
Santa Barbara Papers in Linguistics

VOLUME 10

Proceedings from the third
Workshop on American Indigenous Languages

April 14-16, 2000

Department of Linguistics
University of California, Santa Barbara
Santa Barbara, CA 93106

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FOREWARD

It is with great pleasure that we present the proceedings of the third Workshop on American Indigenous Languages (WAIL 2000). In continuing a tradition begun with the student discussion group on North American Indigenous Languages (NAIL), the evolving membership wishes to pay tribute to Marianne Mithun and Wallace Chafe for their consistent encouragement and support. We hope that this third volume of the Working Papers represents another step in the development of WAIL as a forum where we may all share our discoveries, both descriptive and theoretical, concerning these increasingly endangered languages.

Paul Barthmaier

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Case marking in Marubo (Panoan): a Diachronic Approach

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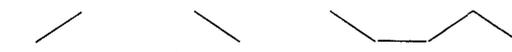
The purpose of this paper is to show that case marking in Marubo — a Panoan language spoken by groups that live in the Brazilian Amazon — is the result of the grammaticalization of a full lexical item. Evidence for this claim is the coexistence in the language of interrelated forms — specifically the **possessive marker**, the **focus marker**, and the **ergative marker** — that show different stages of development from the same original form.

Along these lines, we presume that this process of development follows a unidirectional cline: *content item* > *grammatical word* > *clitic* > *inflectional affix* (cf. Hopper and Traugott, 1993: 7). In other words, we presuppose that the history of an individual form shows a movement from a point on the left to a point further on the right of this cline. And, as the form develops in the course of time, following its path to grammaticalization, it expands the range of its meanings so as to serve a larger range of morphosyntactic functions. In the case of Marubo, we can trace this development from a grammatical word indicating possession to an inflectional affix that marks the ergative case.

Before we approach the development of case marking in Marubo, we describe the ergative case marking devices used in the language. All data used here were provided by pa'naN, a speaker from São Sebastião community, in Curuçá River, Brazil.

1. Marubo: an ergative-absolutive system

Marubo is an ergative-absolutive system (cf. Costa 1992, 1998). The manifestation of ergativity in Marubo can be observed in (1).² The absolutive case is not morphologically marked. The ergative case is marked through final vowel nasalization and stress shift from the second to the first syllable of the base.³

- (1) a.  $\begin{matrix} \diagup & & \diagdown \\ \text{vã}'\text{kũĩ} & & 'ʔ\text{isõ} \\ \text{va}'\text{ki-N} & & \text{'isu-}\emptyset \\ \text{child-ERG} & & \text{monkey-ABS} \end{matrix}$ $\begin{matrix} \diagup & \diagdown \\ \text{'yẽmãmã}'\text{kãtsẽi} & & \\ \text{'yamama-}'\text{katsai} & & \\ \text{kill-FUT} & & \end{matrix}$ *Transitive sentence*
'The boy will kill the monkey.'

- b.  $\begin{matrix} \diagup & & \diagdown \\ \text{'vã}'\text{kũĩ} & & \text{nũ}'\text{kũãi} \\ \text{'vaki-}\emptyset & & \text{nu}'\text{ku-ai} \\ \text{child-ABS} & & \text{arrive-PRES/IM.PAST} \end{matrix}$ *Intransitive sentence*
'The boy has arrived.'

1.1. Case marking devices

The ergative case marker varies in form, depending on the morphology and metrical structure of the noun phrase to which it attaches. We assume that Marubo is a trochaic-iambic language.⁴ The same devices are used to mark *locative*, *means*, *instrumental* and *genitive-possessive* cases. Ergative marking is also manifested in free-form pronominals, in all persons, singular and plural.

1.1.1. The suffix -'N

This type of case marking consists of nasalization of the final vowel of the noun. This is interpreted as the phonetic realization of the ergative morpheme -'N, a placeless nasal consonant, which closes the final syllable of the base when it is affixed to it, thus propitiating nasalization on the preceding vowel.⁵ As observed in (2-5), this type of case marking is found in monosyllables, disyllabic trochees, trisyllables and polysyllabic compounds.

- (2) 'vō
'vu
'proper noun'
- 'vũ 'kũ[̃]dă nĩ'kē[̃]
'vu-N 'kina-ø niN'kaN-ai
PN-ERG PN-ABS hear-PRES/IM.PAST
'vu has heard 'kina.'
- (3) 'kāmă
'kama
'proper noun'
- kă'mē 'kũ[̃]mpō 'kũ[̃]nǎvăt
ka'ma-N 'kiNpu-ø 'kini-a-vai
PN-ERG pot-ABS paint-AUX(T)-REC.PAST
'kama painted the pot.'
- (4) a. 'tākăřĩ
'takari
'chicken'
- 'tākăřĩ 'wākăpăfă 'ākă
'takari-N 'wakapaŋa-ø 'a-ka
chicken-ERG water-ABS AUX(T)-PRES/IM.PAST (= drink)
'The chicken(s) is/are drinking water.'

- b. $\begin{array}{l} \text{mĩ}'\text{māwā} \\ \text{mi}'\text{mawa} \\ \text{'proper noun'} \end{array}$
- $\begin{array}{l} \text{mũ}'\text{māwē} \quad \text{ʔyũ}'\text{ā} \quad \text{'tʃũā}'\text{ākā} \\ \text{mi}'\text{mawa-N} \quad \text{yu}'\text{a-}\emptyset \quad \text{'tʃua-a-ka} \\ \text{PN-ERG} \quad \text{pan-ABS} \quad \text{wash-AUX(T)-PRES/IM.PAST} \\ \text{'mi}'\text{mawa has washed the pan.}' \end{array}$
- (5) $\begin{array}{l} \text{kũ}'\text{yārētʃā} \\ \text{ki}'\text{ya-rantʃa} \\ \text{long-boat} \\ \text{'airplane'} \end{array}$
- $\begin{array}{l} \text{'ūā} \quad \text{kĩ}'\text{yārētʃē} \quad \text{mä}'\text{nāwɔsnāmē} \quad \text{ũkă}'\text{tēvāi} \\ \text{'ia-}\emptyset \quad \text{ki}'\text{yaraNtʃa-N} \quad \text{ma}'\text{naɔs nama-N} \quad \text{iN=ka-}'\text{taN-vai} \\ \text{I-ABS} \quad \text{airplane-MEANS} \quad \text{Manaus down-LOC} \quad \text{1S}_a\text{-SG-go-MOV/DIR-REC.PAST} \\ \text{'I went to Manaus by airplane (and I came back).}' \end{array}$

The great majority of words in Marubo, in their citation form, are trochees, that is, **disyllables** stressed on the first syllable. When they are case marked, however, as in (3), stress shifts from the first to the second syllable, along with final vowel nasalization.

In the other cases, case marking is achieved by means of final vowel nasalization alone, resulting from the attachment of the ergative morpheme **-¹N**. In **trisyllables**, syllabic prominence does not change, no matter which syllable is stressed, as seen in (4)a and b.⁶ Case marking in **polysyllabic compounds** is accomplished the same way, as in (5)⁷, which also shows locative case marking in a postpositional phrase.

1.1.2. The suffix **-¹nV_{.01}**

In disyllabic iambs with the final vowel already nasalized (that is, with the final syllable closed by a placeless nasal consonant), the ergative case marking adds a new syllable, consisting of a coronal nasal plus a high vowel, which assimilates the place feature of the preceding vowel. This suffix is represented as **-¹nV_{.01}**, where **.01** represents [-open 1], a high degree of aperture (cf. Clements and Hume 1995)⁸. Simultaneously, stress shifts from the second to the first syllable. The examples in (6a) show that, if the preceding vowel is [dorsal], the suffix surfaces as **-nĩ**. From (6b) we see that if the preceding vowel is [coronal], it surfaces as **-ni**.

- (6) a. $\begin{array}{l} \text{kă}'\text{mē} \\ \text{ka}'\text{maN} \\ \text{'jaguar'} \end{array}$
- $\begin{array}{l} \text{'kēmēnĩ} \quad \text{'wākăpăʃā} \quad \text{'ākă} \\ \text{'kamaN-nV}_{.01} \quad \text{'wakaɸa-}\emptyset \quad \text{'a-ka} \\ \text{jaguar-ERG} \quad \text{water-ABS} \quad \text{AUX(T)-PRES/IM.PAST (= drink)} \\ \text{'The jaguar is drinking water.}' \end{array}$

/min ¹ fjuN/	‘a mythical creature’	[¹ mĩfũĩ]	‘creature, ERGATIVE’
/ri ¹ kiN/	‘nose’	[¹ rĩkĩĩ]	‘through the nose’
b. /yu ¹ ʃiN/	‘spirit, soul’	[¹ yũʃĩ nĩ]	‘spirit, ERGATIVE’

Trisyllables marked by nasalization alone, can also be marked by suffixation. According to our data, this type of case marking appears only in nouns ending in /i/ or /u/. And the vowel of the ergative suffix assimilates all features of the preceding vowel. This can be observed in (7)a and b. As the preceding vowel is nasalized, the suffix vowel assimilates nasality as well. The ergative morpheme is then phonetically realized as [nĩ] or [ũ]. As total assimilation involves only high vowels, we can maintain the representation -¹nV.O1 for the ergative suffix.

(7) a.	¹ mă ¹ nĩ ¹ ʃĩ ma ¹ niʃi ‘proper noun’	¹ mă ¹ nĩ ¹ ʃĩnĩ ma ¹ niʃi-nV PN-ERG	¹ ẽ ¹ ātsă aN= ¹ atsa-∅ 3A.SG-cassava-ABS	¹ nĩsă ¹ nisa-a rasp-PRES/IM.PAST
		‘ma ¹ niʃi is rasping the cassava.’		
b.	¹ mā ¹ tĩrũ ¹ mā ¹ tĩrũ ‘boat’	¹ wā ¹ wa-∅ he-ABS	¹ mā ¹ tĩrũnũ ¹ matĩru-nV boat-LOC	¹ pă ¹ kuũəi ¹ pa ¹ ki-ai fall-PRES/IM.PAST
		‘He has fallen in the boat’		

1.1.3. The suffix -¹pa

The suffix -¹pa is added to disyllabic iambs ending in an open syllable. Simultaneously, the stress in the second syllable is transferred to the first one, as seen in (8).

(8) sā'bā sa'ba 'proper noun'	'sābāpǎ 'ūǎ 'tākūǎvǎt 'saba-pa 'ia-ø 'takī-a-vai PN-ERG I-ABS help-AUX(T)-REC.PAST 'sa'ba helped me.'
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From these data, we see that Marubo makes use of both morphology and stress as case marking devices. The following generalizations can be made about case marking devices: (a) ergative case is marked by stress and a nasal consonant underlyingly unspecified for place, or (b) it can be marked by stress and a coronal nasal followed by a high vowel underlyingly unspecified for place, or (c) it can be marked by the stressed suffix **-pa**. Based on alternatives (a) and (b), we propose to represent the ergative morpheme as **-¹nV_{.01}**, to account for both **-¹nV_{.01}** and **-¹N** suffixes. The plausibility of postulating such an abstract form lies in the history of the language. In other words, we postulate an abstract form based on what was an actual form in an earlier stage of the language development, namely the postposition **'na**. This claim is supported by the fact that in all Panoan languages absolutive disyllables with second syllable nasalized or closed by a nasal come from original trisyllabic words (cf. Shell 1975: 63-64).

2. The source of ergativity

2.1. The postposition **'na**: a possessive marker

According to our hypothesis outlined above, case marking in Marubo has its origin in a grammatical word, a postposition which serves to indicate a possessive relation between nominals: **'na**, 'of, belonging to'. This form still exists in the language with the same meaning. In both (9)a and b the 'possessed' element is in subject function; the 'possessor' has a predicative function, establishing or negating the genitive relation with the subject.

(9) a. na-'kaNti-ø=na 'tʃanu 'na DEM-bow-ABS-FOCUS PN of 'This bow is of 'tʃanu.'	b. na-'kaNti-ø=na 'tʃanu 'na-ma DEM-bow-ABS-FOCUS PN of-NEG 'This bow is not of 'tʃanu.'
---	--

2.2. The genitive-possessive case

Genitive-possessive constructions show a modifier-noun order, expressing the 'possessor-possessed' relation. Along with word order, possession is coded by means of case marking. As we have mentioned, genitive-possessive case is marked in the same way as the ergative case. This can be observed in the examples in (10).

- (10) a. 'mafi ma'fi-N 'pani 'isu i'su-N 'ina
 'proper noun' 'mafi-GEN hammock 'monkey' 'isu-GEN tail
 ' 'mafi's hammock' 'monkey's tail'
- 'lasaru 'lasaru-N 'nuNti 'ʃaniwitsa 'ʃani-witsa-N 'ʃuvu
 'proper noun' 'lasaru-GEN canoe 'old man' old-someone-GEN tepee
 ' 'lasaru's canoe' 'old man's tepee'
- b. pa'naN 'panaN-ni 'tiwia
 'proper noun' 'panaN-GEN necklace
 'pa'naN's necklace'
- c. ta'si 'tasi-pa 'iwa
 'proper noun' ta'si-GEN mother
 'ta'si's mother'

The two ways of marking possession can be seen in the sentence in (11): by case marking and word order in the first clause and by the postposition alone in the second.

- (11) yu'pa-N 'wapa-ø=ru 'vupi-vai as'ka-miNkiN 'vimi 'na=ru 'ka-vai
 yu'pa-GEN dog-ABS-TOP die-REC.PAST CON/but 'vimi of-TOP go-REC.PAST
 'yupa's dog died, but (the one) of 'vimi went/got away.'

2.3. From instrumental into ergative

The most interesting fact about Marubo case marking is that, besides case marking nominals in genitive-possessive and ergative functions, the same forms also mark *locative*, *means* and *instrumental case*. We propose that, 'at a certain point in the development of the language, the possessive case marker extended its function to mark these other oblique cases as well. Being marked the same way, an oblique such as instrumental would have then been reanalyzed as ergative in a later stage of the language, giving rise to the ergative case'. Evidence for this claim comes from other Panoan languages. According to Shell (1975: 64), vowel nasalization combined with strong stress constitutes the instrumental suffix, which is used with disyllabic words not ending in nasal consonant or nasalized vowel, in Shipibo-Conibo, Capanahua and Cashibo.

Being morphologically marked, obliques show relative flexibility in word order, as seen in (12) a and b. The reanalysis of instrumental into ergative would have originated in a transitive sentence like (12c), with an unspecified agent subject, a construction perfectly possible in Marubo, if the subject is given by the previous context. The instrumental would have been viewed as an agent and then reanalyzed as ergative. The

development of instrumental into ergative case has already been proposed for several languages by Garret (1990).⁹

- (12) a. tʃa'nu-N 'runu-ø tʃiN'ti-N 'rifki-vai
 'tʃanu-ERG snake-ABS stick-INSTR strike-REC.PAST
 'ʔʃanu struck the snake with a stick.'
- b. tʃa'nu-N tʃiN'ti-N 'runu-ø 'rifki-vai
 'tʃanu-ERG stick-INSTR snake-ABS strike-REC.PAST
 'ʔʃanu struck the snake with a stick.'
- c. tʃiN'ti-N 'runu-ø 'rifki-vai
 stick-INSTR/ERG snake-ABS strike-REC.PAST
 'He struck the snake with a stick.' > 'The stick struck the snake.'

As pointed by Mithun (1999: 291), the process of grammaticalization includes both functional and formal changes. Functional changes are characterized by “shifts from concrete, specific meaning to more abstract, general meaning, and from greater to lesser expressive value”. The formal ones involve “a loss of categoriality, increasing bondedness with a host stem, and an erosion of phonetic substance”. This is a valid observation for Marubo. Functionally, case marking can be seen as involving a highly abstract or general meaning, much more than the one carried by the postposition 'na. And formally, it shows increasing bondedness with the host stem and an erosion of the vowel under certain conditions.

3. Pronominal clitics: a complete formal fusion

We should also observe that there are pronominal possessive clitics in Marubo, which have developed from free pronominals marked by -'N, as shown by the system below. As they can bear no stress, these dependent forms cliticize to the left of noun phrases, according to the same possessor-possessed order observed for nominals in such a relation. This can be observed in (13) and (14).

Person	Singular	Plural
1	iN	nuN
2	miN	maN
3	aN	atuN

Pronominal clitics

- (13) 'vini- \emptyset 'wita-ai-ka-ya=na aN='taki- \emptyset
 man-ABS fish-PRES/IM PAST-go-NOM-FOCUS 3POSS.SG-brother-ABS
 'The man who went fishing is his/her brother.'
- (14) i'aN miN='pani- \emptyset iN='maf^hti-vai
 I-ERG 2POSS.SG-hammock-ABS 1A.SG-finish-REC.PAST
 'I finished your hammock.'
- (15) 'ia- \emptyset iN=wi'fa-i-ki
 I-ABS 1S_a.SG-write-AUX(I)-PRES/IM.PAST
 'I am writing.'

In addition, the same pronominal clitics operate, independently from the ergative system, on the basis of a split-S system (cf. Dixon 1994). In this case, they cliticize, most frequently to the left of the verb and sometimes to the left of the direct object, referring in both positions to the subject of a transitive or an intransitive active verb (cf. Costa 1998). See (14) and (15).

In the case of pronominal clitics, we can observe a complete formal fusion, which is assumed to be the last stage in the process of grammaticalization, as observed by Mithun (1999: 291). Compare, for example, the free ergative pronoun and the co-referential pronominal clitic for first person in (14).

4. The focus marker

Another line of development of the postposition 'na is its loss of rhythmic autonomy and its extension of function, to a discourse marker. As a discourse marker, =na has full segmental structure but loses its stress. As a dependent form, it cliticizes to a noun phrase or a verb phrase with the more general function of focusing the relevant information. Occurrences of =na as a focus marker can be seen in (16).

- (16) a. ma'nifi- \emptyset =na tfa'nu-N 'iwa- \emptyset
 ma'nifi-ABS-FOCUS 'tfanu-GEN mother-ABS
 'ma'nifi is 'tfanu's mother.'
- b. 'taNku- \emptyset iN='at^hji-vai=na 'ani-ka
 turtle-ABS 1A.SG-catch-REC.PAST-FOCUS big-PRES.PERM
 'The turtle I caught is big.'
- c. 'wa- \emptyset ki'ya-raNtfa-N i-'ki=na wis'ti-si
 He(VIS)-ABS airplane-MEANS AUX-(I)-PRES/IM.PAST(=travel)-FOCUS only-MAN
 'He has traveled by airplane only once.'

In (16a) the speaker focuses the subject, while in (16b) he calls attention to a clause that restricts the subject, a kind of relative clause. Finally, in (16c) the focus is on the event conveyed by the predicate. Since =na can mark any kind of constituent, it can appear in any position of the sentence. Other kinds of constituents marked by =na can be observed in the interrogatives below:

- (17) a. tʃa¹nu-N=na aN=¹awi-a-¹ka-¹ra
 ¹tʃanu-ERG-FOCUS 3A.SG-what-AUX(T)-PRES/IM.PAST(=do)-INT
 ‘What is ¹tʃanu doing?’
- b. an=kanti-ø ¹kiwi=na
 3A.SG-bow-ABS stretch-FOCUS
 ‘He’s stretching the bow.’
- c. ¹mia=na pra¹siʎa na¹ma-N=na miN=¹ka-ma-¹rivi-¹ra
 you-FOCUS Brasília down-LOC-FOCUS 2S_a.SG-go-NEG-EMPH-INT
 ‘Haven’t you ever gone to Brasília?!’

In interrogative sentences =na may be used to focus on one or more constituents being questioned. In (17a), =na is attached to the subject, about which the speaker wants information. The whole sentence in answer (17b) is focused, since it contains all the relevant information requested. Notice that the subject is coded just by the pronominal clitic. We see finally in (17c) that two constituents may be focused in the same sentence, the subject and the postpositional phrase in that particular example.

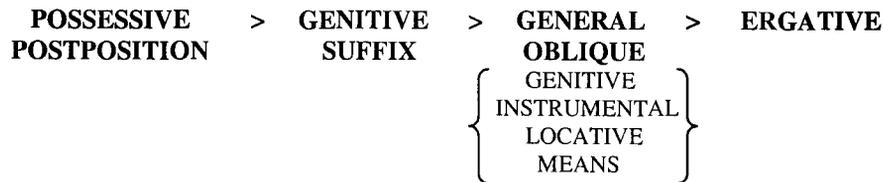
As can be seen in (9)a and b, the discourse clitic =na can co-occur with the postpositional possessive ¹na. It can also co-occur with the genitive-possessive case marker -¹N, as seen in (16a). We see thus that all these forms, in different stages of development, can coexist in the language. As we have already observed, as it expands its functions to a discourse marker, the postposition ¹na loses its rhythmic autonomy, while preserving full segmental structure. Conversely, as a genitive case marker, it loses segmental structure but retains stress. Hence, it might be the case that, at a certain point in the path of development, ¹na split into these new forms, each taking its own path, diverging in both form and function, but coexisting in the language, as divergent reflexes of the original form ¹na.

5. The path of ¹na as a case marker

The facts subsumed above suggest that the source of the ergative case marker in Marubo can be traced to a stressed possessive marker ¹na, the strength of which has been lost in the course of time, with vowel deletion leading to a reduced suffix which

nevertheless maintained its original stress. This is observed in the cline of grammaticalization in (18).

(18) a. **Functional development**



b. **Formal development**

'na > -'nV₀₁ > -'N

In accounting for stress alternations resulting from case marking, we propose that *case is marked by a formative with stress autonomy*: -'nV₀₁. Assuming that iambs are marked in the lexicon and trochees are assigned by default; and that both kinds of feet are parsed from left to right, the correct results can be obtained in a synchronic analysis of case marking devices.

We propose that when -'nV₀₁ case marks a disyllabic root not listed as iambic, such as in (19), the stress of the formative migrates to the second syllable, resulting in a trisyllabic iamb. This can be explained by the fact that word stress must go on the first or second syllable. As a consequence of stress migration, the case-marking vowel is not specified and this triggers resyllabification of the nasal consonant to the coda position. In this position, the nasal can not be fully specified, being realized phonetically as a placeless nasal. At the last stage of the derivation, the consonant in coda spreads the [nasal] feature to the preceding vowel. The word is then realized as [va.¹kĩ] at the surface. This explains the trochaic-iambic alternation in disyllables of this kind, in absolutive and ergative forms, as in 'vaki-∅ 'child-ABS'/va¹ki-N 'child-ERG'.

(19) **Trochees** → **iambs**: 'vaki-∅ 'child-ABS'/va¹ki-N 'child-ERG'.

va. ki.-'nV₀₁ → va.¹ki.-nV₀₁ → va.¹ki-N → [va.¹kĩ]
 stress migration → resyllabification → nasal assimilation

As for the case-marking in lexically listed iambs, with final syllable closed by /N/, the following steps can be postulated: when -'nV₀₁ case marks a word of this type, as in (20), a stress clash causes the root stress movement to the left. Since primary stress must go on the first or second syllable, the root stress wins and the stress of -'nV₀₁ is deleted. In this case, the morpheme vowel is specified, since the nasal consonant cannot resyllabify to the coda of the preceding syllable, a position which has already been filled by another nasal consonant. The place features it shows at the surface are assimilated

from the preceding vowel, which gives the final surface form [ˈpanẽ-ni]. Therefore, in this kind of case marking, the suffix can be realized as [-ni], when preceded by /i/ and as [-ni], when preceded by /a/, /i/, and /u/, and respective allophones.

(20) **Iambs** → **trochees**: paˈnaN-∅ ‘proper noun-ABS’/ˈpanaN-ni
 pa.ˈnaN.-ˈnV.O1 → ˈpa.naN.-ˈnV.O1 → ˈpa.naN.-nV.O1 → [ˈpanẽ-ni]
 stress clash → stress movement → stress deletion → vowel assimilation

6. Conclusion

When viewed with synchronic eyes, case marking devices can be interpreted as a series of ordered rules which apply in several stages so as to derive the actual surface representations. In terms of diachrony, on the other hand, the surface forms are better viewed as a result of language change. What the derivations obtained by rule application show are the various shapes a form assumes as it develops in the course of time, in its path to grammaticalization. In other words, rule ordering can be seen as nothing but the reflection of the historical development.

Notes

1. I would like to acknowledge Professor Dr. Marianne Mithun for her careful and insightful comments and suggestions to this paper.
2. For the first presented data we provide a phonetic transcription (cf. IPA symbols) along with a phonological line below it, so that the reader can compare phonetic realizations to our phonological analysis. As soon as the reader is introduced to the ergative case marking devices, we proceed only with the phonological transcription.

The following are abbreviations used in the text:

A	transitive subject function	NOM	nominalization
ABS	absolute	PERM	permanent
AUX	auxiliary	PL	plural
CON	connective	PN	proper noun
DEM	demonstrative	POSS	possessive
EMPH	emphatic	PRES	present
ERG	ergative	REC. PAST	recent past
FOCUS	focus	REM. PAST	remote past
FUT	future	SG	singular
GEN	genitive	S _a	intransitive subject marked
I	intransitive		like transitive subject
IM. PAST	immediate past	T	transitive
INSTR	instrumental	TOP	topicalization
INT	interrogative	VIS	visible
LOC	locative	1	first person
MAN	manner	2	second person
NEG	negation	3	third person

3. As can be seen from the phonetic transcription, stress in Marubo is characterized by maximal pitch, duration and intensity, the main correlate of which is pitch (duration and intensity are predicted from pitch).
4. In Dorigo and Costa (1997), we established syllabic trochees as basic metrical feet for Marubo, constructed from left to right, with End Rule Left (cf. Hayes, 1995). To account for certain words with stress in the second syllable, we assumed, in a more recent approach, that iambs are marked in the lexicon and trochees are parsed by default (cf. Costa, 2000).
5. As we postulate a nasal archiphoneme for the nasal consonant in coda position, it follows that the ergative morpheme is also a nasal archiphoneme.
6. Nasalized vowels that are not marked for duration in phonetic transcription, as in (4) and (5), are always short. They are not marked as such due to a failure in our IPA fonts tab.
7. It is worth to note that the word for 'airplane' in Marubo is a compound formed by the stems *ki'ya* 'long' and *'rantʃa* 'boat'. As can be seen in (5), the stress of the second stem submits to the stress of the first. In Dorigo and Costa (1997), we propose that after stress assignment at the compound word layer (by End Rule Left application), compounds are reanalyzed as single forms with initial prominence. The same observations hold for the compound in (10a). As for the pronominal clitic preceding the verb, see section 3.
8. We assume, following Clements and Hume (1995), that the same set of features characterizes consonants and vowels.
9. The possessive marking as source of ergative case, is proposed, for example, by Gildea (1991), for Cariban languages of South America, including languages spoken in Brazil. He reconstructs the ergative marking as a posposition meaning 'to, by', while the absolutive is expressed as a possessor. In Cariban languages then the process differs from Marubo in that ergative marking develops only indirectly via possessive morphology.

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"Deferred Evidence" marking and evidential typology in Western Apache

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Evidentiality as a grammatical category in the Athabaskan language family has only recently attracted the attention of linguists (Rice 1986 and DeLancey 1990 on Slave, Liebe-Harkort 1983 and Potter 1995 on Western Apache, Willie 1996 on Navajo, Webster 1999 on Chiricahua Apache, and de Haan 1999 on Athabaskan in general), even though Pliny Earle Goddard had pointed them out for Hupa in 1905, and for Chipewyan in 1912.

In de Reuse (2000) I already presented an account of evidentiality in Western Apache.¹ In this paper I focus on one of the more intriguing particles of Western Apache, which I will argue is not actually an evidential particle in the strict sense of the term, but marks something I will call "deferred evidence".

Following de Haan (1999), I will define "evidential" as in "the grammaticalized marking of the source of the speaker's information." Evidentiality can be considered a subtype of epistemic modality, but there are certainly types of epistemic modality which are not evidential, for example the marking of the degree of certainty the speaker has, which is distinct from, even though often connected with, the marking of the source.

The particle which I will concentrate on occurs in all four major mutually intelligible dialects of Western Apache: San Carlos, Tonto, Cibecue and White Mountain. The forms that this particle takes in each dialect are given in (1).

- | | | |
|-----|----------------------------------|------------------------|
| (1) | <u>lék'eh</u> or <u>lánk'eh</u> | San Carlos dialect |
| | <u>línk'eh</u> or <u>lánk'eh</u> | Tonto dialect |
| | <u>lénk'eh</u> or <u>lánk'eh</u> | Cibecue dialect |
| | <u>lé'e</u> or <u>léh</u> | White Mountain dialect |

Speakers of Western Apache are in unanimous agreement that all these variants mean the same thing. There is also a general agreement that it has something to do with something that happened in the past, and some consultants will volunteer the extra information that the speaker was not an eyewitness to what happened. Glosses given by linguists and anthropologists in some published and unpublished accounts of Western Apache, most apparently derived from what their consultants suggested to them, are given under (2).

- (2) Glosses of this particle in some published and unpublished accounts of Western Apache:
- 'so it is; it is thus' (Hoijer 1936)
 - 'it was, it is reported, always refers to something one did not see' (Uplegger n.d.: 392)
 - 'projects action into the past'; 'so it is to be thought of'; 'as it is to be seen in mind though belonging to the past or to circumstances not actually present' (Uplegger 1945: 2, 3)
 - 'action or condition in the past, known chiefly by hearsay' (Edgerton 1963:122, Liebe-Harkort 1983:111)
 - 'remote past' (Durbin 1964:28)
 - 'in the past' (White Mountain Apache Culture Center 1972:102)

(2) (Continued.)

- 'thus it was' (Basso and Nashley Tessay Sr. 1994:641)
- 'assumed past' (Potter and Dawson 1996:21])
- 'in the past/used to be' (Bray 1998:166-167)

This particle is extremely common in Western Apache stories. As an illustration, I will give under (3) an extract from a story which was composed in 1985 by a San Carlos speaker, on the basis of a story his father had told him. The point of this extract is to show that every sentence has to contain the particle lĕk'eh, underlined in the extract. The position of this particle is after the main verb of the sentence. Western Apache is basically an SOV language but this does not mean that the particle is invariably sentence-final, since adverbs and noun phrases often follow the verb plus particle complex. Examples where something follows lĕk'eh are sentences [2], [3], [6] and [12] in the extract. One would expect that lĕk'eh does not occur in sentences that are direct quotations, and indeed it does not, as seen in sentences [8] and [9].

(3)

- [1] Ła' nnee t'ahbįhyú nádidzaa A man woke up one early morning.
lĕk'eh.
- [2] Aał ní'i'yááhí biké'dí'go After he had eaten he thought he would go
datinyú ch'ínósháh ninzįj lĕk'eh, outside of his wickiup.
mįgowah goz'aądí'.
- [3] Ha'ágotingee nisizįj lĕk'eh, He stood at the entrance massaging his
mįbįd niyik'aąsdá'. stomach.
- [4] Naaghaal hik'eh danahyú Ła' Looking around he spotted a shaded area.
ch'agosh'oh goz'aągo niyįłtsaą
lĕk'eh.
- [5] Gósé át'įj łehíik'ehgo Doing something like what a dog would do,
nįgodiłkqoh nkegonyaa lĕk'eh. he began to clear the area.
- [6] Ákohgo ch'agosh'ohyú nsidaa Then he sat there sitting in the shade,
lĕk'eh, nii idiłsqołgo. whistling.
- [7] Ái n'įi ntsideskeęz lĕk'eh: Suddenly he thought to himself:
- [8] "Héé-ho, Ła' bįh shaa nowáh "My, my, if only a deer could come to me."
adó'."

- [9] "Nláh shigowah goz'ą́ą́hí dazhó nł'éeego bit'ahgee hozjı́ adó' dı́ı́i iskaą́hı́ bijjı́go." "If it would stand just outside my wickiup there four days from now."
- [10] Áídı́' tł'é'yú ní'ı́thoshgo náyeet lék'eh. Then one night while he was sleeping, he had a dream.
- [11] Hayú shı́h dził biyi'yú nagmaago náyeet nkegonyaa lék'eh. He was dreaming that he was in the mountains somewhere.
- [12] Nákoláhá nádabinłı́jı́go náyeełgo dazh'óadı́ı́d nnadılghaazh lék'eh ntsidolyizyú. Frightened by a dream that a UFO had picked him up, he screamed.

This repetition of the particle once per sentence seems to be the proper way of telling a story. Indeed, the particle typically occurs in the same way in more traditional stories, myths, or tales, or in anything that is not considered historical or autobiographical. It also occurs in tales translated from English, including such things as the Little Red Hen, Gingerbread Man, and even nursery rhymes such as Jack and Jill. It could well be considered a typical story telling particle, which one finds in so many other Native American languages².

From all this, one could conclude that the particle under discussion is an quotative evidential of some sort. However, the picture gets more interesting when one looks at the particle in its less typical environments, such as autobiographical stories, or conversation. It is much less commonly encountered there, but it does occur, albeit sporadically. My sense is that the occurrences of the particle in these very atypical contexts are more revealing about its precise meaning than the pervasive, almost automatic occurrence of the particle in stories. While searching over a hundred pages of autobiographical accounts and conversation, I found less than a dozen occurrences of this particle, but each of those has been quite revealing.

Let me now illustrate the particle by a few examples from such atypical contexts. The extract under (4) is from an autobiographical account of a family returning from a dance. On their way, they became very tired and spent the night on a spot in the dark, not knowing where they were sleeping. As they were sleeping, they were constantly disturbed in their sleep by something touching them until finally they became too frightened and decided to leave. The relevant particle is underlined. The particle ni', which is a genuine evidential meaning 'experienced past', is double underlined. It is useful to contrast the particle under discussion with ni', since ni' is an evidential which occurs fairly regularly in autobiographical accounts, even though it is by no means obligatory.

(4)

- [1] T'ah tł'é'dá' danásikai ni' We left from there while it was still dark.
áídı́'.

- [2] Hikahgo nohwee gozt'íjd. It got daylight while we were still walking.
- [3] Go dził bik'á'yú hikahgo t'ąązhí', nijeedyú nádadílt'íjd. When we were walking on the mountain we looked back down to where we had slept.
- [4] Áí n'íí nanezna' řeshijeedyú nohwiheskąą lęk'eh. We had slept in a graveyard!

As can be seen in sentence [1] under (4), ni' is used for experienced events in the past. In sentence [4] however, lęk'eh is used. Why is ni' not used here? I would like to argue that lęk'eh indicates that the evidence that they were in a graveyard was not available when they were sleeping in the graveyard, but that the evidence became available later.

Let me illustrate this further with another short extract, this time from a conversation between a man and a woman, given under (5). This extract is a bit more complicated because, as is common in conversation, there are other particles surrounding the ni's and the lęk'ehs, which were discussed in de Reuse (2000). The man is talking here and relating how he was driving from the reservation to the place where the recording took place, and how he was worried about not having a driver's license.

- (5)
- [1] Nt'é shįh nabil řizgohi lęk'eh go'íí. There had been a car accident/collision.
- [2] Go shą' akú míł daikeedą' nałtsoos náyinił'íí ląą nsįh ni' go'íí... I had thought that they would check for papers...
- [3] Tsidizyiz ni' zhó. I was afraid.
- [4] Hik'eh shą' dazhógo akú bił ch'íikeehi lęk'ehi ląą... But then they were just passing on by....
- [5] Akú shił ch'iotad ni', iłní'yú ... I went on by in the middle of it...

Here is my explanation for the alternations between ni' and lęk'eh occurring in (5). It helps to know that the events told about here happened at night, so the speaker was not as aware of what was happening than he would have been had there been daylight. In sentence [1], lęk'eh indicates that the speaker had no evidence for these precise events at the time that they happened. In other words, he did not see the actual accident happen. What he probably saw was the result of the collision when he drove past it. In the same

way, in sentence [4], lék'eh indicates that the speaker did not actually see the police driving by, but might have seen the police in his rear-view mirror after they had already driven by his car. On the other hand, ni' in sentence [2] refers to what the speaker's thinking was at the time, ni' in sentence [3] refers to the speaker experiencing fear at the time, and ni' in sentence [5] refers to the speaker's driving past the accident location. The speaker must have had evidence for these three events or states at the time that they occurred, and there is no reason to assume that he gained evidence for them at a later time.

A preliminary definition of the particle under discussion is given in (6).

- (6) A definition of the "deferred evidence" particle³
 The speaker did not have evidence for the event or state at the time that it occurred, but the speaker gained evidence for it at a later time.

Let us now return to the most common usage of the "deferred evidence" particle, the usage illustrated in (3) above. Indeed, if the definition in (6) is accurate, then why is lék'eh used as a storytelling particle? There is of course no evidence for anything happening in a story, but that is not a problem, since lék'eh marks lack of evidence. But what is the "deferred evidence" here? I assume that the evidence is the authority of the storyteller, which becomes apparent at the time of the telling.⁴

Now that the description of the "deferred evidence" particle is substantially complete, let me try to fit it in a typology of evidentiality, and complete my discussion in the process. It is by now generally accepted that there are three major kinds of evidentiality in the world's languages, as distinguished in Willett's (1988) survey: attested or experiential, reported or quotative, and inferring or inferential. It is clear enough that the deferred evidence particle cannot be called experiential or quotative. Maybe this particle could be called inferential since we usually infer on the basis of some earlier event or state. However, inferential evidentials emphasize the thought processes, such as reasoning or logic, necessary to go from the earlier event or state to the conclusion taken as evidence. With the "deferred evidence particle", the emphasis is not on the fact that there is an inference, but rather on the time lag between the occurrence and the evidence gained. There is really very little to infer when the "deferred evidence" particle is used. For example, in sentence [4] in extract (4), there is very little inferring to do to conclude that the family had slept in a graveyard, since that became obvious after the sun came up. Furthermore, there are also real inferential evidentials in Western Apache, and so I conclude that the "deferred evidence" particle is not necessarily an inferential.

Also, it should be noted that the evidence gained later might correspond to the three major kinds of evidentiality distinguished in Willett's (1988) survey. As we have seen before, it is often experiential evidence, but it can also be reported evidence. In the elicited sentences under (7), the "deferred evidence" points to reported evidence.

- (7) a. Gowąhyú nashaa. I am at home.
 home.at I.am.around
 b. Gowąhyú nashaa ni'. I was at home.
 c. Gowąhyú nashaa lék'eh. I was at home, I'm told.

(7a) has the present experiential interpretation, and can be said by someone who is talking to the hearer on a cellular phone. (7b) has the past experiential interpretation. At first glance, we expect (7c) to be infelicitous, since it would appear impossible for a speaker to have been at home without having any evidence of it. The interpretation of (7c) is that the speaker has no personal recollection of the fact that s/he was at home, maybe because s/he has lost his/her memory, or was unconscious or drunk at the time, and was told by someone else later that s/he had been at home. Note that (7c) could also be said as a result of later inference, but it does not have to be inference.

It is now time to consider the question of whether this particle is really an evidential at all. Our definition of evidentiality mentioned the grammatical marking of the source of information. According to that definition, ni' is definitely an evidential, even though it also performs a tense-marking function. One can ask whether the "deferred evidence" particle is also an evidential on that definition. Although the "deferred evidence" particle implies that a source has become available later, it does not state what the source is (it can be experience, report, or inference, as we have seen). Therefore I conclude that the "deferred evidence" particle is not an evidential. It is of course possible to broaden the definition of what an evidential is. I would rather not do so, however, because there also exists some syntactic evidence that the "deferred evidence" particle is not an evidential. Let us examine this syntactic evidence.

Anderson (1986:277-78) pointed out that evidentials are not used in irrealis clauses, and Muysken (1995:381-82) pointed out that evidentials are used in main clauses only.⁵ Such restrictions make sense. However, the "deferred evidence" particle is quite common in the protasis of a conditional sentence (the if clause), which is of course both irrealis as well as subordinate. Let us look at (8), an extract of a conversation in which a man discusses the hotel room he is staying in. The underlined part is the conditional clause, which ends in lék'eh, followed by the conditional subordinator -yúgohíí 'if'.

(8)
Dáhayú nt'é anail'j̄hi goz'aa lék'ehyúgohíí tsíst'íí ik'án ʔa' nasiʔnii doleeʔ ni' nláh, tsíst'íí hidʔahíí bigha, itsj' biʔ, doleeʔ ni'.
 If there were a place that had a kitchen, I would have bought some tortilla flour, because we would have eaten tortillas, with meat.

Note, as an interesting aside, that in (8) the apodosis of a conditional sentence (the then clause) often has the sequence doleeʔ ni', which correspond to the English would. Doleeʔ is a common future tense particle and ni' is the past experiential particle already mentioned. Now, doleeʔ ni' "FUTURE plus PAST" functions exactly like English would, which is, historically at least, "will plus PAST". Since ni' cannot possibly be an experiential here since the clause is irrealis, it follows that ni' marks "past tense" only, when it follows doleeʔ. It has to be concluded that ni' is not an evidential in the

sequence doleeł ni'. The sequence *doleeł lək'eh is ungrammatical, as well as the usage of ni' without doleeł in the apodosis.

Let me return to the "deferred evidence" particle. Since this particle is quite common at the end of conditional clauses (both factual and counterfactual, as in (8)), I now have to explain what the "deferred evidence" particle means in such cases. I think the "deferred evidence" particle basically marks lack of evidence here. This evidence might of course materialize later on, but will never do so in the case of counterfactuals. One can conclude then that in conditional sentences, the "deferred evidence" particle is used in the protasis, but the evidence is in a way forever deferred (to use a post-modern cliché), whereas in the apodosis, the "experiential past" particle can be used as a counterpart, but here losing its experiential value.

As a more general conclusion about the "deferred evidence" particle, I hope to have shown that on a rigorous definition, this particle turns out not to be an evidential at all. Furthermore, I hope to show in future publications that this particle interacts in intricate ways with real evidentials, epistemic modals, and with tense and aspect particles, within what one can call the postverbal particle system of Western Apache. From a typological point of view, the "deferred evidence" particle marks a hitherto unrecognized semantic distinction within the field of epistemic modality.

Notes

¹Western Apache is a seriously underdocumented and endangered Native language of the Southern Athabaskan or Apachean subgroup of the Athabaskan family, with about 14,000 speakers, located on five reservations in central and east-central Arizona. The data and examples in this paper are in the San Carlos dialect of Western Apache, unless otherwise noted. The spelling of Apache words is in the fairly standard system described in White Mountain Apache Culture Center (1972) and in Bray (1998). The research leading to this paper was funded by a grant from the National Science Foundation to the University of Arizona (Nr. SBR-9408543), and to the University of North Texas (Nr. SBR-9896227). This support is hereby gratefully acknowledged. My Western Apache speaking consultants prefer to remain anonymous, but their help and patience were very much appreciated nonetheless. I also thank David Samuels, Shobhana Chelliah, and the participants at the SSILA Winter 2000 meeting, the Third High Desert Linguistics Conference, and WAIL III for sharing with me their views on evidentiality.

²One could consider this particle to be identical in function to jiní, the pervasive storytelling particle in Navajo (e.g. in Haile (1984)), a language very closely related to Western Apache. This is not the case, however, since there exists a true quotative ch'inii in Western Apache, which is a perfect cognate to Navajo jiní. See also Note 4 for more on ch'inii.

³There is some etymological justification for glossing this particle as "deferred evidence". Its older variant is lánk'eh, still occurring as a variant in three of the four main dialects (see (1)). This form can be analyzed as containing the particle lán, a hypothetical/irrealis found in interrogative past and hypothetical sentences, and an adverbial element -k'eh 'the next', occurring in hik'eh 'and' and iskaʔanik'eh 'the next day'. The White

Mountain dialect has the form lé'e instead, and this particular form cannot be easily related to lán and -k'eh. It is interesting, however, that the storytelling particle translated as 'it is said'. (i.e. a quotative) in Chiricahua and Mescalero Apache is ná'a (Hoijer 1938). This is certainly cognate with White Mountain Apache lé'e.

⁴It is striking that the Apache quotative ch'inii (see Note 2) is used very much like lék'eh, etc. in older recordings of tales and myths by Goddard (1919) and Hoijer (n.d.), whereas it only rarely appears in modern stories. I assume that this difference is not an instance of language change, but rather the result of a breakdown in the oral tradition of storytelling. Ch'inii is typically used when information is passed down from a specific person, even though that person is not named. In early 20th century texts, the storyteller knew exactly which storyteller had passed the information on to him or her, and indicated this fact by the use of ch'inii. Nowadays, the knowledge of traditional storytelling is much more diffuse; modern speakers learn their stories from a variety of sources, not only storytellers, but also schools, and even published collections of texts. Therefore, they no longer use ch'inii, but establish their authority by using the "deferred evidence" particle instead. I should emphasize that the preceding is an assumption, for which I do not (yet) have solid evidence. Modern speakers still use ch'inii as a verb of saying in direct quotations, but it has acquired the connotation of gossip, since one always knows (or pretends to know) which specific person gossip comes from.

⁵An unpublished survey paper by Aikhenvald (1999) disputes these syntactic claims, but since this paper is part of work in progress, it is not yet appropriate to discuss it.

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- (7) a. $p\acute{e}k\emptyset$ $[\emptyset=ti=ra=s\acute{o}ri$ $\acute{i}ky\acute{e} \mathbf{m\acute{a}}$] $\acute{i}k\acute{i}$
 dress.ABS REAL.TR=3SG.ERG=1SG.ABS=**give** I **BEN** beautiful
 ‘the dress that s/he gave me is beautiful.’
- b. $*p\acute{e}k\emptyset$ $[\emptyset=ti=ra=\mathbf{m\acute{a}}=s\acute{o}ri$ $\acute{i}ky\acute{e}]$ $\acute{i}k\acute{i}$
 dress.ABS REAL.TR=3SG.ERG=1SG.ABS=**BEN**=**give** I beautiful
 ‘the dress that s/he gave me is beautiful.’

The unacceptability of (7b) is evidence that changes in the grammatical relations do occur in applicative constructions. The basic object does lose the proprieties it had as an argument directly associated to the verb. Then one expects that the NP indirect object changes its status in the argument structure of the verb in applicative constructions. Relative constructions in Panara show also that the indirect object becomes an argument closer to the verb in applicative constructions.

Relative clauses can appear immediately after the NP head or at the end of the matrix clause, separated from their head. Panara allows relativization on subjects, direct objects, indirect objects and obliques in accordance with the accessibility hierarchy purposed by Keenan & Comrie (1977). Three different relativization strategies associated with the grammatical function of the relativized nominal are used:

- a) without complementizer: for subjects and direct objects, as in (7a);
- b) with the relative pronouns **pr\acute{e}** for [+human] and **pi\acute{a}** for [-human] (also indefinite and interrogative pronouns), following by one of the postpositions: benefactive, malefactive, comitative, locative (associated with “to see”) and instrumental; for indirect objects.
- (8) $\acute{i}kiara$ $[\mathbf{pr\acute{e}-mera}$ $k\acute{o}$ $\acute{i}ky\acute{e}$ $h\acute{e}$ $\emptyset=re=ra=ku\acute{a}ri]$
 women.ABS **COMP-PL COM** I ERG REAL.TR=1SG.ERG=3PL.ABS=do
 $yi=ra=t\acute{o}$
 REAL.INT=3SG.ABS=go
 ‘the women that I helped went away.’
- c) with a syntactic operator **m\acute{a}m\acute{a}**, also used in adverbial clauses, following by one of the postpositions: ablative, alative, final, inessive and locative, for obliques .

- (9) $\acute{i}ky\acute{e}$ $y\acute{o}$ kri $[\mathbf{mama}$ ni $yi=ra=pan]$ $yut\acute{a}$
 I POSS village **COMP LOC** REAL.INT=1SG.ABS=live far
 ‘the village where I live is faraway.’

Notes

1. I wish to thank Professor Marianne Mithun for her helpful comments and suggestions, needless to say she is not responsible for any remaining problem in this analysis. I would like to thank also the CAPES Foundation, subordinated to the Ministry of Education of Brazil for the scholarship to pursue studies at UCSB, from September/99 to June/2000.

2. The abbreviations used in this article are as follows:

ABL – ablative	ERG – ergative	RFLX - reflexive
ABS – absolutive	INST – instrumental	1SG – first person singular
ALA – alative	INT – intransitive	2SG – second person singular
BEN – benefactive	LOC – locative	3SG – third person singular
COM – comitative	MAL – malefactive	1PL – first person plural
COMP – complementizer	PL - plural	2PL – second person plural
DU – dual	REAL – realis	3PL - third person plural

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The Dual Structure of Halkomelem Motion Verbs*

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0. Introduction.

Most recent literature on verb classes takes the viewpoint of *aktionsart*. Verbs are classified according to such Vendlerian features (Vendler 1967) as achievement, accomplishment, telicity, and their compatibility with different aspects (cf., Smith 1996). Our work on verb classes in Halkomelem, a Salish language of southwestern British Columbia, takes a very different tack. Rather than superimposing Eurocentric concepts on the Halkomelem data, we develop an analysis of verb classes based upon the compatibility of verb bases with various derivational affixes, following Gerdts (1991 and 1996). Halkomelem, a polysynthetic language, has over 200 prefixes and suffixes. So testing the array of possible data for each verb is not a trivial task. Nevertheless, our tests reveal three major classes of intransitive verbs: unergatives (agent-oriented verb bases), process unaccusatives (patient-oriented verb bases), and states.¹ Furthermore, we have identified a handful of verbal suffixes as diagnostic. For example, unergatives take the causative suffix *-stax^w* with the transparent meaning of ‘causing x to do y’, while process unaccusatives do not. Process unaccusatives take the transitive suffix *-t*, allowing the expression of a transitive event with an agent argument, while unergatives do not. These suffixes include transitive, intransitive, antipassive, reflexive, reciprocal, and desiderative, some of which have become grammaticized, taking on special meanings in combination with verbs of the ‘wrong’ class. For example, the suffix *-almən* ‘want to’, which combines with unergative and transitive verbs, may appear with unaccusatives but meaning ‘start to’ or ‘on the verge of’. So the classification of verbs must be done with great care to ensure that the appropriate meaning is involved. This classification is summarized for unergatives and unaccusatives below.

In Section 1, we review our results with respect to unergatives and process unaccusatives. Section 2 narrows the focus to unergative and unaccusative verbs of motion. Unergative motion verbs which encode a trajectory as object are discussed in Section 3. Section 4 presents the most interesting case, namely unergative verbs of motion which are unique in showing properties of causatives (i.e., taking the causative suffix) but also permitting an antipassive suffix which is normally restricted only to non-causative transitive verbs. We discuss HPSG analyses of the various verb classes in Section 5 and, in particular, we propose that unergative motion verbs are intransitive in argument structure but link to both actor and undergoer semantic roles and by virtue of this latter fact, show special properties normally accorded to transitives.

1. Unergative and Unaccusative Verbs.

The basic combinatorial properties of Halkomelem unergative and process unaccusative bases are summarized in Table 1. Meanings which are grammaticized are flagged ‘gr’. ‘*/gr’ indicates speakers either reject the forms or assign them grammaticized interpretations.

Table 1	unergative	process unaccusative
transitive -t	*	adds agent
causative -stəx ^w	adds causer	*
limited control -nəx ^w	limited control causative	limited control transitive
reflexive -θət	*/gr: 'alone'	action on self
antipassive -els	*	action on notional object
limited control -namət	gr: 'manage to'	accidental action on self
desiderative -əlmən	'want'	*/gr: 'about to, almost'

Transitive *-t* generally goes on unaccusative bases. It adds an agent subject and the verb is morphosyntactically a transitive, thus it licenses a (direct case) object. Only verbs which have some sort of transitive suffix (including the causative suffix) license a direct case object. Thus Halkomelem, like other Salish languages, overtly marks morphosyntactic transitivity (Hukari 1976, Gerdts 1988a).² *-stəx^w* also creates a transitive verb, although it goes on unergative bases and adds a causer. Limited control *-nəx^w* functions as a counterpart to both transitive *-t* and causative *-stəx^w*. Verbs with this suffix express attenuated control on the part of the subject and are often glossed as 'managed to do it' or 'accidentally did it'. The reflexive is historically derived from transitive *-t* plus additional material and reflexive verbs are intransitive. The reflexive appears only spottily on unergatives with the grammaticized meaning 'alone' (Gerdts 1998, 2000). With unaccusatives it is a bona fide local reflexive, indicating that the subject acts upon itself. The antipassive suffix *-els* generally combines with unaccusative bases, never with unergatives, except for data discussed below. Usually, it is a morphosyntactically intransitive counterpart to transitive *-t*. Limited control *-namət* leads a double life (Gerdts 1988b). In its philologically correct role, it is the reflexive counterpart of limited control suffix *-nəx^w*. Since unergatives do not take reflexives in their literal sense, *-namət* functions only as the limited control reflexive counterpart to *-θət* in the *-t* paradigm. But it also has a grammaticized meaning 'manage to', where it can function on unergative verbs and provides a fairly robust indicator of unergatives as opposed to unaccusatives as long as meaning is taken into account. Desiderative *-əlmən* (Gerdts 1988c) involves grammaticization in the other direction. It combines with unergatives in its core meaning and takes on an aspectual meaning of 'about to' or 'almost' in combination with unaccusatives, when it is accepted by speakers.

Of these suffixes, the ones most relevant to motion verbs are *-t*, *-stəx^w*, *-els*, *-namət*, and *-əlmən*, so we confine our discussion to these suffixes for the remainder of the paper. Table 2 and Table 3 illustrate the use of the diagnostic suffixes with verb bases in sentences.³

Table 2. Unergatives

BASE:	q̣ ^w əyiləš	'dance'
	ni cən	q̣ ^w əyiləš
	aux 1sub	dance
	'I danced'	
TRANSITIVE :	*q̣ ^w əyiləš-t	for: 'dance it'
CAUSATIVE:	q̣ ^w əyiləš-stəx ^w	'make s.o. dance'
	ni ct	q̣ ^w əyiləš-stəx ^w
	aux 1pl.sub	dance-cs
	'We made him dance.'	
ANTIPASSIVE:	*q̣ ^w əyiləšels	

Process Unaccusatives

k ^w iʔeʔ	'be separated'	ǰəł	'get hurt'
təq ^w	'be taut, be tight'	ǰəp	'get inflected/tied/initiated'
lək ^w	'break'	ǰis	'get knotted'
ʔiyeʔq	'change'	t ^θ əǰ ^w	'get light directed onto'
yəǰ ^w	'come undone, get untied'	ʔik ^w	'get lost'
t ^θ as	'get bumped'	maləq ^w	'get mixed in with'
k ^w es	'get burnt'	ʔiǰ	'get scratched, scraped'
məyaʔ	'get cheaper'	liq ^w	'get slack'
ǰ ^w aq ^w	'get clubbed'	k ^w əł	'get spilt, upset'
lić	'get cut'	t ^θ əǰ ^w	'get washed'
ćəy ^w	'get dry'	ʔet ^θ	'get wiped'
θəyq ^w	'get dug'	ǰiw	'get wrapped around s.t.'
məǰ	'get full of food'	q ^w iǰ ^w	'miss'
paş	'get hit'	səǰ	'tear'
ʔak ^w	'get hooked, snagged, hung up'	ǰ ^w aǰ	'wrinkle'

Unergatives

he ^t əmə	'breathe'	yənəm	'laugh'
ʔa:m	'call for'	tiləm	'sing'
sǰəlcəp	'chop wood'	ʔitət	'sleep'
t ^θ əp ⁿ əx ^w	'close eyes'	yays	'work'
ʔəltən	'eat (intr.)'	ǰ ^w əyiləş	'dance'

2. Verbs of Motion. Basic motion unergatives and accusatives.

We can identify unergative and unaccusative subtypes among the verbs of motion, thus showing profiles as in Table 1 above. Again, grammaticized usages are flagged as 'gr'.

Table 4 **motion unergative** **motion unaccusative**

	motion unergative	motion unaccusative
causative -stəx ^w	adds causer	*
transitive -t	*	adds agent
antipassive -els	*	action on notional object
desiderative -əlmən	'want'	*/gr: 'about to, almost'
limited control -namət	gr: 'manage to'	accidental action on self

Table 5 Motion Unergative

BASE: ǰak^w 'fly'

yəłəłəǰ^w t^θə sǰ^wəleş

ser-fly(cont) art bird

'The bird is flying.'

TRANSITIVE : *ǰak^wə-t

CAUSATIVE: ǰak^w-stəx^w 'make it fly/send it by air'

neṃ ć ǰak^w-stəx^w t^θə sǰəłəm neṃ ʔə k^wθə əṃ šəyəl.

go 2su fly-cs art writing go obl art 2pos older.sibl.

'Send the letter by airmail to your brother.'

ANTIPASSIVE: *ǰk^w-els

DESIDERATIVE: ɬəɬəkʷ-əlmən 'wanting to fly (cont.)'

ʔeʔəθ wəl ɬəɬəkʷ-əlmən θə sɔ̄ʷələš.

here then fly(cont)-desid. art bird

'The bird wants to fly.'

LIMITED CONTROL REFLEXIVE: ɬəkʷnamət 'managed to fly'

naʔəθ wəl ɬəkʷ-namət θə ɔ̄lə:qeʔ.

there then fly-l.c.refl art crow

'The crow has managed to fly.'

Notice that ɬəkʷ-stəxʷ 'make it fly/send it by air' has the semantics of a causative. It does not entail, for example, that the subject is directly involved in the flying event, whereas the transitive of an unaccusative motion verb, seʔ-t 'raise it' in Table 6 below, is typical of such transitives in that the subject is an actor who is directly involved in the lifting event. We return to the semantics of causation in Section 4, where we discuss unergative motion verbs which take -stəxʷ and -els.

Table 6 Motion Unaccusative

BASE: seʔ 'rise'

naʔət seʔ tʰə ɬq̄:ns tʰə ləpla:š

there rise art end-3pos art table

'One end of the board has lifted.'

TRANSITIVE : seʔ-t 'raise it'

nəm seʔ-t tʰə ʃθəm ʔə tʰə lətem

aux lift art box obl art table

'Go lift the box and put it on the table.'

CAUSATIVE: *seʔ-stəxʷ

ANTIPASSIVE: səʔ-els lift

xʷiʔ səʔ-els ɕə kʷθə swəw̄ləs pəptitəl

next lift-ap evid art young-men competing

'The young men are into competitive lifting.'

LIMITED CONTROL REFLEXIVE: seʔ-namət⁶

sɔ̄ʷey kʷə nə-s-seʔnamət kʷis⁷ nan ʔəw̄ -ʃiʃəp kʷθə ʃxʷʔamət.

can't art 1pos-nom-lift-l.c.refl too lnk-deep art bed

'I couldn't managed to get myself up because the bed was too low.'

DESIDERATIVE: *seʔ-əlmən

These subclasses of motion verbs are listed here. The class labeled 'Motion Unergatives' seems to be manner-of-motion verbs, a fact which will not be pursued here but one which merits further study. Not all unaccusatives of motion take -els (just as not all process unaccusatives do). The class which does is labeled 'Motion Unaccusatives' and the one which does not is 'Motion Unaccusative *-els.' We also have verbs which seem basically unaccusative, but take -əlmən and -namət in the unergative sense when the subject is animate and these are labeled 'Unaccusatives with Animate-Subject Desideratives.'

Motion Unergatives

ʔiməš 'walk'
siʃʷəm 'wade'
ɬəkʷ 'fly'
štem 'swim underwater'

Motion Unaccusatives

kʷeʔ 'drop down, come lose'
hiləm 'tumble, fall'
xʷeʔ 'lower, go down'
təyqəl 'move'

łxiliš	'stand up'	ʔəłqəl	'go out'
ʔəmət	'sit down, rise out of bed'	pliq	'move closer'
		hiq	'under'
		čiməl	'get near to'

Motion Unaccusative *-els

tan	'leave'
qiš	'slide'
siləm	'roll'
šič	'hide in bush'
ʔəyq	'go off path, miss'
θəx ^w	'fade away'
łasəm	'slip down, slide down'

Unaccusatives with Animate-Subject**Desideratives**

k ^w eý	'move away',
pək ^w	float, go up to surface',
člaq ^w	'go through',
x ^w əč	'go between, get in the middle'
wil	'appear',
q ^w im	'get off vehicle'

3. Motion Verbs which Encode Trajectory/Goal

We have isolated a class of motion verbs which, when made transitive with *-t*, encode a trajectory. Some of these are otherwise manner-of-motion (e.g., 'swim along', 'crawl') while others already have a trajectory ('go around', 'go over a mountain'). These verbs pattern (other than taking *-t*) as motion unergatives, taking causative *-stəx^w*, and are (unsurprisingly) mixed as far as taking *-els*. As transitive *-t* generally appears on bases which are unaccusative, it may be surprising that the verbs of this class seem otherwise to pattern as unergatives. The following table gives a profile of these verbs.

Table 7. Verbs which Encode Trajectory/Goal

causative <i>-stəx^w</i>	causative or adds comitative object
transitive <i>-t</i>	trajectory
antipassive <i>-els</i>	*/?
desiderative <i>-əlmən</i>	'want'
limited control <i>-namət</i>	'manage to'

Sentence examples are provided for a verb of this class in the following table.

Table 8. Encoding Trajectory

BASE:	ticəm	'swim along'
	ni wəl ticəm t ^θ ə mənə ni ʔə t ^θ ə staləw.	
	aux asp swim art child aux obl art river.	
	'Your son has swum in the river.'	
TRANSITIVE :	ticəm-t	'swim after'
	ni ticəm-ət-əs t ^θ ə k ^w ant t ^θ ə snəx ^w əl.	
	aux swim-tr-erg art porpoise art canoe	
	'The porpoise swam after the canoe.'	
CAUSATIVE:	ticəm-stəx ^w	'make him/her swim'
	nem č ce ^ʔ ticəm-stəx ^w t ^θ ə swiwləs ni ʔə t ^θ ə staləw.	
	go 2su fut swim-cs art young.man aux obl art river	
	'Go have the young man swim in the river!'	
ANTIPASSIVE:	*ticəm-els	

LIMITED CONTROL REFLEXIVE:								ṭicəm-namət	'manage to swim'	
ni	ṭicəm-namət	t ^θ	sq ^w əmeý	ni	ʔə	t ^θ	staləw̄.			
aux	swim-l.c.refl	art	dog	aux	obl	art	river.			
'The dog managed to swim in the river.'										
DESIDERATIVE:								ṭicəm-əlmən	'want to swim'	
ʔi	wəl	ṭicəm-əlmən	t ^θ	maʔaq ^w all	ni	ʔə	t ^θ	ʃacaʔ.		
aux	asp	swim(cont)-want	art	baby.duck	aux	obl	art	lake		
'The baby duck wants to swim out into the lake.'										

As we noted above, transitive *-t* generally appears on bases which are unaccusative, so it may be surprising on the face of it that the verbs of this class seem to pattern as unergatives. We explore this fact in Section 5. The following verbs fall into this class.

Trajectory Verbs

ṭicəm	'swim along'	ṭicim-ət	'swim after it (to get it)'
čtem	'crawl'	čtemət	'crawl after it'
nəqəm	'dive down'	nəqəm-ət	'dive down for it'
ʃ ^w čənəm	'run'	ʃ ^w čənəm-ət	'run after it'
cɬəm	'jump'	cɬəm-ət	'jump after it'

4. Unergative Motion Verbs which take *-stəx^w* and *-els*.

We have discovered a subclass of unergative-like motion verbs which take *-els*. This is surprising in that *-els* is otherwise restricted to verbs which take transitive *-t* (or *-š*), never appearing on ones which take *-stəx^w*. However, it seems noteworthy that the function of *-stəx^w* here is not that which is generally associated with Halkomelem causatives of unergatives, namely to have or make someone do something. *ʔiməš-stəx^w* 'walk-cs' means 'make it walk, walk it', a typical causative meaning, but *ik^w-els* 'go-home-cs' means 'take it home'. The object need not be something that is capable of carrying out the act (e.g., a sack of potatoes) and the subject is involved throughout the event. It is noteworthy that this sense is preserved in the corresponding antipassive *-els* form. The following is a profile of these verbs. They are mixed in some respects, particularly with respect to *-t* for promoting trajectory to object (cf., the trajectory verbs in Section 3).⁸

Table 9. Motion Unergatives with Comitative Causative

causative <i>-stəx^w</i>	adds comitative object
transitive <i>-t</i>	*/trajectory
antipassive <i>-els</i>	comitative
desiderative <i>-əlmən</i>	'want'
limited control <i>-namət</i>	'manage to'

Table 10. Unergative Motion Verb with Comitative Causative

BASE: *tax^w* 'go down from mountains/to beach'
x^wən-netəl ʔiʔ wəl nem *tax^w*
 morning and asp go go-down
 'Early the next morning, he went down to the beach.'

TRANSITIVE : **tax^wə-t*

- CAUSATIVE:** $\dot{\text{t}}\text{ax}^w\text{st}\text{ax}^w$ 'take it down'
 neṃ cən $\dot{\text{t}}\text{ax}^w\text{st}\text{ax}^w$ k^wθə nə syaṭ
 go lsub go-down-cs art lpos firewood
 'I am going to take my firewood down.'
- ANTIPASSIVE:** tx^wels 'bring down'
 ʃəθinə cə k^wθə mi $\dot{\text{t}}\text{x}^w\text{els}$ ʔə k^wθə syaṭ
 four-people evid art come bring.down obl art firewood
 'Four people brought down the firewood.'
- LIMITED CONTROL REFLEXIVE:** $\dot{\text{t}}\text{ax}^w\text{-nam}\text{ət}$ 'manage to go down'
 ʃəʔaθən sk^weyəl yeṭ sis $\dot{\text{t}}\text{ax}^w\text{-nam}\text{ət}$ k^wθə ni-əṭ yəʔəməʃ
 four day finally and down.l.c.refl art aux-past hunting
 'It was four days before the hunters managed to get down.'
- DESIDERATIVE:** $\dot{\text{t}}\text{at}\text{ax}^w\text{-əlm}\text{əṅ}$ 'wanting to go down' (cont.)
 wəṭ $\dot{\text{t}}\text{at}\text{ax}^w\text{-əlm}\text{əṅ}$ t^θə əṅ ʃʃ^wəmnik^w
 asp wanting to go down (cont) art 2pos uncle/aunt
 'Your uncle wants to go down (to the river to fish)'

Verbs of this class seem to involve a trajectory or path. It is unsurprising that not all comitative motion verbs combine with antipassive *-els*, thus we have two lists.

Comitative Motion [+ els]

k ^w iʔ	'climb'	$\dot{\text{t}}\text{ak}^w$	'go home'
ʃaq ^w əl	'cross to the other side'	$\dot{\text{t}}\text{ax}^w$	'go down from mountains'
neṃ	'go'	ca:ɬəc	'go over mountain'
cam	'go up to house/mountains'	ʔəməq	'returned something'
ɬe:l	'go ashore'	qteqən	'go along base of mountains'
ʔa:ɬ	'get on vehicle'	x ^w əʔaləm	'return'

Comitative Motion [- els]

təs	'arrive there, get here'
wəq ^w iləm	'go downstream'
he:wə	'go away on a trip'
qtaθəm	'go along shore'
ʃ ^w teʔ	'come/go toward'
tə:l	'go to the middle of floor'
ʃpil	'go down'

We noted earlier that outside this set of motion verbs, antipassives are based on verbs which take transitive *-t* (or *-š*), although not all such verbs have acceptable antipassives. Thus in both cases, a subset of transitive verbs have corresponding antipassives. It seems clear that some account should be given for the correspondence between *-els* antipassives and transitives, a point to which we return in the next section.

5. Solutions.

We can view the relevant subclasses of motion verbs as having properties of both so-called unergatives and unaccusatives. Rather than representing unergativity and unaccusativity in argument structure we will assume that both are simply intransitive configurations but linked in different ways to semantic proto-roles (Dowty 1991, Davis 1996) or an action tier (Jackendoff 1987, 1991).⁹ So simple unergatives and unaccusatives can be

represented roughly as follows, where the actor and undergoer roles are semantic and ARG-ST (argument structure) is at the interface between syntax and semantics.

Diagram 1. Unergative

<i>actor – pred</i>	
ARG - ST	⟨a⟩
ACTOR	a

Diagram 2. Unaccusative

<i>undergoer – pred</i>	
ARG - ST	⟨a⟩
UNDERGOER	a

We propose that our class of comitative motion verbs derive from bases which all share the following configuration.

Diagram 3. Motion Verb Bases which Combine with Comitative -stəx*

<i>motion – actor – undergoer</i>	
ARG - ST	⟨a⟩
ACTOR	a
UNDERGOER	a

This is still intransitive with respect to argument structure, and the single argument will link to subject. This captures the idea that the subject of an agentive motion verb simultaneously plays to roles, the role of doer and, in a sense, the role of undergoer in that this participant is an incremental theme or theme of motion.

5.1. -t transitives and trajectory/goal objects. We can think of the *motion-actor-undergoer* configuration given above as a lexeme type. Bases of this type (all of which are motion verbs as far as we know) qualify for -t suffixation in that they are intransitive (a single argument in argument structure) and this argument is linked to undergoer, which is typical of -t transitive bases.¹⁰ While we will not formalize a transitive-formation rule here, Diagram 4 provides an approximation of salient aspects of the trajectory -t transitive forms.

Diagram 4. -t Transitive Trajectory

PHONOLOGY	X + t
SUBJ	a
OBJ	b
ARG - ST	⟨a, b⟩
ACTOR	a
UNDERGOER	a
DIRECTION	b

Transitive motion verbs with -t add a directional argument, which we represent simply as 'DIRECTION' here (leaving open whether this is a place-holder for a proto-role or simply part of the thematic/semantic 'soup' which could be covered by entailments derived from the appropriate semantic type). However the specific semantic links are special here, so

we will think of these forms as not being totally predictable. We will assume there is a special *-t* transitive rule which applies to this subset of motion verbs.

5.2. -Stəxʷ transitives and ‘comitative’ objects. Causative *-stəxʷ* normally combines with unergative bases to form morphosyntactic transitives (i.e., verbs which license direct case objects). Motion lexemes of the *actor-undergoer* type above qualify for the causative suffix in that their single argument is linked (inter alia) to actor. Again, we will not formalize a rule, but the derived ‘causative’ verbs will have salient properties along the lines of those in Diagram 5.

Diagram 5. -stəxʷ transitives and comitative objects

PHONOLOGY	X + <i>stəxʷ</i>
SUBJ	a
OBJ	b
ARG - ST	⟨a, b⟩
ACTOR	a
UNDERGOER	a
COMITATIVE	b

Notice that Diagrams 4 and 5 provide accounts incorporating the ‘dual’ properties of such motion verbs. Since their single argument is undergoer, they qualify for *-t* transitivity (albeit in a special way). And since their single argument is actor, they qualify for *-stəxʷ*, again in a special sense.

4.3. -Els antipassives. It is remarkable that antipassive *-els* combines with motion verbs to form words which preserve the meaning relations of the transitive forms. In particular, we do not see the alternation between causative *-stəxʷ* and *-els* in any other verb classes. We argue elsewhere that *-els* combines with bases which are transitive at some level (in argument structure). Since we are not saying that the *motion-actor-undergoer* lexemes have, in fact, transitive argument structures, it is less than obvious why they combine with *-els*.

Let us assume that a lexeme type is formed by the causative in words with feature structures like the one above, one along the following lines.

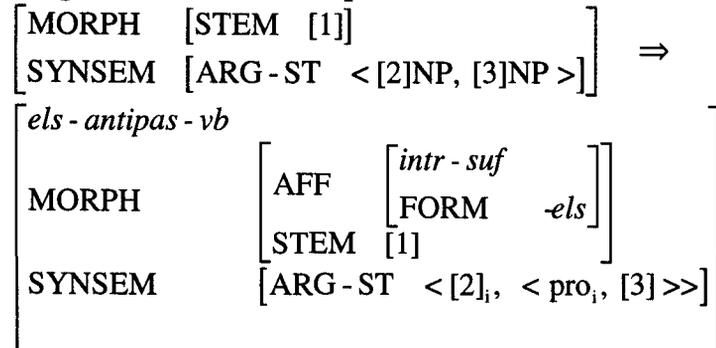
Diagram 6. Input Lexeme for Comitative -els (based on Diagram 5)

<i>comitative – act – und</i>	
ARG - ST	⟨a, b⟩
ACTOR	a
UNDERGOER	a
COMITATIVE	b

This qualifies for combination with *-els* if we assume that it requires a base with a transitive argument structure (Gerds and Hukari 1998, 2000). A highly simplified version of the

antipassive rule is as follows. Notice that 'MORPH' refers to the morphological structure of the word and 'SYNSEM' involves the syntactic and semantic features.

Diagram 7. The -els Antipassive



This is roughly along the lines of antipassivization as proposed by Manning and Sag (1999), in which the first argument (call it the 'a-subject') is promoted to first argument of a complex argument structure. The resulting comitative *-els* verbs then are roughly along the following lines (ignoring the higher-level features such as 'SYNSEM' above).

Diagram 8. Comitative -els.

MORPH	X + <i>els</i>
SUBJ	a
OBJ	∅
OBL	b
ARG-ST	⟨a _i , ⟨pro _i , b⟩⟩
ACTOR	a
UNDERGOER	a
COMITATIVE	b

We assume that direct NP 'matrix' arguments map to subject and object in Halkomelem, while arguments which are embedded (and are not pro) map to obliques.

An obvious question arises concerning comitative causatives. Are they based on Diagram 6 as well? As causatives generally are derived from unergative verbs, we prefer to think that their bases are, in fact, the unergative verb form, thus Diagram 6 is, in effect, a back formation from the causative. The fact that comitative 'causatives' do not have normal causative semantics suggests they are special.

What then do we make of the more regular relationship between *-t* transitives and antipassives? We propose elsewhere (Gerdts and Hukari 2000) that the transitive and antipassive forms are both derived from an abstract lexeme which is 'transitive' in its argument structure. The notion of transitive argument structure needs further examination but

we assume at present that a transitive argument structure is one which has at least two NP arguments within it.¹¹ This, however, is beyond the focus of the present paper.

6 Summary.

We have discussed various classes of Halkomelem motion verbs in this paper, first reviewing the morphological test frames developed in Gerds (1991 and 1996) for classifying unergatives and process unaccusatives. We then turned to various types of motion verbs with a view towards the means by which they introduce objects. Motion unaccusatives generally permit the transitivizer *-t* whereas motion unergatives take the causative *-stəx^w*, following the general patterns for unaccusatives and unergatives. We found however that some motion unergatives permit transitive *-t*, whereby the trajectory becomes the direct object. Also, we found a class of motion unergatives which take *-stəx^w* with a special reading: the object, rather than being a normal causee which would be capable of initiating action, is taken along with the agent, hence we termed these ‘comitative causatives’. Furthermore, a significant number of these also take form antipassives preserving the comitative reading. Our hypothesis is that such motion verb bases map both actor and undergoer to a single argument structure position, hence they qualify for causative formation as their argument structure is ‘intransitive’ and the single argument is linked (inter alia) to the actor role. Our account of the surprising fact that these bases also form antipassives (as unergatives otherwise never do), involves backformation. We suggest that the comitative causative forms a template for a lexeme type whose argument structure is ‘transitive’ and this forms the base for the antipassive. The following table summarizes the verb classes discussed above

Table 11. Summary

	causative <i>-stəx^w</i>	transitive <i>-t</i>	antipassive <i>-els</i>
unergative	adds causer	*	*
unaccusative	*	adds agent	action on notional object
motion unergative	adds causer	*/trajectory	*
motion unaccusative	*	adds agent	action on notional object
comitative motion unergative	adds comitative object	*/trajectory	comitative

Notes

*We would like to thank the various elders who have attempted to teach us Halkomelem over the years, especially Ruby Peter, Theresa Thorne, and the late Arnold Guerin. This research was supported in part by the Jacobs Research Fund and SSHRC (through standard grants and internal grants from Simon Fraser University and the University of Victoria).

¹We use the terms *unergative* and *unaccusative* without any theoretical stand on the issue of unaccusativity as a syntactic phenomenon. The account we develop is more semantic. See Kathol (1991) and Pollard (1994) for an HPSG treatment of German passives employing an ergative feature to single out unaccusative subjects & transitive objects. On that account, couched in current HPSG features, the highest argument of an unaccusative verb would link with the subject feature and the highest argument of an unergative would not.

²Some verbal bases take the allomorph *-š* instead of *-t*.

³The following are the abbreviations used in glosses.

art = article

evid = evidential

asp = aspect (roughly, perfect)

fut = future

aux = auxiliary	l.c.refl = limited control reflexive
ap = antipassive	lnk = linker
cont = continuative (imperfective) aspect	nom = nominalizer
cs = causative	obl = oblique case marker
decid = deciderative	sub = subject
erg = ergative suffix	tr = transitive

⁴The limited control *-nəx^w* overlaps because it functionally corresponds to both transitive *-t* and causative *-stəx^w*. We might conceivably treat it as homophones, but we leave this as an issue for further research. It is, however, a well-known phenomenon in Salish.

⁵An exception is the limited control reflexive *-namət*, whose use as a general limited control suffix meaning 'manage to' is quite productive.

⁶The predicate *sk^wey* 'cannot' takes a nominalized clause in this sentence example.

⁷*k^wis* is short for *k^w-s-ə-s* = art-nom-aux-3pos.

⁸The term 'comitative causative' is probably inappropriate in both respects: We do not think it is a true causative. Also 'comitative' often implies a co-actor, whereas the second participant need not be capable of independent action in this construction.

⁹For a somewhat different perspective on event structure, see Pustejovsky (1986, 1991).

¹⁰A problematic case is inherent antipassives, which we take to have underlying transitive argument structures yet combine with *-t*. This leads perhaps to another view of transitive formation, where the affix combines with lexemes which already have transitive argument structure but this is beyond the focus of the present paper. Note however that we are in fact assuming that antipassives are formed on abstract lexemes with 'transitive' argument structures.

¹¹We only note that, if we follow Manning (1994), it may be possible to have multi-argument argument structures which count as intransitive, as Manning distinguishes between direct and oblique arguments. We leave this as an open issue.

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**Language Planning in the Andes:
A Case Study of the Mapudungun Language of Southern Chile**

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" *Having been silenced for so long, it was forgotten. Silenced at the mercy of a whip, by death, by exile and by family separation.*"¹ This statement which appeared in the May 9, 1997 edition of the Chilean newspaper, *El Mercurio*, served to remind us of all of the indigenous languages of Chile that have become extinct throughout history, and of the rich cultures that died along with them. The article entitled "*La Ultima Palabra de las Lenguas Nativas de Chile*" paid homage to the those who spoke el Chango, Kunza or Atacameño, Diagüita, Selk'nam, Yagan and Chono. The main factor which lead to the eventual extinction of these languages, however, was not solely the cultural imposition and sometimes ruthless political regimes of the Spanish conquerors or the oppressive greed of fortune hunters from abroad, but rather the reduction and eventual disappearance of native speakers. Whereas indigenous cultures were afflicted by religious and political warfare and many natives died from diseases brought over by European settlers, those who survived were often left with the idea that their cultures and languages were of little value.

The colonizers which were to become the Chilean superstrate culture included settlers of Spanish, German and Yugoslav descent. In the 1700's, when tensions decreased and mixed marriages between colonizers and indigenous peoples became more commonplace, children were raised in a diglossic situation with Spanish being considered the language of prestige. This loss of prestige of the native tongue would eventually lead to the reluctance on the part of bilingual parents to teach the indigenous language to their children. It seems clear then, that in order to preserve those indigenous languages which are still spoken in Chile, the native tongue must be passed down to the new generations and the parents of these children need to be provided with a valid reason to do so.

Before one can truly appreciate the unique situation that these languages face, it is important to have a general understanding of the current distribution of languages throughout Chile. Whereas Spanish or *Castellano* is the sole official language of Chile, there are presently four indigenous languages which are spoken in various regions; Aymara, Mapudungun, Kawesqar, and Rapa Nui. The two main indigenous languages are the following: 1) Aymara which has approximately 900 speakers in Chile out of an indigenous population of 20,000 to 33,536 and which is spoken in the Andes of the first region, Tarapacá (Sanchez / "Chile") and 2) Mapudungun which is the language of the Mapuche people. Mapudungun is the Mapuche name for their language whereas 'Araucano' is the name which is most often used in Spanish.² There are an estimated 400,000 speakers in Chile of which 200,000 are active users of the language, and about 40,000 speakers in Argentina. Approximately 85,000 of the Chilean speakers of Mapudungun are literate in Spanish. Nevertheless, the proficiency levels of individuals

speakers who claim fluency have not yet been determined ("Chile"). The Mapuche live in the XIII, XIV and Xth regions of Chile as well as in the Metropolitan region which is comprised of Santiago and its immediate vicinity. According to a 1992 report, forty two percent of the Mapuche people currently live in Santiago, the capital city ("Pueblos Indigenas").

The two minor indigenous languages include Kawesquar and Rapa Nui. Kawesquar, also known as Alacalufe or Halakwulup , has about 20 native speakers of which ten are currently living in Puntas Arenas and Puerto Eden. " The language has its origins on the Isle of Wellington, off the southern coast of Chilean Patagonia. The youngest speakers range from three to twenty years old and are not completely bilingual in Kawesquar and Spanish. Twenty percent of Kawesquar speakers do not speak any Spanish" (qtd. Oscar Aguilera in "Chile"). Rapa Nui or Pascuense is the language of Easter Island. A 1981 survey conducted by Weber reveals that there are approximately 2,200 speakers on Easter Island and another 200-300 on the Chilean mainland. Rapa Nui does not possess a written form and is viewed as a language of the home and of the streets. All of the Pascuenses are bilingual although only 25-50% of those living on the island are literate ("Chile").

Whereas the necessity for language planning and the obstacles related to corpus planning and implementation are very similar in all of the indigenous societies of Chile, a study of the situation of the Mapuche language will yield an accurate picture of what needs to be done in general to ensure the survival of all of the minority languages. As a result, this paper will outline the issues related to language planning in the Mapuche community with the hope of establishing a realistic proposal of steps to take toward language preservation.

Haugen, who first introduced the term language planning in 1959, defined it as , "the activity of preparing a normative orthography, grammar, and dictionary for the guidance of writers and speakers in a non-homogeneous speech community". In 1974, Fishman extended this definition to include, "the organized pursuit of solutions to language problems". The present study will adapt both of these definitions and apply them towards the preservation of indigenous languages.

The two main areas of language planning include status planning and corpus planning/implementation. Status planning refers to the evaluation of the current status of a language as well as attempts to change or maintain the functional roles of that language within a given society. This would include a sociolinguistic assessment of the different language varieties in use, the demographic and functional distribution of these dialects, the existence of an oral vs. a literary tradition, the modes of dissemination and the current attitudes toward the language. Also included in the sociolinguistic assessment would be a classification of the number of native speakers of each generation and proposals for *acquisition planning* (Cooper 1989) or the teaching of the language to new generations.

Once the sociolinguistic status of the language is determined, it is necessary to identify which community needs are being met by the indigenous language while examining possible situations in which this language may not accommodate the needs of

the speaker. At this stage, corpus planning would begin in an attempt to adapt the indigenous language to the needs of an evolving society. In order to accomplish this task, indigenous communities would need to recognize the value of their native language and culture in spite of ongoing pressures to assimilate to the dominant culture. If this cultural reaffirmation occurs, then steps can be taken towards the elaboration of the language including lexical expansion, sociolinguistic extension, the development of additional registers and technological adaptation. Corpus planning may also include the codification of lexical terms, orthography, and syntax, as well as the promotion of a "standard dialect" (not necessarily to the detriment of the others). In many instances of corpus planning, the establishment of a written form of communication is viewed as a possible way of preserving the language although the value of creating such forms will be questioned later. Finally, corpus planning entails an attempt to use the indigenous language in new domains including educational institutions, government and the urban work force.

The linguistic situation of Chile is one in which the imposition of Spanish as the sole official language was used as a means of establishing national unity during times of political and economic instability resulting from the colonization process. As implied by Chiodi and Loncón (1995), the desire for national homogeneity is even reflected in the *Ley Indígena* of September 28, 1993 (Law # 19.253). Whereas this law claims to protect and develop the indigenous cultures and their respective languages, Chiodi and Loncón find that most of the measures proposed are directed towards the development of rural areas and the adaptation and integration of indigenous societies to the mainstream Chilean lifestyle .

In assessing the sociolinguistic status of Mapudugun, one must first understand the present-day dialectical situation of the Mapuche. Although several dialects of Mapudungun are said to exist, many Mapuche claim that the differences between them are very insignificant and limited to a small number of lexical items and slight differences in pronunciation. It would thus be more accurate to refer to the "dialects" as a continuum of features that vary slightly as one travels through the XIII-Xth regions.³ Furthermore, many researchers claim that the Huilliche constitute an indigenous group independent of the Mapuche and speak a language which is related to Mapudungun however barely intelligible with it ("Pueblos Indígenas") . This, however, is not an accurate account of the situation according to Trivero who is married to a Huilliche woman. Trivero explains the situation in the following way:

" The williches (huilliches) are Mapuche subgroup that speaks a dialect of Mapudungun (which is not a separate language) yet there are some differences in pronunciation.⁴ The Huilliche have incorporated many words of Chona⁵ origin into their language. It is true that, in former times, there was once little intelligibility between the northern Mapuche and those of the south but this was only the result of dialectical differences. Today, the Mapuche would be bothered by someone referring to them as Huilliche: According to them there are no

longer such differences and it is the winka (non-Mapuche people) who create this differences to separate them. Personally I feel that there are few differences between the williches of the region of Llanquihue and the Mapuche but there are differences which are more significant if one is to consider the Williche of Chiloé (of which very few are still living) and which can be considered as a kind of mix between the Mapuche and the Chono⁶. In any case, the ancient williche dialect (el Willidungun: that which was not understood by speakers of Mapudungun) is now completely extinct. There are some williche that claim to still speak it but this is not true: they speak a very poor version of Mapudungun, normally repeating formulaic expressions that they are unable to translate literally...(Insofar as the cultural subdivision is concerned,) when the Mapuche want to classify themselves into a subgroup, they use the name of the place where they live and add the suffix -che meaning 'the people of'. (Trivero 11/98)

The Mapuche live in a state of diglossa and all have some knowledge of the Spanish language. Nevertheless the degree of oral proficiency in each language will vary greatly between individuals. According to a 1989 study conducted by Duran and Ramos, the number of Mapuche who speak and/or understand Mapudungun is drastically declining with every new generation. In a study of 45 Mapuche children between the ages of 13 and 17, 24% claimed that they could understand and speak Mapudugun, 22% claimed to only be able to understand it and 54% attested to having very little or no knowledge of the native tongue. These results contrasted quite sharply with those of their parents. Of the fathers, 71.1% claimed to be bilingual in Mapudungun and Spanish whereas 80% of the mothers defined themselves as bilingual. The remaining 28% of the males and 20% of the females claimed to be monolingual in Spanish. Whereas the researchers in question did not ask the subjects to define bilingual and thus failed to establish the precise Mapudungun proficiency levels of the parents and children, it was determined that there was not a single monolingual speaker of Mapudungun amongst the participants. In spite of this fact, many of the parents claimed that one or more of their parents were monolingual Mapudungun speakers. In the words of one of the students questioned, "*a los abuelitos poco se les entiende...mi abuelito me habla en mapuche y yo le contesto en castellano*"⁷ (Duran & Ramos). In fact, 71% of the subjects questioned stated that only Spanish was used within their household whereas 20% used only Mapudungun and 8.8% used both. The situation in which one would be least likely to use Mapudungun in the household, according to the participants, would be in a conversation between two siblings under the age of twenty-five. Duran and Ramos qualify this as being "*una peligrosa tendencia generacional a disminuir drásticamente el uso del mapudungun en la familia*"⁸.

The intergenerational decline in the rate of usage of Mapudungun is one of several problems which threaten the long-term survival of the language. The reluctance on the part of parents to teach the indigenous tongue to their children is closely linked to the lack of prestige attributed to the language. In every Latin American country today, the

indigenous languages have become stigmatized, lessening the degree to which they are used by minority speakers. As the number of Mapuche people who are monolingual in Spanish increases, many Mapuche children are redefining their cultural identity with respect to the majority society. The use of Spanish in Chile has become a symbol of education and social advancement. As explained by a parent in the Duran and Ramos study, "*Algunos progenitores reconocen que conscientemente no enseñaron la lengua a sus hijos porque ellos mismos no la aprendieron de sus padres o porque dificulta el buen aprendizaje del castellano*"⁹.

As the benefits of formal instruction are being recognized within the indigenous communities, children from distant rural areas are filtering into the cities where they are exposed to the dominant culture and speech patterns at an early age. As they grow further away from their roots and become more integrated into the society of the Chilean colonizers, many of those who did have some exposure to the indigenous tongue lose proficiency in their native language. Although the proficient use of Mapudungun is often valued within the Mapuche culture, the language maintains a distinct functional role from that of Spanish in the community and the mixing of both languages may therefore be looked down upon. The blending of cultures has led to a change in the *ad-mapu* or Mapuche vision of the world. This shift, along with the introduction of new ideas into the Mapuche culture have resulted in the borrowing of Spanish words into the Mapuche language. Although Mapudungun possesses a rich lexicon, it cannot express the influx of new concepts introduced by the majority culture.

Nevertheless, the problems posed by the interaction between the two cultures are not limited to the desire to speak Spanish to communicate new ideas or as a symbol of prestige. As stated by Chiodi and Loncon,

"The mobility within the Mapuche society and the contact between cultures has resulted in a kind of linguistic acculturation that exists on many different levels. Whereas indigenous words are continually being introduced into Chilean Spanish, the syntactic, phonological, semantic and lexical qualities of Spanish have had a strong influence on the linguistic evolution of Mapudugun. Spanish is penetrating into Mapudugun...It is important to mention that this acculturation is taking place not only when Mapudugun does not dispose of resources for discourse and its own concepts of occidental culture. We are also witnessing a type of acculturation that one could define as unnecessary, as we are beginning to observe the substitution of existing Mapudugun words by their Spanish equivalents" (32).

Whereas the necessity to coin new terms is crucial to the long-term survival of a language, the borrowing of Spanish words to fill the gaps in Mapudugun is resulting in a relexification of the Mapuche language.

The problem of the continual impoverishment of the Mapudungun lexicon is a growing concern amongst the Mapuche. This phenomenon can be attributed to the

simplification and reduction of terminology on the part of the elders in an attempt to facilitate comprehension. As children are becoming less familiar with the indigenous language, the result is a type of accommodation as elders resort to "caretaker speech" or "foreigner talk" to ensure comprehension. Another cause of lexical impoverishment is the fact that society is advancing at a faster rate than that of the evolution of the language. Whereas the Mapudugun lexicon was once sufficient in addressing all of the communicative needs of the society, recent advancements in technology and science have not been acknowledged by an attempt at lexical elaboration. That is to say, that in order to gain greater prestige in the Chilean society, the Mapuche would need to coin new terms in order to expand the functional capacities of the language and meet the linguistic needs of a society in transition. *"The lack of terminology is astonishing. Concepts that do not have Mapudugun equivalents are, for example, book, notebook, library, curriculum, methodology, and many other terms that pertain to pedagogical language which are indispensable for the entrance of the Mapuche language into educational circles"* (Chiodi and Loncon, 23).

Another important concern for the preservation of the language is the Mapuche reliance on oral tradition in a society where literacy is now held in high esteem. As Mapudugun does not have a literary history, the Mapuche must resort to Spanish for writing purposes. The lack of a standard dialect as the fixed point of reference for orthographic representation and the absence of a modern prescriptive grammar make it difficult for the Mapudugun language to make the transition from oral to written mediums. The Mapuche possess a rich oral tradition in which they preserve the language patterns found in everyday speech. Their teachings are directed towards their friends, families and others within the Mapuche community who they view as sharing their same social status. The transition from speech to writing would imply the creation of formal registers in a society based on equality. This would inevitably call for the division of the Mapuche society into subgroups of dominance and subordination much like the system of social hierarchy found in the dominant Chilean culture. Furthermore, the Mapudugun language does not possess the stylistic variants of the Spanish language which are often considered to be necessary in formal writing, in poetry and in literature.

If the Mapuche were to try to eliminate the oral components of language such as gestures and facial expressions in order to establish a written form, the cultural content of the message would be lost or not adequately expressed as these are essential features of the language. As expressed by Chiodi and Loncon, *"in the Mapuche society, communication and culture are by definition interactive. Every form of communication must inevitably involve a relationship of social interaction"* (21). Whereas writing in general is also an interactive task involving the negotiation of meaning between the writer and the reader, the Mapuche would argue that such a form of communication would encourage individualism and separatism within the culture. Whereas a writer will very often take his audience into consideration, this act does not constitute an obligatory step in the composition process. The distance created by such impersonal forms of communication would conflict with the Mapuche ideology. This concept of social

distancing in writing and the lack of a fixed orthography have resulted in the absence of written forms of Mapudungun media such as magazines or newspapers. Nevertheless, the Internet has recently become a forum for the discussion of Mapuche social concerns expressed in Spanish. The use of the Spanish language corresponds to the necessity for the Mapuche to reach a wide audience in order to adequately address the social conflicts that threaten their very existence. This use of written Spanish, oddly enough, does not seem to conflict with the fear of individualism in writing, maybe because it constitutes conversation outside of the nuclear family or community and is thus, impersonal by nature. Insofar as radio and television are concerned, I am not aware of any Mapuche television programs in the native language although a bilingual radio station, *La Angelina*, does exist in the Mapuche community. The Mapuche radio station aims at teaching Mapuche history while providing educational programs about the culture, folklore and trades of the Mapuche. The radio station will also convey daily news concerning issues related to economics, politics and the environment. In a 1994 article written by Calquilpan and Marileo about Mapuche radio, there was no mention of the broadcasting of music of any kind.

With the above knowledge of the current status of Mapudungun, we are brought to the question of corpus planning. In order to preserve and protect the Mapudungun language, the Chilean government would need to abide by the Indigenous Law of 1993. This law was designed by representatives of the various indigenous populations of Chile in accordance with government officials at the national level. It is upheld by the Corporación Nacional de Desarrollo Indígena (CONADI), a government agency which focuses on concerns of the indigenous communities while making politicians aware of any new legal proposition that might be in violation of the indigenous law.. According to this law, any proposition made by the Chilean government must not disrespect or contradict any of the following criteria (which are often very loosely defined) :

The Indigenous Law

Article 28 - The recognition, respect and protection of the indigenous cultures and languages must include the following:

- a) The use and conservation of the indigenous languages alongside Spanish*
- b) The establishment of a national educational system containing programs that give students the possibility to gain knowledge of the indigenous languages and cultures and which teaches them their value.*
- c) The diffusion of radio broadcasts and television channels in the native language in regions with high indigenous populations.*
- d) The establishment and promotion of courses on indigenous culture, history and languages in the universities.*
- e) the obligation of the civil registry to note the names and family names of indigenous people according to the orthography invented by their ancestors and according to the rules of phonetic transcription that they dictate.*
- f) The protection of the fatherland, its architecture and its archeology.*

In order to accomplish the above, the law indicates that the CONADI must work together with the Ministry of Education.

Article 32 - Indigenous Education :

The corporation, in the areas of high indigenous density and in coordination with the corresponding services and organisms of the state, will develop an intercultural bilingual system of education with the aim of preparing indigenous students to succeed in both their society of origin as well as in the global market (word for word translation of "La ley indigena" 1998).

The minutes of the National Mapuche Conference held in Temuco in November of 1997 provide some elaboration of the above concepts. For example, the meeting focused on issues such as "the invasion of foreign ideologies" which is said to have resulted in the recent recognition of the value and ideas of their own culture. The minutes also reflect strong opposition to megaprojects which threaten to uproot indigenous communities in the name of progress and expansion thus violating several sections of the indigenous law including article 28 above.

Whereas these initial attempts at linguistic and cultural preservation seem fairly straightforward, the problem lies in the fact that the indigenous communities have very little direct legislative power in spite of their political representation via CONADI. As a result, the opposition of the CONADI to issues violating the indigenous law is frequently disregarded or overturned at higher levels of jurisdiction. It is for this very reason that Mauricio Huenchulaf Cayuqueo, former director of the CONADI, stepped down from his position in 1997. He explained his actions in a letter posted in a Mapuche Internet forum (and written in Spanish), which began with the phrase, " This web site is here to break the informational censure imposed by the economic powers and bring to light the truth about the attitude of the Chilean government. Marri Chiwen!!!"¹⁰. He goes on to explain that the CONADI is seen by the Mapuche as a means to negotiate issues of importance in their community and bring about negotiation, although many government officials and politicians see it as a symbol of weakness. He also clarifies that *"the CONADI is not a forum through which the Chilean government can impose viewpoints and decisions already finalized, masked as participative negotiations"* while stating that this classification neither corresponds to his democratic position nor his desire for intercultural relations as a principle of life.

The consequence of this disregard for the indigenous law is the destruction or transformation of territorial land and the risk of cultural diaspora of the Mapuche nation. This conflict lies at the heart of the fight to preserve the Mapudungun language as linguistic survival is dependent upon the protection of the indigenous communities in which the language is spoken. This concern is conveyed in the minutes of the Mapuche National Conference of 1997 in which a representative made the following statements, *" Estamos empeñados igual que todos en el desarrollo del país, pero esto no debe ser a costa del territorio y la cultura mapuche, porque la marginalidad, la postergación económica, la discriminación que estigmatiza,...atentan directamente contra nuestra*

supervivencia e identidad...La tenencia de la tierra es la base del pueblo mapuche, como asimismo el uso de las aguas de los rios, de los lagos y del mar. Aun cuando la mitad de la población está en zonas urbanas la referencia ideológica cultural es la tierra y el territorio mapuche ancestral^{m1} ("Congreso"). In fact, the word 'Mapuche' itself means 'people of the land' and it is from these roots that their culture must flourish.

One of the megaprojects currently threatening the Mapuche community is the construction of a second hydroelectrical plant in the Alto Bio Bio region of Mapuche territory. This project is to be carried out by the ENDESA¹² and would involve the flooding of 3,467 hectares of territorial land including 14 cemeteries, various sacred sites and over 70 archeological sites (Bustos 1-6). It would also demand the relocation of 91 families, all of which use Mapudungun as their principle language ("Ralco"). The fact that such an endeavor would violate Articles 13 and 28 of the Indigenous law did not stop the construction from getting underway. The Mapuche themselves did not immediately react to the threat to their land due to the enticing negotiations between Endesa and the Mapuche which lured many natives in with propositions which, at first glance, seemed very beneficial to their people. According to Bustos, *"their first reaction (to the building of the power plant) was distress, then came the amazement. The amazement concerning the unexpected benefits that the company was to offer them in exchange for their land"* (screen 3). In an area where the deceased and the mother-earth are honored in ceremonies and where few homes have electricity or other basic amenities, Bustos explains that the 'bribes' included new homes, clean water, electricity, animal, stables, roads, bridges and schools. Aid and training in order to increase their productivity, subventions, a program of cultural development, medical care, and funding for the translation of texts into Mapudungun in order to facilitate bilingual education were all part of the package. Nevertheless, Trivero, who lived for many years in the Mapuche community, brings up the point that these methods of persuasion were not only used to take away ancestral land but also to promote the governmental idea of Chile as a country with one unified culture. As he stated in an on-line interview, *"los gobiernos chilenos siempre han sido empeñados en acabar con la identidad mapuche que consideran una amenaza para la unidad e integridad de la nación chilena. Lo estan logrando con la presión económica y quitando a las comunidades sus tierras: su situación obliga a los mapuches a emigrar hacia otros pueblos y ciudades, donde se mezclan rapidamente con los huincas asimilandose a ellos (ahuincandose) y así desapareciendo como pueblo. Es el etnocidio que persigue la nación chilena desde su nacimiento*^{m13}.

By the end of July of 1998, 83 of the families had accepted the offer (Bustos). Although all of the families needed to approve in order for the project to be underway, the building of the plant began without the consent of the CONADI. In August 1998, seven Mapuche held a hunger strike in order to pressure the CONADI to stand up to the Chilean government and impede the construction of the second power plant, Ralco. The manifestation was only temporarily successful. Nevertheless, the initiation of the construction of Ralco has served as a wake-up call to the Mapuche community who is now beginning to realize the true threat to their identity. In an on-line interview, Trivero

added the following observation, "*Hay algunas instituciones que se dedican a la preservación del idioma y de la cultura Mapuche pero tienen escaso apoyo también por parte de la misma comunidad mapuche que está casi totalmente dedicada al problema de la defensa y recupero de sus tierras, dejando en segundo lugar la preservación de su propia cultura*".¹⁴

Before the Mapuche can hope that others will uphold the indigenous law, they will need to reaffirm the value of their own heritage. In a land where the effects of racism are often felt, this valorization process can only be achieved through education aimed at increasing cultural awareness. The Mapuche community, (and ideally the Chilean government) will need to establish educational programs at all levels of instruction which would focus on the history, culture, folklore, and language of the Mapuche people. Only education and knowledge can help to reduce discrimination, and the Mapuche will not feel the need to pass their language and culture on to their children until they recognize its intrinsic value. It is important to remember that negative attitudes towards an indigenous culture can also stem from within the native community and thus must be addressed at both the micro and macro levels. This brings us to our next question.

Would understanding the wealth of one's cultural heritage be enough to preserve an indigenous language? The answer is "no". A living language can only survive if there are situations in which it can be used. That is to say, that the language cannot only be adequate for the expression of concepts of the past, but must also convey ideas of the future. If language shifts occur regularly due to a lack of appropriate vocabulary, then children and parents alike will tend to opt for the more efficient language. This implies the need for coining new terms.

Mapudungun, like all of the indigenous languages of Chile, is by nature agglutinating. New terms should be coined based on concepts and structures already found within the Mapuche language to avoid the relexification resulting from words borrowed from Spanish. The process of agglutination could help to create compounds based on pre-existing words. Another means of coining lexical terms could be via derivation in which case Mapuche words could be expanded to cover various syntactic categories (eg. a noun being made into an adjective or a verb). The combination of these two techniques for lexical expansion would increase the overall utility of the language by making it apt for communication in new domains such as science and technology. Terms would need to include concepts in any domain relating to the Chilean majority culture as this would greatly reduce the risk of relying on language transfer in speaking of issues not directly related to the Mapuche. According to the indigenous law, a language academy is to be established within the Mapuche territory to address the issue of word coinage and language standardization. Although there are presently several cultural institutions concerned with language-related issues, the language academy itself has not yet been set up.

The lexical expansion which would make it possible to use Mapudungun in the schools and in the workplace would, in theory, need to be accompanied by the establishment of a written form of communication. Nevertheless, the benefits in creating

a written form of the language remain questionable as doing so would violate the traditional ideology of the Mapuche. As previously mentioned, many Mapuche people have already migrated to the cities and use Spanish in all formal situations as well as for writing purposes. Although the use of Mapudungun in writing would constitute a large sacrifice, most Mapuche seem to understand that such an adaptation is inevitable at this point. If they do not establish a written form of the language as the society around them continues to advance, the functional utility of their language will continue to decline, possibly leading to language death. As stated by Trivero, "*I feel that it is very important to secure a clear and unified written form of Mapudungun but it may be too late. The culture has become more Spanish mainly due to the lack of a written tradition as a point of reference.*"

Although many different alphabets have been proposed, there has not yet been much analysis as to which one most accurately represents Mapudungun phonetics. Furthermore, there has been virtually no effort to teach any given orthography to the Mapuche community. In the absence of the proposed Academy, the Nhewenh Mapuche alphabet of 1975 has become the most widely accepted. Other alphabets include the Augusta system by Felix Jose de Augusta and Ernesto Wilhelm de Moesbach, The UniLing proposal of 1986 by Robert Croese, A. Salas and Maria Catrileo, the 1986 Rangileo alphabet proposed by a man of the same name and the Aflayay Mapuche alphabet of 1993 by the Folil Che Alfayay group (Arnold and Puschman 1998). Although various dictionaries and grammar books have been published using the different alphabets, these have proved more beneficial to researchers and others outside of the Mapuche community than to the Mapuche themselves, according to De Pierris. The choice of a given dialect of Mapudungun has not, however, been a source of conflict as only very minor differences can be observed between regions. De Pierris takes the concept of dialects one step further by stating that, "*there isn't exactly a proliferation of dialects but rather a proliferation of non-Mapuche interpreting and spelling things differently giving the appearance of dialects*". Jennifer Arnold of Stanford University responded to De Pierris' comment by adding that, although his statement is true, "*there are also real dialects in the linguistic sense of the word*". Trivero added the following:

" No me resulta que al momento se haya definido algun dialecto como expresion del "verdadero" Mapudungun, ni me parece posible que se haga en el futuro. En los últimos tiempos han aparecido numerosos diccionarios y la falta de la identificación de un dialecto de referencia contribuye a crear confusion y proliferación de terminos: pero produce mucho más inconvenientes (y muy graves) la falta de reglas precisas sobre la trascripción de los sonidos mapudungun, así que se suman las dos cosas: las variantes dialectales y las variantes de transcripción" ¹⁵ (email 11/98).

Another drawback to creating a standard alphabet is the influence that such a written system could have on the spoken vernacular. It is not practical to assume that the speech of children learning a written form of Mapudungun in school will not be affected by the learning of the written language. As children study the artificial prescriptive forms of the written language in school, their lack of exposure to the language outside of the classroom lends itself to the desire to use those same forms in speech. In doing so, children may often be poorly understood by their elders and vice-versa; a situation which leads to a decline in the use of the natural language.

This is the situation that occurred in Ecuador with the introduction of Unified Quichua (King 1999). Nevertheless, the sacrifices of language change and standardization may be inevitable outcomes of preservation strategies. As such, the codification of the language may constitute a necessary stepping stone.

As few Mapuche have insisted on the use of their specific 'dialect', once the Academy is established, they may not encounter strong opposition in choosing the most efficient orthography and promoting it with the help of teachers in the schools. It is only through the establishment of an academy that the Mapuche could begin to address the questions of lexical, grammatical and orthographic codification. Once a given alphabet is officially adopted, it will be the responsibility of the national board of education to initiate the production of a corpus of texts written in the native language. Although some texts have already been published in Mapudungun, they have been produced mainly by researchers who chose from one of the above alphabets. As a result, they would only be comprehensible to a very small portion of the community.

The creation of written materials should not be limited to accounts of Mapuche history and culture and fiction in the native language, but should also include basic texts needed for teaching courses in all areas of study including basic science and technology curriculums. This would permit schools to not only teach the Mapudungun language itself, but also to teach IN the language, once again increasing its overall utility within the society. Such a proposition would only be successful if accompanied by the establishment of bilingual teacher training programs at the university level. Such programs would not only need to address issues of second language acquisition and teaching in general, but rather should include language courses in Mapudungun as well as courses in indigenous culture and history. To my knowledge, such programs have already been implemented in the Xth region at the Universidad de la Frontera¹⁶ and the Universidad Catolica de Temuco¹⁷ as options within the pedagogy departments.

The establishment of materials in Mapudungun could later be expanded to areas such as the creation of a Mapuche newspaper or magazines. Although financial support to produce such texts was offered by Endesa, the diaspora of the Mapuche people would conflict with the production of materials as a unifying force. It is also important to mention that the development of such documents would imply the creation of formal registers by the Academy which may continue to be a controversial issue for some Mapuche people.

Although bilingual education programs currently exist in Araucania¹⁸, they are often limited to language classes restricted to oral communication. In the Loncon and Rain study, the researchers described one such program in which 90% of the students were Mapuche and 10% non-Mapuche. 60% of the students had Mapudungun as their first language and had some knowledge of Spanish, and 40% were monolingual in Spanish. The activities were designed in a way which led the students to teach one another the language in which they were the most proficient. This would include sample dialogues in a given language which would inductively teach various expressions to speakers of the other language.¹⁹ In order for the Mapuche language to be preserved, however, Mapudungun should also be incorporated into language programs for non-native Mapuche where it could be one of several electives at universities throughout the country (as is the case of the two existing pedagogy programs). Nevertheless, it would be unrealistic to propose that Mapudungun be incorporated into the primary or secondary school curriculums outside of the Mapuche community due to the low prestige attributed to the language at the present time.

Finally, Trivero, who was born and raised in Italy but later married a Mapuche woman and moved to Araucania, made an intriguing proposition for language preservation. He compared the current situation in Chile with issues of language planning in his home country and proposed the following solution:

" ...Tiene poca utilidad aprender un idioma cuando en la vida cotidiana nadie lo entiende: la unica forma para preservar el mapudungun es impedir que dentro de dos generaciones desaparezca totalmente sería imponer obligatoriamente el uso del bilingüismo en una región geográfica (imponiendo el conocimiento de los dos idiomas a todos los empleados públicos y extendiendo su empleo en las escuelas, hasta las universidades y en las oficinas publicas) (e-mail 11/98).

Trivero explains that this is what was done in Italy in regions populated by important linguistic minorities (Valee d'Aoste, Sud-Tirol), where the knowledge of both languages was necessary in order to get a public job and where there is no longer the threat of losing the indigenous cultures. He draws a parallel with the situation of certain dialects of Greek origin in small towns of the south of Italy which can be traced back to the ancient world and which have come to be used as administrative languages and thus, are no longer being lost.

In conclusion, the preservation of the Mapudungun language would require the recognition of its cultural worth on the part of the Mapuche. Those people that remain on ancestral land will also need to be made aware of the consequences of accepting governmental compensation for leaving their territory. Until the Mapuche are made aware of the benefits of teaching Mapudungun to their children, the language increasingly faces the threat of extinction with every new generation. The bilingual Mapuche people will not speak Mapudungun in their homes or opt to teach it to their children until they fully

understand the value of their culture and until the utility of the language is recognized by way of lexical expansion and its introduction into the workplace and government. The spreading of the language to cover new domains would reduce the necessity for regular language shift while reinforcing a new sense of worth attributed to the language.

On the other hand, some would say that attempts should be made to preserve the language rather than reform it. That is to say that any attempt to change the language in a way that conflicts with cultural ideologies fails to acknowledge the interdependency of language and culture. As a result, it would seem that preservation may inevitably involve adaptation and change via language planning. Nevertheless, language planning issues will continue to be the secondary priority of the Mapuche nation, whereas keeping the culture intact will need to be their primary focus, for the language would have little significance in the absence of the tradition and ideology expressed by it.

Notes

¹De tanto callar, se olvidó. Callar a punta de latigazos o muerte, de destierro y separación de familias.

² Trivero stated in his interview that, “ the term Araucano is absolutely improper and should never be used. It is not a synonym of Mapuche (or Mapudungun) nor does it refer to a subgroup within the Mapuche”. Nevertheless, the term Araucano continues to be the most widespread word in Spanish when referring to the Mapuche language.

³ The variation between the Mapudungun spoken in various areas has resulted in the coining of 'dialect' names such as Moluche (Ngoluche, Manzanero), Picinche and Pehuenche. These 'dialects', which are all mutually intelligible, are more closely associated with various Mapuche subgroups than with unique linguistic features. In fact, in certain instances the differences between two dialects may be no greater than the variation between the idiolects of speakers within a given region.

⁴ For example: they often pronounce “v” in place of “f”, “ch” in place of “t”, and sometimes the opposite, “u” in place of “i”. (Trivero 1998)

⁵ An ancient (now extinct) language of the canals of Chilean Patagonia and Chiloé.

⁶ " Even their physical appearance is very different and they have traditions and myths which are only partly shared by the Mapuche". (Trivero 1998)

⁷ Our grandparents are understood very little... My grandfather speaks to me in Mapuche and I answer him in Spanish.

⁸ A dangerous generational tendency to drastically diminish the use of Mapudungun amongst family members.

⁹Some parents are aware of the fact that they intentionally did not teach the (Mapuche) language to their children because their own parents didn't teach it to them or because, " it makes the proper learning of Spanish more difficult ".

¹⁰ We will defend our land !!! (in Mapudungun)

¹¹ "We are, just like everyone else, involved in the development of the country but this should not be at the expense of the Mapuche territory and culture because the marginality, our economic situation, the discrimination that stigmatizes, all directly threaten our survival and identity... The steadfastness to the land is the foundation of the Mapuche people, just as is the use of the water of the rivers of the lakes and of the sea. Even when half of the population is in urban zones the ideological cultural reference is the land and the ancestral Mapuche territory.

¹² ENDESA= la empresa nacional de electricidad sociedad anónima

(the national electricity firm, privatized in 1989, and currently controlling 60% of the Chilean electricity market.). Endesa has plans for building a total of seven hydroelectric centers in Bio Bio, the first of which has already been built (Pangué). Ralco would be the second. (Bustos)

¹³ " The Chilean governments have always wanted to put an end to the Mapuche identity which they consider to be a threat to the unity and integrality of the Chilean nation. They are achieving this with economic pressure and the acquisition of indigenous land" these factors oblige the Mapuche to emigrate to the towns and cities where they rapidly mix in, assimilating to them (becoming like the Spaniards) and thus, disappearing as a people. It is the ETHNOCIDE that has been present in the Chilean nation since the time of its birth.

¹⁴ " There are some institutions that are dedicated to the preservation of the Mapuche language and culture but they have very little support even within the Mapuche community due to the fact that they (the Mapuche) are almost totally dedicated to the problem of the defense and restitution of their lands, leaving the preservation of their culture as their second priority.

¹⁵ " it doesn't seem at this time that one given dialect has been defined as the expression of true Mapudungun, nor does it seem possible that this will be done in the future. Numerous dictionaries have appeared recently and the lack of the identification of a dialect of reference contributes to the creation of confusion and the proliferation of terms; but the lack of precise rules of transcription of the Mapudungun sounds has proven to be even more inconvenient

(and serious) insofar as it is comprised of two issues: dialectal variants and variants of transcription.

¹⁶ The department is composed of twenty teachers (some of which are Mapuche) with various areas of expertise including education, anthropology, history, law, agronomy health, and social work. This curriculum is much less pedagogy oriented than the Universidad Católica program and focuses more on issues of the Mapuche community.

¹⁷ La Carrera de Pedagogía Básica con mención en Educación Intercultural (The Elementary Pedagogy Curriculum with a specialty in Intercultural Education).

¹⁸ According to Trivero, "the programs of intercultural teaching are limited to eight schools within the VIII region, one in the IXth region, and one in the Xth: These last two are on Huilliche territory where the use of Mapudungun is already lost".

¹⁹The example given in the article was that of one Mapuche student saying "Iney pigeymi am?" and the other answering, "Ince ta Jorge pigen" which was perfectly understood as being an inquiry as to the name of the second participant. They were in turn able to replicate these conversations.

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Switch-Reference and Direct Quotation in Zuni¹

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1. Introduction

In this paper, I provide an analysis of switch-reference in Zuni, taking into account the interaction of switch-reference and direct quotation in this language. The analysis I propose differs from Lynn Nichols' account (Nichols 1990) in several ways and I point out precisely how they differ and the merits my account has over hers. While there is an extensive literature on switch-reference (SR), surprisingly little has been written on its behaviour in the environment of direct quotation (DQ). Nichols' paper is an important contribution in that it directly addresses the interaction of SR and DQ. I show that the facts of Zuni support the view that switch-reference operates at the level of semantic-pragmatic information and cannot be adequately characterized in purely syntactic terms. This is because the choice of switch-reference suffix before a direct quotation depends on the understood speaker of that direct quote. A second goal of my paper is to point out the relevance and the significance of the interaction of SR and DQ to the question of whether SR is a syntactic device (switch or continuation of the referent of the syntactic subject) or a semantic/pragmatic device (switch or continuation of a prominent semantic/pragmatic referent).

The paper is organized as follows. In section 2, I give a brief overview of switch-reference, followed by a description of the facts in Zuni. What I am calling "facts" are observations of switch-reference marking in the Zuni stories collected and transcribed by the anthropologist Ruth Bunzel in 1926 (Bunzel 1933; Bunzel 1934). To analyze these stories, I have made use of two Zuni grammars (Bunzel 1934; Newman 1965) and a Zuni dictionary (Newman 1958). In section 3, I summarize Nichols' account, which in essence amounts to this: "SR marking of the frame verb... preceding the quote skips over the quoted material and references the subject of the frame verb that follows the quote" (Nichols 1990:95). I then contrast this with my analysis in section 4, arguing that switch-reference marking before a direct quote references the entity to whom the quote is attributed. I summarize the main points of the paper in section 5.

2. Switch-Reference and Zuni

'Switch-reference' is the name William Jacobsen gave to a reference tracking device he found in three languages of the Hokan-Coahuiltecan group — Tonkawa (central Texas), Kashaya (west central California), and Washo (east central California and Nevada). Jacobsen defined switch-reference as follows: "It consists simply in the fact that a switch in subject or agent... is *obligatorily* indicated in certain situations by a morpheme, usually

suffixed, which may or may not carry other meanings in addition” (Jacobsen 1967:240, original emphasis). Haiman and Munro (1983), in their introduction to a collection of papers documenting switch-reference in many typologically diverse languages, characterize “canonical” switch-reference as “an inflectional category of the verb, which indicates whether or not its subject is identical with the subject of some other verb. . . . Functionally, switch-reference is a device for referential tracking” (Haiman and Munro 1983:ix).

With respect to Papuan languages, Roberts (1988) posed the question: Is switch-reference a syntactic or semantic/pragmatic device? This question is central in three formal accounts of switch-reference:

- Syntactic view — Finer (1984) proposed that switch-reference markers occupy the COMP node and argued that Same Subject (SS) is an A-bar anaphor, Different Subject (DS) is an A-bar pronominal, and Aounian Theory of Generalized Binding applies.
- Semantic view — Tsujimura (1987) and Stirling (1988, 1993) both criticized Finer’s purely syntactic account and argued that SR is best analyzed as agreement (SS) or disagreement (DS) between clauses, i.e., “parameters of the ‘eventualities’ described by the clauses” (Stirling 1993:1–2).

Scancarrelli (1989) and Mithun (1993) argue that SR markers indicate continuity and discontinuity in conversation and narrative, a view in line with Tsujimura’s and Stirling’s. The idea that SR just indicates whether or not the subject of the marked clause is coreferent with the following clause is an effect of looking only at elicited sentences (Mithun 1993).

2.1 Canonical Switch-Reference in Zuni

Zuni is a North American indigenous language spoken in western New Mexico by several thousand Zuni people. Newman (1964) suggested a genetic relation between Zuni and California Penutian, but Zuni is generally listed (e.g., in Mithun 1999) as a language isolate. A recent controversial book argues that Zuni is related to Japanese (Davis 2000).

In Zuni, we find a pair of subordinating suffixes: *-nan* ~ *-n*, which forms a participial verb with the same subject as the following clause, and *-[?]appa* ~ *-appa* ~ *-ppa* ~ *-p*, which forms a participial with a different subject from that of the following clause. The effect these suffixes have on meaning is illustrated in (1).

- (1) a. ?ito-nan ?a-kä
eat-SS go-PAST²

'After eating, he went.'
- b. ?ito-p ?a-kä
eat-DS go-PAST

'After he_i ate, he_j went.'

(Newman, 1958:110, 114)

In (1a), the same subject marker, *-nan*, simultaneously marks the clause as subordinate to the following one and indicates that the subject of the subordinate clause (the eater) continues as the subject of the next clause the goer). In (1b), on the other hand, the verbal suffix *-p*, a reduced form of *-?appa*, marks the clause as subordinate and that the referent of the subject is switched in the next clause. We can infer that the subjects in these sentences are third person singular because (i) Zuni lacks third person subject pronouns in the singular and plural (though it has one in the dual) and (ii) plural subjects are indicated by verbal affixes such as *-nap-* (e.g., *?ito-nap-kä* 'they ate'), *te-* (e.g., *te-čune-kä* 'they stopped'), and *?a-w-* (e.g., *?a-w-i-kä* 'they came'). The pronoun paradigm is given in (2) below to assist with the examples used in the rest of the paper. Note that Zuni does not have third person subject pronouns in the the singular and plural and that the third person singular and plural object pronouns (in square brackets) are used for emphasis and are generally omitted (Newman 1965:50). Reduced, utterance-medial forms are in parentheses.

(2) Zuni Pronoun Paradigm

Person	Number	Subject	Object
1st	Sg	ho [?] o (ho [?])	hom
	Du/Pl	ho [?] no (hon)	ho [?] na [?] (ho [?] n)
2nd	Sg	to [?] o (to [?])	tom
	Du/Pl	to [?] no (ton)	to [?] na [?] (to [?] n)
3rd	Sg	—	[[?] an]
	Du	?a [?] či (?a [?] č)	?a [?] čiya [?] (?a [?] č)
	Pl	—	[[?] a [?] wan]

Additional examples of the canonical switch-reference pattern are given in (3) and (4). In (3), Crow is the one who stands up and the one who sits down, and consequently we find the SS-affix on the verb of the subordinate (first) clause. In (4), the first clause contains a second person subject pronoun and the second clause contains a first person subject pronoun; the DS-affix on the verb in the first clause marks this change of subject.

- (3) k^w?alaš ?elemak-nan les hoł tey-?an ?i·mu-kä
Crow stand-SS this somewhere be-LOC sit.down-PAST

‘Crow, getting up, sat down some distance from where he had been before.’

(Newman, 1965:37)

- (4) kwa? hom ?an to? tena-·-na?ma-p
NEG 1.SG.OBJ INDIR 2.SG.SUBJ be.music-CAUS-NEG-DS

tom ho? ?utte-nna
2.SG.OBJ 1.SG.SUBJ bite-FUT

‘If you don’t sing for me, I will bite you.’³

(Newman, 1965:53)

2.2 Plurality and Inclusive Reference

Jacobsen noted that for Washo “A change between singular and plural subjects, when the singular referent is included in those referred to by the plural, is ordinarily not signaled as a switch” (Jacobsen, 1967:244). Stirling (1993) discusses plurality and switch-reference in detail. Cross-linguistically, all three situations schematized in (5) can appear with SS or DS marking, the choice being language-dependent (Stirling 1993:34–39). In the schemata in (5), NP_m stands for the relevant NP (generally, the subject or agent) in the marked clause where the marked clause is the one bearing the SS or DS marker; NP_c stands for the relevant NP in the controlling clause where the controlling clause can be independent and can be inflected for tense, unless it too is marked for switch-reference with respect to another controlling clause.

- (5) a. NP_m properly includes NP_c; e.g. {a, b, c} ⊃ {a}
b. NP_m is properly included in NP_c; e.g. {a, b} ⊂ {a, b, c}
c. NP_m and NP_c intersect; e.g. {a, b, c} ∩ {b, c, d}

(From Stirling, 1993:35)

In Zuni, SS marking appears when the situation is as in (5a) — as in, for example, (6). DS marking appears when the situation is as in (5b), as illustrated in (7) and (8). I have not found Zuni examples corresponding to (5c).

- (6) ?a'či te?či-nan ?a'či kwato-kä ?a'či kwato-nan
 they.DU arrive-SS they.DU enter-PAST they.DU enter-SS

pi'łašiwān' leskwa-nan hom ?a'-tačču hom ?a'-citta
 bow.priest this.say-SS my PL-father my PL-mother

'They_{i,j} came there(-SS) and entered. As they_{i,j} entered(-SS) the bow priest;
 said(-SS), "My fathers, my mothers,..."'

(From: Deer Youth, Bunzel, 1933:103, line 5)

The two entered → The priest said
 {i, j} → {i}: same subject subordinator

- (7) ?i'to-nan te-čune-nan ?an tačču ?ana woppun
 eat-SS PL.SUBJ-stop-SS her father tobacco bag

?ah-nan še-tih-nan ?i'mu-p ?a'či pokti-kä
 take-SS corn.husk-??-SS sit.down-DS they.DU smoke-PAST

'When they_{i,j,...} were finished eating(-SS), her father_i took(-SS) his sack of tobacco,
 and corn husks and sat down(-DS), and the two_{i,j} smoked.'

(From: Wife of Ahaiyute, Bunzel, 1933:125, line 59)

Her father sat down → The two smoked
 {i} → {i, j}: different subject subordinator

- (8) cawak ?elemaku-p yam set-i'k-ona ?i-woppona-?u
 young.man stand.up-DS REFL.POSS carry-??-that.which REFL-have.them-CAUS

le?kwa-p ?a'či kwato-nan si? wanani
 thus.say-DS 3.DU.SUBJ enter-SS now wait

'The boy_i arose(-DS). "Take along that which you brought with you."
 She_j said(-DS). They_{i,j} entered(-SS). "Now wait...'

(From: Wife of Ahaiyute, Bunzel, 1933:126, line 69)

She said → They entered
 {i} → {i, j}: different subject subordinator

Inclusive reference is relevant for some of the examples in the next sections where a shift from a plural referent to an included singular referent is accompanied by SS marking on

the verb in the preceding subordinate clause. In particular, I return to the example in (8) in comparing my proposal with Nichols' account.

2.3 Switch-Reference and Direct Quotation

Nichols pointed out the unexpected SR marking in the environment of direct quotation. For example, in (9) the third person dual subject of the verb of saying at the start of the example differs from the subject in the following clause (i.e., the direct quote), but the same subject subordinating suffix appears on *leskwa* 'this say'.

(9) ?a'či leskwa-nan hom ?a'-taču hom ča-we ko' t'on la'k'atik'ä-nap-kä
 they.DU this.say-SS my PL-father my child-PL how you.SUBJ ??-PL.SUBJ-PAST

?a'či le?kwa-p k'et'sanici... ?a'čia le?-an-ik'ä-p
 3.DU.SUBJ thus.say-DS happily... they.DU thus-INDIR-??-DS

'They_{i,j} said, "My fathers, my children, how have you passed this time?"
 they_{i,j} said. "Happily..." Thus they_{k,l,...} said to them_{i,j}.'

(From: The Lame and the Blind, Bunzel, 1933:163, line 17)

Nichols also pointed out that direct quotations are often "framed" between forms derived from the verb meaning 'say', as represented in (10):

(10) les-ikwa-nan "DQ" le?-ikwa-nan/-p/-kä/etc.
 this-say-SS "DQ" thus-say-SS/-DS/-PAST/etc.

The example in (9) is one in which both frame verbs are present. In (11) the frame-final verb is missing, in (12) the frame-initial verb is missing, and both frame verbs are missing in (13).

(11) ?isk'on i'to-na-p'e'en te-čune-nan yam cit
 near.addressee eat-PL.SUBJ-?? PL.SUBJ-stop-SS REFL.POSS mother

?a'či les-an-ikwa-nan tepiš-a ?a'čia cita tepiš-kä
 2.DU.SUBJ this-INDIR-say-SS sweep-IMPER 2.DU.POSS mother sweep-PAST

'When they had finished eating they said to their mother, "Sweep." Their mother swept.'

(From: Wife of Ahaiyute, Bunzel:135, line 58)

- (12) ?a'či šo-waš-nan wan ho' yam nana
 3.DU.SUBJ arrow-make-SS wait 1.SG.SUBJ REFL.POSS grandfather
 sewuʔan hakä-ttu ?an suwe le?kwa-nan kwai'i-kä
 ?? request-PERM his younger.brother thus.say-SS emerge-PAST

'When they_{i,j} had made their arrows, "Wait. I will send grandfather to take the message." Thus the younger_i said and went out.'

(From: The Lame and the Blind, Bunzel, 1933:143, line 22)

- (13) cawaḵ kwato-nan hom ?a'-taču hom a'-tsita hom ča-we
 young.man enter-SS my PL-father my PL-mother my child-PL
 ko'na t'on t'ewanan ?a'-tea-iye k'etsanici
 how 2.PL.SUBJ daily PL.SUBJ-live-PRES happily

'The boy came in. "My fathers, my mothers, my children, how have you lived these days?" "Happily,..."'

(From: Wife of Ahaiyute, Bunzel, 1933:125, line 54)

3. Nichols' Analysis of SR and DQ in Zuni

In order to see how Nichols' analysis of the examples in section 2.3 works, consider the fragment of discourse in (14):

- (14) cawaḵ ?elemaku-p yam set-i'k-ona ?i-woppona-?u
 young.man stand.up-DS REFL.POSS carry-??-that.which REFL-have.them-CAUS
 le?kwa-p ?a'či kwato-nan si? wanani kwa hon
 thus.say-DS 3.DU.SUBJ enter-SS now wait not 1.DU.SUBJ
 ?i'wil' ?aʔ-šukwa cawaḵ leskwa-nan koplarti e'lactoki leskwa-nan
 together sleep-FUT.NEG young.man this.say-SS why young.girl this.say-SS

'The boy_i arose. "Take along that which you brought with you." She_j said. They_{i,j} entered. "Now wait. We_{i,j} shall not sleep together." The boy_i said, "Why?" The girl_j said, ["You needn't ask why. That which I wish is not there."]'

(From: Wife of Ahaiyute, Bunzel, 1933:126, line 69)

We can represent the relevant features of this example as in (15), where the subscripts on the translations of the SR-affixed verbs indicate the subject (semantic agent) of the verb: *i* standing for the boy in the discourse and *j* standing for the girl. The aim is to account for the SS and DS marking on the verbs of the dependent clauses.

(15) standing.up_{*i*}-DS “DQ₁” thus.saying_{*j*}-DS entering_{*i,j*}-SS “DQ₂”
 this.saying_{*i*}-SS “DQ₃” this.saying_{*j*}-SS “DQ₄”

Nichols’ makes the following assumptions to account for the switch-reference marking in the environment of direct quotation:

- Assume that every direct quote has a frame-initial verb before it — *lesikwa* ‘this (the following) say’ — and a frame-final verb after it — *le’ikwa* ‘thus (the preceding) say’.
- Assume that “Subjects within a quote are overlooked when SR is marked on the verb preceding the quote” (Nichols 1990:95).
- Optionally delete one or both frame verbs after SR marking.

Nichols’ assumptions leads to the enriched representation in (16) of the example in (14). Everything in parentheses is present for SR-marking and then deleted. The SS and DS marking is consistent when one compares the subscripts from one verb to the next, ignoring the direct quotations.

(16) standing.up_{*i*}-DS (this.saying_{*j*}-SS) “DQ₁” thus.saying_{*j*}-DS entering_{*i,j*}-SS
 (this.saying_{*j*}-SS) “DQ₂” (thus.saying_{*j*}-DS) this.saying_{*i*}-SS “DQ₃”
 (thus.saying_{*i*}-DS) this.saying_{*j*}-SS “DQ₄”

The account comes at a cost. First, as Nichols points out, direct quotes are not syntactically integrated into the sentences containing them. Thus, the question remains as to how to represent the relationship of a direct quotation to the rest of the sentence. Nichols leaves it at this: “we may have to describe the relation of a quote to its matrix sentence in terms of well-formed discourse structure, rather than in terms of well-formed syntactic structure” (Nichols 1990:99).

The second cost is that underlying representations are posited which must sometimes be deleted for the facts to follow. For example, the third direct quote in (14), *kopla’ti* ‘Why?’,

is preceded by an SS-marked verb, whose subject is *cawak* ‘the boy’, but is followed by a different subject (*e’lactoki* ‘the girl’). Deletion of an underlying frame-final verb, something meaning ‘the boy said’ in this case, is necessary under Nichols’ analysis but there is no independent evidence for this underlying frame-final verb; its existence is neither verifiable nor falsifiable.

One of the expected consequences of “overlooking” direct quotes when marking verbs with SS and DS affixes is that final verbs in direct quotations should never have these affixes. In fact Nichols claimed that “no verb that is the final verb of quoted material ever bears SR marking even though directly followed by another clause. . . the final verb within a quote is treated as sentence-final” (Nichols 1990:98). However, there are counterexamples to this claim, as in (17–20):⁴

(17) čims ši?u-nan hom nana to? cawaḵ yoṛt’u to?
then give.a.name.to-SS my grandchild you.SUBJ youth may.become you.SUBJ

łašit’u to? ?ona-yaṛt’u to? tehya-t’u
may.grow.old you.SUBJ road-may.become.finished you.SUBJ be.valued-PERM

hom pinna-n tehya-ppa le?-an-ikwa-nan-s ši?u-n’a
my breath-SG be.valued-DS thus-INDIR-say-SS-so give.a.name.to-FUT

‘Then he would name him. “My grandchild, may you become a young man. May you grow old. May your road be fulfilled. May you become valuable since my breath is valuable.” So he would say and he would give him the name.’

(From: Naming, Bunzel, 1934:397, line 4)

(18) ḵ’āk’äl e’lactok le?kwa-n hana ye’maku liṭ tata-p
eagle young.girl thus.say-SS ??⁵ climb here tree-DS?

cawak tata-kwi ye’mak-nan
young.man tree-LOC climb-SS

‘[“Well, you certainly beat all for stupidity!”] said Eagle Girl. “Well hurry up, climb up, here is the tree.” The boy climbed the tree.’

(From: The Ghost Wife, Bunzel, 1933:227, line 14)

(19) ?isk?on to?n ?a’-papa ḵäkweni-ye
near.addressee 2.PL.POSS PL-older.brother reside-PRES

le[?]-ačian-ikwa-p ma [?]eła'-p'a aw-ant'ewa-kä
 thus-to.them.DU-say-DS so NEG-DS? PL.SUBJ-stay.overnight-PAST

‘... There your elder brothers live.’ Thus he said to them. ‘Oh no!’ They passed the night.’

(From: Wife of Ahaiyute, Bunzel:135, line 47)

(20) hon [?]i'kwa'ni yałe[?]a le[?] ač ikwa-p
 1.PL.SUBJ have.work.accomplished ask.PRES thus 3.DU.SUBJ say-DS

wanini tem ho[?] käne'lu łata-p le[?] hom kākā ikwa-kä
 wait until 1.SG.SUBJ sheep hunt-DS thus 1SG.POSS mother's.brother say-PAST

‘... We are asking for work.’ Thus they said. ‘Wait until I have killed sheep,’ my uncle said.’

(From: Two Girls are Shot While Dancing, Bunzel:70, line 42)

These examples indicate that clauses in a direct quotation can be subordinate to clauses outside the quote. In fact, it shows that direct quotations cannot simply be ignored for the purposes of SR marking. I give my analysis of SR and DQ in Zuni in the next section, an analysis in which direct quotations are syntactically integrated into the sentences containing them — preceding clauses can be subordinate to DQs and they in turn can be subordinate to following clauses.

4. My Proposal

With respect to Tonkawa, Jacobsen observed: “In several examples where the preceding clause is a quotation, the reference seems to be to the actor of an understood verb expressing the uttering of the quotation” (Jacobsen 1967:250). In essence, my proposal follows up on Jacobsen’s astute observation, an insight that has received little discussion in subsequent work on switch-reference (e.g., Haiman and Munro 1983, Finer 1984, Stirling 1993). My analysis rests on the following assumptions:

- Switch-reference affixes mark a continuation (or change) of the referent of the most prominent semantic argument in the clause. This is in line with the work of Tsujimura (1987) and Stirling (1988, 1993). In somewhat more precise terms, I propose that verbs bearing SS and DS affixes are inflected verb types with the following constraints on them:

- If a verb bears the affix *-nan* or its variants, then the referent denoted by the most prominent semantic role of the controlling clause is a subset of the referent denoted by the most prominent semantic role of the *nan*-marked verb.
 - If a verb bears the affix *-²appa* or its variants, then the referent denoted by the most prominent role of the controlling clause is not identical to the referent denoted by the most prominent semantic role of the *²appa*-marked verb.
 - I am assuming there is an independent means of determining the most prominent semantic role of a verb, such as a thematic hierarchy — e.g., Agent » Instrument » Patient.
- The most prominent semantic argument of a direct quotation is the one to which the direct quotation is attributed (the speaker). This is analogous to Nichols’ assumption that a frame-initial verb of saying precedes a direct quote “at some level of structure” (Nichols 1990:94).
 - Clauses can be subordinate to direct quotations.

Under my analysis, the representation for the example in (14), repeated here in (21), would be as in (22):

(21) cawak ²elemaku-p yam set-i’k-ona ²i-woppona-²u
 young.man stand.up-DS REFL.POSS carry-??-that.which REFL-have.them-CAUS

le²kwa-p ²a’či kwato-nan si’ wanani kwa hon
 thus.say-DS 3.DU.SUBJ enter-SS now wait not 1.DU.SUBJ

²i-wil’ ²ał-šukwa cawak leskwa-nan koplarti e’lactoki leskwa-nan
 together sleep-FUT.NEG young.man this.say-SS why young.girl this.say-SS

‘The boy_i arose. “Take along that which you brought with you.” She_j said. They_{i,j} entered. “Now wait. We_{i,j} shall not sleep together.” The boy_i said, “Why?” The girl_j said, [“You needn’t ask why. That which I wish is not there.”]’

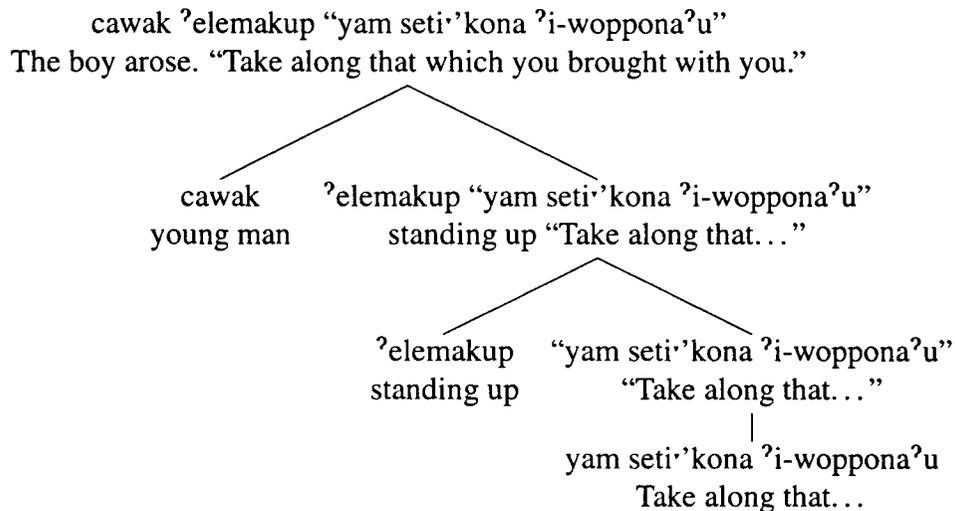
(From: Wife of Ahaiyute, Bunzel, 1933:126, line 69)

(22) standing.up_i-DS ^j“DQ₁” thus.saying_j-DS entering_{i,j}-SS ^j“DQ₂”
 this.saying_i-SS ⁱ“DQ₃” this.saying_j-SS ^j“DQ₄”

At the start of (21), the subject of the verb *²elemaku* ‘stand up’ is the young man and the speaker of the direct quotation is a girl who is already established in the discourse. The

DS-suffix appears on the verb *ʔelemaku* in the subordinate clause since there is a switch in reference from the one who stands up to the one who speaks. The DS marker on the verb of saying, *leʔkwa*, is what we expect since the following third person dual subject of *kwato* ‘enter’ (i.e., the boy and the girl) is not contained in the referent of the subject of verb of saying (i.e., the girl). However, the speaker of the direct quotation which follows the subordinate clause headed by *kwato* ‘enter’ is contained in the dual subject of *kwato*, and so the SS suffix appears. In fact we can infer it is the girl and not the boy who is the speaker of the direct quote because of what the boy says (“Why?”).

In my account, direct quotation is syntactically a part of the sentence containing it. For example, the first part of (21) would have the following constituent structure:



I am treating the direct quote as a unary-branching construction — a relation between the speaker and what that speaker says. There are no constraints on the form of what the speaker says, since direct quotations can be in a language that differs from the sentence containing it, can be an action or gesture, or can even be an ill-formed utterance (see Partee 1973). Certainly the direct quotation does not need to have a syntactic subject — this is the essence of the problem for the syntactic definition of switch-reference when SS and DS marked verbs are immediately followed by a direct quote.

5. Summary

The interaction of switch-reference and direct quotation bears on the question of whether SR is a syntactic or semantic/pragmatic device. In order to maintain the syntactic view, an analysis along the lines of Nichols’ is needed. The semantic view allows for an account in which a DQ is syntactically a part of the sentence containing it. The generalization can be

captured by (i) treating direct quotation as a construction that relates the implicit speaker and what that speaker says and (ii) treating SS- and DS-inflected verbs as types which place restrictions on the referential indices of the most prominent argument of the subordinate clause headed by the marked verb and that of the controlling clause.

The advantage of this analysis over Nichols' is that direct quotations are not simply neglected with respect to switch-reference marking. The analysis captures the generalization that the understood speaker of a direct quotation is what is referenced by the SS and DS suffixes. Furthermore, there is no need to assume deletion of verbs of saying and rule ordering of switch-reference marking before this deletion. Finally, this account makes explicit the semantic nature of switch-reference in Zuni, challenging the view that switch-reference is simply a matter of (non-)coreference between subjects of adjacent clauses.

Notes

¹For helpful comments on earlier drafts of this paper, I thank Ivan Sag, Peter Sells, Elizabeth Traugott, and Chris Culy. I also thank Marianne Mithun and Thom Hess for pointing me to additional relevant references. None of these people necessarily agrees with what I say in this paper.

²The following abbreviations appear in the glosses: INDIR is for the so-called indirective morpheme used, among other things, to mark oblique arguments including possessors, benefactives, and datives (see Walker 1983). LOC is for the locative suffix. 1,2, and 3 indicate person on pronouns and POSS indicates the possessive. For pronouns and verbal agreement affixes, SG, DU, and PL indicate number, and SUBJ and OBJ indicate case or function. REFL.POSS is the reflexive possessive form *yam* meaning 'one's own'. PAST, PRES, and FUT are verbal tense suffixes, *imper* indicates imperative mood and *perm* is for permissive mood. Derivational prefixes include CAUS for the causative, INCH for the inchoative, and REFL for the reflexive.

³Word order in Zuni is generally S-O-V but when the object is first or second person, the order is O-S-V (see Nichols 1997).

⁴Chris Culy has suggested to me that in (17), the last clause of the direct quote, bearing the DS-subordinator, may be subordinate to the preceding clause. This would mean Newman's descriptive generalization that "In complex sentences the independent clause is always the final clause" (Newman 1965:74) is too strong.

⁵The form *hana?te* is listed as 'immediately' in Newman's dictionary.

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[ATR] Vowel Harmony and Palatalization in Karajá

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1. Introduction. The main purpose of this paper is to describe the process of vowel harmony in Karajá, a Macro-Jê language spoken along the Araguaia River, in Central Brazil.² This analysis demonstrates that the system of vowel harmony in Karajá should be analyzed in terms of the feature [ATR] (“Advanced Tongue Root”), instead of [high], as the previous mentions of the phenomenon would suggest (Fortune & Fortune 1963, Cavalcante 1992). Furthermore, I propose a reanalysis of the phonological inventory of the language, suggesting, among other things, that the complete series of palatal obstruents described by Fortune & Fortune and Cavalcante as phonemes may be in fact analyzed as allophones in complementary distribution with non-palatal consonants.

2. [ATR] vowel harmony. There are two contemporary phonological descriptions of Karajá, Fortune & Fortune (1963) and Cavalcante (1992). In both, vowel harmony is briefly mentioned as a process by which a high or close-mid vowel “closes” an open-mid vowel in a preceding syllable.³ Fortune’s examples are reproduced below, with my own transcription and morphological segmentation:

- | | | | | | |
|-----|----|---|--|------------|----------------|
| (1) | a. | ♂ | /d-εbɔ-ube/
REL-hand-palm | [debou'be] | ‘palm of hand’ |
| | b. | | /r-I-dɔ=r-e/
CTFG-TRANS-eat=CTFG-IMPERF
‘S/he ate (it).’ | [ri'dore] | |
| | c. | | /budɔε-dĩ/
deer-similar.to | [budoε'ni] | ‘sheep’ |

Although both accounts are limited to a handful of examples, without any attempt of further generalization, it is clear that they consider vowel harmony as being a case of height assimilation. Thus, discussing the example [debou'be] ‘palm of hand’, Fortune & Fortune suggest that “the high /u/ of *ube* seems to have influenced all the preceding vowels to the higher vowel position.” However, this formulation would not account for a number of cases in which a high vowel would ‘fail’ to trigger vowel harmony. For example, the postpositions *tʃi* ‘locative’ and *dɪ* ‘instrumental’, which would contain the same vowel in Fortune & Fortune’s and Cavalcante’s transcriptions, have totally inverse behaviors in regard to vowel harmony (2). Similarly, while the root *u* ʔ ‘tooth’ triggers vowel harmony, the root *rʊ* ʔ ‘thigh’ does not (3):

- (2) a. /hawəkɔ=tʃi/ [hawəkɔtʃi] ‘in the canoe’
canoe=LOC
- b. /hawəkɔ=di/ [hawə’kɔdɪ] ‘with the canoe’
canoe=INSTR
- (3) a. /wa-ritʃɔɾɛ dʒ-u/ [waritʃɔɾɛ’dʒu]
1-offspring REL-tooth
‘my child’s tooth’
- b. /wa-ritʃɔɾɛ ru/ [waritʃɔɾɛ’ru]
1-offspring thigh
‘my child’s thigh’

Examples such as the ones above show that vowel harmony in Karajá cannot be described as a matter of height assimilation, since some morphemes containing high vowels, such as *tʃi*, would trigger vowel harmony, whereas others, such as *di*, would fail to do it under the same circumstances. In this paper, I claim that what underlies the differences in behavior between morphemes such as *tʃi* and *di* is the feature [ATR]. Consequently, I propose that vowel harmony in Karajá is better described as the regressive spreading of the feature value [+ATR] to [-ATR] vowels, a well-documented phenomenon in West African languages, but apparently rare in Brazilian languages.

This analysis is contingent on a revision of the phonemic inventory of Karajá. Contrasting with the previous phonological descriptions of the language, this analysis points to a larger inventory of vowels in which the feature [ATR] plays a major role (Table 1). The main difference is that in this analysis, a phonemic opposition is recognized between the high ‘tense’ vowels /i/ and /u/ and their ‘lax’ counterparts /ɪ/ and /ʊ/⁴, as shown by the minimal pairs given below (4). This distinction was not considered in the previous works.⁵

Table 1. Vocalic inventory of Karajá⁶

i		u	ĩ	ũ	õ
ɪ	ɨ	ʊ			
e	ɘ	o			
ɛ		ɔ			
	a				

- (4) a. *-lahi* I ‘to curse’ b. *-lahi* I ‘grandmother’
c. *-uka* II ‘to split’ d. *-uka* II ‘to be cooked’

Besides the existence of minimal pairs, the phonemic character of the opposition is also shown by the fact that lax and tense vowels have totally different behaviors in the processes of vowel harmony and palatalization. As the examples below demonstrate, the

high tense vowels /i/ and /u/ and the close-mid vowels /e/ and /o/ are dominant⁷, triggering vowel harmony, whereas the high lax vowels /ɪ/ and /ʊ/ do not trigger vowel harmony. This fact would be difficult to explain through an analysis in terms of the feature [high].

- | | | | | | |
|-----|----|--------------------|-----------------------|------------------|------------------|
| (5) | a. | /hadĩke
chicken | ritʃɔre/
offspring | [hãnikeritʃɔ're] | 'chick' |
| | b. | /hadĩke
chicken | θɪ/
egg | [hãnikɛ'θɪ] | 'chicken's egg' |
| | c. | /hadĩke
chicken | d-e/
REL-wing | [hãnikɛ' de] | 'chicken's wing' |
| (6) | a. | /budɔɛ
deer | dʒ-u/
REL-tooth | [budɔɛ' dʒu] | 'deer's tooth' |
| | b. | /budɔɛ
deer | rʊ/
thigh | [budɔɛ' rʊ] | 'deer's thigh' |
| | c. | /budɔɛ
deer | woku/
stomach | [budoewo' ku] | 'deer's stomach' |

This distinction has shown itself to be crucial for the study of vowel harmony in Karajá, in particular, and of Karajá phonology, in general. By recognizing the distinction between lax and tense (or [-ATR] and [+ATR]) vowels, one can account for a number of otherwise unexplainable 'exceptions' in which a high front or back vowel would 'fail' to trigger vowel harmony.

Phonotactics. Vowel harmony languages are characterized by constraints on which vowels may co-occur within a given phonological domain (typically, the phonological word). In Karajá, the parameter governing these constraints is, as claimed in this work, the feature [ATR]. The examples below show the patterns of vowel combinations in the phonological word in Karajá, according to the feature [ATR].

- | | | | |
|-----|---------------|------------|----------------------------------|
| (7) | [+ATR] [+ATR] | | |
| a. | /hedʌ/ | [he'dʌ] | 'smoke (noun)' |
| b. | /kubɛ/ | [ku'be] | 'palm' |
| c. | /kufɛ/ | [ku'fe] | 'fish flour' |
| d. | /urʌ/ | [u'rʌ] | 'tip' |
| e. | /krotʃu/ | [kro' tʃu] | 'pamonha (a type of corn bread)' |

- (8) [+ATR] [-ATR]
- | | | | |
|----|-----------|--------------|----------------------------|
| a. | /tʃuʃɔ/ | [tʃu ' ʃɔ] | ‘quati (a type of mammal)’ |
| b. | /ritʃɔrɛ/ | [ritʃɔ ' rɛ] | ‘offspring’ |
| c. | /hãĩkɛ/ | [hãni ' kɛ] | ‘chicken’ |
| d. | /itʃʌrɛ/ | [itʃʌ ' rɛ] | ‘fried’ |
- (9) [-ATR] [-ATR]
- | | | | |
|----|--------|-----------|---------------------------------|
| a. | /rorɪ/ | [ru ' rɪ] | ‘(a type of) basket’ |
| b. | /dɔrɛ/ | [dɔ ' rɛ] | ‘parrot’ |
| c. | /berɔ/ | [be ' rɔ] | ‘puba (a type of manioc flour)’ |
| d. | /hɛdĩ/ | [he ' dɪ] | ‘blanket’ |
- (10) *[-ATR] [+ATR]
- | | | | |
|----|-------------------------------|----------------|---------------------------|
| a. | /halɔkɔɛ-dĩ/ | [hãlokoe ' ni] | ‘(wild or domestic) cat’ |
| | jaguar-similar.to | | |
| b. | /r-a-rue-dʌ=r-a/ | [rarue ' dʌra] | ‘he/she/it became blind.’ |
| | CTFG-INTR-eye-close=CTFG-PERF | | |
| c. | /dɔrɛ d-e/ | [dore ' de] | ‘parrot’s wing’ |
| | parrot REL-wing | | |

As the examples above show, all combinations of vowels in a phonological word are possible, except [-ATR] vowels preceding [+ATR] vowels. This is the circumstance under which vowel harmony takes place (10). Thus, for example, the morpheme *dɔrɛ* ‘parrot’ undergoes [+ATR] vowel harmony when followed by the morpheme *e ɪ* ‘wing’ (10c). Conversely, a [+ATR] vowel remains unchanged when followed by a [-ATR] vowel, such as in *ritʃɔrɛ* ‘offspring’ (8b). Therefore, vowel harmony in Karajá can be defined as a process of regressive spreading of the feature value [+ATR] to [-ATR] vowels.⁸

According to their behavior in triggering, undergoing, or blocking vowel harmony, the vowels of Karajá can be grouped as follows:

Table 2. Vowels according to their behavior in terms of vowel harmony

Oral

	[+ATR]		opaque		[-ATR]⁹
i		u		ɪ	ɨ
e	ʌ	o		ɛ	ɔ
			a		

harmony is a local process. The examples below, involving the suffix *-dí* ‘similar to’, further illustrate the differences between mid and high [-ATR] vowels:

- (16) a. /krɔbɪ-dí/ [krɔbɪ'ni] ‘a type of monkey’
 monkey-similar.to
- b. /kɔɖu-dí/ [kɔɖu'ni] ‘a type of turtle’
 turtle-similar.to
- c. /brɔrɛ-dí/ [brɔrɛ'ni] ‘cow’
 deer-similar.to
- d. /bedɔ-dí/ [bedɔ'ni] ‘a type of fish’
 fish (sp.)-similar.to

While back and front vowels may be symmetrically divided into the two classes, [+ATR] and [-ATR], central vowels do not show the same symmetry. The two non-low central vowels, /i/ and /ɘ/, have exactly opposite behaviors: while the close-mid central vowel /ɘ/ triggers vowel harmony (10b), the high central vowel /i/ undergoes it in an iterative fashion (18). However, contrasting with pairs such as /e/ and /ɛ/, /ɘ/ and /i/ do not form a complementary pair. As shown in (17), /ɘ/ is not the [+ATR] counterpart of /i/:¹⁰

- (17) /r-ɛ-ki=r-e/ [rɛ 'kɪrɛ]
 CTFG-1+TRANS-eat.grains=CTFG-IMPERF
 ‘I ate (it).’

Finally, the vowels /a/, /ẽ/, and /õ/ block vowel harmony, as illustrated by examples (18), (19), and (20) below:

- (18) /r-ɛ-ka=r-e/ [rɛ 'kare]
 CTFG-1+TRANS-dig=CTFG-IMPERF
 ‘I dug (it).’
- (19) /r-ɛ-bẽ=r-e/ [rɛ 'mẽre]
 CTFG-1+TRANS-take=CTFG-IMPERF
 ‘I took (it).’
- (20) /r-ɛ-õ=r-e/ [rɛ 'õre]
 CTFG-1+TRANS-give=CTFG-IMPERF
 ‘I gave (it).’

The example *beraku* ‘river’ illustrates well the way the three types of vowels—‘dominant’, ‘recessive’, and ‘blocking’—interact. In this example, the spreading of the [+ATR] feature value of the vowel /u/ in the last syllable to the [-ATR] vowel /ɛ/ in the first syllable is blocked by the presence of the opaque vowel /a/ in the medial syllable. However, a quite different situation results in the male speech. In this case, the velar stop is dropped, making possible the fusion between the vowels /a/ and /u/, resulting in the mid-close vowel /o/, which then triggers vowel harmony in the first vowel:

(21)	♀	/beraku/
	k-dropping	berau
	vowel fusion	bero
	vowel harmony	bero
	♂	[be'ro]

3. Palatalization. Another consequence of the analysis of the vowels proposed here is that it also makes possible a reanalysis of the consonantal system of Karajá. According to Fortune & Fortune (1963), the consonantal inventory of Karajá would be as follows:

Table 3. Consonantal inventory of Karajá (Fortune & Fortune 1963)¹¹

		tʃ	k
b	d	dʒ	
	ɖ		
	θ	ʃ	h
	l		
w	r		

Considering the reanalysis of the vocalic inventory proposed here, it is possible to question the phonemic character of the complete series of palatals, /tʃ/, dʒ/, and ʃ/. A careful examination of the distribution of palatal consonants in Karajá reveals that they occur in very restricted environments—generally in contiguity to high [+ATR] vowels. Thus, as the examples below show, the interdental fricative and the palatal fricative are in complementary distribution: [ʃ] occurs after the high [+ATR] vowels /u/ and /i/, whereas [θ] occurs elsewhere.

(22)	<i>bɪθa</i>	‘macaw’	<i>-kiθɛ</i>	‘scratch’	<i>-uθa</i>	‘forget’
	<i>iʃa</i>	‘bowl’	<i>kufe</i>	‘fish flour’	<i>ruʃa</i>	‘raw’

Therefore, the distinction between [+ATR] and [-ATR] high vowels proves to be crucial also for the analysis of the consonantal system. The allophonic nature of the variations shown above is missed if the oppositions between /i, u/ and /ɪ, ʊ/ are not recognized. It can be reasonably concluded that the interdental fricative and the palatal fricative are allophones of the same phoneme.

The study of some morphophonemic alternations also corroborates the analysis suggested above. Thus, the nominalizer suffix *-θV* (where V stands for a vowel identical to the last vowel in the verb root) is palatalized when attached to a verb root ending in the high front [+ATR] vowel /i/, but not after its [-ATR] counterpart /ɪ/:

(23)	Verb	Noun	
	<i>-aha</i>	<i>-aha-θa</i>	‘find’
	<i>-uɔ</i>	<i>-uɔ-θɔ</i>	‘fly’
	<i>-lədɪ</i>	<i>-lədɪ-θɪ</i>	‘put’
	<i>-obi</i>	<i>-obi-fi</i>	‘see’

The same can be postulated for the remaining palatal consonants, the affricates /tʃ/ and /dʒ/. As the examples below show, they also occur generally in contiguity to high [+ATR] vowels. Notice the contrast with the [-ATR] high vowels /ʊ/ and /ɪ/, which occur with non-palatal consonants:

(24)	<i>tʃu</i>	‘sun’	<i>dʊ</i>	‘loin cloth’
	<i>tʃi</i>	‘locative post.’	<i>dɪ</i>	‘bone, leg’
	<i>butʃi</i>	‘pot’	<i>kɔdɪ</i>	‘tobacco’
	<i>adzikura</i>	‘manioc’	<i>-adɪ</i>	‘mother’
	<i>hodʒu</i>	‘pole’	<i>-dʊ</i>	‘nominal suffix’

One of the sources of *tʃ* in Southern and Northern Karajá is the palatalization of the velar stop /k/ after the [high, +ATR] vowel /i/, a process that does not occur in Javaé and Xambioá (25). Again, the high front [-ATR] vowel /ɪ/ does not trigger palatalization: *bɪkɔwa* ‘friend’ [bɪkɔ’wa].

(25)	Javaé, Xambioá	Karajá	
	<i>rikɔɾe</i>	<i>ritʃɔɾe</i>	‘offspring’
	<i>ikɔɾɔ</i>	<i>itʃɔɾɔ</i>	‘fox’

Another source of *tʃ* in all the four dialects is the palatalization of an initial alveolar implosive /d/ in a verb root when preceded by the prefix *i-*, a fossilized prefix that appears with deverbal nouns (26a-b). The same prefix triggers palatalization with roots beginning with /θ/ (26c), /d/ (26d) and /l/ (26e).

(26)	Verb	Noun	
a.	<i>-dehe</i>	<i>i-tʃere</i>	‘look’ ¹²
b.	<i>-diki</i>	<i>i-tʃiki</i>	‘carry’
c.	<i>-θe</i>	<i>i-ʃe</i>	‘dance’
d.	<i>-dɔ</i>	<i>i-dʒɔ</i>	‘fight (cursing)’
e.	<i>-liki</i>	<i>i-dʒiki</i>	‘tell’

The same alternations are found with personal and relational prefixes.¹³ The 3rd-person prefix *d-*, which occurs with Class II stems, is pronounced *tf-* when attached to roots beginning with /u/ or /i/:

(27)	<i>d-adi</i>	‘his mother’	<i>tf-u</i>	‘his tooth’
	<i>d-ɔdi</i>	‘his throat’	<i>tf-urɔ</i>	‘its tip’
	<i>d-uahi</i>	‘his medicine’	<i>tf-iru</i>	‘its leaves’
	<i>d-e</i>	‘its wing’	<i>tf-ira</i>	‘its seed’

Similarly, the ‘relational’ prefix *d-* becomes *dʒ-* before /u/:

(28)	<i>waha d-ebɔ</i>	‘my father’s hand’	<i>waha dʒ-u</i>	‘my father’s tooth’
	<i>waha l-uahi</i>	‘my father’s medicine’	<i>wihi dʒ-urɔ</i>	‘arrow tip’

Finally, the nominalizer suffix *-dV* is subject to the same palatalization rule shown in (23) above for the suffix *-θV*:

(29)	Verb	Noun	
a.	<i>-hʊ</i>	<i>-hʊ-dʊ</i>	‘finish’
b.	<i>-b̃</i>	<i>-b̃-d̃</i>	‘take’
c.	<i>-hɛ</i>	<i>-rɛ-dɛ</i>	‘scarify’
d.	<i>-hi</i>	<i>-ri-di</i>	‘drive away’
e.	<i>-lahi</i>	<i>-lahi-dʒi</i>	‘curse’

The evidence presented here strongly suggest that the palatal consonants *tf*, *dʒ*, and *ʃ* trace back to non-palatal consonants occurring in contiguity to high [+ATR] vowels, a fact that can only be captured when the phonological opposition between the high [+ATR] vowels /i/ and /u/ and their [-ATR] counterparts /ɪ/ and /ʊ/ is recognized.

4. Rule ordering. Vowel harmony occurs either morpheme-internally or across word-boundaries. Therefore, it is likely a post-lexical rule. However, additional evidence exist that the vowel harmony rule applies at least twice. As previously mentioned, Class II stems take the third-person prefix *d-*, which is palatalized before the high back [+ATR] vowel /u/. There appears to be only one exception to this palatalization rule: the verb stem *uri* II ‘(a fire) to be extinguished’ unexpectedly takes a non-palatal prefix, *d-*:

(30)	/r-ɛ-d-uri-d̃=r-a/	[redu’riñɔra]
	CTFG-1+TRANS-3/REL-extinguish-VERB=CTFG-PERF	
	‘I’ve extinguished (it).’	

This analysis suggests that *uri* underlyingly contains a [-ATR] vowel in its first syllable: /ori/. The surface [+ATR] quality of its first vowel would be a consequence of vowel harmony triggered by the [+ATR] vowel occurring in its last syllable. The rules of

vowel harmony and palatalization would be in a ‘counter-feeding’ order. As mentioned in Section 4 above, high [-ATR] vowels seem to undergo vowel harmony locally, failing to transmit the feature value [+ATR] to the preceding element, as illustrated by examples such as *kɔɖudĩ* [kɔɖuni] ‘turtle (sp.).’ The fact that the prefix *ɛ-* in example (30) above undergoes vowel harmony suggests that vowel harmony applies at least twice, pre- and post-lexically, as in the derivation below:

(31)	input	/ɛ-d-uri/
	palatalization	does not apply
	vowel harmony	ɛ-duri
	vowel harmony	ɛduri
	output	[ɛdu’ri]

In addition, there is at least one case in which vowel harmony clearly feeds palatalization. The kinship term *adʒikura* ‘mother’s older sister’ results probably from the combination of the morphemes *adr* ‘mother’ and *kura* ‘white’¹⁴ (compare it with *waha* ‘my father’ versus *wahakura* ‘my father’s older brother’). In this case, the high [+ATR] vowel /u/ triggers vowel harmony in the [-ATR] vowel of the preceding root, which then triggers palatalization on the voiced stop /d/, as shown by the derivation given below:

(32)	input	/adr-kura/
	vowel harmony	adikura
	palatalization	adʒikura
	output	[adʒiku’ra]

5. Final remarks. The primary focus of this paper was to propose an analysis of vowel harmony in Karajá in terms of the feature [ATR], taking into consideration a reanalysis of the vocalic inventory. Contrasting with the previous descriptions of the language, the present analysis points out to a larger system of vowels in which the feature [ATR] plays a major role. As I intended to demonstrate, the existence of a phonemic opposition between the high [+ATR] vowels /i/ and /u/ and their [-ATR] counterparts /ɪ/ and /ʊ/ has pervasive consequences for the analysis of phonological processes such as vowel harmony and palatalization.

Besides the consequences that this new account of Karajá phonology has for the study of the language itself, it can also have interesting implications for comparative studies involving the Macro-Jê family. The most recent survey of the language family (Rodrigues 1999) does not mention the existence of processes of vowel harmony in any of the Macro-Jê languages. There are also no mentions of phonological systems in which the features [tense] or [ATR] play a role, in spite of the fact that one of the major characteristics of Macro-Jê languages is the presence of large vowel inventories. These phenomena could be an innovation of Karajá among the Macro-Jê languages. However, the apparent ‘uniqueness’ of Karajá can also be due to descriptive gaps concerning the

remaining languages of the group. Therefore, the research reported here provides a more complete description of the Karajá language and can suggest new perspectives for the studies on the phonology of Macro-Jê languages.

Notes

¹ My studies at the University of Chicago are supported by fellowships from the Wenner-Gren Foundation for Anthropological Research and CNPq, the Brazilian national scientific council (Grant 200018/98-1), as well as a Century Scholarship from the Division of Humanities at the University of Chicago. I would like to thank the Tinker Foundation and the Center for Latin American Studies of the University of Chicago, who provided me with a travel grant which made my fieldwork possible (Summer/1999). I also owe special thanks to the Karajá people, for their customary hospitality, and to Neha Dave and Deepa Dave for editing support. The research reported in this paper is still in progress, and I would very much appreciate any comments and suggestions. Abbreviations and symbols read as follows: ♀ ‘female speech’; ♂ ‘male speech’; ATR ‘advanced tongue root’; CTFG ‘centrifugal direction’; IMPERF ‘imperfective auxiliary’; INTR ‘intransitive verb marker’; INSTR ‘instrumental postposition’; LOC ‘locative postposition’; PERF ‘perfective auxiliary’; REL ‘relational prefix’; TRANS ‘transitive verb marker’; VERB ‘verbalizer’. Roman numerals indicate the formal class to which the verb or noun stem belongs (see note 13 below).

² Karajá has four dialects—Southern Karajá, Northern Karajá, Javaé, and Xambioá. The dialects are mutually intelligible and have a total of approximately three thousand speakers, in the states of Goiás, Mato Grosso, Tocantins, and Pará. The processes described in the present work are common to all four dialects, although the examples mentioned are restricted to the Northern and Southern Karajá dialects. The language shows differences between male and female speech to a degree that is not found in other Brazilian languages. These differences are in general explainable by regular phonological rules. Female speech must be considered the basic one, male speech being characterized, in general, by the deletion of a velar stop occurring in the corresponding female speech form (♀ *kɔwɔɾu* ‘wood’ > ♂ *ɔwɔɾu*). The deletion of the velar stop can make possible the fusion between vowels (♀ *halɔkɔɛ* ‘jaguar’ > *halɔɔɛ* > ♂ *halɔɛ*). Unless otherwise noted, the data presented in this paper are in the female speech of the Southern and Northern Karajá dialects.

³ Interestingly, Fortune & Fortune label as a case of vowel harmony only the example reproduced as (1a) above, naming the process illustrated by (1b) and (1c) as ‘vowel assimilation across consonants.’ However, the examples illustrate obviously one and the same process. Cavalcante’s description is limited to a rule of ‘raising of /e/ and /ɔ/’ in unstressed positions, although all examples she mentions involve open-mid vowels followed by [+ATR] vowels.

⁴ I am using the terms [+ATR]/[-ATR] and tense/lax more or less interchangeably. In discussing issues related to Karajá orthography with native teachers, I used the terms ‘strong’ and ‘weak’ to refer to the high vowels /u/ and /ʊ/, respectively. The terms were translated by the Karajá teachers as *ikutʃie* ‘heavy’ and *iwedari* ‘light’, which seem to provide a more sensible description of the oppositions between [+ATR] and [-ATR] vowels in Karajá. Noske (1995) finds “the [+ATR] and [-ATR] vowels of Turkana auditorily quite close to the tense and lax vowels of English and German.” I would say the same at least with respect to the front vowels /i/ and /ɪ/ of Karajá, which sound to me similar to the vowels in *beat* and *bit*, respectively, but, as Noske noted for Turkana, without the length distinction occurring in the English examples. The mid vowels resemble the ones of Portuguese. An acoustic analysis of the Karajá vowels is still to be done, though.

⁵ In fact, Fortune & Fortune (1963) include /ʊ/ as a phoneme in their description. However, more recent works, such as Fortune (1973), do not mention it. Although this phoneme was initially represented in Fortune’s Karajá orthography, it was not used in more recent published works, such as the New Testament and literacy materials.

⁶ I am using the symbol ʌ to represent the mid-close central vowel which occurs in such words as *ira* ‘sweet manioc.’ This phoneme is transcribed by Fortune & Fortune as *i* and by Cavalcante as *ə*.

⁷ For the use of the terms ‘dominant’ and ‘recessive’ in the sense adopted here, see Rigsby & Silverstein (1969).

⁸ Karajá presents an asymmetrical kind of vowel harmony, since only the feature specification [+ATR] seems to be phonologically active, triggering vowel harmony. In symmetrical vowel harmony systems—that is, in systems where both feature values are phonologically active—a given feature value is generally considered to be a property of the entire morpheme. In Karajá that is certainly not the case. As shown above, [+ATR] vowels can be followed by [-ATR] vowels in the same morpheme. Therefore, a word such as *ritʃɔre* ‘offspring’ may either trigger (a) or undergo (b) vowel harmony:

- | | | | |
|----|---|-----------------|---------------|
| a. | /wa-θɛ-ritʃɔre/
l-mother-offspring | [wəθɛritʃɔrɛ] | ‘my sibling’ |
| b. | /wa-ritʃɔre boho/
l-offspring PLURAL | [waritʃɔreboʰo] | ‘my children’ |

⁹ By ‘[-ATR] vowels’ I refer to those vowels which will surface as [-ATR] unless they undergo [+ATR] vowel harmony. I do not refer to their underlying feature specification. In fact, the Karajá data likely support an analysis in which the [-ATR] feature value is not present underlyingly for the recessive vowel series, being rather introduced by a redundancy rule. Therefore, [+ATR] spreading would probably be a feature-filling rule. I shall also explain the use of the term ‘opaque’ in this paper. In the description of some languages, such as Akan, this term is used to describe vowels that not only block [+ATR] spreading, but also trigger [-ATR] vowel harmony (Kenstowicz 1994, 351). In Karajá, the opaque vowels /a, ẽ, and õ/ simply block vowel harmony. As a first approximation, it may be hypothesized that opaque vowels are underlyingly specified as [-ATR] and, therefore, do not undergo [+ATR] vowel harmony, which would be a feature-filling process.

¹⁰ I am using the IPA diacritic under the high vowel /i/ to indicate what seems to be a tense, [+ATR] version of it. My transcription is based not only on my own perception, but also on the opinion of my native consultants, according to whom the high central vowel sounds ‘heavier’ (or more *ikutʃiɛ*) in examples such as [reʰ kʲiɛ]. A reasonable solution would be to consider /i/ as phonologically ‘transparent’ to vowel harmony, since it does not alternate with any other phonemic vowel, although it phonetically seems to undergo vowel harmony.

¹¹ Cavalcante (1992) describes a similar consonantal system, but with two more consonants, the nasals *m* and *n*. I follow Fortune & Fortune in considering [m] and [n] as allophones of the voiced stops /b/ and /d/ before nasal vowels and the low vowel /a/. Another difference is that Cavalcante has *s* corresponding to Fortune’s *f*, reflecting variances that in fact occur between dialects and even among speakers of the same dialect: [waʰsi] ~ [waʰʃi] ‘hook.’

¹² This example presents *consonantal replacement*, a common derivational process to create nouns from verb stems. It consists in the replacement of a velar stop or a glottal fricative occurring in the last syllable of the verb root with an alveolar flap in the corresponding noun form. (29c) and (29d) also show examples of consonantal replacement. This process may appear combined with affixation.

¹³ Relational prefixes, which mark the contiguity or non-contiguity of a stem to its determiner, are a grammatical peculiarity typical of Tupí-Guarani languages. Their occurrence in languages of Karib and Macro-Jê stocks, as well as in languages of other branches within the Tupí stock, has been pointed out as evidence for a genetic relationship among these three groups (Rodrigues 1994). According to their paradigmatic behavior, noun and verb stems in Karajá can be divided into two main formal classes, arbitrarily labeled Class I and Class II (Ribeiro 1996). The main difference between Class I and Class II noun stems is in the series of personal prefixes with which they occur, as illustrated below by the paradigms for *kɔɾv* I ‘forehead’ and *ɛbɔ* II ‘hand’. Notice that Class II stems occur with the relational prefix *d-* (or, sometimes, *l-*):

(a)	Class I		(b)	Class II	
	<i>kɔru</i>	‘forehead’		<i>d-ɛbɔ</i>	‘hand’
	<i>wa-kɔru</i>	‘my forehead’		<i>wa-d-ɛbɔ</i>	‘my hand’
	<i>a-kɔru</i>	‘your forehead’		<i>Ø-ɛbɔ</i>	‘your hand’
	<i>i-kɔru</i>	‘his/her/its forehead’		<i>d-ɛbɔ</i>	‘his/her hand’, or
	<i>da-kɔru</i>	‘his/her/its own forehead’			‘his/her own hand’

The relational prefix is also used when a Class II verb stem is immediately preceded by a direct object marker or by an incorporated noun:

- (c) *hɔri waritɔre Ø-r-ɪ-d-vaɰi-dɔ̃=r-e*
 shaman 1-offspring 3-CTFG-TRANS-3/REL-medicine-VERB=CTFG-IMPERF
 ‘The shaman gave medicine to my child.’
- (d) *hɔri Ø-r-ɪ-wa-l-vaɰi-dɔ̃=r-e*
 shaman 3-CTFG-TRANS-1-REL-medicine-VERB=CTFG-IMPERF
 ‘The shaman gave me medicine.’

¹⁴ I am not sure what the exact meaning of the morpheme *kura* in such examples would be. It may be related to the verb root *kura* ‘to be made white.’

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