Another factor in support of a two-tone system is that it makes an analysis of tonal polarity, ‘a common state of affairs in two-tone systems’ (Kenstowicz 1994: 313) possible. Tonal polarity is crucial to the analysis of 1s possessor suffixes shown in section 5.
4. **3s possessor suffix**
Of the three singular possessor suffixes, 3s is probably the most straight-forward. With the addition of a 3s possessor suffix to the possessed form of the noun, the final syllable of the stem is nasalized. Forms marked with 3s are almost always controlled; the only exceptions being nouns which I am analyzing as having an underlying floating H. Derivations are given for these noun stems as well as for others which have interesting tone changes when the 3s suffix is added.

4.1 **Nouns which are always ballistic**
Nouns with a floating H are always ballistic when suffixed with the 3s possessor. In OCP Repair, a H tone which follows a linked H becomes L. I claim that this is also true whether the second H tone is linked or floating. I suggest that besides the nasal feature, 3s also has a floating H tone⁸ and that it is subject to OCP Repair. The resulting floating L tone is what makes the syllable ballistic. The derivation of 'ndyoo 'mouth' in (20) represents forms with a floating H tone.

(20) mouth 3s
   'ndyoo  [nas]  spreads left
   'nom  [nas] spreads left
   \                   underlying tones
   \                   H          H          H linking
   \                   H          L          OCP Repair

Neutralization Before Floating L does not apply because the floating L here is not morpheme-internal. The result is a stem with H tone and ballistic characteristics.

4.2 **Cases of alternate surface tones**
As shown in examples (21) and (22) below, different surface tones are possible for nouns such as tsei'sndaa 'scapula' depending on whether a rule of Stray Erasure, which deletes a floating tone when it is followed by another floating tone, takes place before or after H linking. If H linking is applied first, the result is a stem with HL tone and controlled characteristics.

(21) scapula 3s
   tsei'sndaa  [nas]  spreads left
   tsei'sna'da  [nas]  spreads left
   \           \                   underlying tones
   \           \                   H          H          H linking
   \           \                   H          H          L          OCP Repair

---

⁸ Other Otomanguean languages have been known to have floating H tones at morpheme boundaries. E. Pike (1956), for example, describes a process in Soyiantepec Mazatec in which the tone of a M-toned morpheme raises preceding a morpheme with a L tone. Since there is nothing intuitive about a L tone raising a M tone, an analysis based on current tone theory would likely posit a floating H tone.
When Stray Erasure takes place before H linking, however, OCP Repair affects the floating tone. This results in a stem with H tone and ballistic characteristics.

\[ (22) \quad \text{scapula} \]
\[ tsei'sndaa' \quad [\text{nas}] \]
\[ tsei'snda''a' \quad [\text{nas}] \text{ spreads left} \]
\[ \begin{array}{ccc}
& H & H \\
\end{array} \] underlying tones
\[ \begin{array}{ccc}
& H & H \\
\end{array} \] Stray Erasure
\[ \begin{array}{ccc}
& H & L \\
\end{array} \] OCP Repair

4.3 A floating L tone is neutralized
Nouns with an underlying L tone and ballistic characteristics such as sto ‘tray’ have surface M tone and are controlled when marked with the 3s possessor suffix. Since they bear no underlying tone and floating L tones do not link, a L tone is assigned by default. It is raised to M by Neutralization Before Floating L.

\[ (23) \quad \text{tray} \]
\[ sto \quad [\text{nas}] \]
\[ stom'm \quad [\text{nas}] \text{ spreads left} \]
\[ \begin{array}{ccc}
& L & H \\
\end{array} \] underlying tones
\[ \begin{array}{ccc}
& L & H \\
\end{array} \] L assigned by default
\[ \begin{array}{ccc}
& M & H \\
\end{array} \] Neutralization Before Floating L
\[ \begin{array}{ccc}
& M & H \\
\end{array} \] Stray Erasure

4.4 /LH/ tone has surface L tone
Nouns with underlying LH tone have surface L tone in the 3s form and they have controlled characteristics. As shown in (25), they undergo Glide Simplification, which states that a H tone deletes between a L tone and a word-final floating H or any floating L tone.

\[ (24) \quad \text{Glide Simplification:} \]
\[ \text{TBU} \]
\[ \begin{array}{c}
H \rightarrow \emptyset / L \\
\end{array} \quad \{ \text{Floating H}\} \]
\[ \{ \text{Floating L}\} \]
(25) younger brother 3s

\[ *nylee \quad [nas]\]
\[ *nyle \quad [nas] \text{ spreads left}\]

\[ \text{underlying tones}\]

H

\[ \text{Glide Simplification}\]

5. 1s possessor suffix

When a noun is marked for 1s possession, the 1s possessor suffix is added to the free form of the noun when one exists and to the possessed form otherwise. The 1s form has suppletive allomorphs depending on whether the stem to which it is added is vowel-final. If it is, the segmental content of the 1s possessor suffix is \(-ya\); if the stem is glottal-final, it is \(-a\).

1s forms support the two-tone analysis for XA because its floating tone is determined by tonal polarity. If a H tone is linked to the stem, the floating tone associated with 1s is L. If a L tone is linked to the stem, the floating tone associated with 1s is H. If the stem has no underlying tone, a HL melody is associated with the 1s possessor.\(^{10}\)

5.1 Nouns with an associated H tone are ballistic

Tonal polarity dictates a floating L tone for 1s possession on nouns with an associated H tone. These nouns all have ballistic characteristics in their 1s form.

(26) mouth 1s

\[ *ndyoo \quad -ya^{11}\]

\[ \text{underlying tones}\]

H

\[ \text{H linking}\]

H

\[ \text{1s tones assigned}\]

(27) forehead 1s

\[ *sta \quad -ya\]

\[ \text{underlying tones}\]

H

\[ \text{1s tone assigned}\]

H

\[ \text{Stray Erasure}\]

---

\(^9\) It appears that OCP Repair does not apply when the linked H is part of a contour tone.

\(^{10}\) A HL melody in association with 1s forms does occur in other Otomanguean languages. Ayautla Mazatec has a set of verbs which appear to be unmarked for tone in which 1s forms show a HL melody. Also, H and L are the tones associated with 1s in San Francisco Ozolotepec Zapotec (Julie Nelson-Hernández, personal communication).

\(^{11}\) Since the [M] tone on \(-ya/ -a\) does not enter into the derivation, it will not be shown.
5.2 **Nouns with a L tone are controlled**
Nouns with a linked L tone like *ncwa’* ‘shade’ are controlled in their 1s form because tonal polarity dictates a floating H; no floating L is present.

(28) shade 1s
     *ncwa’* -a

     | underlying tones
     | L
     | L  H
     \ /  H linking
     \ /  Glide-final H Lowering

5.3 **Alternate forms for nouns which are unspecified for tone**
Nouns which have no underlying tone may have two surface forms when suffixed with 1s. They may have LM tone and be controlled or they may have a L tone and be ballistic. The difference is in whether 1s tones are assigned before or after the default tone is assigned. In (29) a L tone is assigned by default before 1s tones are assigned, and the result is a surface LM tone and controlled characteristics.

When 1s tones are assigned before a default tone is assigned as in (30), the result is a surface L tone and ballistic characteristics. Glide Simplification applies.

(29) machete 1s
     *xjo* -ya

     | underlying tones
     | L
     \ /  L assigned by default
     | L  H
     \ /  1s tones assigned
     \ /  H linking
     \ /  Glide-final H Lowering

(30) *xjo* -ya

     | underlying tones
     | H  L
     \ /  1s tones assigned
     | L  H
     \ /  L assigned by default
     \ /  H linking
     \ /  Glide Simplification
6. 2s possessor suffix
The 2s possessor suffix is added to the possessed form of the noun. If the possessed form is vowel-final, the 2s form is closed and there is no tone change. If the possessed form is closed by a glottal stop, the 2s form may have a change in tone. No matter what is the controlled/ballistic state of the possessed form, the 2s form is always ballistic. I claim that the 2s possessor suffix has the shape:

(31) Glottal stop\(^{12}\) \(\text{L}\)

To account for the fact that tone changes may occur when the possessed form is closed, I posit a rule of Glottal Stop to Floating H.

(32) Glottal Stop to Floating H: glottal stop → floating H / glottal stop

I claim that the glottal stop in the 2s suffix is an autosegmental feature for the following reasons:
- The 2s form for 'younger brother' (\(\text{ty'lu'}\)) gives evidence for spreading of the [constricted glottis] feature.
- Tone patterns show a glottal stop to floating H change.
- It blocks Final L Stray Erasure\(^{13}\), H linking and L Raising After Floating H.

6.1 Open and closed syllables
\(\text{Tsj}\) 'pitcher' has an underlying floating H tone and its possessed form is closed by a glottal stop. Glottal Stop to Floating H applies. The result is a stem with HL tone and ballistic characteristics.

(33) pitcher
\(\text{tsjoo'}\)

\(\text{H}\) \(\text{L}\)

underlying tones

\(\text{H}\) \(\text{H}\) \(\text{L}\)

Glottal Stop to Floating H

\H
\H
\H
\L
H linking
H linking
H linking

\(\text{H}\ L\)
\(\text{L}\)
OCP Repair

\(\text{Ndjoo'}\) 'mouth' also has an associated floating H tone but its possessed form is an open syllable. As shown in (34), the glottal stop from 2s attaches to the final vowel, and there is no tone change.

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\(^{12}\) Black (2004) reports that in Tlapanec a suffix which bears a L tone is preceded by a glottal stop.

\(^{13}\) In Sierra Juárez Zapotec (Bickmore and Broadwell 1998) a rule of Rightward High/Mid Spread is blocked by the presence of a glottal stop.
An Analysis of Amuzgo Nominal Tone

(34) mouth

'ndyoo
'ndyo'

\ H L \ underlying tones
H L \ H linking

Vowel-final nouns with an underlying L and a floating L tone such as xue ‘embroidered tunic’ have a surface M tone in their 2s form because they undergo Neutralization Before Floating L. Glottal-final forms such as tycwi ‘leg’, however, have surface MH tone because they undergo Glottal Stop to Floating H, as shown in (35).

(35) leg

tycwi'

L L L \ underlying tones
L L H H L \ Glottal Stop to Floating H
L H L \ Stray Erasure
M H L \ L Raising
\ MH L \ H linking

6.2 Alternate surface tones for nouns which are unspecified for tone
Xjo ‘machete’ has no underlying tone and two possible surface tone patterns in its 2s form. When Stray Erasure is applied before H linking as in (36), the result is a stem with L tone.

(36) machete

xjoo'

\ L \ underlying tones
H L \ Glottal Stop to Floating H
L H \ L assigned by default
L L \ Stray Erasure

When H linking is applied before Stray Erasure as in (37), however, the result is a stem with MH tone.

When H linking is applied before Stray Erasure as in (37), however, the result is a stem with MH tone.
7. Conclusion

The three new claims being proposed here are:

1) "Ballistic" syllables are actually syllables which have a floating L tone. This floating L tone may interact with other tones on the tone tier in predictable ways.
2) The singular possessor suffixes have associated floating tones
3) A two-tone analysis for Amuzgo is preferable over the traditional three-tone analysis.

Under this new analysis, what had seemed to be a random assignment of "controlled" and "ballistic" characteristics as well as the formerly inexplicable tone changes on noun stems may be accounted for. More importantly, they may be predicted.

- Forms bearing a 2s possessor are always ballistic because the shape of 2s involves a word-final floating L.
- Forms bearing a 3s possessor are always controlled, except for those which have a floating H tone because the application of OCP Repair results in a word-final floating L tone.
- Free forms are sometimes ballistic and sometimes controlled, but their possessed form is always controlled because the L tone which is added to free forms occurs only NP-finally and the possessed form is always followed by its possessor.
- A [LM] up glide does not occur on ballistic syllables because the application of Glide Simplification results in a surface L tone.
- A second type of [HL] down glide occurs in controlled syllables because OCP Repair applies to a sequence of two H tones.
- Forms bearing L or M tone may or may not show an up glide when a possessor suffix is added because of options dictated by tonal polarity in 1s forms and by rule options in 2s and 3s forms.

Forms involving plural possessor suffixes remain for further study.

Verbs, which are considered to have more complex tonal variation than nouns have, were not considered at all in this study. To have merit, the claim that "ballistic" is actually the presence of a floating L tone would have to prove true in verbs also.
References


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