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FOREWORD

It is with great pleasure that we present the proceedings of the 8th Workshop on American Indigenous Languages (WAIL 2005). In continuing a tradition begun with the student discussion group on Native American Indian 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 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.

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What is a passive? The case of Yaqui and Warihío

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1. Introduction

In this work I contrast passive constructions in two Uto-Aztecan languages: Yaqui and Warihío, members of the Taracahitic sub-branch. These languages behave differently regarding passivization: Yaqui systematically shows a morphological passive with the verbal suffix *–wa*, whereas Warihío shows a heterogeneous group of passives (tentatively): morphological, periphrastic and notional-functional.

2. Some remarks on Yaqui and Warihío grammar

A basic overview about some grammatical features of Yaqui and Warihío, such as case marking, major constituent order, and verbal agreement is called for since these characteristics, involved in the description of a passive, show striking differences between the two languages.

Coding properties for grammatical relations
(i) Case marking

Nominals
Yaqui: *-ta* for singular object

Warihío: non-marked

(1a) hoan pueta-ta etapo-k
John door-AC open-PFV
'John opened the door.'

(1b) waní wahó-na-re puetá
John open-TRZ-PFV door
'John opened the door.'

Pronouns

Yaqui

	Nominatives		Accusatives		Obliques possessives	Reflexives	
	Free	Cliticized	Free	Cliticized			
1sg.	inepo	=ne	nee		neu, newi	in	ino
2sg.	empo	='e	enči		eu, ewi	em	emo
3sg.	aapo	ø	am, aapo'ik	a=	au, aewi	a, aapo'ik	au, emo
1pl.	itepo	=te	itom		itou, itowi	itom	ito
2pl.	em'e	='em	enčim		emou, emowi	enčim	emo
3pl.	bempo	ø	bempo'im	am=	ameu, amewi	bem	emo

Warihío

	Subject pronouns		Non-subject pronouns
	Free and Emphatic	Cliticized and Non-Emphatic	
1sg.	neé	=ne	no'ó
2sg.	muú	=mu	amó
3sg.	apoé/puú	-ø, =pu	ø
1pl.	temé	-teme	tamó
2pl.	emé	-eme	amó
3pl.	a'póe	- ø	ø

(ii) Major constituent order

Yaqui: SOV

(2a) u'u ili uusi botea-m jamta-k
DET small child bottle-PL break-PFV
'The child broke the bottles.'

Warihío: flexible

(2b) waní kapo-ré kuú
John break-PFV stick

kaporé waní kuú
kaporé kuú waní
kuú kaporé waní
kuú waní kaporé
'John broke the stick.'

(iii) Verbal agreement

Yaqui: *a*= 3sg.ac, *am*= 3pl.ac

Warihío: non-marked

(3a) ítepo rolando-ta (a=)bwise-k
1PL.NOM Rolando-AC (3SG.AC=)detain-PFV
'We arrested Rolando.'

(3b) rolando santo-m (am=)nuk-saja-k
Rolando Saint.figure-PL 3PL.AC=take-go-PFV
'Rolando took the saint figures.'

(3c) poresía me'yá-re rolándo
police kill.sg-PFV Rolando
'The police killed Rolando.'

3. What is a passive?

According to Shibatani(in preparation), the main voice parameter relevant to the passive is the origin of the action i.e., where does the action originate. In the case of passive, the locus of the origin of the action is other than the subject of the clause.

One main problem regarding the description and definition of passive is the fact that cross-linguistically speaking, not all languages show passive morphology; there is no passive Gram (Bybee and Dahl, 1989). Regarding the Uto-aztecan family, it is known that there is no passive morphology for some other of the languages belonging to this family such as Serrano, Pochutla (Langacker, 1976), Pima, Papago (Estrada p.c). A second set of problems is that the constructions used for the periphrastic passive in a

given language cover domains other than passive; and likewise, constructions from other domains are used to encode passives (Andersen, 1991).

Some researchers (Keenan 1985, Haspelmath 1990, Dixon and Aikhenvald 2000) establish a structural feature as the main definitional criterion for a passive, whereas others (Shibatani 1985, Comrie 1988) talk about the vantages and consequences of a approach in terms of prototypes. Even more, Comrie (2003) questions himself about the inappropiatness of the question: "What is a passive?

Shibatani (1985:833) gives primary importance to the defocusing[i] of the agent: "the defocusing of an agent in the passive is not merely a consequence of an object promotion or of topicalization, but rather is the basic and primary function of the passive construction." Shibatani lists three facts that support this claim: (i) passives generally do not express agents overtly, (ii) some languages avoid the presence of an agent in a passive (e.g. Finnish, Cheremis, Turkish)[ii], and (iii) passivization generally does not apply to non-agentive intransitives. He claims that a clause without an agent or agent-like participant is impossible to passivize since there is no agent to defocus.

The necessity of a functional definition of the passive turns evident on investigating languages such as Warihío given that in this language we one can find clauses that fulfill the passive definition given by Givón (2004), who defines the passive clause functionally as "the clause-type whereby the agent of the corresponding active is radically de-topicalized and its patient becomes, by default, the only topical argument", then the following typology of the cross-linguistically most common major clause-types that perform this function may be obtained. This definition has the characteristic that a passive is obligatorily derived. A more neutral definition is given by Andersen (1991:111-112): "The passive is a transitive construction containing two participants, i.e. an initiator (prototypically an agent) and another (i.e. a 'patient') exhibiting the feature [+ affected], whereby only the 'patient' is specified in the 'core' of the clause".

What I want to illustrate by describing all these different accounts is the diversity of criteria on stipulating a passive. Even those approaches that include non-prototypical instances show differences on how they use terms such as 'transitivity' and 'valency'. Following Shibatani (1985) in his approach to passive, I emphasize that all its features have equal importance, and a construction lacking even one of the features is a non-protoypical instance of a passive.

4. The passives in Yaqui and Warihío

Langacker (1976) proposes a serie of passive markers for Uto-Aztecan languages. Two of them are pertinents for this work; (i) *-(i)wa* for Yaqui, and (ii) *–ria, -tu ~-ru* for Tarahumara. In his work, passive marker is not signaled for Warihío, but cognates of the two suffixes for Tarahumara were found in Warihío.

Yaqui

(4a) rolando bwih-**wa**-k
Rolando detain-PASS-PFV
'Rolando was detained.'

(4b) *rolando polisia-e bwih-**wa**-k
Rolando police-INS detain-PASS-PFV
'Rolando was detained by the police.'

(4c) hunama bea hunak a=eta-**wa**-k-o
there then then 3SG:AC=close-PASS-PFV-SUB
'...then after that they closed it.'

(4d) bwik-**wa**-k
sing-PASS-PFV
'There was singing going on.'

We observe in (1b) that Yaqui excludes the agent obligatory. The promotional passive (1a) is constrained to a human patient and the non-promotional passive (1c) to an inanimate patient.

The passive in Yaqui narrative

An additional point here is that in the context of elicitation, one can discover a perfectly grammatical passive expression for almost any type of clause with an agentive-like participant[iii]. However, Félix-Armendáriz (2004a) showed that the use of an active vs. a passive clause in Yaqui narrative is strongly determined by the extra-linguistic context where the events occur, being this more important than the type of verb to be conjugated. The Yaqui passive in discourse is generally motivated by a very specific state of affairs: that of a real life environment in which some authority is recognized. The results from two big texts are illustrated in table 1 and 2:

	within context of 'subjugation'	Outside context of 'subjugation'
Speaker: passive subject	64	1
Speaker: transitive object	26	9
Speaker: agent	25	19

Table 1. Frequency and distribution of roles by the main character in the 'Don Hilario text' with 346 sentences (Félix-Armendáriz, Rolando, 2004a).

	within context of 'subjugation'	Outside context of 'subjugation'
Speaker: passive subject	15	3
Speaker: transitive object	5	4
Speaker: agent	8	43

Table 2. Frequency and distribution of roles by the main character in the 'Cresencio text' with 390 sentences (Félix-Armendáriz, Rolando, 2004a).

In conclusion, for Yaqui passive we have these two possibilities:

a) Elicited passives require only the following condition:

(i) An active verb

b) In contrast, the use of passives requires the following conditions:

(i) A full of control with authority status agent contextually determinable,
(ii) A patient that lacks autonomy/control and recognizes agent authority status, and
(iii) An authority environment.

Warihío

Warihío presents two passive suffixes atested for Uto-Aztecan languages: *-tu* and *-tia*.

The suffix *-tu*

(5a) kahpona-ré=mu kuú
break-PFV=2SG.S stick
'You broke the stick.'

(5b) kahpona-ré-tu kuú (no'ó-e, amó-e, waní-e, tihoé-e)
break-PRF-PASS stick 1SG.NS-INS 2SG.NS-INS John-INS men-INS
'The stick was broken (by me, by you, by John, by the men.'

These constructions fit very well with the main properties given in Shibatani (1985); (i) the agent *–mu* 'you' (5a) is defocalized and is optionally expressed in oblique form *amóe* (5b); (ii) the only obligatorily expressed participant *kuú* 'stick' is the entity affected (5b); and (iii) the verb shows an aditional morpheme *–tu*. What the construction in (5) shows, too, is that there is no restriction on the occurrence of the participants in terms of the animacy and hierarchy, since many directions are possible Non SAP ---> SAP (1p, 2p), Non SAP as it is shown in (5b). Usually, passives have a non-marked direction from a 1p, 2p, or 3p entity affected by a 3p.

Passives of intransitives verbs (6)-(7) are allowed in Warihío with the oblique optional expression of the only participant (the agent) as well (7):

(6a) owéru yau-ré yomá tukawári
women dance-PFV QUANT night
'The women danced all night.'

(6b) yau-ré-tu (yomá tukawári)
dance-PFV-PASS QUANT night
'There was dancing (all night.)'

(7a) pedró umá-re yomá-či kusítere
Peter run-PFV QUANT-LOC woods
'Peter ran all over the woods.'

(7b) uma-ré-tu (yomá kusítere) (pedró-e)
run-PFV-PASS QUANT woods Peter-INS
'There was running (all over the woods) (by Peter).'

I am going to address two main points about the morphological passive constructions given in (5)-(7):

(i) Morphological passives given by the verbal suffix *–tu* are restricted to perfective aspect.
(ii) The causative *–te / -na*, applicative *–ke*, suffixes occur before the tense/aspect suffix; while the *–tu* suffix occurs after.

Tarahumara has a similar construction with the same cognate suffix *–tu / - ru* (Burgess 1984, Valdez-Jara 2005) analyzed as a passive clause. Langacker (1976) glosses this *–tu* suffix as 'become'.

However, we observe in ((5b)-(7b)) that the position of the passive suffix *–tu* is away from the slot for valency changing suffixes that cross-linguistically tend to be closer to the verbal root (Bybee, 1985). The place of the suffix contrasts with the cognate construction in Tarahumara where the suffix *–tu* (*-ru*) is placed before the tense/aspect suffix:

(8) igú ripuná-ru-re, (rió si-lé) (Valdez-Jara, 2005)
wood chop-PASS-PFV man be-PFV
'The wood was chopped, the man did it.'

This morphological passive in Warihío is described by Haspelmath (1990:29-30) as a passive with an extra-inflectional affix, something very rare in the passives of the world.

Personal vs. Impersonal morphological passive

One can also find in Warihío personal and impersonal morphological passive versions of the same event, as is shown in (9b) and (9c), respectively:

(9a) pedró no'ó wewe-rú tapaná
Peter 1SG.NS hit-PFV.EV yesterday
'Peter hit me yesterday.'

(9b) wewe-ré-tu=ne tapaná
hit-PFV-PASS=1SG.S yesterday
'I was hit yesterday.'

(9c) no'ó wewe-re-tu tapaná
1SG.NS hit-PFV-PASS yesterday
'They hit me yesterday.'

This could be related to Focus, since in Warihío the constituent in Focus is the constituent in initial position. Hence (9b) could be the response to what happened yesterday? And (9c) could be the response to who they hit yesterday?

The verbal suffix *-tia*

The passives showing the suffix *–tia* have no perfect/tense suffix:

(10a) wikahtá-tia yomá aarí
sing-PASS QUANT afternoon
'There was singing all afternoon.'

(10b) wewé-tia=ne
hit-PASS=1SG.S
'I was hit.'

(10c) wiiká inamú-tia-me
song listen-PASS-NMLZ
'The song was listened to.'

It seems that the construction with *–tia* tend to be conceived as an event with a singular participant affected.

Functional passive

I am taking a functional or notional passive (Givón, 2001) as a non-prototypical instance of a passive. The verb has no a specific 'passive' meaning, however the whole construction fills all the criteria but the morphological ones given in Shibatani (1985).

The characteristics of these constructions with a passive meaning in Warihío are: (i) The verb is inflected only for non-perfective tense/aspect; (ii) the verb has no passive suffix; and, (iii) the agent can be included peripherically with the instrumental suffix *–e*:

(11a) wiiká inamú=mu
song listen=2SG.S
'You are listening the song.'

(11b) wiiká inamú-mera (amó-e)
song listen-FUT.POT 2SG.NS-INS
'The song will be listened (by you).'

(11c) wikahtá-mera yomá aarí (owéru-e)
sing-FUT.POT QUANT afternoon women-INS
'There will be singing all afternoon (by women).'

(12a) waní kahponá-ni kuú
John break-PRS stick
'John is breaking the stick.'

(12b) kuú kahpóna-ni=a (waní-e)
stick break-PRS=EMPH John-INS
'The stick is being broken (by John).'

(13a) wewe-nia=ni-a
hit-PRS=1SG.S-EMPH
'I am being hit.'

(13b) waní no'ó tetewá-ru no'o we-pa-ní-o
John 1SG.NS see- PFV.EV 1SG.NS hit-INCH-PRS-EMPH
'John saw when I was being hit.'

Note that all the constructions above have the option of including the agent peripherically. If the construction does not include the agent peripherically, this can have two readings depending on the animacy of the participant and the class of verb as can be seen in (14):

(9) neé inamú-mera
1SG.S listen-POT
'I am going to listen.'/'I am going to be listen to.'

Other possibilitiy for a construction to be considered a lexical/notional passive in Warihío is a nominalized copulative construction. In Warihío there are two copulas; the auxiliary verb *ininá* 'to be' and the verbal suffix *-hu*. This latter is used usually for conditions that are not complete:

(10) kuú capona=pu-áme-hu (pedró-e)
stick break-D.D-NMLZ-COP PETER-INS
'The stick will be broken (by Peter).'

(11) wiiká inamu-ni-áme-hu (hustína-e)
song listen-PRS-NMLZ-COP Agustína-INS
'The song is being listened to (by Agustina).'

(12) tihoé natahkepa-ni-áme-hu (yomá tihoé-e)
man forget-PRS-NMLZ-COP QUANT man-INS
'The man is being forgotten (by everybody).'

(13) kuitá uhura-ni-áme-hu ahpó no'nó-ma (maniwíri-e)
child send-PRS-NMLZ-COP 3SG.NS parents-COM Manuel-INS
'The child is being sent to his parents (by Manuel).'

Periphrastic passive

The verb *ininá* 'be' can be used periphrastically with all tense/aspects:

(14a) meeré-o tihóe natahkepa-ni-áme ini-méra yomá-e
tomorrow=EMPH man forget-PRS-NMLZ be-FUT.POT QUANT-INS
'By tomorrow the man will be forgotten by everybody.'

(14b) wiiká inamú-tia-me ini-ré yomá puebló-či
song listen-PASS-NMLZ be-PFV QUANT town-LOC
'The song was listened to by (in) the whole town.'

Ditransitive verbs are passivized also using a nominalized copula construction. With the copula *ininá* for non present tense/aspect (15a, b):

(15a) kuitá uhurá-tia-me ini-ré ahpó no'nó-ma
child send-PASS-NMLZ be-PFV 3SG.NS parents-COM
'The child was sent to his parents.'

(15b) kuitá uhurá-pu-ame ini-méra meeré ahpó no'nó-ma
child send-D.D-NMLZ be-FUT.POT tomorrow 3SG.NS parents-COM
'The child will be sent to his parents tomorrow.'

Warihío passive in narrative

Warihío is not as consistent and systematic as Yaqui on using passive clauses for specific semantico-pragmatic contexts. Actually, only one dozen of passive clauses out of more than one thousand clauses texts were found. Most of them with the suffix *–tia*.

(5b) awési ihkéta wikí-ri-a=ne-o ihkéta soorandóna=pu
how.much owe- PFV-EMPH=1SG.S-EMPH how.much left-D.D

tehkí yoí-**tia**-me
work earn-PASS-NMLZ
'...I went to see how much I owed and how much was left with the work done.'

(5c) kawé to'weré-**tia** kuú wa'á-pote pueta-čí-pote
good put-PASS stick there-up door-LOC-up

ki=moi-míčio henté-o wa'á yoré-muna ičikuá-me
NEG=enter-PURP people-EMPH there inside-toward steal-NMLZ
'...they had put the sticks above on the door very well, so people, thieves, couldn't get in.'

The suffix *–tia* in (5a)-(5b) seems to function as participle, that is, as verbal adjectives. Actually most of the adjectives in Warihío have this same ending *–tia-me* giving the following glosses: 'the listened song' in (5a), 'the earned work' in (5b). For (5c)-(5d) the attributive reading is a little more difficult since there is no the nominalizer *–(a)me* present in almost all verbal adjectives in Warihío. This same suffix *–tia* occurs with intransitive verbs (5e):

(5e) wikahtá-**tia** yomá aarí
sing-PASS QUANT afternoon
'There was singing all afternoon.'

In the examples in (5f)-(5h) the subjects *=ne* 'I', *puú tehtémari* 'those boys', *=pu* 'he' of the passive clauses are the benefactives of ditransitive active sentences :

(5f) simi-yái simi-ká kawái rewé-**tia**=ne
go-IPFV go-PTCP horse lend-PASS=1SG.S

pukaépa pu'-ká-če i'nó-mia pu'-ká rootóre
that's.why D.D-ID-ITER bring-FUT D.D-ID doctor
'...I walked and walked, and they lent me a horse just to bring the doctor.'

(5g) wa'á ihto-aí-čia eikó tihoé-a-pa
there leave-IPFV-QUOT then man-EMPH-INCH
'...then when the man was leaving,

puú teh~témari puú kiya-**tiá**-me wa'á u'má-to-ka wa'á
D.D PL~boy D.D give-PASS-NMLZ there run-MOV-PTCP there
those boys, those who were given (the pears) passed by there.'

(5h) wa'á ihto-ái-čia eikó
there leave-IPFV-QUOT then
when he was leaving

kia-**tiá**=pu-a pu'-ká mókori
give-PASS=D.D-EMPH D.D-ID hat
they gave him the hat

eikó kiyá-ka paiká pu'-ká
then give-PTCP three D.D-ID
then he gave them three (pears)

Warihío shows a heterogeneous group of constructions that can follow the functional properties of a prototypical passive construction. Not all of them show a specific passive morphology. However, I have decided to include them in this section alluding to the diachronic stage of Warihío. A stage with no fully grammaticalized construction for passive. Given the appropriate conditions, diverse constructions may fulfill the functional demands of a passive.

5. Results

As observed before, the morphosyntax of practically all passive constructions found in Yaqui and Warihío is the same. Both languages even share cognates of the protoforms of passive attested for Uto-aztecan languages. however, in analysing discourse in both languages, one find remarkable differences in the use of the construction, such as occurence frequency: while passive constructions are higly frequent in Yaqui, they are rarely found in Warihío. Besides, passive occurrence in Yaqui discourse is very specifically determined, in contrast with the lack of a specific context for the use of the passive construction in Warihío discourse.

6. Conclusion

Asking what a passive is, might be, as Comrie (2003) points out, an inappropriate question, specially given the Yaqui and Warihío data. Some issues still remain to be clarified, such as the following:

(i) The extent to which the presence of verbal morphology is necessary to determine the 'passive' functionality of a construction.

(ii) Determine the point of grammaticalization required to include a construction undergoing such a process: (I) when they fulfill the functional criteria, (II) when additional independent morphology appear, morphology that is not yet in the crossling slot for morphemes that produce valency changes, or (III) until the morpheme appears in that position. (IV) simply discard (I) and (II) from the passive corpus in a given language.

(iii) The passive in Yaqui and Warihío, languages of the same family that share passive verbal morphology and syntax, seems to confirm that the function of the passive on a clausal level (that of agent defocusing) is the same. However, the striking differences of the pasive in use in these two languages can give us information about the semantics of the use of the passive.

Notes

[i] Shibatani uses the term 'agent defocusing' in an attempt to cover different but related phenomena such as the absence of the mention of an agent, mention of an agent in a non-prominent syntactic slot, the blurring of the identity of an agent by the use of plural forms, and the indirect reference to an agent by the use of an oblique case.

[ii] Yaqui is one of those languages that obligatory excludes the agent in the passive (Félix-Armendáriz 2004b).

[iii] Weather events in Yaqui, such as *yuke* 'to rain' and other inactive intransitive verbs like *weče* 'to fall down' or *yo'otu* 'to grow up' do not allow passive forms.

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Yaqui relative clauses

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1. Introduction. Relative clauses have been the topic of many grammatical studies. On the one hand, relativization is a helpful mechanism to distinguish grammatical relations, e.g., subject from object, direct object from indirect object, and so on. On the other hand, relative clauses involve two events, one of which (the dependent one) provides specific information about a participant of the other event (the main one). The dependency is not structural, as in complement clauses, nor temporal, as in adverbial clauses, but in terms of participant sharing. Most languages distinguish the morpho-syntactic structure of relative clauses from other subordinated constructions. Some others may use the same construction type to express relatives and completive clauses. This paper is the first attempt to describe relative clauses in Yaqui, a Uto-Aztecan language from the Sonoran branch. The goals are twofold. It first looks to determine the strategies of relativization in Yaqui in terms of Keenan & Comrie's Accessibility Hierarchy (1977). Second, it seeks to distinguish truly relative clauses from other related phenomena, specifically, complementation. In this language, some complement-taking predicates take a complement unit very similar to relative clauses.

2. Simple clauses in Yaqui. Yaqui is a synthetic/agglutinant type of language with a nominative-accusative case system (Lindenfeld 1973; Escalante 1990; Dedrick & Casad 1999). In nouns, the nominative is unmarked and the accusative is marked by the suffix *–ta*, as shown in (1a). There is no dative case. Postpositions indicate oblique arguments, such as the 'indirect' object of *nooka* 'to talk' in (1b), as well as adjuncts. The clause in (1c) shows that accusative and plural marking on nouns are mutually exclusive.[1]

(1) a. U jamut-Ø Peo-ta bicha-k.
the woman-NOM Pedro-ACC see-PRFV
'The woman saw Pedro.'

b. U o'ou-Ø jamut-ta-u nooka-k.
the man-NOM woman-ACC-DIR talk-PRFV
'The man talked to the woman.'

c. U goi-Ø u-me chu'u-im ke'e-kan.
the coyote-NOM the-PL dog-PL bite-PASTC
'The coyote was biting the dogs.'

Although core arguments tend to precede the verb, i.e., the nominative NP precedes the accusative NP in the examples in (1), it is possible for a core argument to appear in the post-core slot, following the predicate without an intonation break. When the nominative NP follows the verb (2a), nothing happens. When the accusative (2b) or postpositional

(2c) NPs follow the verb, a clitic pronoun co-indexed to the NP must be attached to the verb. Notice that the clitic pronoun keeps the relevant case and number coded in the extraposed NP.

(2) a. Peo-ta bicha-k U jamut-Ø.
Peo-ACC see-PRFV the woman-NOM
'Saw Pedro, the woman.'

b. U jamut-Ø a = bicha-k Peo-ta.
the woman-NOM 3SG:ACC = see-PRFV Peo-ACC
'Pedro, the woman saw him.'

c. U o'ou-Ø au = nooka-k jamu-ta-u.
the man-NOM 3SG:DIR = talk-PRFV woman-ACC-DIR
'To the woman, the man talked to her.'

3. Yaqui relative clauses and the Accessibility Hierarchy. Relative clauses [henceforth RC] introduce or further establish people, objects, time and locations in discourse, by linking them to known referents and situations (cf. Fox & Thompson 1990). As defined by Lehmann (1984: 276), a RC is a construction consisting of a nominal and a subordinate clause interpreted as attributively modifying that nominal. The nominal is referred as the head, and the dependent unit as the relative or restricting clause. The information coded in the dependent unit may either be essential to understanding who the designated entity is (restrictive), or non essential, merely specifying in further detail some information about that noun (non-restrictive). In this vein, RCs are a subspecies of attributive (adjective) clauses, and their core function is to restrict the referent of a head noun (Bickel 2005).

Two main aspects have been widely documented from the viewpoint of typological variation. First, the fact that there is an argument (the head noun), that plays two roles, one in the main clause and one in the RC. Generally, the head noun appears in a modified or reduced form, or is completely omitted in one of the two units (Comrie 1989, 2003, 2005). One of the aims on the study of relativization is to determine the function of the head in the clause in which it does not occur: if the head is outside the RC (externally-headed), we look for its function in the relative clause; if the head is inside the RC (internally-headed), we search for its function in the matrix clause (Van Valin 2005).

Second, languages vary with respect to which syntactic argument can be subject of relativization. Keenan & Comrie found out that different languages exhibit different constraints with respect to which the roles are accessible to relativization, and each language can also use different strategies for a particular role. Keenan & Comrie (1977) proposed the Accessibility Hierarchy illustrated in (3).

(3) Accessibility Hierarchy (AH; Keenan & Comrie 1977: 66)
Subject > Direct Object > Indirect Object > Oblique > Genitive > Object of comparison

This hierarchy has been the object of much debate since its original formulation, even on the part of the authors themselves (cf. Comrie & Keenan 1979; Keenan 1985). For the purpose of this paper, the syntactic role of the notional head in the RC, help us to distinguish different RC strategies in Yaqui. Except for genitives and objects of comparison, the rest of the grammatical positions are accessible to relativization, by means of particular strategies at certain points of the hierarchy.

As in most Uto-Aztecan languages (Langacker 1977), Yaqui has two RCs types. The first type is marked by the clause linkage marker *-m(e)* and it is used when the head noun functions as the subject argument within the RC, as illustrated in (4b). The second type is marked by *–'u* and it is used when the head noun functions as a non-subject argument within the RC, as shown in (4c). As in many languages, the RC is often incomplete (something is missing), since the head noun occurs as an argument of the matrix clause.

(4) a. Aapo siika.
3SG:NOM leave(SG):PRFV
'He/she left.'

b. U [enchi bicha-ka-me] siika.
the 2SG:ACC see-PRFV-CLM leave(SG):PRFV
'The one$_i$ who $\_\__i$ saw you, left'

c. U-me [em bicha-ka-'u] saja-k.
the-PL 2SG:GEN see-PRFV-CLM leave(PL)-PRFV
'The ones$_i$ who you saw$___i$, left.'

d.* [Em u-me bicha-ka-'u] saja-k.
'The ones$_i$ who you saw$___i$, left.'

In (4b), the head noun functions as the agent participant of the dependent verb *bicha* 'see'; in (4b), it serves as the theme participant. The heads (determiners) *u* 'the/one (sg)' and *ume* 'the/ones (pl)' are outside the RCs. Clauses where the notional head is inside the RCs or where there is not a missing (shared) argument as in (4d), are ruled out.

Martínez & Langendoen (1996: 453-4) proposed that RCs marked by *–m(e)* are an instance of nominalization, whereas clauses marked by *–'u* are truly subordinated constructions. Among the evidence presented for the non-subordinated status of *–me* clauses are the following: (i) they may occur by itself as a NP or may occur as an adjunct of a noun; (ii) they may appear as the predicative phrase in copulative clauses; and (iii) they may function as a complement of complement-taking predicates, the later being the

strongest evidence. It is true such as NPs like *bwa'ame* 'food' in (5a) are often derived from verbs using the suffix *–me*, and it is also true that they may function as a complement unit, as shown in (5b). But it seems to me that it is the sharing of a participant between the main and the dependent units which motivates the formation of a referential term from predicative expressions. In Section 4, I will address in detailed the distinction between RCs and complement units. In what follows, the syntactic role of the notional head in the dependent unit is described.

(5) a. [Ini'i bwa'a-me] kia!
this eat-CLM tasty
'This food is tasty (lit. what is eaten)'

b. Aurelia-Ø [enchi laaben-ta pona-m-ta] jikka-k.
Aurelia-NOM 2SG:ACC violin-ACC play-CLM-ACC hear-PRFV
'Aurelia heard you play the violin.'

The subject participant inside the RC is easily accessible to relativization. The head noun *u yoeme* 'the man' in (6a) functions as the dependent subject in *(the one) who stood there.* The head noun *misita* 'cat' in (6b) is also the subject of *(the one) who is around.* Because the notional heads act as the dependent subject, the RC is then marked by *–me.* Notice that the RCs may be overtly marked by accusative or relevant postpositions, depending on the syntactic/semantic function of the notional head within the matrix clause. For instance, *misita* in (6b) is the direct object of the matrix predicate *miika* 'give', and the RC modifying that noun is also marked by the accusative suffix *–ta.* In these examples, the dependent unit is missing a core argument, its subject, meaning they are externally-headed RCs. Notice that there is no reference to the syntax/semantic function of the head noun inside the RC.

(6) a. U yoeme-Ø [aman weye-ka-me] ripti.
the man-NOM there stand-PRFV-CLM blind:STA
'The man who is stood there is blind.'

b. Jipi'ikim misi-ta miiika-Ø [pa'aku weama-m-ta]
milk-PL cat-ACC give-PRES outside be around-CLM-ACC
'Give milk (to) the cat that is outside.'

Non-subject arguments within the dependent verb are relativized using the clause linkage marker *–'u.* The examples below show the relativization of direct objects. In (7a), *jamut* 'the woman' is the direct object of the dependent verb *waata* 'love'. In (7b) *u bisikleta* 'the bike' is the object of *jinu* 'buy'. In (7c) *ume tiikom* 'the wheat' is the object of *echa* 'to sow'. Again, the notional head noun is a core argument of the matrix predicate, and there is a missing argument in the dependent unit. Notice that the RC in (7c) agrees in number with the head noun *tiikom* 'wheat', i.e. the plural marking *–m* is following the clause linkage marker *–'u.*

(7) a. Jamut-ta-u [nim waata-'u] ne waate-Ø.
woman-ACC-DIR 1SG:GEN want-CLM 1SG:NOM miss-PRES
'I miss the woman that I love.'

b. U bisikleeta-Ø [in jinu-ka-'u] sikili.
the bike-NOM 1SG:GEN buy-PRFV-CLM red
'The bike that I bought is red.'

c. U-me tiikom [itom echa-ka-'u-m] si amue-k.
the-PL wheat:PL 1PL:ACC sow-PRFV-CLM-PL a lot produce-PRFV
'The wheat that we sowed produced very well.'

Thus, RCs in Yaqui referring to the dependent subject and direct object are externally-headed. There is nothing inside the RC coding the syntax/semantic function of the notional head noun besides, maybe, the distribution of the clause linkage markers. The situation is more complicated when the head noun functions as the indirect object within the RC. Apparently, there are three strategies: a missing core argument in (8a), a resumptive pronoun in (8b), and the occurrence of the notional head noun inside the RC in (8c).

(8) a. U jamut-Ø [Joan-ta ili usi-ta makka-ka'u] Maria
the woman-NOM Joan-ACC little child-NOM give-PRFV-CLM Maria
'The woman to whom Juan gave a child is Mary.'

b. U jamut-$Ø_i$ [Joan-ta ili usi-ta $a\text{-}u_i$
the woman-NOM Joan-ACC little child-ACC 3SG:DIR

bittua-ka-'u] siika.
send-PRFV-CLM leave:PRFV
'The woman to whom Juan sent (her) the child left.'

c. [Kajlos-ta jamut-ta-u nooka-ka-'u] Maria-tu-kan.
Carlos-ACC woman-ACC-DIR talk-PRFV-CLM María-be-PASTC
'Maria was the woman to whom Carlos talked.'

In (8a), the notional head *u jamut* 'the woman' is the indirect object of *maka* 'give' and it appears as a core argument of a matrix unit, while there is a gap inside the RC. In (8b), the *u jamut* functions as the indirect object of the verb *bittua* 'send' but here there is a pronoun inside the RC co-indexed to the head noun. Notice that the pronoun *au* 'to her/him' explicitly codes the syntax and semantic roles of the head noun within the RC. In (8c), the head noun occurs inside the RC, i.e., internally-headed. Although more data is necessary, the second strategy seems to be the most common one, and it is observed in more complex structures.

Yaqui shows a predominantly primary/secondary object pattern in ditransitive and derived verbs, but it also shows a direct/indirect object pattern with certain predicates (Guerrero & Van Valin 2004). For the set of predicates where the theme and the recipient are both marked as accusative, as *miika* 'give', the RC has equally access to both arguments, the accusative theme (9b) and the accusative recipient (9c).

(9) a. Peo-Ø jamut-ta toto'i-ta miika-k.
Peo-NOM woman-ACC hen-ACC give-PRFV
'Pedro gave the woman a hen.'

b. U toto'i-$Ø_i$ [Peo-ta jamut-ta a_i miika-ka-'u]
the hen-NOM Peo-ACC woman-ACC 3SG:ACC give-PRFV-CLM
'The hen that Pedro gave (it) to the woman.'

c. U jamut-$Ø_i$ [Peo-ta toto'i-ta a_i miika-ka-'u]
the woman-NOM Peo-ACC hen-ACC 3SG:ACC give-PRFV-CLM
'The woman to whom Pedro gave (her) the hen.'

For those ditransitive verbs where the theme is marked accusative and the recipient/goal is marked by a postposition, such as *nenka* 'sell', both core arguments can be relativized in the same way that above, meaning that relativization cannot distinguish between the theme and the recipient. In (10b), the head noun *toto'ita* 'the chicken' remains in the main clause, whereas the dependent verb takes an accusative resumptive pronoun. In (10c), the resumptive pronoun is marked by the directional postposition.[2]

(10) a. Peo-Ø jamut-ta-u toto'i-ta neenka-k.
Peo-NOM woman-ACC-DIR hen-ACC sell-PRFV
'Pedro sold the hen to the woman.'

b. U toto'i-ta_i [Peo-ta jamut-ta-u a_i nenka-ka-'u]
the hen-NOM Peo-ACC woman-ACC-DIR 3SG:ACC sell-PRFV-CLM
'The hen that Pedro sold (it) to the woman.'

c. U jamut-ta_i [Peo-ta toto'i-ta a-u_i nenka-ka-'u]
the woman-NOM Peo-ACC hen-ACC 3SG:DIR sell-PRFV-CLM
'The woman to whom Pedro sold the hen (to her).'

The same strategy of pronoun retention is used for oblique arguments. In (11), the head noun *kuchi'im* 'knifes' acts as an instrument within the dependent verb *chukta* 'cut'. Inside the RC, there is a pronoun *amea* 'with it' marked with the relevant postposition. Notice that in this particular example, the dependent verb not only agrees in number with the head noun, but it also takes the instrumental postposition *-mea* 'with'.

(11) Kuchi'i-m$_i$ ne maka-'e [wakaj-ta em a-mea$_i$
knife-PL 1SG:ACC give-IMPER meat-ACC 2SG:GEN 3SG-INSTR

chuk-chukta-'u-m-mea].
RED-cut-CLM-PL-INST:PL
'Give me the knives that you chop the meat with.'

To sum up, there are two main strategies to express the relative notions in Yaqui. In the first one, the notional head noun acts as a core argument of the matrix predicate; there is no morphological coding on the syntax/semantic roles of the head noun within the RC, i.e. the gap strategy. In the second one, the RC shows a non-subject pronoun coding the syntax/semantic functions of the notional head noun, i.e. pronoun retention strategy. The distribution of the clause linkage markers *–me* and *–'u* only distinguishes subject and non-subject relativization. Direct object, indirect object and adjuncts are all relativized using the suffix *–'u*, although the occurrence of certain postpositions are also attested. It is hard to get RCs modifying genitives and objects of comparisons; because of this, I don't have convinced date about these positions. Let's move now to the comparison of RCs and other related phenomena in Yaqui.

4. Relative clauses vs. complement constructions. Languages sometimes use the same or a very similar construction for relatives and other subordinate relations such as complementation (cf. Cristofaro 2003). This seems to be the case in Yaqui. There are four complement types: a syntactic type, a nominalized type, a periphrastic type, and a morphological type (Guerrero 2004). The first two are structurally similar to RCs. The syntactic complement type takes the clause linkage marker *–'u*, and it is selected by most cognitive and mental verbs, as well as certain jussives and psych-action complement-taking predicates. In (12a), the matrix predicate *jikka* 'to hear' takes a syntactic complement to express indirect perception, e.g. *Maria heard that Ivan cried.* The nominalized type takes the clause linkage marker *–me* and its occurrence is restricted to perception predicates, *teenku* 'dream', and *te'a* 'find'. In (12b), the same predicate takes a nominalized complement expressing direct perception, e.g. *Maria heard Ivan cry.* In contrast to the *–'u* type, the *–me* type requires the main subject and the dependent subject to be different, i.e., non-correferential. The construction in (12c) is a relative clause.

(12) a. Maria-Ø [Ivan-ta bwana-ka-'u] jikka-k.
Maria-NOM Ivan-ACC cry-PRFV-CLM hear-PRFV
'Maria heard that Ivan cried.'

b. Maria-Ø [Ivan-ta bwana-m-ta] jikka-k.
Maria-NOM Ivan-ACC cry-CLM-ACC hear-PRFV
'Maria heard Ivan cry.' / *'Maria heard the Ivan who cried.'

c. Maria-Ø ili uusi-ta [bwana-m-ta] jikka-k.
Maria-NOM little child-ACC cry-CLM-ACC hear-PRFV
'Maria heard the child who cried.' / 'Maria heard the child cry.'

There are, at least, six major differences between a RC and complement clauses. First, whereas the head noun of a RC tends to be a common noun, the subject of a complement unit is usually a proper name or a personal pronoun. The complement in (12a-b) cannot be derived from a restrictive RC because proper names and unique noun phrases may not be heads of restrictive relatives (Akmajian 1977). In other words, whereas a RC refers to a particular entity, complements do not refer to any particular individual but rather expresses a state of affairs regarding that individual. However, when the participant involved in a state of affairs is a common noun as in (12c), we would be in a borderline area in which it may be interpreted as the perception of an entity modified by a restrictive RC, e.g., *I heard [a child] [crying],* or a direct perception of a situation, e.g. *I heard [a child crying].*

Second, as Langacker (1977) points out, the subject inside the RC may occur in its genitive or accusative form in most Uto-Aztecan languages; in complementation, they are primarily marked as accusative. In Yaqui, there are only two consistent differences between the two pronominal paradigms: the genitive pronouns for the first person singular *ni ~ nim* and second person singular *em,* as compared to the accusative pronouns for first person *ne* and second person *enchi*, respectively. All other pronouns are the same for genitives and accusatives. In the RCs in (13a-b), the pronominal subjects must be genitive. In the completive clause in (13c), the pronominal subject must be accusative. When nominal, the subject is marked by the suffix *–ta* in both cases.

(13) a. Jamut-ta-u [nim / *ne waata-'u] ne waate-Ø.
woman-ACC-DIR 1SG:GEN / 1SG:ACC want-CLM 1SG:NOM miss-PRES
'I miss the woman that I love.'

b. [Em / *enchi bwika-'u] ne yi'i-ne.
2SG:GEN / 2SG:ACC sing-CLM 1SG:NOM dance-EXPE
'I will dance whatever you sing.'

c. Maria-Ø [enchi / *em bwana-m-ta] jikka-k
Maria-NOM 2SG:ACC 2SG:GEN cry-CLM-ACC hear-PRFV
'Maria heard you cry.'

There are some instances in complementation where the embedded subject may be marked genitive. This seems to happen with cognitive predicates, such as *forget* and *remember*, and only when the matrix subject and the dependent subject are co-referential, as in (14a). Otherwise, the construction is inaccurate, as shown in (14b).

(14) a. Ne [ne / nim_i Vicam-u ya'a-ne-'u] wawaate-k.
1SG:NOM 1SG:ACC/ 1SG:GEN Vicam-DIR make-EXPE-CLM remember-PRFV
'I remembered what I have to do in Vicam.'

b. Ne [enchi / *em_i Vicam-u ya'a-ne-'u] wawaate-k.
1SG:NOM 2SG:ACC / 2SG:GEN Vicam-DIR make-EXPE-CLM remember-PRFV
'I remembered what you have to do in Vicam.'

Third, RCs may take nominal categories such as number, case and even postpositions, whereas complement units can not. On the one hand, we saw examples where RCs marked by *–me* take the suffix *–ta* when the head noun functions as the accusative argument within the matrix unit; see the example in (6b) above. The nominalized complement in (15) is also marked as accusative but not because of agreement, but because it serves as a core argument of the matrix predicate *te'a* 'find'.

(15) Nim achai [jaibu enchi siika-m-ta] te'a-k.
1SG:GEN father already 2SG:ACC go:PRFV-CLM-ACC find-PRFV
'My father found/discovered that you already left.'

On the other hand, a RC marked by *–'u* tends to agree with its notional head noun when plural; see the example in (7b) above and (16a) below. Regardless of the number of the participants involved in complementation, number agreement is completely disallowed, as demonstrated in (16b-b′).

(16) a. Min-Ø kaba'i-m bicha-k [Anselmo-ta jinu-ka-'u-m]
Min-NOM horse-PL see-PRFV Anselmo-ACC buy-PRFV-CLM-PL
'Fermín saw the horses that Anselmo bought.'

b. Min-Ø [Anselmo-ta kaba'i-m jinu-ka-'u] bicha-k
Min-NOM Anselmo-ACC horse-PL buy-PRFV-CLM see-PRFV
'Fermín saw that Anselmo bought the horses.'

b′. *Min-Ø [Anselmo-ta kaba'i-m jinu-ka-'u-m] bicha-k
'Fermín saw that Anselmo bought the horses.'

Fourth, we have seen cases where there is a one verbal slot left empty in a RC when modifying subjects and objects, which the head noun may fill, For clarity, this gap is indicated in (17a) by a blank space. In contrast, all of the slots required by the dependent verb in a complement unit must be overtly expressed, as shown in (17b). The clause in (17b′) is ruled out since the embedded subject serves as an argument of the matrix core, something that is fine for RCs.

(17) a. Mu'u-ta$_i$ empo bichak [___$_i$ ito-t wam ne'e-ka-m-ta].
owl -PL 2SG:NOM see-PRFV 1PL-LOC over fly-PRFV-CLM-ACC
'Did you see the owl that flew over us.'

b. Min-Ø bicha-k [ne kaba'i-ta jinu-ka-m-ta].
Min-NOM see-PRFV 1SG:ACC horse-ACC buy-PRFV-CLM-ACC
'Fermín saw me buy the horse.'

b'. *Min-Ø ne bicha-k [___$_i$ kaba'i-ta jinu-ka-m-ta].
'Fermín saw me buying the horse.'

Fifth, regarding the position of the linked unit, the RC goes after the head noun, whereas the complement unit tends to appear extraposed to the right. Usually, the RC immediately follows the head noun, but it may also occur apart, especially when modifying a non-subject notional head. This is illustrated in (18a). In complementation, the linked unit may appear embedded in the main clause as in (18b), but the preferred position is to be extraposed to the right, following the matrix predicate, as in (18c).

(18) a. Luisa-Ø tajo'o-ta bicha-k [___$_i$ nim baksia-ka-'u]
Luisa-NOM cloth-ACC see-PRFV 1SG:GEN wash-PRFV-CLM
'Luisa saw the clothes that I washed.'

b. Luisa [tajo'o-ta ne baksia-ka-'u] bicha-k
Luisa-NOM cloth-ACC 1SG:ACC wash-PRFV-CLM see-PRFV
'Luisa saw that I washed the clothes.'

c. Luisa a$_i$ bicha-k [tajo'o-ta ne baksia-ka-'u]$_i$
Luisa-NOM 3SG:ACC see-PRFV cloth-ACC 1SG:ACC wash-PRFV-CLM
'Luisa saw it, that I washed the clothes.'

And six, pronoun retention. We found that the strategy of pronoun retention recalls the syntactic/semantic role of the head noun inside the RC, and it is more likely to be found towards the right end of the hierarchy than towards the leftward end. Relativized nouns functioning as subjects and transitive objects do not allow this strategy. One more example is presented below. In (18a), the head noun *wikiata* 'the lasso' functions as an instrumental oblique argument within the RC; since the RC is extraposed, it takes a resumptive pronoun *a-e* 'with it' referring to the head noun. Complementation involves another kind of pronoun retention. When the complement unit marked by *–'u* is extraposed to the right, the main clause takes a resumptive pronoun co-indexed to the complement as a whole. In (18b), the main predicate takes an accusative singular pronoun *a*, but there is nothing inside the dependent unit to which *a* may agree with.

(18) a. Inepo u-ka wikia-ta$_i$ tamachia-Ø [in a-e$_i$
1SG:NOM the-ACC lasso-ACC measure-PRES 1SG:GEN 3SG-INST

kaba'i-ta jicho'ola-bae-'u].
horse-ACC rope-DESID-CLM
'I am measuring the lasso with which I will rope the horse.'

b. Aurelia-Ø a$_i$ jikka-k [enchi laaben-im pona-ka-'u]$_i$
Aurelia-NOM 3SG:ACC hear-PASTP 2SG:ACC violin-PL play-PASTP-CLM
'Aurelia heard it, that you played the violins.'

5. Final remarks. This paper has described the morpho-syntactic strategies to express relative clauses in Yaqui and has introduced the major differences between relative clauses and complement constructions. The fact that a 'pseudo'-relative clauses may serve as the complement of perception and other knowledge predicates has been observed in other languages; see Lambrecht (1981), Koenig & Lambrecht (1999), van der Auwera (1985) for French; Miller (1989) for Huaraz Quechua; Guasti (1992) and Borgonovo (1996) for Spanish. In Yaqui, verbs coding direct perception, as well as mental predicates such as *te'a* 'find, discover' and *teenku* 'dream, imagine' seem to be the only complement-taking predicates allowing a dependent unit marked by *–me*. Verbs coding acquisition of knowledge, such as indirect perception and cognitive, as well as speech act verbs, take a clausal complement marked by *–'u* but never a nominalized clause.[3]

The question then arises as to what is the association between relative relations and perception and cognition predicates. A possibility may be the sharing of a participant. On the one hand, in RCs the dependent unit only provides a specification or attributive property about a single participant of it. This property is used to uniquely identify this entity within a set of possible referents (Cristofaro 2003: 197). On the other hand, an act of perception involves a state of affairs as a whole, the perceived event, but it also involves the entity bringing about this state of affair. That is, we simultaneously see, hear, or otherwise perceive not only the event going on but also the entities bringing them about. As a result, the dependent unit may be construed as a property attributed to the entity bringing it about.

Notes

[1] Abbreviations: ACC = Accusative, CLM = Clause Linkage Marker, DIR = Directional, EXPE = Expected, GEN = Genitive, INSTR = Instrumental, LOC = Locative, NEG = Negation, NOM = Nominative, PASS = Passive, PASTC = Past Continuative, PRFV = Perfective, PL = Plural, PRES = Present, SG = Singular.

[2] Although more data is necessary, I found examples where the relativization of the goal involves the passivization of the dependent verb. In this case, the RC is missing a

syntactic argument, i.e. no-reduction strategy. Below, two versions of a RC provided by different speakers.

a. U misi-Ø [chu'u-ta nenki-wa-ka-'u chikul-ta]
the cat-NOM dog-ACC sell-PASS-PRFV-CLM mouse-ACC
'The cat to whom the dog sold a mouse left.'

a'. U misi-$Ø_i$ [chu'u-ta chikul-ta a-u_i nenka-ka-'u]
the cat-NOM dog-ACC mouse-ACC 3SG-DIR sell-PRFV-CLM
'The cat to whom the dog sold a mouse.'

[3] Yaqui is also more restrictive in marking a complement clause as accusative, compared to other Uto-Aztecan languages. According to the examples in Langacker (1977), cognition and propositional attitude predicates used to take an accusative complement clause in Luiseño, Cahuilla, Serrano, Cupeño, Tulatulabal, among others.

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The Poetics of Evidentiality in South American Storytelling

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This paper compares reportive evidential marking in the context of two South American storytelling traditions: Brazilian Nheengatú (Tupian *língua geral*) and Ecuadorian Quichua (Quechuan). Both languages use a reportive marker in association with second-hand information, and in both cases evidential marking is an important grammatical feature of the artistic genre of the traditional story, understood as a broad category including myths, folktales and community histories (but excluding personal narratives, which are first-hand experiences). Although it is common for indigenous languages of the Americas to evidentially frame stories as reported information, it is notable that Quichua and Nheengatú do so in ways that contrast with the other members of their respective language families. Both languages arrived in northwestern South America relatively recently, an area where evidentials are widespread, and over time Nheengatú and Quichua developed their particular present relationships between grammatical marking and poetic performance, probably influenced in part by processes of transmission and translation of stories from the areas they were imported into.

By focusing on evidentiality in storytelling I hope to illustrate the importance of the role of South American discourse forms and verbal art traditions in mediating language contact and change at all levels, from the social to the grammatical, and to show how storytelling can be one of the mediums though which linguistic features are adopted, adapted, modified and integrated into new contexts.

Amazon case study: storytelling and reportives in Brazilian Nheengatú

The Tupian language Nheengatú is often considered an oddity when compared to the other members of its language family; adopted by both *mestiços* and non-Tupí Indians, it was dispersed far from its coastal origins into Amazonia beginning in the 17th Century (Moore, Facundes and Pires 1994). This unique history has allowed modern Nheengatú to develop features uncommon in Tupí languages, including evidential marking.[1] Rodrigues writes this about evidentials in Tupí languages:

> "Evidentiality is a pervasive feature of parts of Amazonia. On the information available, it is not a major characteristic of the Tupí family, being found in only a few languages."
>
> Rodrigues (1991:119)

In Nheengatú speakers frequently use a reportive marker (*paá*) to manage information, distinguishing what is hearsay from what is firsthand experience. The following example illustrates reportative marking in everyday conversation:

(1)
1. I see Aldevan go fishing.

2. Aldevan's aunt Marcilha arrives at the house and asks where he has gone.

3. I say: u-sú u-piniatika
3sg-go 3sg-fish
He went fishing.

4. A friend comes to visit and asks Marcilha where Aldevan has gone.

5. She says: u-sú u-piniatika paá
3sg-go 3sg-fish REP
He went fishing (they say/I was told)

Perhaps because attempting to translate *paá* into Portuguese commonly yields a speech verb like *dizem* or *contam* ("they say" or "they tell"), some sources mistake the reportive for a verb. Cassasnovas, a Catholic priest who wrote a useful reference booklet on Nheengatú, glosses the particle as a verb, calling it:

> "An irregular form, unconjugatable, with a certain dubitative sense; the person who relates the information does not affirm it, but attributes it to those who told it before him" (2000:40)

This is an excellent description of the reportative in discourse, but it mis-categorizes it as an irregular verb; it is better described as an evidential marker.[2]

Although evidentials are rare in Tupian languages, modern Nheengatú speakers are the neighbors of speakers of Tucanoan, Arawak, Makú and Yanomami languages, all which have evidential systems with reportive markers (Epps forthcoming, Aikenvald and Dixon 1998). The Nheengatú speakers in the Middle Rio Negro community where I collected data self-identified with a range of Upper Rio Negro ethno-linguistic categories, including Tucanoan, Arawak and Makú groups. Many community members could relate histories of migration from upriver areas over the last two or three generations; the adoption of Nheengatú had accompanied this migration. Given this context of language contact with and shift from languages with evidential systems, it is not surprising to find reportive evidential marking in Nheengatú discourse.

The following example illustrates how speakers use the reportive marker to manage information in a personal narrative. The speaker uses the marker two times (lines 3 and 4) when she mentions the supernatural monster "*mira akanga*," disavowing all knowledge of whether such a creature exists:

(2)
1. Ya-studari waá tempo kariwa,
1pl-study that time whiteboy
In the days when we studied (in elementary school), whiteboy,

2. maá tempo ya-yupirú ya-studari waá,
in.that time 3pl-begin 3pl-study that
in the time when we began to study;

3. ape pituna ramé u-sika-wera mira akanga paá.
then night during 3sg-arrive-HAB person head REP.
at that time, during the night the "people head" used to arrive, they say.

4. Aé paá pituna ramé ya-sendu-wera sasemu
3sg REP night during 1pl-hear-HAB shout
He - they say - we used to hear his cries at night.

5. mĩ kaá-kití u-sasemu-wera u-sika-wera.
there forest-DIR 3sg-shout-HAB 3sg-arrive-HAB
There in the forest (something) used arrive and to cry out.

6. Ti a-kwó maá taá aé.
no 1sg-know that INT 3sg
I do not know what it was.

In most kinds of discourse the reportive is invoked selectively in association with the reported or doubtful information[3], and might be heard only rarely, depending on the topic of talk. In traditional stories, however, where all of the information conveyed is repeated from an earlier source, the evidential marker occurs with notable regularity, usually about once per line of transcript.

The following example shows three short excerpts from a Nheengatú story whose teller noted at the outset was a translation from a story in Tucano that she had presumably heard as a girl from her Tucano-speaking parents or grandparents. The story, about a woman who has a deer baby with a forest devil, exists in a number of different local languages.

Most lines in the following example begin with the word *ape*, "then," followed by the reportive in second position: [I provide notes about the story to connect the three excerpts.]

(3)
[There was a woman who every day told her three children "You go down to the river and bathe, blowing bubbles 'foo, foo, foo,' in the water." "Why does she send us away?" they asked. Every day it was the same, so one day the children decided to sneak back home early. They saw their mother take a baby deer out of a bundle in the rafters and nurse it. When she finished and went to the field to work, the children stayed behind and went to look at the deer baby. It did not have any legs.]

1. Ape paá u-yuka "puxa" unheé paá,
then REP 3sg-get wow 3sg-say REP
Then, they say, they got it and said "wow," they say.

2. "Se-mú-miri-tá puranga retã yande mu nungara puranga-ikú."
1sg.POSS-brother-DIM-pl excellent very 1pl brother similar excellent-CONT
"My little brother is really great our little adopted brother is great."

3. Tambem paá ta-pisika ta-maá puranga; ti u-puamu, u-wari-ntu.
also REP 3pl-arrive 3pl-see excellent no 3sg-stand 3sg-fall-only
Then, they say, they picked it up and looked it over well; it would not stand, only fall over.

4. "Ya-sú ya-maá wirandé kuri."
1pl-go 1pl-see tomorrow POT
"Let's go see tomorrow again."

5. Tayana paá ta-mu-yupiri.
3pl-run REP 3pl-CAUS-climb
They ran, they say, and climbed up.

6. Amú ara paá i-manha u-sika, "Pe-sú pe-yasuka."
other day REP 3sg POSS-mother 3sg-arrive 2pl-go 2pl-bathe
Another day, they say, their mother arrived. "You go and bathe."

7. Tasu-ã garapá-kití-tẽ iri ta-semu iri ta-peyu iri fu fu
3pl-go-COMP shore-towards-EMPH again 3pl-go.out again 3pl-blow again fu fu
They went down to the shore again. They went out again and blew (bubbles) again, foo foo.

[One day the children decided to make the deer baby some legs out of an embaúba plant. The deer baby began to wander around the yard.]

8. Ape paá u-mu-puamu-ã
then REP 3sg-CAUS-stand-up-COMP
Then, they say, they made (the deer child) stand up,

9. aikwé paá batata tia, kwe akwó (ba?) terero-pé.
exist REP potato plant like.that 1sg-think garden-inside
and there was a potato plant (nearby) I think inside the garden.

10. Ape paá u-puamu suasú raíra
then REP 3sg-stand-up deer child
Then, they say, the deer child stood up,

11. yuruparí raíra wasú. u-sú u-mbaú batata rawa.
devil child big 3sg-go 3sg-eat potato leaf
the big devil child, he went eating potato leaves.

12. Puu yande mu nungara puranga retã u-mbaú batata rawa.
wow 1pl brother similar excellent very 3sg-eat potato leaf
"Wow, our little adopted brother eats potato leaves really well!"

[The deer baby ran off into the forest. When their mother returned she was very angry. Later the devil (*yuruparí*), the deer child's father, arrived at their house with some with a freshly-killed *inambú* bird. He cooked food for himself.]

13. Ape paá yuruparí r-imbiú manikwera.
then REP devil 3sg POSS-food sweet-manioc
Then, they say, (they put it) in the devil's food, his sweet manioc.

14. Ape paá ta-timiaro ta-xari.
then REP 3pl-mix.poison 3sg-leave
Then, they say, they mixed in the poison and left it.

15. Ape u-nheé paá xupé "Ti puranga u-ikú," u-nheé a-kwó.
then 3sg-say REP OB no excellent 3sg-be 3sg-say 1sg-know
Then, he said to them, "It doesn't look good," he said, I think.

[The devil fell dead. The children were not able to reconcile with their mother. "We fought with our mother," they said, and then they grew feathers, turned into birds, sang "tutireeee" and flew away.]

Writing about reportive marking in Hup discourse, Epps describes an almost identical scenario to that of Nheengatú, as shown in the last two examples.

> [The reportive] can cliticize to any focused constituent of a clause . . . In narrative, the reportative marker is much more likely to occur in second position in the clause than on the verb.
> (Epps forthcoming:14)

Likewise, the Nheengatú reportive marker is associated with focus in most kinds of discourse, and its positioning becomes more regularized, in second position, in storytelling. Similar patterns hold for other area languages. An example from of the same story told in Tariana also regularly marks verbs with a reportive suffix (Aikhenvald 1999b) creating a register that resembles the regular repeated evidential marking in the Nheengatú version. As seen in the following example from a late 19th Century collection of Wanano and Tariana stories told in Nheengatú, people have been translating Upper Rio Negro stories into Nheengatú for many generations. Representative of all of the tales in the collection, the example shows the same repeating second position usage of the reportive as seen in the modern story above.

(4)
Aikué paá iké Mauhiti-Kuri Kaxiuerupé iepé kurumiuasu
There was, they say, here on Mauhiti-Kuri rapids, one young man.

Aé paá puranga iepé, maaiaué aé ntyo omuapý ipuranga maanungara mimbŷ kunhãetá ntyo omaan i xupé.
He, they say, was handsome, but he since he could not play memby well, none of the girls looked at him.

Sasyara paá aé ouatá, upanhé aé osu opinaityka kaxiuerapé . . .
Saddened, they say, he always went alone to fish in the rapids . . .
(Brandão de Amorim 1926:267)

Taylor, investigating Nheengatú on the Rio Negro in the mid-eighties, noted the importance of the reportive's rhythmic affect in storytelling:

> "The reportive *paá* appears frequently in stories with a function that is more prosodic than semantic."
> (Taylor 1985:16)

I would argue, however, that the function of the reportive in storytelling is neither more nor less prosodic than it is semantic, and that in fact it represents an integrated expression of poetics and information management. The storyteller creates a repeating, rhythmic and parallel line structure while simultaneously reminding listeners that the information has been handed down from person to person over generations.

New generations of storytellers use the prosodic affect of repeating reportive marking as a model for aesthetically pleasing storytelling, and simultaneously affirm their place in the chain that passes down oral knowledge. In the following example a young girl retelling a favorite story of her grandfather faithfully reproduces the second position reportive marking, a key ingredient of a Nheengatú story's line structure. In line 5 she

repeats the line-initial storytelling device *ape paá* twice, as if she knows how the line is supposed to start, even as she stalls, trying to remember the rest:

(5)

1. Yepé viagem paá yepé pigá u-mbeú kunhá xi-mirikú xupe rã que u-sú ayuri kití
one trip REP one man 3sg-tell woman 3sgPOSS-wife OB for that 3sg-go shore DIR
One time, they say, a man told his wife that he was going down to the river.

2. Ape paá até kunhá u-sendú barulho no garapá kití
then REP until woman 3sg-hear noise in port DIR
Then, they say, the woman heard some noise by the port.

3. Ape u-sendú que, até taína u-mbeú ti u paya aé até kunhá u-nheenga que imena paá
then 3sg-hear that until child 3sg-tell NEG 3sg father 3sg until woman 3sg-speak that husband REP
Then she heard, the children said "that's not father" she said it was her husband, they say.

4. Ape paá, ape paá u-yatimun u-yatimun u-yatimun até u-wari.
then REP then REP 3sg-roll 3sg-roll 3sg-roll until 3sg-fall
Then, they say, then, they say, they rolled and rolled and rolled and fell.

Evidential marking, which is a particularly contagious feature, has been noted to spread from language to language around the northwest Amazon; storytelling is an important medium for such spread. As Nheengatú probably adopted/adapted reportive marking, both in its semantic and prosodic capacities, from the languages it came into contact with when it was brought to Amazonia, now Nheengatú may be influencing the regional variety of Portuguese, where a frequent usage of dubitive phrases like *dizque*, "they say," and *parece que*, "it seems that" are common in the context of stories and other second-hand information. Similar adaptations to evidentiality have been noted in Latin American varieties of Spanish and Portuguese (Aikhenvald 2004).

The following excerpts are from a Portuguese version of the *mikura* story (a.), told by the same girl who related it in Nheengatú (in example 5) and a Portuguese version of the story about the deer child (b.) (in example 3), told by the son of the woman who narrated it in Nheengatú:

(6)

a. 1. Aí ele perguntou para onde dizque estava
Then he asked where do "they say" she was,

2. e falarom que um homem matou, que o nôme dele era mikura dizque.
and they said to him that a man killed (his wife) and his name was *mikura*, "they say."

b. 1. Até dizque um dia, ne? que os filhos, parece que já olharam, ne?
Until "they say" one day, right? that the children, "it seems that" they already saw, right? . . .

2. tinha umas batatas assím que tinha dizque na frente da casa
There were some potatoes that they had, "they say," in front of the house . . .

3. Até um día que, parece que (?) a perna parece que estava mais forte, ne?
Until one day that, "it seems that" (?) the leg(s) "it seems that" they were stronger, right? . . .

The special relationship between storytelling and information management is re-invented and maintained as traditional stories are translated from other Rio Negro languages into Nheengatú, and perhaps to some extent as Nheengatú stories are translated into Portuguese. Both the grammatical and poetic functions of evidentials, as an integrated package in discourse, are adapted into new linguistic contexts through the retelling of stories. The following section leaves Brazil to describe a different scenario for indigenous discourse in Ecuador.

Andean case study: line structure and reportives in Ecuadorian Quichua stories

Quichua, the Ecuadorian variety of the Andean Quechua languages, has a reportive marker which is pragmatically very similar to that of Nheengatú. In most cases second-hand information is obligatorily marked, a zero marker being equivalent to claiming first-hand experience:

(7)

a. Huasha-man cunug yacu tia-n.
behind-towards hot water be-3sg
On the other side (of the ridge) there are hot springs; (I have been there and seen them).

b. Huasha-man cunug yacu tia-n nin.
behind-towards hot water be-3sg REP
On the other side (of the ridge) there are hot springs; (I have been told).

Despite this pragmatic similarity to the Nheengatú reportative marker, the Quichua marker is quite different syntactically and grammatically. The word *nin* is a third person form of the verb "to say," making the reportive explicitly a quotative. Quechuan langauges are SOV and the reportive's verbal origins appear to explain why it frequently appears in phrase-final position – contrasting with Nheengatú reportives which usually prefer second position, as noted earlier.

Aside from these structural differences, however, reportive marking in Quichua traditional stories shows many poetic similarities to Nheengatú's prosodic use of evidential marking in storytelling discourse. As in Nheengatú, the reportive appears fairly regularly, about once per line, in a consistent position. In the case of Quichua, the storytelling pattern ends most lines (except for dialogue; see lines 7-10, 11, 19) with a past participle that expresses the main action of the sentence, and the reportive *nin*, technically in the role of main verb. The following example shows an excerpt from a longer story, showing a parallel structure created by repeated reportative marking:

(8)

1. Ña cutishug tiempo-pi tupa-ri-shca nin, cutin.
now another time-LOC meet-REFL-PART REP again.
Now another time (rabbit and wolf) met, they say, again.

2. Chay-ca ni-shca nin:
DEM-FOC say-PART REP
Then (rabbit) said, they say:

3. Tio ima-ta-tag rura-shpa cay-pi shaya-cu-ngui ni-shca nin.
uncle what-DO-INT do-GER here-LOC stand-CONT-2 say-PART REP
"Uncle what are you doing standing around here?" he said, they say.

4. Sanja jahua-pi shaya-cu-shca ni-n, lobo-ca.
ditch above-LOC stand-CONT-PART REP wolf-FOC
Above the ditch he stood, they say, the wolf.

5. Atug rucu-ca. Chayca ni-shca nin:
wolf old-FOC DEM-FOC say-PART REP
The old wolf. Then he said, they say:

6. Huambra, can ima-ta rura-cu-shpa cay-pi shaya-cu-ngui, ni-shca nin.
boy 2sg what-DO do-CONT-GER here-LOC stand-CONT-2 say-PART-REP
"Boy, what are *you* doing standing around here?" he said, they say.

7. Imata rura-shpa shaya-cu-ngui huambra?
what-DO do-GER stand-CONT-2sg boy
"What are you doing standing around, boy?"

8. Tio ucu-pi-ca oro-huan cullqui-huan-mari tia-cu-n.
uncle inside-LOC-FOC gold-with silver-with-AF exist-CONT-3SG
"Uncle, underneath (the water) there is gold and silver."

9. Ima ri-y-ta na usha-ni-ca. Chay-ta japi-ngapag-mari muna-ni
what go-INF-CO NEG be.able-1sg-FOC that- DO grab-in.order.to.AF want-1sg
"But there is no way for me to get it. I want to get it."

10. Ricuy ricuy ucupi-ca oro-huan cullqui-huan-mari tia-nacu-n, ni-shca nin.
Look look inside-LOC-FOC gold-with silver-with-AF exist-REC-3sg say-PART REP
"Look, look, underneath (the water) there is gold and silver together," he said, they say.

11. Chay-ca, ñuca-pag huicsa-gu-mari uchilla, tio-ca jatun huicsa-ta-mari char-ingui
DEM-FOC 1sg-POSS stomach-DIM-AF small uncle-FOC big stomach-DO-AF have-2sg
"And my stomach is too small, but you uncle have a very big stomach."

12. Can yacu-ta upya-shpa chupa-y oro-ta japi-ngapag, ni-shca nin.
2sg water-DO drink-GER suck-IMP gold-DO grab-in.order.to say-PART REP
"You can drink up all the water in order to get the gold," (rabbit) said, they say.

13. Chupa-cu-gri-y-lla ñu-ca japi-sha-lla ni-scha-mi nin.
suck-CONT-FUT-IMP-LIM 1sg grab-1sgFUT-LIM say-PART-AF REP
"Go ahead and drink it up, and I will get (the gold)," he said, they say.

14. Chay-manta-ca tonto-ca ari nishpa yacu-ta chupay calla-ri-shca nin.
DEM-from-FOC idiot-FOC yes say-GER water-DO suck-NOM begin-PART REP
So then the idiot said yes and began to drink up the water, they say.

15. Ri-cun yacu-ta. Chay-manta-ca ña huicsa-ca tugya-shca nin.
go-CONT3sg water-DO DEM-from-FOC now stomach burst-PART REP
The water goes (down). Then his stomach was ready to burst, they say.

16. Ña yacu-ca siqui-manta llugshi-shca nin.
now water-FOC backside-from leave-PART REP
Now water came out of his backside, they say.

17. Singa-cuna-man-pash llugshi-shca nin.
nose-pl-to-also leave-PART REP
And water came out of his nostrils, they say.

18. Pero por dios oro ima (?) mayta japi-sha? Chay-ca ni-shca nin:
but by god gold what where-DO find-FUT-1sg DEM-FOC say-PART REP
"By god, where (?) will I find the gold?" Then rabbit said, they say:

19. Apura-y tio, tio, tio, upya-y-ta, ñuca-ca japi-cu-ni,
hurry-IMP uncle uncle uncle drink-DO 1sg-FOC grab-CONT-1sg
"Hurry uncle, uncle, uncle, drink up, I will get it,"

20. japi-ngapag chapa-cuni-mi ni-shca nin.
grab-in.order.to watch-CONT-1sg-AF say-PART REP
"I will watch out and get it," he said, they say.

This storytelling structure is common for many dialects of Ecuadorian Quichua, including both highland and lowland varieties (see Carpenter 1985 for a lowland example from Ecuador). It is not, however, common in other Quechuan languages (see examples of Ankash Quechua in Howard-Malverde 1989 and Cuzco Quechua in Pantigozo 1992), as Salomon notes when reviewing a collection of Cañari stories from central Ecuador:

> "Since the pressence of *nin* (He/she says/they say), a word functioning to set the whole sentence at a reportative or hearsay level of experiential validity, seems to have the effect of subordinating the rest of the sentence, some informants continually produce sentences like *Chaymanta shamuna nin kutin kutish chasinallata* (They say that after that she came again returning in the same way, p.124). Such unfamiliar syntactic devices, which are not commented on will cause readers familiar with other Quichuas or Quechuas more problems than the lexical borrowings and variant morphemes which Howard annotates copiously."
>
> (Salomon 1982:141)

Why should Ecuadorian Quichua differ so much from other Quechuan languages with respect to evidential marking in narrative discourse? Quichua shares a set of evidential suffixes with its southern Quechuan neighbors (Weber 1986, Howard-Malverde 1988) which, as bound morphemes that can be attached to different parts of speech, bear little resemblance to the Quichua reportative *nin*, with its verbal origin and phrase-final positioning. The Quechuan evidentials are more like those of Aymara and the other Jaqi languages, which also manage information sources with a set of suffixes (see Hardman 1988; Quechua and Aymara share many areal traits). The Quechua system largely consists of epistemological markers of certainty and doubt; some Quechua dialects do include a reportive suffix[4], but the Peruvian Quechua reportive suffix is not recognizably traceable to a speech verb, contrasting with the Quichua *nin*. Usage of the reportive in discourse also shows some contrast between Quechua and Quichua; with respect to line-by-line marking of reported information, Quichua storytelling poetically resembles Nheengatú discourse more than it does discourse in other Andean languages.

It would appear that Quichua's reportive marker is a more recent development than the set of evidential markers it shares with other Quechuan languages. Perhaps it was grammaticalized from its verbal origins as speakers of local Ecuadorian languages

learned Quichua, a process which began with the Inca conquest in the 15th Century, continued throughout Colonial times, and is even ongoing today in some areas of eastern lowland Ecuador. If the speakers of these languages paid special attention to reported information, then they may have used the verb "to say" to create this effect in Quichua, similarly to how the example of a Portuguese translation of a Nheengatú story above used *dizque* from Portuguese to approximate the evidential marker. Frequent use of *dizque* is common in Ecuadorian rural Spanish, in long term contact with Quichua, and it is likely that Romance languages, when adapting to South American evidential marking, might resort to speech verbs to translate this level of meaning. While forms of the expression *dizque* are common in many dialects of Spanish, in dialects that have had intense conact with indigenous languages, such as Ecuadorian rural Spanish, reportive marking seems to have a more obligatory character so that, as in Quichua, unmarked statements are often understood as personal experience.

Storytelling could have been a particularly important vehicle for processes of formation of new evidential forms. There is evidence that the narrative tense combination of a subordinated verb in a past particle, followed by the third person "they say" in the syntactic role of main verb – quite different from other Quechuas – may be further incorporating into the Quichua tense system, combining the past participle with the reportative *nin* to form a new suffix – more friendly to agglutinative Quechuan morphology. Even though Quichua has a strict penultimate stress rule, some storytellers stress the final syllable of the participle suffix *–shca*, evidence that the following *nin* is being treated as an affix rather than a separate word:

(9)
Cay-ta paska-g-pi-ca, quiru-ca iri-n-lla,
DEM-DO open-AG-LOC-FOC tooth-FOC go-3sg-LIM
Opening this (hair on the monster's neck) up,

quiru-ca cay-man shug shimi rucu tiyashcá nin. <shift in stress
tooth-FOC this.to one mouth oldDIM exist-PART REP
teeth went, teeth like this, a little mouth was there, they say.

Chay-ca uchilla cuytsa-hua-ca manchari-shpa-ca
That-FOC little girl-DIM-FOC scare-GER-FOC
Then the little girl, getting frightened,

ña casi casi saqui-shpa-mi yanga-ta fuerza-ta vola-shcá nin. <shift in stress
then quietly quietly stay-GER-AF just-DO force-DO fly-PART REP
quietly quietly leaving, just quickly flew off, they say.

The reportive in Quichua is a relatively new innovation and is not part of the older set of suffixed evidentials shared by most other Quechuan languages. Yet Quichua is a highly agglutinative language, and in this context the reportative marker, as the above example shows, is losing its status as an independant verb as it is incorporated into Quichua's complex system of suffixes. The reportive may have been adopted in the 16th or 17th Century, drawn from the local languages spoken at the time of Inca invasion, some of which had their own evidential systems.[5] A probable scenario for the early stages of the development of unique Ecuadorian Quichua dialects would have local groups

mixing with Quechua-speaking immigrants, most likely leading to the incorporation of some non-Quechua features into the trade language. Ecuadorian Quichua could have drawn its evidentials from two different sources (if not more), and its modern evidential system shows similarities to both those of the Quechua/Aymara Andean area and to those of northwest South America, including northern parts of the Andean highlands as well as the adjacent parts of the Pacific and Amazon lowlands, perhaps with chains of linguistic contact relationships stretching as far as western Brazil.

The modern distribution of Quichua in Ecuador challenges the division of highland and lowland linguistic areas. Quichua is the only indigenous language spoken today in the Ecuadorian highlands, and is also the most widely spoken indigenous language in Ecuador's eastern Amazon region, currently in contact with a number of languages from different families. Two of these are the closely related Western Tucanoan languages Siona and Secoya, whose speakers inhabit the Ecuador-Colombia border areas, an area which also has many Quichua villages. Language contact between Quechuan and Tucanoan languages in the area appears to have a long history, judging from a 1753 Jesuit manuscript from eastern Ecuador, described in Cipolleti (1992), which along with lexical and grammatical notes about the Cabellado language, related to modern Secoya, includes catechisms in both the Tucanoan language and in "*la lengua del ynga*," that is, Quechua. A contact scenario peripherally including both Quichua and Nheengatú is not entirely far fetched, and it is not surprising that Quichua, a language adopted by speakers of languages from the western fringes of Tucanoan territory, would show a few similar discourse forms to Nheengatú, a language adopted on the eastern geographic limits of the Tucanoan family. Both languages today are geographically closer to each other than either one is to its area of genetic origin, in the southern Andes or on the Altantic coast, respectively. Tucanoan languages, sandwiched between Quechuan and Tupian territories, may have shared some of their discourse styles and complex evidential system, either throuh first- or second- (third-, fourth- etc.) hand contact.

Conclusions

To connect the two case studies presented in this paper I will point out a series of similarities between Quichua and Nheengatú. Both languages were imported into northwestern South America relatively recently. Both languages use reportive marking in ways that are uncommon in their respective language families. In traditional storytelling in both languages grammatical evidentiality is important poetically, helping to construct stories with rhythmic, parallel and repetitive line structures. And in both cases linguistic change is ongoing in modern storytelling discourse, in the first through translations from other indigenous languages into Nheengatú and subsequently into Portuguese, and in the second through ongoing morphological and phonological incorporation of the innovated reportive marker into Quichua's agglutinative system.

Discussions of widespread indigenous discourse forms have noted similar types of verbal art like ritual dialogues and wailing are spread for thousands of kilometers across the continent (see Urban 1991, Beier et al. 2002). While the Andes are sometimes

assumed to be separate linguistic area from the lowlands (Aikhenvald and Dixon 1998 doubt Amazon-Andes influence; authors generally refer to "lowland" discourse, excluding the Andes), similarities between highland Quichua and Amazonian discourse can challenge a highland/lowland dichotomy, which may not accurately reflect either historical or current situations of language contact.

The primary aim of this paper was exploratory, and it probably asks more questions than it answers – though I hope that some of the questions are interesting enough to consider in an unresolved state. If I have not exactly proven than the poetics of evidentiality in Nheengatú and Quichua are derived from the same original source, I hope to have shown how a broad scenario of areal diffusion including both languages is at least possible and worthy of investigation. I also hope to have illustrated a methodological point about the importance of poetics and discourse in understanding the social mediums and mechanisms of contact-based linguistic change. As new indigenous languages were brought into northwestern South America – Quichua by conquering Incas in the 15th Century and Nheengatú by *mestiço* colonists and traders in the 17th – local ethnic groups adopted new languages but retained much of their cultural knowledge through the translation of traditional verbal art. When certain grammatical forms in specific patterns such as repetitive evidential marking were important for the construction of traditional genres, then such features stood a good chance of being preserved in some form in the new code. And when speech styles in genetically unrelated Quechuan and a Tupian language can come to resemble each other in interesting ways in storytelling, and in ways that contrast with their closest genetic relatives, it is possible that such similarities are related to patterns of language contact, and to the social events though which stories have been transmitted and translated. A long history of multilingualism in the northwestern South America suggest that the translation of stories with their poetic and grammatical features has been common for a long time, probably well before Quechua, Nheengatú, Spanish or Portuguese entered the region.

It is not really enough to say that certain grammatical features spread from language to language without paying some attention to the kind of interaction through which languages come into contact. Grammatical features to not simply spread around on their own accord but are shared through integrated relationships of social, grammatical and aesthetic concerns. Many indigenous cultures of northwest South America place importance on negotiating responsibility for communicated information, many indigenous languages mark such responsibility grammatically, and traditions of verbal art reflect such relationships between social and grammatical structures. Storytellers do not simply transmit referential content; they attend levels of grammar and poetics as well as to content as they transmit, translate and transform stories through performance.

Notes

[1] I am currently seeking more information on Tupian evidentials. While they *do* appear to be rare, it may be that they are more common than some sources reveal.
[2] Grammatically *paá* cannot stand alone as a main verb in a sentence. Morphologically *paá* does not take affixes, while Nheengatú verbs are always accompanied by pronominal prefixes, infinitive forms being unknown. Synactically *paá* never appears in first position, while in Nheengatú, where VSO is a common word order, verbs commonly take first position.
[3] In this case reported speech and epistimological (certainty/doubt) marking are conflated.
[4] The suffix *-si* or *–shi;* it is also a reportive in Colombian Inga – see McDowell and Tandioy 2003 – but has become a speculative interrogative in all Ecuadorian dialects I am familiar with.
[5] At least one pre-Quichua Ecuadorian language family, Barbacoan, has evidentials; see Dickinson 2001 on Tsafiki. Interestingly, some Barbacoan languages also mark second-hand experience in narrative with a line-final reportive marker based on a speech verb.

Key to Abreviations

1,2,3	person	OB	object postposition	PAST	past
sg/pl	singular/plural	DO	direct object	PART	participle
HAB	habitual	NEG	negative	NOM	nominalizer
POT	potential	DEM	demonstrative	AG	agentive
COMP	completive	REFL	reflexive	LIM	limitative
CONT	continuative	GER	gerund	DIM	diminutive
REP	reportive	REC	reciprocal	LOC	locative
INT	interogative	IMP	imperative	FOC	focus
POSS	possesive	FUT	future	DIR	directional
CAUS	causative	PR	present	AF	affirmative

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Kueteero where are you? The Spanish Suffix –ero in Sierra Popoluca

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I. Introduction. Sierra Popoluca is a native Mexican language that belongs to the Mixe-Zoquean family. People speak this language in the southwestern part of the State of Veracruz, specifically in the area of Soteapan. At this point, Sierra Popoluca is still a robust language, with around 30,000 speakers. Nevertheless, all of them are bilingual in Spanish. We believe that contact with the Spanish language goes back less than a hundred years. As recently as 1970, Sierra Popoluca speakers were not able to speak Spanish very well. Modern speakers still remember that whenever they saw anyone that did not belong to the community, they used to close their doors in order to avoid speaking with foreigners. Nevertheless, little by little they started to learn Spanish. A major change took place around 1972 when electricity was introduced into some native communities and with it, popular means of communication such as the television and radio. In a town named Amamaloya, a person who owned a small grocery store was the first to get a black and white television. Every night many people used to congregate at his business in order to enjoy some of the TV programs. It is our belief that this factor helped the Sierra Popoluca speakers improve their Spanish very quickly, to the degree that at the current time, Sierra Popoluca is in an intense contact with Spanish.

It is now well known that in situations of intense and extended language contact, the subordinate language can undergo change on any linguistic level, i.e. in the vocabulary, phonology, morphology, syntax, and semantics (Thomason and Kaufman 1988, Thomason 2002, 2003, and Heine and Kuteva 2003). The transfer of vocabulary and phonology has been widely described in many languages. There has been less discussion of the transfer of grammatical features, particularly morphological features. Such features are in fact generally considered to be highly resistant to borrowing. Here we will examine a situation that appears at first glance to be a case of the direct transfer of morphology. A closer look will show that the story is actually even more interesting. There is evidence that some modern derivational morphology in Sierra Popoluca is the result of two processes: first borrowing, then grammaticalization. The analyses presented here are based primarily on data from spontaneous conversations recorded among some of the bilingual speakers of Sierra Popoluca.

II. The suffix –ero. Spanish contains a very productive derivational suffix –ero, which forms nouns for persons engaged in particular occupations or professions.

(1) Some Spanish derived agentive nouns

leche	'milk'	*lechero*	'milkman'
carne[1]	'meat'	*carnicero*	'butcher'
cocina	'kitchen'	*cocinero*	'chef'
tienda[2]	'shop'	*tendero*	'shopkeeper'

ganado	'cattle'	*ganadero*	'rancher'
zapato	'shoes'	*zapatero*	'cobbler'
parto	'childbirth'	*partero*	'midwife'
café	'coffee'	*cafetero*	'coffee grower'
carta	'letter'	*cartero*	'mailman'

Sierra Popoluca shows a strikingly similar formation.

(2) Sierra Popoluca derived agentive nouns

nɨtsteero	'armadillo hunter'	(*nɨts* 'armadillo')
aateero	'rower, paddler'	(*aa* < *aaha* 'canoe')
ti?ɨpteero	'fisherman'	(*ti?ɨp* < *ti?ɨpi* 'fish')
ni?teero	'water carrier'	(*ni?* 'water')
muutteero	'well driller'	(*muut* < *muuti* 'well')

The examples above suggest that Sierra Popoluca borrowed the Spanish suffix *-ero* directly. But was this actually the way by which *-teero* entered Sierra Popoluca? Was it incorporated with the same grammatical function? That is, was it treated just as a borrowed suffix or as another grammatical category?

Most documented cases of morphological borrowing have involved the transfer of large numbers of vocabulary items containing a particular affix. After a sufficient number of sets of derivationally related words have been borrowed into a language, speakers may come to recognize the contribution of the affix in question and extend it to native stems. Thomason and Kaufman describe such a situation in English.

> Because of massive lexical borrowing, certain derivational affixes occurring in words of French origin have been abstracted and applied to relevant root and stems of any origin whatsoever (for example, **-able**, which first entered English through French suffix **–able**; this suffix does not become at all popular on English verbs until the late 14th century). (Thomason and Kaufman, 1988:308)

If this were the mechanism by which Sierra Popoluca borrowed the Spanish suffix, we would expect to find a substantial set of Spanish loans with and without the suffix. Interestingly, we could find only one early Spanish loan with the suffix: *kueteero*.

(3) *Kueteero*[3], *juuty mi'-ity, pɨma' yi'ɨm!*
fireworks expert where 3SG:ABS-be come here!
'Fireworks expert, Where are you? Come here!

A *kueteero* is a person who has the skill of setting off fireworks. This activity is important in traditional festivities among Sierra Popoluca speakers because fireworks are displayed throughout the duration of the celebration. However, an important fact is that not everyone can serve as a *kueteero* because the work requires a special skill that few

people have. In addition, even at the present time, this particular activity is restricted to men: in Sierra Popoluca women never serve as *kueteeros*. In spite of this restriction it is very obvious that the word *kueteero* has been borrowed from Spanish, and culturally it is a very important one. Therefore, we strongly believe that the Spanish derivational suffix was incorporated into the Sierra Popoluca grammatical structure through the Spanish word *cohetero* that was nativized as *kueteero*.

The stem on which this agentive noun was based was also borrowed into Sierra Popoluca, as *kuete*. (cohete in Spanish).

(4) *Juty mi'-oy,*
where 2SG:ABS-go-PERF
'Where did you go?'

a'-oy *utya-tik-ki'im,*
1SG:ABS-go-PERF Oteapan-house-LOC
'I went to Oteapan (name of town)'

oy *an-juy* *kuete*
go:PERF 1SG:ERG-buy-PERF fireworks
'I went to buy fireworks.'

(5) *Ju'tsang-nam* *kuete* *tan-a-'ity*
How many-still fireworks 1PL:INCL-1SG:ABS-have
'How many fireworks do we still have?'

It is easy to imagine why these two words, *kuete* 'fireworks' and *kueteero* 'fireworks expert', were borrowed. Before contact, there were no people in the Sierra Popoluca area who made fireworks. We can thus infer that there was no native word either for *kuete* or for *kueteero* in Sierra Popoluca. Obviously, this cultural reason explains why speakers easily accepted both words.

But did speakers actually recognize the derivational suffix and extend it to native stems on the basis of this one set of loans? A closer look at the form of the marker suggests that it was transferred through a different mechanism. Though the Spanish suffix has the form *-ero*, it appears in Sierra Popoluca as *-teero*. We might wonder why speakers chose the form *–teero* instead of *-ero* as it is in Spanish. Their choice suggests that the story is actually more interesting than the simple transfer of a suffix. We strongly believe that Sierra Popoluca borrowed the form not as a suffix but as a noun, following the compounding strategy already present in the language, an easy process for speakers since this language is very rich in compounding. A common pattern of compounding in Sierra Popoluca is the combination of two nouns to form a new noun: N + N = N.

(6) Native noun compounding

apitychiiji	'porcupine'	(*aapity* 'thorn' + *chiiji* 'fox')
kawajnoono	'kind of mushroom'	(*kawaj* 'horse' + *noono* 'mushroom')
kosochiima	'kneecap'	(*kooso* 'knee' + *chiima* 'plate')
kuypaasung	'squash'	(*kuy* 'tree' + *paasung* 'pumpkin')
mokyooya	'raccoon'	(*mok* 'corn' + *yooya* 'pig')

Most of the time, the second noun in the compound, which represents the head, has the phonological shape of 'CVV.CV(C). Interestingly, *-'teero* does too. Speakers of Sierra Popoluca apparently interpreted the form *kueteero* 'fireworks expert' as a compound, recutting the form so that the second element showed the canonical form of a head noun: *teero*.

Sierra Popoluca also had a precedent for forming sets of compounds with the same head.

(7) Compounding with the same noun in the second position

piyu'aapa	'old hen'	(*piyu'* 'hen' + *aapa* 'mother')
yoya'aapa	'old pig'	(*yooa* 'pig' + *aapa* 'mother')
chimpa'aapa	'old dog'	(*chimpa* 'dog' + *aapa* 'mother')
xixaapa	'old cow'	(*xix* 'cow' + *aapa* 'mother')
koya'aapa	'old rabbit'	(*kooya* 'rabbit' + *aapa* 'mother')
yoommaanɨk	'daughter	(*yoomo* 'girl' + *maanɨk* 'son')
jaymaanɨk	'son'	(*jaaya'* male' + *maanɨk* 'son)
okmaanɨk	'grandson'	(*ok* < *okmo* 'after' + *maanɨk* 'son')
tsɨ̃ɨ̃ɨ̃maanɨk	'stepson'	(*tsɨ̃ɨ̃* ? + *maanɨk* 'son')
aachtyɨ̃ɨ̃wi	'elder brother'	(*aach* < *aachi* 'uncle' + *tɨ̃ɨ̃wi* 'brother')
tsɨ̃ɨ̃ɨ̃tyɨ̃ɨ̃wi	'stepbrother'	(*tsɨ̃ɨ̃* ? + *tɨ̃ɨ̃wi* 'brother')
yoomtɨ̃ɨ̃wi	'sister'	(*yoomo* 'girl' + *tɨ̃ɨ̃wi* 'brother')
jaaytyɨ̃ɨ̃wi	'brother'	(*jaay* < *jaaya* 'male' + *tyɨ̃ɨ̃wi* < *tɨ̃ɨ̃wi* 'brother')

It appears that the borrowed word kueteero was analyzed by Sierra Popoluca speakers as a compound, parallel in formation to native compounds like those in (7) above on the basis of its phonological, grammatical, and semantic structure. We do not know exactly when native speakers began to extend the form -teero to native words. We do know that the process had begun by at least 1960. In his grammar of Sierra Popoluca, Elson provides the examples below.

(8) Sierra Popoluca -teero nouns found by Elson 1960

yoom-teero (*yoomo* 'girl')	'somebody who has several women'
yooya-teero (*yooya* 'pig ')	'somebody who buys pigs'
kawah-teero (*kawah* 'horse')	'somebody who buys horses'
hɨy-tyeero (*hɨy* 'talk')	'somebody who talks a lot'
mɨich-tyeero (*mɨich* 'to play')	'joker'
ets-teero (*ets* 'to dance')	'dancer'

The Sierra Popoluca marker *-teero* matches the Spanish suffix *-ero* in forming agentive nominals. It is used to form nouns designating people but not objects, as it is in Spanish.

(9) Spanish words ending in –ero for objects.

rop-ero	'closet'	(*ropa*	'clothes')
moned-ero	'wallet'	(*moneda*	'coin')
libr-ero	'bookcase'	(*libro*	'book')
cenic-ero	'ashtray'	(*ceniza*	'ash')
azucar-ero	'sugar bowl'	(*azucar*	'sugar')

There is no evidence of a similar process in Sierra Popoluca. Therefore, it is obvious that in this native language *-teero* was restricted to people 'occupation' as in the example below:

(10) Teero restricted to human 'occupations'

a. *...nɨk-pam i'-a'm-taa koowa-**teero**-yaj...*
go-IMPERF 3SG:ERG-see-PASS guitar-NOM-PL
'(Somebody) goes to see the guitar players'

b. *an-tiẅi* *tsaam* ***uk-teero,***
1SG:POSS-brother a lot drunk-NOM
'My brother is very drunk;'

tum tum jaama *iñ-ix-pa* *iga* *uk-pa* *i-xi'*
one one day 2SG:ERG-see-IMPERF PART drink-IMPERF 3SG:ERG-be
'every day you can see him drinking.'

c. *am-maanɨk* *tsaam* ***yooxa-teero;***
1SG:POSS-son a lot work-NOM
'My son is very hard worker;

muuma jaama nɨk-pa *ityii* *I-kaam-joom*
all day go-IMPERF be 3SG:POSS-cornfield-LOC
He spends all the day in his cornfield.'

d. *jem* *an-aachi* *tsam* *idyɨk* ***mɨich-tyeero***
DEF 1SG:POSS-uncle a lot PART play-NOM
'My uncle used to be a real joker.'

In Spanish the suffix *–ero* is used only with nouns to derive other nouns, while in Sierra Popoluca, *-teero* is also added to verbs. So why was it extended so easily to verbs? It was easy because in Sierra Popoluca V + N = N is so productive pattern of noun compounding. Example:

(11) Verb + Noun compounding with *kuy* ('tree' or 'wood') in the second position [4]

tuj	'to shoot'	*tuj-kuy*	'guns'
kooñ	'to sit'	*kooñ-koy*	'chair'
pet	'to sweep'	*pet-kuy*	'broom'
ix	'to see'	*ix-kuy*	'eye'
mong	'to sleep'	*mong-koy*	'blanket'

The noun *kuy* 'tree or wood' is always added after the verb root. *-teero* follows this pattern when it is combined with verbs. Therefore, there is no doubt that rather than considering *-teero* as a suffix coming from the Spanish *-ero*, it should be treated in Sierra Popoluca as a noun form with no lexical meaning since it is a borrowing form.

It is of course possible that the borrowing might serve as a source for further processes of grammaticalization leading to the development of a suffix. The form *-teero* is never used as a free noun in isolation, but only added to other roots to form new nouns. A precedent for such a development already exists in the language in the native noun *kuy* 'tree, wood', which is coming to be used as a more abstract instrumental nominalizer.

III. Conclusion. Morphological features have generally been considered to be highly resistant to borrowing. It has been hypothesized that specific affixes are never borrowed directly, but are rather transferred into a language through the borrowing of large sets of derivationally related lexical items, pairs of words with and without them. Sierra Popoluca appears to present an exception to this principle with the borrowing of a derivational suffix *-ero* from Spanish without the large set of contrasting vocabulary pairs. A closer look indicates, however, that the marker was not borrowed directly as a suffix. Instead, a borrowed noun *kueteero* 'fireworkers expert' (Spanish *cohetero*) was recut and reanalyzed as a compound *kue-teero* (from Spanish *cohet-ero*) on the pattern of compounding already pervasive in the language. There are two kinds of evidence that support this claim:

a) -Teero has the phonological shape of native disyllabic noun forms.
b) It behaves much like any other native noun in compounding.

Notes

[1] From Latin 'carnis'
[2] From Latin 'tenta'
[3] The noun form is 'cohete'
[4] Elson treats this form as a derivational suffix. Nevertheless, it seems pretty obvious that it came from the noun form 'tree or board".

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Washo Morphophonology: Hiatus resolution at the edges –or– Let them be vowels

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Hiatuses that arise due to VV contact across morpheme boundaries in Washo are resolved in one of two ways. Between stems and non-final suffixes an epenthetic glide resolves the hiatus. Hiatuses due to affixation elsewhere are resolved by the elision of the stem vowel. This V_2 elision is likely not coalescence in a formal sense as we will see and must be governed by another factor. This paper argues that a possible solution for the V_2 elision observed in Washo is vowel dominance, where sonority determines dominance.

The original analysis of this phenomenon by Jacobsen (1964) argues that rather than hiatus resolution by elision, vowel quality shifts due to the affixation of a CV prefix to a VC stem (e.g., i > e, u > o) are the result of vowel coloring morphophonemes. These morphophonemes are represented by superscripted vowels (/^{e}, $^{\varepsilon}$, ^{u}, ^{a}, ^{i}, $^{\dot{i}}$, E/) that when preceding a V initial stem behave similarly to floating features that can effect the resulting surface vowel. This paper rejects Jacobsen's vowel coloring hypothesis and argues instead that these superscripted vowels are actually surface vowels. Section 1 outlines the basics of the Washo language. Section 2 lays out the original analysis of vowel quality shifts in detail. Section 3 concludes and narrows down the vowel quality shifts to those that are relevant to the vowel hiatus resolution. Section 4 advances the argument that these vowel coloring morphophonemes are actual surface vowels. In Section 5, I will present evidence that in addition to / y/ epenthesis to resolve hiatus (between stems and suffixes), there is a second hiatus resolution strategy between CV prefixes and vowel initial stems—vowel elision due to vowel dominance by sonority. Section 6 is the conclusion.

1. Some Basics of the Washo Language

The Washo language is a severely moribund language spoken in east-central California and Nevada around the area surrounding Lake Tahoe. Traditionally, Washo is considered a member of the Hokan family, however, this genetic relationship has been called into question. In her 1999 book, Mithun reports that Washo is an isolate.

The major resources for Washo forms are William H. Jacobsen's 1964 University of California: Berkeley dissertation *A Grammar of the Washo Language* and his 1996 *Beginning Washo.*

In (1) and (2) you'll find the surface consonant and vowel inventories of Washo:

(1)

p		t		k	ʔ
b		d	z	g	
p'		t'	c'	k'	
		s	š		h
M[m̥]				N[ŋ̊]	
m		n		ŋ	
W[w̥]		L[ɬ]		Y[j̊]	
w				y[j]	

(2)

i, i:	ɨ, ɨ:	u, u:
e, e:		o, o:
	a,a:	

Stress in Washo is regular being primarily restricted to stems and on the penultimate syllable. Washo has six verb classes from which three cross-cutting groups can be found. The first group contains independent verb stems to which pronominal prefixes can be affixed to create verb forms. The second group contains both dependent and neutral verb stems, which cannot be directly inflected for person or number but take a class of prefixes that derive transitivity. Within in this second group, almost all the verb stems begin with /a/ or /i/ while /e/ is rare. The third group is auxiliary verbs, which precede independent verb stems (Jacobsen 1964: 393). My primary concerns in this paper are groups two and three. Washo does not tolerate VV sequences. Washo also has a process of pretonic regressive vowel harmony where an /a/ or /o/ in a stressed position will condition /a/ in preceding vowels. In the absence of a /á/ or /ó/ the pretonic vowels surface normally (discussed further in Section 3.1).

2. Vowel Coloring in Washo

The affixation of certain CV- certain lexical and inflectional prefixes to vowel initial stems result in vowel quality shifts. Jacobsen represents the V in the prefixes as a superscripted vowel (and for illustrative purposes in this section here we will maintain that convention). Consider the data in (3):

(3)

l^e- í:bu 1nom-Nr 'nape of neck'	lé:bu 'my nape'	(JA96: 7)
∅- h^a- í?iʃ -i 3per-Pi 'to rain'-Vd 'to have come'-imp	há?ʃi 'it's raining'	(JA64: 291)

Ø- h^u- ámad –ug –i	hómadugi	(JA64: 289)
3per-Pi 'wind to blow'-Vd 'to the south, from the north-hence-imp	'wind is blowing from the north'	
g^e- íʔiw	géʔew	(JA64: 303)
IMP-Vt 'to eat'	'eat!'	
$ʔl^u$- ílsil	ʔlúlsil	(JA80: 90)
Pi 'texture, density'-thin	'(cloth) to be thin, fine'	

The data above illustrate some of the vowel quality shifts that occur due to CV prefixes attaching to V-initial stems; we see that {/u/, /e/} + /i/ yields /e/, /a/ + /i/ yields /a/, and /u/ + /a/ yields /o/. The entire pattern of vowel coloring morphemes and their effect on following surface vowels can be seen in the table reproduced from Jacobsen 1964 as (4):

(4)

vowel coloring	following vowel					
	a	*e*	*i*	*ɨ*	*o*	*u*
~	a		i			
e	a	e	e			e
ˇ	a		e			
ɛ	a		e			
u	o	u	u	ɨ		
a			a		a	
i	i	i	i			
ɨ			ɨ			
E	e					

The above table shows all the vowel coloring morphophonemes (/^{e}, ^{ɛ}, ^{u}, ^{a}, ^{i}, ^{ɨ}, E, ~, ˇ/) on the y-axis and the following surface vowel on the x-axis. Gaps in the table represent sequences that do not occur.

The convention of superscripted vowels is Jacobsen's pre-generative phonology way of describing the abundance of Washo allomorphy. It also accounts for vowel shifts that occur without needing to rely on hiatus resolution. Suffixally, VV sequences are resolved by glide epenthesis (more on this in section 5). The necessity of this convention is suspect since there is a 1-to-1 correspondence before consonant initial stems between vowel coloring morphophonemes and their surface representation (/a/ according to the rules of vowel harmony). The majority of the proof for Jacobsen's convention is the presence of the vowel coloring morphophonemes in allomorphs of the reduplicated plural marker.

From here I will proceed through the chart one by one to fully elucidate the range of vowel shifts that occur. Then I will advance the argument that the superscripted vowels are really surface vowels with proof from affixation to consonant initial stems and the rules of vowel harmony. The lengthener /ˇ/ and shortener /~/ will also be dealt with in this section. Their status as independent vowel coloring morphemes is interesting. The shortener has neither a phonemic representation nor a coloring effect on following vowels while the

lengthener has the same phonemic representation as raised /ᵉ/ but also lengthens immediately following short vowels.

2.1 The /ᵉ/ coloring

Among the vowel coloring morphophonemes /ᵉ/ is the most common. In addition to being the most numerous in instrumental prefixes, only /ᵉ/ occurs in prevocalic allomorphs of inflectional prefixes (lᵉ- first person/possessive and gᵉ- imperative) (Jacobsen 1964: 285). From the chart we find that /ᵉ/ is dominate over /i/ and /u/ when they two come together and is dominated by /a/ when the two come together. /ᵉ/ before /e/ is vacuous. See (5):

(5)	a.	lᵉ- íːbiʔ 1per-Nr 'bone'	lé:biʔ 'my bone'	(JA64: 286)
		∅- dᵉ- íʔiʃ -i 3per-Pi 'to snow'-Vd empty stem-imp	déʔʃi 'it's snowing'	(JA64: 286)
		gᵉ- íːbikʼ -ha IMP-Vi 'to be cooked, ripened'-caus	gé:bikʼha 'cook it!, ripen it!	(JA64: 270)
	b.	gᵉ- áyad IMP-Vi 'to spend the night'	gáyat 'spend the night'	(JA64: 269)
		lᵉ- áŋal 1per-N 'house'	láŋal 'my house'	(JA64: 284)
		∅- sᵉ- áhad -i 3per-Pi 'to wade'-Vd 'across'-imp	sáhadi 'he's wading across'	(JA64: 286)
	c.	lᵉ- émle 1per-Nr 'heart'	lémle 'my heart'	(JA64: 261)
		gᵉ- émcʼi IMP-Vi 'to awaken, to be awake'	gémcʼi 'wake up!'	(JA64: 261)
		lᵉ- émlu-tiʔ –i -ᵊ- -g –í 1per-Vi 'to eat'-int. fut.-imp-TJ-3subj-pro. stem	lémlutiʔgi 'I'm going to eat'	(JA64: 306)

Above in 5a-c we see the distribution of /ᵉ/ before /i, a, e/. The chart also shows that when /ᵉ/ precedes /u/ the resulting surface vowel is /u/. However the sequence /ᵉu/ occurs in only one allomorph of the reduplicated plural marker shown in (6):

(6)	gᵉ- ʻiːgi –uwᵉ- dúwe -giʃ -aʔ IMP-Vt, Vd 'to see, sense'-plural-Va, Vt 'to try to, to want to, to look for'-motion-aorist	giːgidúwewe?giʃaʔ 'go along looking for them!'	(JA64: 286)

It may not be clear from (6) where the /ᵉu/ sequence occurs because the plural marker -uwᵉ- is infixed into the stressed syllable of the stem e.g., ...***d- uwᵉ-úwe***... The –uwᵉ- plural marker is just one of many allomorphs of the reduplicated plural marker.

The analysis of reduplication in Washo is another interesting question and the analyses of Urbancyk 1993 and Yu 2005 present evidence that the abstract vowel coloring morphophonemes are not present in these reduplicated forms because the size and shape of the reduplicant is predictable, unlike the one allomorph for each stem, stipulated analysis of Jacobsen (Yu, 2005). Reduplication will be revisited in Section 3.

2.2 The /ᵉ/ coloring

The /ᵉ/ behaves exactly like /ᵉ/ before vowels which is to say it dominates /i/ but is dominated by /a/. Unlike /ᵉ/ however, /ᵉ/ is represented as Ø before a consonant as shown in (7a and 7b):

(7) a. gᵉ- c'ugᵋ- á:gal -i — gac'ug**á:**gali (JA64: 287)
3per-Pt 'to carry, put small objects'-Vd 'into the mouth, down the throat'-imp
'he's putting them in his mouth

gᵉ- sᵉbᵋ-ílb ᵋ- ‘’ -á?y –i — gesebélba?yi (JA64: 287)
3per-Pt 'to blow'-Vd 'to push, impel'-AVF-TJ-Vd 'away'-imp
'he's blowing it away'

b. gᵉ- c'ugᵋ d- -á:ʃ -ug –i — gec'u**kd**áʃugi (JA64:269)
3obj-Pt 'to carry, put small objects'-plural-Vd 'in, into'-hither-imp
'they're carrying them in there'

Ø- mó:k'o ᵋ- -wᵉ -íwe? –i — mó:k'owéwe?i/ (JA64: 298)
3per-N 'knee'-IPF-plural-Vd 'on the ground'-imp 'they're kneeing

One reason why /ᵋ/ does not surface before consonants in 7b is because /ɛ/ is not within the surface vowel inventory. This is an important distinction, and along with the lengthener and shortener the /ᵋ/ morphophoneme has peculiar properties which must be clarified.

2.3 The /ᵘ/ coloring

The most interesting vowel coloring morphophoneme is /ᵘ/. The distribution of /ᵘ/ presents an interesting argument for underlying and surface vowels because of the variation in the shifts. /ᵘ/ before /á/ yields an /o/, /ᵘ/ before either {/u/, /e/} yields an /u/ and /ᵘ/ before /**i**/ yields an /**i**/. Consider the data in (8):

(8) a. Ø- wgᵘ- áyab -i — wagóyabi (JA64: 289)
3per-Pi 'hole to exist'-Vd 'through'-imp 'there's a hole through it'

Ø- kMᵘ- áhad ᵋ- ‘’ ⁱí:k'**i**l –**i** — **M**óhadik'**i**li (JA64:293)
3per-Pi 'to run' (sg)-Vd 'across'-AVF-TJ-Vd 'back and forth'-imp
'he ran back and forth across'

b. lᵉ- má?ag –ᵘ i:bi? –ha -i
1per-N 'wood'-IPF-Vi, Vd 'to have come'-caus-imp — lama?**gu:**bihayi (JA64: 290)
'he has come bringing me wood'

c. Ø- c'ilᵘ- **i**'yp**i**y ᵋ- ‘’ íti? -i — c'il**i**yp**i**yeti?i (JA64: 290)
3per-Pi 'descriptive of hips'-Vd 'narrow'-IPF-TJ-Vd 'downwards'-imp
'he has small, even hips, it has a small even trunk'

Like the /ᵉu/ sequence from section 2.1 the sequence /ᵘe/ occurs only in plural forms with the reduplicant pre/infixing before the stem vowel as shown in (9):

(9)	Ø- m^{u}- émlu-i 3per-plural-Vi, N 'to eat, food'-imp	múmluyi 'they're eating	(JA64: 289)
	-et^{u}- nént'uʃ -u plural-Vi, 'to be an old woman'-nominalizing	net'únt'uʃu 'old women'	(JA64: 289)
	-eh^{u}- mé:hu plural-Vi, N 'to be a boy, boy'	mehú:hu 'boys'	(JA64:289)

This vowel coloring morphophoneme, more than any other, presents an argument for vowel coalescence, which at first seems entirely plausible. Evidence from reduplication will show that Washo does not conform to the rules of vowel coalescence. Moreover I will show that vowel dominance/elision is the correct mechanism for hiatus resolution and that underlying representations of /u/ and the presence of vowel harmony that provide better answers to this problem.

2.4 The /^{a}/ coloring

The /^{a}/ coloring occurs only in the instrumental prefixes h^{a}- *to rain* and ŋ^{a} *descriptive of the belly*. It also is part of two plural markers, -oy^{a}- and –is^{a}-. Data is shown in (10):

(10) a.	Ø- h^{a}- í:bi? -i 3per-Pi 'to rain'-Vd 'to have come'-imp	há:bʔi 'rain has gotten here'	(JA64: 291)
	Ø- ŋ^{a}- í:bug -i 3per-Pi descriptive of belly-Vd 'bloated'-imp	ŋá:bugi 'he's bloated in the stomach'	(JA64: 291)
b.	di- -is^{a}- ʔí:sa 1per-plural-Np, 'older sister'	diʔisá:sa 'my older sister'	(JA64: 291)
	d^{e}- -oy^{a}- móya 3per unexpressed-plural-N 'shoulder'	damoyáya 'their shoulders'	(JA64: 291)

As we can see from 10a, /a/ dominates /i/ and is only found in this sequence. The sequence /^{a}o/ (10b) only appears in the allomorphs of the reduplicated plural marker.

2.5 The /^{i}/ coloring

The /^{i}/ coloring is listed in the chart as occurring before /a/, /e/, and /i/. The table in (4) shows that /^{i}/ dominates both /e/ and /a/ and that /^{i}/ before /i/ is vacuous. The case of /^{i}/ before /e/ and /a/ is shown in (11):

(11)	-aʃ^{i}- wá:ʃiw plural-N 'Washo'	waʃí:ʃiw 'Washoes'	(JA64: 291)
	di- aʔm^{i}- ŋáʔmiŋ 1per-plural-Vi, N 'to give birth; child'	diŋaʔmíʔmiŋ 'my children'	(JA64: 292)

The governing motivation for Jacobsen's system is that the change in quality of the surface vowel ought to match that of the superscripted vowel coloring morphophoneme. Reviewing the case of /^{i}/ makes this claim entirely apparent. The only application of the /^{i}/ before the

/e/ and /a/ is make sure that the reduplicated plurals surface correctly in Jacobsen's system of reduplicated plurals.

The /ⁱ/ before /i/ is different from all previous cases of raised morphemes since it is not part of a CV (C^{v} in Jacobsen's analysis) prefix but instead occurs on the stem before an initial /i/ to block the coloring effects of any previous vowel coloring morphophoneme. In other words, in sequences of these morphophonemes, it is the last morphophoneme that surfaces and in sequences of morphophonemes, /ⁱ/ is always last. The only sequences of this type are /^{ei}/ and /^{ei}/ as illustrated by the two forms in (12) one of which is reprinted from (8a):

(12)	l^{e}- ⁱí:gi -i	lí:giyi	(JA64: 293)
	1per-Vt, Vd 'to see, sense'	I see it	
	Ø- kM^{u}- áhad ^{e}- '' ⁱí:k'ɨl –i	Móhadik'ɨli	(JA64:293)
	3per-Pi 'to run' (sg)-Vd 'across'-AVF-TJ-Vd 'back and forth'-imp	'he ran back and forth across'	

2.6 The /^{i}/ coloring

The /^{i}/ coloring occurs in only one instrumental prefix and in regular allomorphs of the reduplicated plural marker. Moreover it only appears before /i/. Examples of the instrumental prefix and regular allomorphs are shown in (13):

(13)	di- hulb^{i}- íps -i	dihulbɨpsi	(JA64: 295)
	1per-Pi 'to pry, lift with long object'-Vd 'up from the surface'-imp	'I'm prying it up, lifting it with a long object'	
	Ø- ʔil- ʃ^{i}- íʃɨʃ -iʔ –i	ʔilʃɨʃɨʃiʔi	(JA64: 295)
	3per-descriptive-plural-Vd 'heavy'-AA-imp	'it's heavy'	
	c'il^{u}- t'^{i}- ínt'ɨn	c'ilut'ɨnt'ɨn	(JA64: 295)
	Pi 'descriptive of hips, tree trunks, roots'-plural-Vd 'rough'	'carrots'	

2.0.7 The /E/ coloring

The /E/ also occurs in only one environment, before /a/, and occurs only in one form as "only as a possible alternative analysis" (Jacobsen 1964: 295). Moreover, /E/ is part of an allomorph of the reduplicated plural. The form Jacobsen includes is shown in (14):

(14)	-aʔlE- báʔlew	baʔlélew	(JA64: 296)
	plural-N 'Paitue'	Paiutes	

2.8 The lengthener /ˇ/ and the shortener /˜/

The inclusion of these items within the class of vowel coloring morphophonemes poses an interesting question. The lengthener has two effects on following vowels. With respect to vowel coloring, the lengthener behaves *exactly* like the /^{e}/ coloring from section 2.1. The lengthener also has a lengthening effect on any following short vowel (15a).[iii] However, the environments where we observe the full effects of the lengthener are limited. The lengthening effect (but not the coloring effect) of the lengthener is blocked when the

lengthener precedes a vowel that is followed by a consonant cluster or a "guttural morphophoneme" like /ʔ/ or /h/ (15b). The lengthening effect (but again not the coloring effect) is also blocked when the lengthener precedes an already long vowel (15c). Also similarly to the /ᵉ/ vowel coloring morphophoneme before a consonant, the lengthener surfaces as either /e/ or /a/ due to the rules of vowel harmony before a consonant. There is no evidence of a lengthening effect on either the harmonized vowel or is the following vowel (harmonizer) when the lengthener precedes a consonant initial stem. It should also be noted that all these forms are pluralized and are likely related to the reduplicated plurals mentioned in each of the above sections (15d).

The shortener has one duty only prescribed to it: shorten any immediately following long vowel unless said vowel is followed by a voiced stop—it has no phonemic representation and no effect on the shape of the surface vowel (15e). Examples of both the lengthener and shortener are found in (15a-e):

(15) a.	∅- dᵘlˇ- áŋa -i	malá:ŋaʔi	(JA64:307)
	3per Pi 'with the hand' Vd 'on, upon'-imp	'he has his hand on it'	
	∅- mᵉlˇ- íti? -i	melé:tiʔi	(JA64: 307)
	3per-Pi 'to jump'-Vd 'down, downwards'-imp	'he's jumping down'	
b.	∅- mᵉlˇ- áwd -i	maláwdi	(JA64: 307)
	3per-Pi 'to jump'-Vd 'over the summit'-imp	'he's jumping over'	
	∅- mᵉlˇ-íps –i	melépsi	(JA64: 308)
	3per-Pi 'to jump'-Vd 'up from a surface'-imp	'he's jumping up'	
c.	∅- dᵘlˇ- á:gal –am –i	dulá:galami	(JA64: 308)
	3per-Pi 'with the hand'-Vd 'from the south'-'away to'-imperfect	'he's extending his hand towards the north'	
	∅- dᵘlˇ- í:kɬ –i	dulé:kɬili	(JA64:308)
	3per-Pi 'with the hand'-Vd 'back and forth'-imp	'she's cooking'	
d.	∅- dᵘlˇ- k- ákd –i	dulakákdi	(JA64: 297)
	3per-Pi 'with the hand'-plural-Vd 'slowly'-imp	'he's moving his hands slowly'	
	∅- mᵉlˇ- pᵉ- íps –i	melepépsi	(JA64: 297)
	3per-Pi 'to jump'-plural-imp	'he's jumping up and down'	
e.	∅- ʃ̃- á:t'i –weʔ –i	ʃát'iweʔi	(JA64: 310)
	3per-Pi '(sg.per) to walk'-Vd 'uphill, upstream, upwards-imp	'he's walking uphill, upstream'	
	∅- ʃ̃- á:gal –am –i	ʃá:galami	(JA64: 310)
	3per-Pi 'to jump'-Vd 'from the south'-'away to'-imp	'he's walking north'	

The observation that the lengthener behaves exactly like the /ᵉ/ coloring leads me to believe that it is either closely related to /ᵉ/ or that the lengthening effect is due to another phenomenon in the language. One solution, from Yu 2005 is that stressed syllables are naturally heavy on the surface and that the reason that the lengthening effect is blocked in 15b and 15c is due to the presence of already heavy syllables in the surface for. 15b shows the lengthener before a vowel in a closed syllable and a likely explanation is that coda

consonants are mora-bearing, thus blocking the lengthening of the vowel. In 15c the vowel is all ready long and thus the vowel already bears two morae. This explanation does explain why the vowel coloring morphophoneme still has an effect on the shape of the vowel but not on the length.

The shortener occurs in a highly restricted domain—only one morpheme contains it ʃ˜-Pi '(singular person) to walk' and only with one stem 'á:ti Vd 'uphill, upstream, upwards.'

3.0 Interim conclusion on vowel coloring

Now we have fully illustrated the pattern of vowel quality shifts and the separated the data into two clear groups: those instances where the vowel-coloring morpheme is used in forms of Jacobsen's stipulated and pre-listed allomorphs of the reduplicated plural and those where the vowel coloring morphemes are not. From here on out we will only be interested in those affixes that contain vowel coloring morphophonemes that are not used for reduplication. We will address this issue in the next section.

Below is a modified version of the table first presented in (4):

(16)

vowel coloring	following vowel					
	a	*e*	*i*	*ɨ*	*o*	*u*
ˇ	a		e			
e	a	e	e			
ɛ	a		e			
u	o		u	ɨ		
a			a			
i			ɨ			

What we have done in (16) is to remove the vowel coloring morphophonemes used only in reduplication /ⁱ, E/ and the sequences that only occur in allomorphs of the reduplicated plural /ᵘe/, /ᵃo/. We have also removed the shortener /˜/because it is only present in one morpheme and is only combined with one stem. The lengthener /ˇ/ will only be considered under the reasoning that it behaves exactly like /ᵉ/ both before vowel initial stems and consonant initial stems. While /ᵋ/ has the same properties as /ᵉ/ before vowel initial roots, the Ø allomorph before consonants is interesting and possibly problematic—the zero morph appears not only when / ᵋ/ part of instrumental prefixes but also when part of auxiliary verb formatives and instrumental prefix formatives. The question of whether the type of affix and the role / ᵋ/ vowel coloring morpheme plays in vowel shifts is part of ongoing research.

4. Let them be vowels

The reduced chart in (16) allows us to further advance the idea that there superscripted vowels are actually surface vowels. Jacobsen points out that there are four attested morphophonemes occurring before consonants: /ᵉ, ˇ, ᵋ, ᵘ/ (Jacobsen 1964: 296). Of these

four, three surface as themselves, with the lengthener patterning with /ᵉ/. Please consider the data in (17):

(17)

gᵉ- m- ímiʔ -we?	gemímweʔ	(JA64: 283)
IMP-Pt 'to throw, fell a tree'-Vd 'to the east, from the west'-hence	'throw it to the east!'	
gᵉ- sᵉbᵋ-ílb ᵋ- ‘’ -áʔy –i	gesebélbaʔyi	(JA64: 287)
3per-Pt 'to blow'-Vd 'to push, impel'-AVF-TJ-Vd 'away'-imp	'he's blowing it away'	
dᵉ- wgᵘ- m- ámad	dewgumámat	(JA64: 299)
Nom-Pi 'hole to occur'-plural-Vd 'in or into a tubular opening'	'macaroni: tubular holes'	
dᵉ- k'éteb	dek'étep	(JA64: 302)
3nom N 'bottle'	'his bottle'	

As mentioned in Section 1, Washo has pretonic regressive vowel harmony. An /o/ or /a/ in the stressed position licenses regressive vowel harmony that shifts previous vowels in the word to /a/ as well. In this way all the vowel coloring morphemes that do surface before consonantas behave precisely as regular surface vowels. The data in (18) show the interaction of vowel harmony and these vowel coloring morphemes:

(18)

gᵉ- c'ugᵋ- á:gal -i	gac'ugá:gali	(JA64: 287)
3per-Pt 'to carry, put small objects'-Vd 'into the mouth, down the throat'-imp	'he's putting them in his mouth'	
dᵉ- c'áŋa -'--' -é:s	dac'áʔŋaʔé:s	(JA64: 272)
Nom-N 'buttocks'-AA-neg	'a man's name, having no buttocks'	
gᵉ- sáʔ- lel	gasálel ~ gasál'el	(JA64: 76)
IMP-'also'-transitory	'put it away for awhile!'	
dᵉ- tóʔo	datóʔo	(Ja64: 301)
3nom-N 'throat'	'his throat'	
∅- dᵘlˇ- k- ákd –i	dulakákdi	(JA64: 297)
3per-Pi 'with the hand'-plural-Vd 'slowly'-imp	'he's moving his hands slowly'	

In (17) and (18) we observe two facts 1) the vowel coloring morphemes that occur before consonants surface as themselves before consonants and 2) that when they do surface they obey the same rules that regular surface vowels do, namely vowel harmony. Due to these two facts there is positive evidence to conclude that these vowel coloring morphemes are really surface vowels. From this observation I can begin to present the argument that vowel hiatuses that arise from affixation of a CV prefix (previously C^v in Jacobsen's analysis) are resolved by the invocation of the notion of vowel dominance expressed as sonority.

Jacobsen concedes the fact that the above vowel coloring morphophonemes surface as themselves preconsonantally. Moreover, the reanalysis of reduplication by both Urbancyk 1993 and Yu 2005 gives us further reason to discard the vowel coloring morphophonemes. Yu further solidifies the argument that /i/ is underlyingly /e/ and surfaces as /i/ in onsetless monosyllabic stems and that /u/ is underlyingly /o/. A quick contrast of Jacobsen's analysis and Yu's analysis will clarify the point: Jacobsen relies on infixed

reduplicants of the shape C, VC, or VC^V, the shape of which is unpredictable and requires pre-listing. Yu's analysis treats the reduplicant's shape and size "as an emergent property of the grammar. No stipulation or pre-listing is needed." (Yu 2005: 29)

5. *VV in Washo

The phonotactics of Washo do not permit VV sequences. This is most observable in the epenthesis of a /y/ between a final stem vowel and a vowel initial suffixes. Consider (19):

(19)

lá:du -a 'my hand'-loc	lá:duya 'in my hand'	(JA64: 260)
legú?u -i? '(1st obj) mother's mother'-AA	legú?uyi 'my daughter's child' (woman, specifically)	(JA64: 306)
lémc'iha -i 'I cause to awake'-imp	lémc'ihayi 'I'm waking him up'	(JA64: 262)
lémlu –é:s –i 'I eat'-neg-imp	lémluyé:si I'm not eating'	(JA96: 17)

It is not impossible, and is in fact, quite common that one language can support multiple hiatus resolution strategies Casali (1996) provides with each strategy targeting a specific domain. It is the contention of this paper that now that we have shown in the previous that the vowel coloring morphemes can be considered actual surface vowels that Washo indeed has two such strategies: /y/ epenthesis and vowel elision based on the concept of vowel dominance.

Hopkins's (1987) description of vowel syncope in Mohawk employs strength hierarchies to explain the pattern of vowel is elided when a hiatus due to affixation occurs. This same technique can be used to describe the elision process that occurs in Washo. A strength hierarchy is a linear ordering, assumed to be universal within certain parameters, where segmental strength is related to some measure of dominance such as sonority. Referring back to the modified table in (16), reproduced here as (20) we can develop the strength hierarchy for Washo.

(20)

vowel coloring	following vowel					
	a	*e*	*i*	*ɨ*	*o*	*u*
e	a	e	e			
ɛ	a		e			
u	o		u	ɨ		
a			a			
ɨ			ɨ			

Starting with /e/ we see that is dominates /i/, is equal to /e/, but is dominated by /a/. Thus, our first run yields /i/ > /e/>/a/ where from left to right we see a correlation between conventional sonority values and the hierarchy for /e/, that is [low] is more sonorous than [mid] which in turn is more sonorous than [high]. The next vowel in the

chart, /ɛ/, never precedes /e/, but again confirms the ordering, /u/ preceding /a/ surfaces as /o/, /u/ preceding /i/ surfaces as /u/, and /u/ before /ɨ/ surfaces as /ɨ/. If we assume that /u/ is underlying /o/ we run into one problem however. It appears that /u/ must be underlyingly both /o/ (preceding to /a/) and /u/ (elsewhere). This assumption is not fatal to the analysis and the results help us to fill out the rest of the strength hierarchy. This means then that the mid back rounded vowel /o/ appears to be almost as strong as /a/, while the high back rounded vowel /u/ is stronger than /e/ and /i/. The only tricky part to the analysis of /u/ is when it precedes /ɨ/ and /ɨ/ wins out. The /ɨ/ preceding /i/ also results in /ɨ/ hints at a special status for /ɨ/ within Washo.

Thus, a plausible strength hierarchy for Washo that we should consider is shown in (21):

(21) i ɨ e u o a

1 2 3 4 5 6

In (21) the vowels are ranked by strength indicated by increasing number and the relative strength of the vowel determines whether it surfaces or not. The general layout of the modified chart supports this sketch of vowel dominance in Washo.

When the strength hierarchy is then applied the general rule (with few exceptions) would hold that the vowel with the highest number wins out, surfaces and the other is elided.

Furthermore this analysis is preferable to the alternative analysis of vowel coalescence between prefixes and stems. De Haas's *A Formal Theory of Vowel Coalescence* formalizes the notion vowel coalescence so that languages either are VC (vowel coalescing) or not VC. De Haas at first argues that Washo is a formally VC language but that upon the vowel shifts due to infixation are also easily explainable by two vowel harmony rules and that if considered a true VC language would violate two of the diagnostics laid out in his theory. First, the reduplicated plural contains a CV syllable not present in the singular and second, the quality of output vowel is not a derivative of both the input vowels (de Haas 1988: 200). Essentially, the sometimes first, sometimes second, sometimes a little of both results I have seen throughout this paper do not add up to a vowel coalescence answer.

6. Conclusion

This paper presents a plausible reanalysis of vowel quality shifts due to the affixation of inflectional and lexical prefixes to stems. While Jacobsen's original analysis using vowel coloring morphophonemes was a novel approach, there is adequate proof that the vowel coloring morphophonemes are actually surface vowels. This is based on the 1-to-1 correspondences between vowel coloring morphophonemes and surface vowels before consonant initial stems, and their behavior under the rules of vowel harmony. Once it is established that the vowel coloring morphophonemes are surface vowels, then there is a need for a second repair strategy. It was clearly shown that vowel coalescence as a processis not present in Washo due to the unsystematic nature of the "derivative vowel." What we are then left with is vowel elision based on vowel dominance. Moreover, the strength hierarchy

coincides with vowel shifts present in the affixation of CV prefixes to vowel initial stems, which, in turn, are consistent with the canonical sonority scale.

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[ii] Legend for abbreviations used in data citations: AA = Attributive Agentive AVF = auxiliary verb formative IMP = imperative imp = imperfect IPF = instrumental prefix formative N = (unrestricted) N (stem) Nap = attributed-possessed noun Np = possessed noun Nr = Restricted noun stem Pi = intransitive instrumental prefix Pt = transitive instrumental prefix TJ = Tactic Juncture Vd = dependent verb stem Vi = intransitive verb stem Vn = neutral verb stem Vt = transitive verb stem Vtt = ditransitive verb stem Va = auxiliary verb caus = causative

[iii] On this Jacobsen 1964 further states "the rules for which [certain patterns of consonants following the vowel] have not yet fully worked out." (307)

Plurality in the verbal domain of Upriver Halkomelem*

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1. Introduction

It has been noted for Upriver Halkomelem (Coast Salish, BC; UH henceforth) that plural marking in the verbal domain[1] is associated with both an iterative interpretation (typically referred to as plural events) and a plural participant interpretation (Galloway 1993)[2]. While one could argue for an analysis in which either events or participants can be independently pluralized, it will be argued here that a more coherent picture can be drawn if plurality in the verbal domain ranges strictly over events.

In developing this account, I will build on the analysis of Lasersohn (1995), in which a range of cross-linguistically attested interpretations associated with pluractional morphology is presented. There he proposes a formal semantic account in which events only are pluralized in the verbal domain, and all attested interpretations are derived. In particular, I further develop the mechanism appealed to in Lasersohn (1995), allowing for plurality to range over *sub-events* as well as events, and show that Upriver Halkomelem in fact utilizes such a mechanism in generating collective readings with the use of plural morphology in the verbal domain.

This paper is organized as follows: section 2 will provide an overview of plural morphology in Upriver Halkomelem, including phonological shape and some morpho-syntactic properties; I will lay out the event-based account of verbal number in section 3; section 4 will address what I refer to as the 'single event' problem,

where a verb with overt plural marking is felicitous in the context of what appears to be a single event with plural participants, and will show how plural sub-events can resolve these apparent issues; conclusions and consequences will be the subject of section 5; future research will be outlined in section 6.

2. Plural morphology

2.1 Morphological shape

Common among the Salish languages for encoding plurality is the CVC-reduplicant (Kinkade 1995). UH is no exception – the use of this as a realization of plural morphology is shown below.

1. CVC-reduplicant

lémet[34]	lemlémet
fold sthg	*fold lots of things, fold sthg several times*
t'eméls	t'emt'émels
chop, adze	*chop sthg in different places*

(Galloway 1993: 328)

UH also makes productive use of an *-l-* infix, and infrequent use of a series of prosodic changes as well, collectively referred to in Galloway (1991, 1993) as 'ablaut'[5]. Examples of these are shown in 2.

2. *-l-* infix

lhóqwet	lhóleqwet
wet sthg.	*wet many things*
kw'és	kw'éles
get burned	*both burned, many got burned*

(G. 1993:325)

Ablaut

thíyeltxwem	tháyeltxwem
build a house	*building a house/houses*
tl'éwels	tl'áwels
bark	*do lots of barking*

A detailed discussion of the distribution of the UH forms can be found in Galloway (1993;324-330). There it is tied to phonotactic properties of the roots and to some aspectual distinctions. The discussion is framed around the canonical CVC root. Given the choice of phonemes in each position of that root, Galloway's claim is that the distinction between non-continuative, continuative, resultative, durative, and

characteristic plurals is reflected in the shape of the plural morpheme. I have yet to find evidence that such distinctions are maintained in any consistent fashion in the speech of my consultant. It seems rather that these are treated simply as allomorphs, in that there does not seem to be any systematic restrictions on interpretation when only one form is available for a given root. I have found a couple of cases where both the reduplicant and the *-l-* infix or ablaut are available for a single root, and they seem to reflect some semantic discrimination. One of these is presented in 3.

(3) a. xwetxwet-át te pípa
tear.pl-tr det paper *Iterative interpretation*
'tear the paper all up'

b. xwelt-át te pípa
tear.pl-tr det paper *Plural participant interpretation*
'tear a bunch of papers'

I have not yet succeeded in systematically replicated this distinction with other predicates, though the distinction between 3a and b has held up under re-elicitation. It is crucial though, that where only one form is available, it is capable of encoding both of these interpretations. This could be taken to reflect an underlying semantic distinction that is neutralized in this context. Alternatively, it may be that where the phonotactics of the root permit multiple forms, the semantics exploits this freedom to disambiguate between possible readings. I am not currently able to argue for one over the other.

Given that the interpretive distinctions that have been attributed by Galloway to the CVC-/-*l*- choice appear to have been bleached, and that ablaut seems to display similar properties (i.e. phonotactically governed distribution, with semantic effects in the few cases of overlapping distribution) I will posit a single semantic account for the CVC-reduplicant and the *-l-* infix, and refer to them as allomorphs of PLURAL[6].

2.2 Morpho-syntactic properties

Of the morpho-syntactic properties of UH PLURAL morphology, perhaps the most relevant to this research is its ability to be used across the open class categories, as discussed in Hukari (1978), Wiltschko (2004, 2005a,b). The following data, taken from Galloway (1993), show the use of PLURAL morphology across the nominal, verbal, and adjectival domains.

(4)

Category	Singular	Plural
Noun	smé:lt *rock, mountain*	smelmélt *rocks, mountains*
Verb	líyem *laughing*	líyleyem *lots of people laughing*

(379)

(326)

Adjective	sméth'el	smé:leth'el
	be proud	*lots of people are proud*

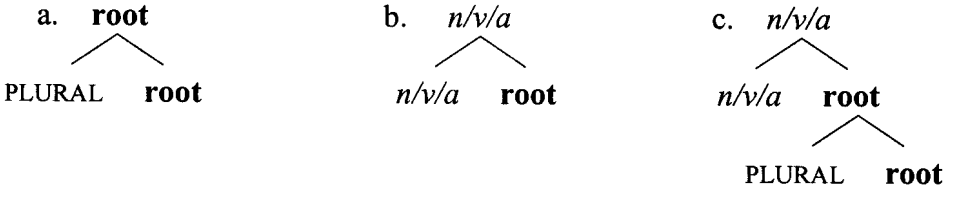
(325)

There are at least two logically possible scenarios that could produce this behavior[7]. On the one hand, one could argue that PLURAL morphology selects for nouns, verbs, and adjectives. This *cross-categorial* approach, the structure for which is shown in 5, is taken in Bar-el (2002) for similar phenomena in Sḵwx̱wu7mesh (Squamish, Coast Salish, BC).

(5)

On the other hand, one could argue that PLURAL morphology selects for roots, as argued in Hukari (1978) and in Wiltschko (2005a,b). On the assumption that roots are category neutral (cf. Marantz 1997 and others), the apparent category neutrality of PLURAL morphology finds ready explanation if PLURAL morphology operates on roots in UH. The relevant syntactic configurations for this *pre-categorial* approach are given in 6.

(6)



In 6a, PLURAL is shown merging with a root, with the root projecting. The introduction of categorial specification via some functional head is shown in 6b. Thus, prior to the introduction of category-bearing functional material, PLURAL modification takes place, as shown in 6c.

Both solutions have several consequences for the semantics of PLURAL. In either case, it will need to be sufficiently general to be able to generate the range of readings associated with plurality in the different domains. Depending on one's assumptions about roots, however, the implications for PLURAL are quite different. If we assume, following Marantz (1994), that roots lack categorial specification, the pre-categorial morpho-syntax will require a pre-categorial semantics as well. One way to do this would be to claim that roots are predicates, though not yet of events or entities. These would be introduced as arguments by the categorizing head, following Wiltschko (2005b) – the *e*(vent) argument by *v*, and the R(eferential) argument by n^8. PLURAL modification then would create a plural predicate, which would apply to this first argument. If we follow Borer (2004) in assuming for the verbal domain that agent and patient arguments are introduced higher in the clausal architecture via the addition of functional heads, it follows that they will not be directly available for PLURAL modification. If such an account proves successful, it would derive the 'event only' semantics I am proposing here.

On the other hand, one could argue[9], as does Davis and Matthewson (1999), that roots are not in fact category neutral, but rather that they enter the syntactic derivation already specified for category membership. On such a view, the structures in 6 do not exist, and PLURAL modification would have the structure in 5. With the additional claim in Davis (1997;55) that 'all predicates are based on roots which are lexically associated with an internal argument', it seems that the operation of PLURAL would have to be quite different in order to rule out the possibility of direct pluralization of the internal argument, which would now be under the scope of PLURAL. I have not yet thought through how such an analysis could be implemented. I believe though, that it is possible to reconcile such a morpho-syntactic analysis with the basic intuition of this paper that plurality ranges strictly over events in the verbal domain.

I will assume the pre-categorial analysis for this paper.

3. Event number

In what follows, I lay out a formal semantic account of pluractionality as event number. Given that this follows closely the analysis put forward in Lasersohn (1995), I begin with a discussion of that work, and of the revisions that need to be made for UH on the basis of the discussion in section 2. I will then lay out the range of interpretations that are found with UH PLURAL morphology. While most of these readily accommodate the current event-based analysis, instances of the 'single event' problem will be presented and then taken up in section 4.

3.1 Lasersohn (1995) and beyond

Recall that the 'event only' account proposed here is set against that class of analyses that assumes that events and participants can be pluralized directly and independently. The task for an event-based account then is to show that the full range of readings – event (which subsumes iterative and continuative interpretations) and participant (agent, patient, etc.) – can all be derived from plural events. The central insight developed in Lasersohn (1995) is that there are a number of ways in which an event can be 'plural', be it in terms of *times, spaces,* or *participants*. He is here taking his cue from Cusic (1981), where a wide range of interpretive effects of pluractional morphology are unified by means of four parameters. One of these is the parameter of distribution, which determines the dimension along which an event is pluralized. Also relevant to the current topic is the event ratio parameter, which will be discussed in detail in section 4. For now let it suffice to say that pluractional morphology generates or is associated with plurality at different 'event levels', referred to by Lasersohn as *phases, events,* and *occasions* [10][11].

Given these parameters to cover in his formalization, Lasersohn comes up with the following formula that is meant to be flexible enough to accommodate the attested range of interpretive effects.

(7) $\text{V-PA(X)} \Leftrightarrow \forall e,e' \in X[P(e) \wedge \neg (f(e) \circ f(e'))] \wedge |X| \geq n$

This sets the conditions that must hold for a verb V + pluractional marker PA to be true of some set of events X. Thus, it must be the case that all events *e,e'* that are elements of

set X are the same type of event as that which is predicated of X, that they do not overlap along the relevant dimension *f*, and that the cardinality of X is greater than some contextually determined number *n*. The relationship between what is predicated of the set of events X and the individual events *e,e'* is in fact more nuanced, as reflected by the use of two different variables, V and P. This is what I will refer to as Lasersohn's *phase notation*, and will take it up again in more detail in section 4, as it will play a crucial role in resolving the 'single event' problem. For Lasersohn, the use of different variables is a means to capturing the effects of the event ratio parameter, such that *e* can represent a phase of V, and X will be the set of those phases.

In line with the assumption discussed and adopted in section 2, namely that PLURAL modification operates on category-free roots, Lasersohn's formula needs to be revised somewhat. The changes are as follows: following the claim in Wiltschko (2005a,b) and Hukari (1978) to the effect that this morphology targets roots, I substitute R (root) for V. Because roots are not inherently specified for category (Marantz 1997, Borer 2004), and because events are arguments of verbs, it is necessary to change the value of X to that of a variable ranging over sets of events, individuals, and properties[12]. It is then of course necessary to change *e*, this to x, a variable ranging over single events, individuals, and properties. Finally, given the cross-categorial use of PLURAL morphology, it is not appropriate to refer to it as pluractional. Rather, I adopt the convention of Bar-el (2002) and refer to it as PLURAL, represented in the formula as PL. The revised formula is given below.

(8) $\text{R-PL(X)} \Leftrightarrow \forall x,x' \in X[P(x) \wedge \neg (f(x) \circ f(x'))] \wedge |X| \geq n$

3.2 Available interpretations in Upriver Halkomelem

In discussing overtly pluralized verbs, Galloway (1993) claims that the presence of this morphology 'indicates, for intransitive verbs, that either the subject or the action is plural (done many times), and for transitive verbs, that either the subject, the object, or the action is plural.' (323)[13]. The task here is to flesh out this description, and to show that it is consistent with the type of analysis I am advocating.

In terms of what is usually referred to as 'plural events', UH displays both iterative and continuative readings, shown in 9 and 10 below.

(9) chel peqwpeqw-l-exw te ey lepot-elh
1sg break.pl-lct-3o det good cup-'former'
'I broke my good cup over and over'

(10) teltíl-thet-es te témexw
clear.pl-refl-3s[14] det clear
'He's clearing the land'

The cup in (9) is subject to repeated breakings (and subsequent repairs), and this iteration of events reflects the contribution of PLURAL to the situation. The man in (10) is doing a lot of clearing, and so the event has an extended duration. The difference between these two interpretations is an example of Cusic's 'connectedness' parameter. It is modeled in

Lasersohn's system by the addition of a clause that stipulates either the presence or absence of some time t at which the event denoted by the predicate does not hold, intervening between times at which the event does hold. The presence of such a time would generate an iterative interpretation, while its absence corresponds to the continuative.

Galloway also mentions plural participant readings, claiming that 'the subject or object pluralized may be functioning as agent or patient or any of a variety of other semantic roles' (G 1993; 324). The data below suggest that all of this can happen at once.

(11) chel léplep-ex te sqawth
1sgS eatpl-tr det potato
'I ate and ate the potatoes'

(12) qw'émqw'em-et-es tel máqel ye swíweles
pull.pl-tr-3s det.1sg.poss hair det.pl boy
'The boys kept pulling out my hair'

In these volunteered translations, the situations described involve *both* continuative 11 and iterative 12 readings *and* plural participants. The eating of the (plural) potatoes in 11 is going on for some time, while the boys in 12 pull out the speaker's hair day after day. These readings are derived on this analysis by distributing over time and potatoes in 11, and over times and pairs of boys and bits of hair in 12.

For the sake of concreteness, it will be useful to take an example, say that in 12, and apply the formula in 8 to it. Assigning the relevant values to the variables produces the representation in 13.

(13) $\text{pull+PL}(X) \Leftrightarrow \forall x,x' \in X[\text{pull}(x) \wedge \neg(\theta_{<ag,pat>},\tau(x) \circ \theta_{<ag,pat>},\tau(x'))] \wedge |X| \geq n$

What this says is that there is some set X (of what will be events, after the event argument is introduced) of which 'pull+PL' holds, and the elements of this set are distinguished on the basis of agents, patients, and times[15].

In more recently elicited data, I have found evidence of events that are distributed spatially as well. A prime example involves a PLURALized weather predicate that can perfectly well be used to describe separate but simultaneous storms (as seen from a mountain, e.g.). Thus it seems that the full range of 'parameters of distribution' posited by Lasersohn are in fact utilized in UH.

4. The 'single event' problem, phases, and Dowty

On the account developed here, pluractional morphology is licensed strictly by plural events. We will see however, that PLURAL is in fact felicitous in some contexts that *do not seem to* involve plural events, but which do involve plural participants. This section will examine these 'single event' cases in detail and show how the formal apparatus already developed can be utilized to bring them into line with an event-based account.

4.1 Single events

There are a few different scenarios in which a single event can be interpreted collectively, involving multiple participants, whether agents or patients. The appearance of PLURAL morphology in these contexts is superficially unexpected on the account offered here, where plurality in the verbal domain is argued to range only over events.

4.1.1 Collective predicates with distributive sub-entailments

Among the predicates for which PLURAL morphology is seemingly licensed by plural participants are those labeled in Dowty (1986) as 'disguised distributives', collective predicates with purely distributive sub-entailments. These are predicates, like 'gather' and 'scatter', that can only hold of a group, but which entail certain properties of the individuals of which the group is composed. As it stands, the event-based account developed here would presumably predict that use of PLURAL would correspond to situations where there were several gathering (or scatterings), or a gathering that went on for an extended period of time. These interpretations are in fact possible, as shown in (14).

(14) q'epq'ép ye xwélmexw li te shxwelí-s
gather.pl pl.det people aux det place-poss
'The people are gathering in lots of their places'

One would not, however, expect a situation like that in (15), where the use of PLURAL is felicitous even though there is only a single gathering.

(15) q'epq'ép ye mestíyexw li te lálem
gather.pl pl.det people aux det place
'The people are gathered in the house'

This is essentially the same sentence as (14) above, which is itself capable of the single event interpretation.

4.1.2 Ambiguous predicates

The ambiguity referred to here is that between collective and distributive readings. It was noted in Dowty (1986) (following Link and others) that some predicates can hold of individuals or of groups. Some of the examples he gives include *build a house* and *carry the piano upstairs.* It is perfectly possible for a (very capable) individual to build a house, or for a (very strong) individual to carry a piano upstairs. These predicates do however, allow for a collective reading when the subject has a plural denotation, in the sense that there is a single event with a plural agent. Again, what might be expected is that the appearance of PLURAL morphology will signify multiple events, whether by an individual or a group, and again, we find that such interpretations are indeed generated, as shown in (16).

(16) kwálkwel-tel yutl'ólem
argue.pl-recip 3pl
'They're always arguing'

And still again, we find that situations involving a single collective event admit of PLURAL morphology.

(17) tháy-t-es ye mestíyexw tel bicycle
fix.pl-tr-3s det.pl people det.1sg.poss bicycle
'A bunch of people are fixing/fixed my bike'

(18) tsel lháleq'-et mekw' ye spul
1sgS put.down.pl-tr all det.pl spoon
'I put down all the spoons (at once).'

(19) lháleq'-et-es ye slháli te theq'át
put.down.pl-tran-3S det.pl woman det tree
'The women put down the tree (together)'

Altogether, these cases present a serious challenge to a theory that exclusively invokes event number in motivating PLURAL morphology. The next section will mount a defense of that theory, making use of the *phase notation* introduced in Lasersohn (1995).

4.2 Lasersohn's phase notation and plural sub-events

4.2.1 From *event ratio* to *phase notation*

In positing an *event ratio* parameter, Cusic (1981) was intending to capture the fact that in the situations described below, for example, plurality can hold at different levels.

(20) a. 'the mouse *nibbled* the cheese' (plural phases)

b. 'the mouse nibbled the cheese *again and again*' (plural events)

c. 'the mouse nibbled the cheese *every thursday*' (plural occasions)

While he does posit a three-tiered system, Cusic claims that the distinction between plural *events* and *occasions* is not typically encoded grammatically, and so reduces the burden on the theoretical machinery to two – phases and events.

I have been assuming the notion of *events* used by Lasersohn, and so will forgo further discussion of that in favor of exploring and developing the notion of *phases*. For Cusic, and by extension for Lasersohn, a phase corresponds to some event that when combined with more events of the same type yields an event of a different type. Thus, in the 'nibbling' example, it is clear that there is some notion of plurality involved in a nibbling event, namely that of the small bites taken out of the cracker, peanut butter cup, etc. What is crucial though, is that each of those small bites by themselves do not

constitute a nibbling event. It is only when these small bites take place in conjunction with each other that nibbling can be said to have happened.

It is this type of scenario that Lasersohn has in mind when he introduces what I have been referring to as his *phase notation*. This is represented formally by using two different variables to range over event types on either side of his formula presented in section 3.1, reproduced here for convenience.

(7) $\mathbf{V}\text{-PA}(X) \Leftrightarrow \forall e \in X[\mathbf{P}(e) \wedge \neg (f(e) \circ f(e'))] \wedge |X| \geq n$

The variable V on the left-hand side ranges over verbs, which are taken to be predicates over events, and which, in conjunction with the pluractional morphology PA, can hold of a set of events X. On the right-hand side, the variable P ranges over what gets predicated of the individual events e, e' elements of set X. As a matter of pragmatic reasoning or world knowledge, the value of P will be set either to that of V, in which case the plural event reading will be generated, or to some phase of the event represented by V, in which case the plural phase interpretation is generated. Again, to make use of the 'nibbling' example, in the plural phase reading represented in 20a, P = [small bite], while in the plural event reading of 20b is generated by P = V (in this case [nibbling]). This is also presumably an area of cross-linguistic variation, in terms of a given language's ability to value P at something other than V[16].

This sums up the motivation for the phase notation is in Lasersohn's account, and the use to which it is put. The next section will lay out the use to which I put it in dealing with the challenge raised in 4.1.

4.2.2 Phase notation and collective interpretations

Recall that the problem this account was faced with in 4.1 had to do with the felicitous use of PLURAL in describing single events with plural participants. With Lasersohn's phase notation in place, those kinds of interpretations are in fact predicted to be available. The argument goes as follows.

Inasmuch as there is independent motivation for the kind of flexibility introduced by the phase notation, we are in a position to utilize the potential mismatch between what is predicated of the set of events X and the individual events that make it up. I propose that examples like those in (21-22) offer the needed evidence to motivate reference to phases.

(21) teltíl-thet-es te témexw
clear.land.pl-refl-3s det land
'He's clearing the land'

(22) tsel lekwlékw-et te léts'e theqát
1sgS break.pl-tr det one tree
'I broke up one tree (for kindling)'

In the first of these examples, 'he' is doing a number of actions that collectively amount to 'clearing the land', while in the second, all the little breaks result in a broken up tree

and a pile of kindling. In both cases, there is a plurality, clearly not of participants, but also not really of events. Rather, there is a plurality of phases of 'clearing' and 'breaking' events.

Having motivated reference to phases in UH, I am now free to make use of them in addressing the single event problem. All of the cases presented in 4.1 were examples of collective predicates with distributive sub-entailments (cf. Dowty 1986). They are collective in the sense that at least one participant is a group – in the case of the predicates in 4.1.1, this is required, while for those in 4.1.2, the predicates can hold of individuals *or* groups, triggering a collective interpretation in the latter case. These predicates are distributive in the sense that certain things are entailed of the individuals in the groups – while a 'gathering' event cannot be predicated of a single participant, we are in a position to say something about the behavior of the individuals that collectively gather, namely that they all proceed to one location at something like a coordinated time. I propose that it is these events, which are themselves *sub-events* of that picked out by V, that are represented by P. Thus, in a manner analogous to a bunch of 'little bite' events adding up to a nibbling event, a bunch of 'moving to a specified location at a specified time' events add up to a gathering event. The crucial difference between the two is that where all of the 'little bite' events have the same agent, the 'moving...' events are distributed across multiple agents.

To see how this would work, let us go through an example in detail. In (19), repeated from above, there is a group of women who are collectively responsible for getting the tree safely to the ground.

(19) lháleq'-et-es ye slháli te theq'át
put.down.pl-tran-3S pl.det woman det tree
'The women put down the tree' (together)

It is not the case here that each woman is individually the agent of a 'tree-putting-down' event, but rather that each is an agent of some sub-event of that. They are *sub-agents*, if you will, of the collective event. If we were to plug the various pieces into the appropriate spaces created by the formula, we would get (23).

(23) $\text{put.down+PL}(X) \Leftrightarrow \forall x,x' \in X\ [\text{put.down}'(x) \wedge \neg(\theta_{<ag>}(x) \circ \theta_{<ag>}(x'))] \wedge |X| > m$

What this says is that there is a root composed of 'put.down' and PLURAL that holds of some set (of what will be events[17]) X, and that that set is composed of (what will be) sub-events of put.down (put.down', which denotes the coordinated holding and releasing done by each of the sub-agents), and further that those sub-events are distinguished from each other in virtue of their agents.

The same sort of mechanism is capable of generating the example in (18), only substituting the patient theta-role for the agent theta-role.

5. Consequences and Conclusions

This paper has presented an account of UH PLURALization in the verbal domain based on the account developed in Lasersohn (1995). Here, as there, it was argued that plurality in

the verbal domain is best analyzed as applying strictly to events, and it was shown how an event-based account is sufficient to generate the attested range of interpretive effects, if one recognizes that a plurality of events can be instantiated along a number of lines. The theoretical contribution made by this paper lies in the use to which Lasersohn's phase notation is put in maintaining an event-based account of pluractionality in the face of the challenge posed by the 'single event' problem, while the descriptive contribution lies in a more thorough documenting of the interpretive effects of PLURAL morphology than has been conducted.

As it has been framed, this approach has several consequences for the operation of PLURAL morphology in UH. For instance, there is a great deal of freedom left by this account in terms of how the presence of overt PLURAL morphology is to be interpreted. This essentially builds a great deal of ambiguity directly into the semantic content of PLURAL, and then relies on pragmatic reasoning and world knowledge to fill in the gaps. As it happens, this is exactly what we need. Given that a single sentence is felicitous in a number of situations, as shown below, such ambiguity is highly motivated, as is the appeal to pragmatics in resolving that ambiguity.

(24) yáleq'-et-es te theqát
fall.pl-tr-3s det tree
a) 'He felled all the trees' – spontaneous translation
b) 'He felled all the trees (with one swing)' – accepted with appropriate contexts
c) 'They felled the trees'
d) 'He felled the same (magic) tree over and over'

The consultant's judgments on these were quite clear. Provided with sufficient context (e.g. a magic tree that grows back every night after it is cut down), the UH sentence in (24) is a felicitous means of describing the situations in a-d.

One also expects, if pragmatics plays the role I am suggesting, that certain readings will be more likely for a given predicate than others. Thus for verbs of destruction and verbs of creation, where under normal circumstances the patient can only be so affected once, the expectation is that the default interpretation of the PLURALized form will involve plural patients, and that somewhat more work will have to be done in order to accommodate a situation with a single patient. I would argue that example (x) offers exactly the right sort of evidence – the spontaneous translation for a sentence with a verb of destruction involves plural patients, and magic was needed to get a translation with a single patient[18]. This sort of preference has been maintained so far in follow-up elicitations as well. It is somewhat more difficult to think of situations that only involve a single agent under normal circumstances, which may offer some insight into the fairly common 'absolutive' pattern, in which subjects of intransitives and objects of transitives are more likely to be interpreted as plural than subjects of transitives[19].

6. Future research

There are several directions to take this research, and the two that seem most pressing involve the 'cross-categorial' nature of this morphology, and its interaction with aspect. For the first of these, it remains to be seen how readily the formula can be extended to

cover the various effects found in those domains. For instance, what would the possible values for *f* (i.e. parameters of distribution) be in the nominal domain? How does one model the 'intensifier' effect found in the adjectival domain?

As for the interaction of PLURALization with the aspectual system, it is clear that events can be iterated or extended durationally, but given the lack of consensus on the status of tense in the language, it is not clear how this interaction ought to be addressed.

This is of course not the end of the issues that need to be resolved or followed up on, and as always, they serve to highlight the need for further elicitation.

Notes

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[1] The same plural morphology operates in the nominal and adjectival domains as well (Galloway 1980, Wiltschko 2004). While this account focuses strictly on verbal number, the ultimate goal is to extend it to cover all instances of plural morphology.

[2] For other discussions of this morphology, see Urbanczyk (2004) for Central Salish, Gerdts and Hukari (to appear) for Halkomelem, Suttles (2004) for Musqueam.

[3] Forms are presented in the official orthography used by the Stó:lo Nation.

[4] Unless otherwise noted, data comes from my field notes. I thank Strang Burton and Martina Wiltschko for facilitating and/or conducting several elicitations.

[5] In earlier versions of this work I also included the *h*V- prefix among the allomorphs, and in the discussion of plural nouns, Galloway lists 'hí:-' as a plural affix (378). However, my data are not clear with respect to its use as a plural marker in the verbal domain, and I am currently attempting to sort this out.

[6] I take this label from Bar-el (2002), where a similar account of plurality in the verbal domain in Squamish (Sḵwx̱u7mesh; Coast Salish, BC) was developed. This label was chosen there to reflect the fact that the same morphology operates across domains in Squamish, as it does in UH (see fn.1 and subsequent discussion), and is thus a generalized plural.

[7] I do not consider a third possibility, namely that PLURAL is hosted by a functional projection Num(ber)P, for reasons laid out in Wiltschko (2004) having to do with the lack of number agreement within UH NPs.

[8] Presumably *a* would introduce a property, though I have not yet thought through all the implications or the implementation of this.

[9] Or one could simply assume it, as much of the generative tradition seems to.

[10] Of the other two parameters – relative measure and connectedness – the first is not directly relevant to the discussion at hand, but will certainly play a role in the final description of plural morphology in UH, while the second is briefly introduced below.

[11] See Yu (2003) for an account of pluractional morphology in Chechen that is developed along the same lines.

[12] This last is just a suggestion for how to deal with the use of this morphology in what might be an adjectival domain, where use of PLURAL indicates a higher degree of whatever property the 'adjective' denotes.

[13] It is worth noting that elicitations with a speaker of the Island dialect have shown that it is possible for PLURAL morphology to, in these terms, distribute events over oblique arguments as well. I intend to attempt to replicate this for the Upriver dialect.

[14] This is one of the non-reflexive uses of the 'reflexive' morpheme. See Thompson and Jacobs (2004) for a discussion of the range of situations in which this morphology appears across the Salish family.

[15] It may in fact be necessary to separate τ from the $\theta_{<ag,pat>}$ to allow the same set of boys to be involved in the different hair-pulling events. This remains to be worked out.

[16] In fact, given the varying degrees of lexicalization that pluractionalized verbs can and do undergo, it is perfectly conceivable that different restrictions could hold across predicates within a single language.
[17] 'Will be' after the appropriate functional material is introduced to make this a verb. The semantic content of roots is a subject of ongoing research.
[18] This even elicited a laugh from our consultant.
[19] I thank Martina Wiltschko for this point.

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Vocalic Mora Augmentation in the Morphology of Guajiro/Wayuunaiki

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1. Background information and typological characterisation

Guajiro or Wayuunaiki is an Arawak language spoken by about 400,000 people in the northernmost tip of South America, in Venezuela and Colombia. The Arawak language family is one of the most widespread families in South America, having members as far as Brazil and Peru. Within the family, Guajiro is closely related to near-extinct Paraujano/Añú, and a little less closely related to Lokono (or Arawak proper). Although it is also related to the Arawak languages of the Río Negro basin (Baniva, Piapoko, Yavitero, Warekena, Kurripako, Baré, etc.), the differences in morphological and syntactic structures are striking, some probably due to areally diffused patterns in these languages (cf Aikhenwald 1999). Guajiro has various mutually intelligible dialects.

Guajiro is a polysynthetic language with head-marking morphology. It is agglutinating with little fusion (mostly explainable in terms of transparent phonological processes). It only has 11 prefixes. Of these, 7 are person/number/gender prefixes which can be used with active verbs, nouns and prepositions: *ta-ya'lajüin* 'I bought it', *ta-japü* 'my hand', *ta-maa* 'with me', and also appear in personal pronouns *ta-ya* 'I/me'. These prefixes always cross-reference the object of a preposition in a prepositional phrase: *nü-maa Juan* 'with John', and the possessor in a possessive noun phrase: *nü-tüna Juan* 'John's arm'. There is also 1 person/number/gender prefix *a-* used for unspecified person. There are 2 productive derivational prefixes *ka-* 'ATTRIBUTIVE' and *ma-* 'NEGATIVE' which are mainly used to derive (positive and negative) possessive verbs from nominal themes, and a non-productive, fossilised prefix *pa-* 'DUAL'. There are dozens of suffixes.

The open classes are nouns and verbs. There does not seem to be a class of adjectives. There are around 6 adjective-like words (*laülaa* 'old', *mulo'u* 'big', etc.) that do not take a verbal suffix when used in the general tense, but which take normal verbal morphology elsewhere. There are no verbless clause complements. Nouns used in the predicative slot behave as stative verbs and take all the appropriate elements of verbal morphology. There is no copula, and the verb *eewaa* 'be, exist' behaves like any other stative verb and has no special functions (it is not an auxiliary) in the language.

Nouns are divided into two neat classes: alienable and inalienable. Inalienable nouns are basically body-parts and kinship terms, as well as some cultural items and most deverbal nouns. They are always possessed and do not need additional morphology to indicate possession other than the indication of the possessor (even in an indefinite form): *tatüna* /ta-tüna/ [1S-arm] 'my arm'. In alienable nouns the possessor is also indicated with the person/number/gender prefixes, but they require an additional lexically-specified possessive suffix *-se* ∞ *-in* ∞ *-ya*, the first being the most productive: *tachajaruutase* /ta-chajaruuta-se/ [1S-machete-POSS] 'my machete'.

Verbs can be divided into two classes: active verbs and stative verbs. The former are always prefixed, the latter are never prefixed. This means that stative verbs cannot participate in constructions where the prefixes are required. All stative verbs are intransitive and can be regarded as unaccusative predicates. Active verbs can be further divided into transitive and intransitive verbs. But active intransitive verbs are easily transitivised through causativisation or

incorporation. The same verbal roots can show up in stative, active intransitives and active transitive verbs. Grammatical relations are marked on the verb by means of one set of 7 person/number/gender prefixes (*ta-* 1S, *pü-* 2S, *nü-* 3SM, *jü-/sü-* 3SF, *wa-* 1P, *jü-/ja-* 2P, and *na-* 3P), or by means of several sets (used according to tense/aspect) of 3 gender/number suffixes (for example:-*shi* M, -*sü* F, -*shii* PL for the general tense).

There are two conjugations: subjective and objective. The subjective conjugation can be used with all types of verbs in both transitive and intransitive clauses. This conjugation only marks the subject, be it A or S, with one of the gender number suffixes in agreement with it: *Atunkeechi Juan.* 'John will sleep'; *Aya'lajeechi Juan awarianta.* 'John will buy booze'. The objective conjugation behaves more or less as in Finno-Ugric languages, as it requires that the object be specific. In this latter conjugation, the prefix will refer to A and the suffix will refer to O: *Jüya'lajeechi*[*Mariia*]$_A$ [*chi kaa'ulakai*]$_O$. 'Mary will buy the (male) goat'. The order of the clause constituents is basically one in which the verb is initial, while the order of the other constituents varies: VS, VAO, VOA. In pragmatically-marked contexts, both S and A, as well as O, can be fronted, with an intonation break.

The verb can exhibit a very particularly complex morphological structure, which may include arguments, tense, valency (passive, causative), modality, and an impressive array of other categories such as desiderative, collaborative, permansive, untimely, counter-expectancy, immediacy, here/there, celerity, excess, additional, augmentative, diminutive, fiction, transient, etc. Due to this complexity, in Guajiro any transitive verb can literally have thousands of forms. Extremely complex forms, although limited by pragmatic reasons, are not rare. Guajiro verbs can also have dozens of infinitives based on themes of increasing complexity.

2. A typology of mora augmentation

Morphological mora augmentation is a straightforward case of prosodic morphology. Aronoff & Fudeman (2005:75) provide the following characterisation of this field of linguistic inquiry: "Prosodic morphology deals with the interaction of morphology and prosodic structure. Prosodic structure, in turn, is particularly concerned with the timing units of languages, e.g., the word and syllable, and vowel length." In linguistic theory the mora has been understood as a unit of phonological weight/timing. This notion allows us, among other things, to model the opposition between heavy syllables (bimoraic) and light syllables (monomoraic), as well as to account for the equivalence among different types of heavy syllables. Although the notion of mora had been used in an informal manner for a long time, only in the eighties it has been used formally as an explicit level of representation.

Within prosodic morphology, one of the most common phenomena is reduplication, that is, the operation of copying a continuous substring from either the beginning or the end of a root. Reduplication may be used for both inflection and derivation. In fact, even within a given language this type of prosodic operation can be used for several purposes. In Nahuatl, for example, reduplication can be used for the plural of nouns, the superlative of adjectives, while in verbs it can express distribution, reiteration, intensification, reciprocal, and other semantic changes (see Peralta 1991 and references therein).

Mora augmentation is also a common type of process in prosodic morphology. It can be achieved through diverse strategies: vocalic augmentation, consonant insertion, consonant

gemination, metathesis, and reduplication. However, mora augmentation can also be simply conditioned by the prosody, with no consequence for the morphology whatsoever. Such is the case of the so-called 'iamb optimization' in Cariban languages. In this paper we shall examine cases of mora augmentation as instances of a morphological operation applying to various bases (differently defined according to each case): "The **base** of a morphologically complex word is the element to which a morphological operation applies" (Haspelmath 2002:25).

Davis and Ueda (2001, 2002b) claim that the selection of strategies of mora augmentation can be predicted in a typologically interesting way according to whether it is required by the prosody or by the morphology. If required by the prosody, the preferred strategy is vocalic augmentation, as in Hixkaryana (Derbyshire 1985), and Kari'ña (Álvarez 2000). If required by the morphology, then consonant insertion takes prominence, as in Japanese (Davis and Ueda 2002a), Saanich (Davis and Ueda 2001), and Choctaw (Lombardi and McCarthy 2000).

They recognize that vowel lengthening can sometimes be used morphologically, as in reciprocal stems in Classical Arabic (*kaatab* 'write' versus *kaatab* 'correspond'). They further contend that by using Optimality Theory as the formal apparatus, the choice of strategy within a language can be explained in terms of a specific ranking of constraints, while the differences across languages can be explained by different rankings. They further claim that when morphological mora augmentation is always realized as vowel lengthening, its representation must be a floating *vocalic* mora, whereas when various realizations are possible, it must be represented as a floating mora *tout court*.

Although somewhat unusual, in the literature it is not difficult to find clear cases of the morphological use of vocalic mora augmentation. In Huallaga Quechua, the first person singular of verbs is formed by lengthening the final stem vowel (Weber 1989:99, 118), as shown in [01].

[01] Quechua 1st person singular of verbs

2ND SINGULAR		1ST SINGULAR	
aywa-nki	'you go'	aywa- :	'I go'
aywa-pti-ki	'when you went'	aywa-pti- :	'when I went'
aywa-shka-nki	'you have gone'	aywa-shka- :	'I have gone'

In Hausa, the difference in the length of the vowel is used to indicate whether the markers in [02] are in the relative form (Spencer 1991:17).

[02] Hausa relatives

naa kaawoo 'I have brought'	abìn dà **na** kaawoo 'the thing which I have brought'
kaa kaawoo 'you have brought'	abìn dà **ka** kaawoo 'the thing which you have brought'

In Slovak [03], according to Spencer (1998:137), the morphological lengthening of vowels occurs in some paradigms: "The genitive plural of (mainly feminine) nouns in the *-a* class and the (neuter) *-o* class has no suffix, but usually a lengthened final syllable."

[03] Slovak (restricted) genitive plural (accented vowels = long vowels)

NOMINATIVE SINGULAR	GENITIVE PLURAL	
kadivo	kladív	'hammer'
stopa	stóp	'trace'

3. Vocalic mora augmentation in Guajiro morphology

In Guajiro, vowel duration is not conditioned by prosody and long vowels can occur in any syllable. The phonemic status of length can be easily established through copious minimal pairs [04].

[04] Guajiro minimal pairs by vowel length

achitaa	/a-chi-ta-a/	'hit'	achiitaa	/a-chii-ta-a/	'defecate'
a'wataa	/a-'wa-ta-a/	'pat'	a'waataa	/a-'waa-ta-a/	'cry'
kashisü	/ka-shi-sü/	'she has tail'	kashiisü	/ka-shii-sü/	'she has father'
kenaa	/kena-a/	'firefly'	keenaa	/keena-a/	'spill'
ayataa	/a-ya-ta-a/	'stay the same'	ayaataa	/a-yaa-ta-a/	'travel for goods'

Long vowels can appear intra-morphemically [05a], they may also arise through morphological concatenation [05b], and they may also be the outcome of morphological mora augmentation. This third possibility is the focus of this paper.

[05] Sources of Guajiro long vowels

a.

a'waataa	/a-'waa-ta-a/	'cry'
ayaataa	/a-yaa-ta-a/	'travel for goods'
tamaa	/ta-maa/	'with me'
wayee	/wa-yee/	'our tongues'
palaa	/palaa/	'sea'
atpanaa	/atpanaa/	'rabbit'

b

püüliijana	/pü-üliijana/	'your necklace'
taapüin	/ta-apa-in/	'I give'
piimata	/pü-imata/	'your lips'
puusaja	/pü-usa-ja/	'kiss!'

In what follows, we shall describe eleven cases of vocalic mora augmentation in Guajiro morphology. Most of these are clearly derivational processes, but some of them could be considered instances of inflectional morphology. It is important to stress that morphological mora augmentation can take place more than once within a word domain.

3.1. Infinitive Formation

In Guajiro each active verb can have some fifty infinitives which are based on themes of increasing complexity [06]. Stative verbs have a smaller number of infinitives.

[06] A sample of the multiple infinitives of 'hang' (active transitive) [1]

akacheja'alaa	'hang always unexpectedly'	akachennaa	'be hung'
akachejaa	'be constantly hanging'	akacheraa	'hang'
akachejaajiraawaa	'hang suddenly with others'	akacheraajeewaa	'wish to hang oneself suddenly'
akachejaanaa	'be hung suddenly'	akacheraajiraawaa	'hang oneself with others'
akachejaaweewaa	'wish to hang suddenly'	akacheraawaa	'hang oneself'
akachejaawaa	'hang suddenly'	akachere'ennaa	'be made hang oneself'
akacheje'ennaa	'be made hang suddenly'	akachereemataa	'hang at once'
akacheje'eraa	'make hang suddenly'	akachere'eraa	'make hang oneself'
akachejeewaa	'wish to hang constantly'	akachereewaa	'wish to hang'
akachejinnaa	'be made hang constantly'	akacherinnaa	'be made hang'
akachejiraa	'make hang constantly'	akacheriraa	'make hang'
akachejiraawaa	'hang constantly with others'	akacheriraawaa	'hang with other'
akachejünaa	'be hung constantly'	akacheruuwaa	'be finally hung'

The Guajiro infinitive ends in one of the six long vowels *aa, ee, ii, oo, uu, üü* or in the sequence *waa*. This duality in infinitive formation is not directly dependent on the morphological complexity of the theme or on the valency of the verb. It is conditioned by phonological structure only, because it has to do with the difference in the weight of the final syllable of the theme acting as the base for the process. If the syllable is light, the final vowel is lengthened [07a]; but if it is heavy (that is, if it has a long vowel, a diphthong, or is checked by a consonant), *-waa* is added, as shown in [07b]. We shall use the label 'moraic doubling' for this operation.

[07] Duality in infinitive formation

a. LIGHT THEMES

ka'.wa.yuu.**se-**]$_{\text{Theme}}$	+ INF	→	ka'.wa.yuu.**see**	'have spouse'
ka.pü.**shi-**]$_{\text{Theme}}$	+ INF	→	ka.pü.**shii**	'have maternal family'
a.sha.ka.**ta-**]$_{\text{Theme}}$	+ INF	→	a.sha.ka.**taa**	'descend'

b. HEAVY THEMES

ka.ma.**nee-**]$_{\text{Theme}}$	+ INF	→	ka.ma.nee.**waa**	'be kind'
ja.**püi-**]$_{\text{Theme}}$	+ INF	→	ja.püi.**waa**	'be shy'
ka.**chon-**]$_{\text{Theme}}$	+ INF	→	ka.chon.**waa**	'have children'

3.2. Indefinite Possession

In Guajiro nouns are distinguished in terms of how they behave in possession. Alienable nouns can appear in an unpossessed form, but when possessed they take a pronominal prefix and a possessive suffix [08a]. Inalienable nouns do not need a possessive suffix as they are intrinsically

possessed. Because they can never appear in an unpossessed form, they will always show one of the following forms in [08b]: (1) with a pronominal prefix, (2) with the prefix for unspecified person and a suffix of indefinite possession, (3) in composition with another noun acting as the possessor, and (4) with the prefix for unspecified person in certain cases of nominal incorporation (see Álvarez 1994, chapter 9). All possessed themes (both inalienable nouns *without* a possessive suffix and alienable nouns *with* a possessive suffix) can act as stems for the formation of denominal verbs with the prefixes *ka-* and *ma-*, which express positive and negative possession respectively [08c]. [2]

[08] Alienable and inalienable nouns

WORD	MORPHOLOGY	MORPHEME GLOSS	WORD GLOSS
a.			
limuuna	/limuuna/	[lemmon]	'lemmon'
taliimuunase	/ta-limuuna-se/	[1S-lemmon-POSS]	'my lemmon'
jime	/jime/	[fish]	'fish'
wejimein	/wa-jime-in/	[1P-fish-POSS]	'our fish'
b			
1. jüpana	/jü-pana/	[3SF-leaf]	'its leaf'
2. apanaa	/a-pana-a/	[0-leaf-IPOSS/	'leaf'
3. aipiapana	/aipia+pana/	[cují+leaf]	'cují leaf'
4. apana	/a-pana/	[0-leaf]	'leaf of'
c.			
kalimuunasee	/ka-limuuna-se-e/	[AT-lemmon-POSS-INF]	'to have lemmon'
mapanaa	/ma-pana-a/	[CA-leaf-INF]	'to lack leaves'

Most Arawak languages (Yavitero, Baniva, Warekena, Piapoko, Nomatsiguenga, Caquinte, Ashéninca, etc.) also exhibit a suffix to mark 'unpossessed' (see Payne 1991, Aikhenvald 1999). In Baniva of Guainía, for example, this suffix is *-sri*, as shown in [09].

[09] Possessed and unpossessed nouns in Baniva of Guainía

POSSESSED		UNPOSSESSED	
nu-nûma	'my mouth'	numâ-sri	'mouth'
nu-têpa	'my buttocks'	tepâ-sri	'buttocks'
nu-tâni	'my son'	tâni-sri	'son'

Guajiro does not have such suffix, but it has developed a rather unusual mechanism which is parallel to infinitive formation, as it is also a case of moraic doubling. The final vowel of the theme is lengthened if the syllable is light [10a], but *-waa* is added if the syllable is heavy [10b]. Additionally, in this stem the root receives a prefix indicating indefinite person. This procedure can be applied even to possessed alienable nouns in order to indicate indefinite possession [10c].

[10] Indefinite possession in inalienable nouns

DEFINITE POSSESSION			INDEFINITE POSSESSION (someone's N)		
a.					
nüsi	/nü-si/	'his tail'	asii	/a-si-i/	'tail'
püshi	/pü-shi/	'your father'	ashii	/a-shi-i/	'father'
tajapü	/ta-japü/	'my hand'	ajapüü	/a-jepira-a/	'hand'
tamüla	/ta-müla/	'my throat'	amülaa	/a-müla-a/	'throat'
tasiipü	/ta-siipü/	'my nephew'	asiipüü	/a-siipü-ü/	'nephew'
tejepira	/ta-jepira/	'my finger'	ejepiraa	/a-jepira-a/	'finger'
wa'wala	/wa-'wala/	'our hair'	a'walaa	/a-'wala-a/	'hair'
b					
jüsii	/jü-sii/	'its flower'	asiiwaa	/a-sii-waa/	'flower'
tekii	/ta-kii/	'my head'	ekiiwaa	/a-kii-waa/	'head'
wayee	/wa-yee/	'our tongue'	ayeewaa	/a-yee-waa/	'tongue'
c.					
takaliinase	/ta-kaliina-se/	'my hen'	akaliinasee	/a-kaliina-se-e/	'someone's hen'
			Compare with *kaliina*		'hen (unpossessed)'

3.3. Verb Gradation

Most Guajiro verb themes, both active and stative, exhibit a *thematic suffix* (*-ta, -ja, -la, -na*) in addition to the root. Guajiro gradation can be defined as the existence of three first-level verbal themes, with partially diverse morphological structures which are systematically related in expressing three different aspects of the predicate (1 SINGLE, 2 MULTIPLE, or 3 SUDDEN) through manipulation (replacement, addition, or *lengthening*) of thematic suffixes (TS), as illustrated in [11] (see also Olza & Jusayú 1978, 1986, Ferrer 1990). Gradation contributes substantially to the multiplicity of infinitives, as seen also above in [06].

[11] Gradation as manipulation of thematic suffixes

G	INFINITIVE	MORPHOLOGY	GLOSS	OPERATION	
1	alataa	/a-la-**ta**-a/	'pass'	1: Addition of TS *-ta*	+INF
2	alanaa	/a-la-**na**-a/	'be passing'	2: Replace with TS *-na*	+INF
3	alanaawaa	/a-la-**na-a**-waa/	'pass suddenly'	3: Lengthening of TS *-na-a*	+INF
1	kachetaa	/kache-**ta**-a/	'hang (intr)'	1: Addition of TS *-ta*	+INF
2	kachetajaa	/kache-**ta-ja**-a/	'be hanging'	2: Addition of TS *-ja*	+INF
3	kachetajaawaa	/kache-**ta-ja-a**-waa/	'hang suddenly'	3: Lengthening of TS *-ja-a*	+INF

Of special interest for us here is the case of Gradation 3, as it is systematically derived from Gradation 2 by lengthening the vowel of its last thematic suffix (*-na* in the case of 'pass' and *-ja* in the case of 'hang'). Again, this is a case of moraic doubling, only with a single outcome, as the

thematic suffixes always have the shape CV with a short vowel. The theme thus obtained is available to Infinitive Formation, which will have to resort to adding the suffix *-waa* to the already long theme. In [12] we summarise and illustrate the procedures most frequently used when deriving Gradation 2 from Gradation 1 (examples given in the infinitive, S = Stative, A = Active).

[12] Gradation by replacement (TS1 >TS2) or addition (TS1+TS2) of thematic suffixes

G1	EXAMPLE G1	G2	EXAMPLE G2	G3	EXAMPLE G3	GLOSS
$Ø_S$	chü'lü-ü	+ -ja	chü'lü-ja-a	Lengthening of final vowel of G2	chü'lü-ja-a-waa	'be wet'
$Ø_A$	asa-a	+ -ja	a-sa-ja-a		asa-ja-a-waa	'drink'
$-ta_A$	e-me-ta-a	>-na	e-me-na-a		e-me-na-a-waa	'sink'
	a-to'u-ta-a	>-ja	a-to'u-ja-a		a-to'u-ja-a-waa	'lick'
-la	a-na-la-a	>-ja	a-na-ja-a		a-na-ja-a-waa	'stare'
$-ta_S$	jakü-ta-a	+ -ja	jakü-ta-ja-a		jakü-ta-ja-a-waa	'be ripe'
-ka	o-ula-ka-a	+ -ja	o-ula-ka-ja-a		o-ula-ka-ja-a-waa	'try'
-ja	e-jime-ja-a	+ -ja	e-jime-ja-a		e-jime-ja-a-waa	'fish'

Except for a number of stative themes (mostly denominal verbs) and around six active themes, verb roots generally cannot appear without a thematic suffix. Gradation 2 differs from Gradation 1 in exhibiting a different thematic suffix altogether, or a thematic suffix additional to the one already present in Gradation 1. When Gradation 2 is obtained through replacement of thematic suffixes, Gradations 1 and 2 have exactly the same number of morphemes. But Gradation 3 is always more complex than both Gradations 1 and 2, as it involves the moraic doubling of the last syllable of Gradation 2, achieved by vowel lengthening. Although the infinitives of G2 and G3 do not constitute minimal pairs in terms of vowel length, the finite forms of these verbs, as well as the deverbal nouns created from them (with *–i* 'agent masculine', *-lü* 'agent feminine', *-le* 'locative'), do constitute such minimal pairs [13] (G3 = gloss + 'suddenly').

[13] Some minimal pairs by vowel lengthening in gradation

FINITE G2	FINITE G3	COMMON GLOSS	INFINITIVE G2	INFINITIVE G3
a'lüüjashi	a'lüüjaashi	'he extracts'	a'lüüjaa	a'lüüjaawaa
achujashi	achujaashi	'he sucks'	achujaa	achujaawaa
akaalijashi	akaalijaashi	'he helps'	akaaliijaa	akaaliijaawaa
apünashi	apünaashi	'he leaves'	apünaa	apünaawaa
apoijasü	apoijaasü	'she boils'	apoijaa	apoijaawaa

asünasü	asünaasü	'she takes away'	asünaa	asünaawaa
epinasü	epinaasü	'she sweeps'	epinaa	epinaawaa
a'aküjalü	a'aküjaalü	'a female instigator'	a'aküjaa	a'aküjaawaa
achiinalü	achiinaalü	'a female hitter'	achiinaa	achiinaawaa
achiinai	achiinaai	'a male hitter'	achiinaa	achiinaawaa
takamüjale	takamüjaale	'my place for smoking'	akamüjaa	akamüjaawaa

We have thus minimal pairs in which the length of the vowel creates a change of meaning: *akamüjashi* 'he smokes' versus *akamüjaashi* 'he smokes in a hurry', *takamüjale* 'my place for smoking' versus *akamüjaalee* 'place for smoking in a hurry', etc.

3.4. Dual Verbs

In Guajiro there are eight inflectional (pronominal) prefixes and two derivational prefixes used to create denominal verbs of positive and negative possession *ka-* and *ma-*. There is a third derivational prefix *pa-* which is used with both prepositional and (inalienable) nominal roots in a productively restricted derivational process (with restrictions in the selection of roots) yielding forms with the meaning of 'sharing N/P'. Although they seem to have a common morphological structure, these stative verbs split in two groups [14] depending on the syllabic weight of the last syllable of the nominal/prepositional root.

[14] Two groups of dual verbs

a. ROOTS WITH FINAL LIGHT SYLLABLES

pachiiruwaawaa	'be one after the other'
painchiiwaa	'be brothers-in-law doubly'
pa'laülaawaa	'have a common uncle'
papüshiiwaa	'be of the same maternal family'
pashiiwaa	'have the same father'
pashimiaawaa	'have the same father-in-law (men)'
pawalaawaa	'be brothers'
pa'ataawaa	'be side by side'
pa'yulaawaa	'share the warmth'
pemiiruwaawaa	'be consecutive sisters'
pemüliaawaa	'be consecutive brothers'
pepiaawaa	'share a house'

b. ROOTS WITH FINAL HEAVY SYLLABLES

pa'ato'uwaawaa	'be contiguous'
papüyamüinwaawaa	'share the same spouse'
pasiicho'uwaawaa	'be together on horseback'
patchinwaawaa	'be even in strength'
peechinwaawaa	'be coupled with male'
peerüinwaawaa	'share a wife'
peiwaawaa	'have the same mother'

The common structure for dual verbs of both groups is given and illustrated in [15].

[15] Morphological structure of dual verbs

DUAL PREFIX	+	NOMINAL ROOT	+	DUAL MORAIC DOUBLING	+	RECIPROCAL SUFFIX	+	FINITE / INFINITIVE
/pa-		wa.la		-a		-wa		-shii/
/pa-		pü.ya.müin		-waa		----		-shii/
/pa-		wa.la		-a		-wa		-a/
/pa-		pü.ya.müin		-waa		----	Theme	-waa/

When infinitive formation comes into play, it encounters either a theme-final **wa** or **waa**. In the first case, it lengthens it to **waa**. In the second case, as the stem cannot be further lengthened, it adds a necessary extra **waa**. We have thus two instances of moraic doubling within the domain of a single word. In [16] we illustrate this pattern, and we also include the first person singular so as to let the reader examine the shape of the root (whether the last syllable is monomoraic or bimoraic). In [17] we present an example of the use of these dual verbs.

[16] The roots of dual verbs and moraic doubling

INFINITIVE	MORPHOLOGY	1ST SING	MORPHOLOGY
a.			
pachiiruwaawaa	/pa-chiiruwa-a-wa-a/	tachiiruwa	/ta-chiiruwa/
painchiiwaa	/pa-inchi-i-wa-a/	tainchi	/ta-inchi/
pa'laülaawaa	/pa-'laüla-a-wa-a/	ta'laüla	/ta-'laüla/
papüshiiwaa	/pa-püshi-i-wa-a/	tapüshi	/ta-püshi/
pashiiwaa	/pa-shi-i-wa-a/	tashi	/ta-shi/
pashimiaawaa	/pa-shimia-a-wa-a/	tashimia	/ta-shimia/
pawalaawaa	/pa-wala-a-wa-a/	tawala	/ta-wala/
pa'ataawaa	/pa-'ata-a-wa-a/	ta'ata	/ta-'ata/
pa'yulaawaa	/pa-'yula-a-wa-a/	ta'yula	/ta-'yula/
pemiiruwaawaa	/pa-miiruwa-a-wa-a/	pemiiruwa	/pa-miiruwa/
pemüliaawaa	/pa-mülia-a-wa-a/	temülia	/ta-mülia/
papüyaawaa	/pa-püya-a-wa-a/	tapüya	/ta-püya/
b.			
pa'ato'uwaawaa	/pa-'ato'u-waa-waa/	ta'ato'u	/ta-'ato'u/
papüyamüinwaawaa	/pa-püyamüin-waa-waa/	tapüyamüin	/ta-püyamüin/
pasiicho'uwaawaa	/pa-siicho'u-waa-waa/	tasiicho'u	/ta-siicho'u/
patchinwaawaa	/pa-tchin-waa-waa/	tatchin	/ta-tchin/
peechinwaawaa	/pa-echin-waa-waa/	teechin	/ta-echin/
peerüinwaawaa	/pa-erüin-waa-waa/	teerüin	/ta-erüin/
peiwaawaa	/pa-i-waa-waa/	tei	/ta-i/

[17] Dual verbs in a clause

Pa'ato'uwaashii	tepichikana	julu'u	nayuupala.
pa-'ato'u-wa-a-shii	tepichi-ka-na	jü-lu'u	na-yuupala
DU-side-REC-DU-PLU	child-SP-PLU	3F-in	3P-seat

'The children are (sitting) side by side in their seats.'

3.5. Permansive of Stative Verbs

Defective stative verbs with a permansive meaning 'stay, remain' are obtained by lengthening the vowel of the last syllable of *roots* [18a], which in related regular stative verbs are almost always accompanied by the thematic suffix *-ta*. If the last syllable is already long, the sequence *waa* is added, as seen in [18b]. This is again a case of moraic doubling with two possible outcomes. These verbs are defective in the sense that they cannot receive any other suffixes and thus cannot have the forms which are typical of the regular conjugation, as regular statives do. The auxiliary verb *maa* /ma-a/ will be used to fom the infinitive of these verbs and also to take all the required inflection (TAM, gender/number, etc.), as seen in [18c] (*-shi* 'M, *-sü* 'F', *-ee* 'FU').

[18] Permansive reduplication with auxiliary verb *maa*

INFINITIVE OF REGULAR STATIVES			INFINITIVE OF PERMANSIVE STATIVES		
a.					
jimataa	/jima-ta-a/	'be still'	jimaa maa	/jima-a ma-a/	'remain still'
joyotoo	/joyo-to-o/	'be seated'	joyoo maa	/joyo-o ma-a/	'remain seated'
ju'letaa	/ju'le-ta-a/	'be lying'	ju'lee maa	/joyo-o ma-a/	'remain lying'
kulemataa	/kulema-ta-a/	'be smiling'	kulemaa maa	/kulema-a ma-a/	'remain smiling'
lesutaa	/lesu-ta-a/	'be inclined'	lesuu maa	/lesu-u ma-a/	'remain inclined'
sha'wataa	/sha'wa-ta-a/	'be standing'	sha'waa maa	/sha'wa-a ma-a/	'remain standing'
b.					
che'ujaawaa	/che'ujaa-waa/	'be missing'	che'ujaawaa maa	/che'ujaa-waa ma-a/	'remain missing'
cheecheewaa	/cheechee-waa/	'be slack'	cheecheewaa maa	/cheechee-waa ma-a/	'remain slack'
c.					
FINITE FORMS OF REGULAR STATIVES			FINITE FORMS OF PERMANSIVE STATIVES		
Joyot**üshi** Juan.		'John is sitting'	Joyoo **müshi** /ma-shi/ Juan.		'John remained sitting'
Joyot**üsü** Mariia.		'Mary is sitting'	Joyoo **müsü** /ma-sü/ Mariia.		'Mary remained sitting'
Joyot**eechi** Juan.		'John will sit'	Joyoo **meechi** /ma-ee-chi/ Juan.		'John will remain sitting'
Joyot**eerü** María.		'Mary will sit'	Joyoo **meerü** /ma-ee-lü/Mariia.		'Mary will remain sitting'

3.6. Denominal Stative Verbs

In Olza's (1985) discussion of inalienable nouns in Guajiro, he points out that nouns in general frequently originate verbal forms: "Una de las características que tienen los nombres absolutos como los relativos es la facilidad para convertirse en verbos" (Olza 1985:245). Apart from the denominal

verbs of positive/negative possession illustrated in [08b] above, he brings up an interesting case of denominal verbs which have the general meaning 'become/act as somebody's N'. Although Olza does not mention vowel length, it is clear that the operation of moraic doubling of the final syllable of a possessed nominal theme acts as verbalizer, together with the prefix for unspecified person.

The structure of these denominal verbs is illustrated in [19] in the infinitive (where moraic doubling takes place twice within a word), while in [20] the last two denominal verbs are used in sentences.

[19] Denominal stative verbs of 'becoming'

INFINITIVE	MORPHOLOGY	MORPHEME GLOSS	INFINITIVE GLOSS
ashe'eniiwaa	/a-she'eni-i-waa/	[0-dress-VLZR-INF]	'become sb's dress'
o'uuwaa	/a-'u-u-waa/	[0-eye-VLZR-INF]	'become sb's eye'
apüshiiwaa	/a-püshi-i-waa/	[0-relative-VLZR-INF]	'become sb's relative'
epiuunaseewaa	/a-piuuna-se-e-waa/	[0-slave-POSS-VLZR-INF]	'become sb's slave'
ashiiwaa	/a-shi-i-waa/	[0-father-VLZR-INF]	'become sb's father'
ekiiwaawaa	/a-kii-waa-waa/	[0-head-VLZR-INF]	'become sb's head'

[20] Examples of use of denominal stative verbs of 'becoming' (from Olza 1985:249-251)

a.

Tü	wayuu	jietkalü	matüjainsalü	*ashiiwaa.*
tü	wayuu	jierü-ka-lü	ma-tüjain-salü	a-shi-i-waa
DEM.F	person	woman-SP-F	NEG-know-NEG.F	0-father-VLZR-INF

'The woman does not usually become someone's father.'

b.

Ashiisü	nutuma	Peetut	tü	alijunakalü.
a-shi-i-sü	nu-tuma	Peetut	tü	alijuna-ka-lü
0-father-VLZR-F	3M-by	Peter	DEM.F	Creole-SP-F

'The Creole has been taken as a father by Peter.'

c.

Epiuunaseeshi	chi	jintüikai.
a-piuuna-se-e-shi	chi	jintüi-ka-li
0-slave-POSS-VLZR-M	DEM.M	boy-SP-M

'The boy has become someone's slave.'

d.

Matüjainsai	*epiuunaseewaa*	chi	alijunakai.
Ma-tüjain-sai	a-piuuna-se-e-waa	chi	alijuna-ka-li
NEG-know-NEG.M	0-slave-POSS-VLZR-INF	DEM.M	Creole-SP-M

'The Creole does not usually become someone's slave.'

3.7. Detransitivization

In a number of cases, a transitive theme can be rendered intransitive by lengthening the final vowel of the thematic suffix. In these cases moraic doubling has just one possible outcome, as the thematic suffixes always have the shape CV with a short vowel. In [21] we illustrate such cases with the second person singular imperative of verbs (using the pronominal prefix *pü-* '2S').

[21] Detransitivization through vowel lengthening

TRANSITIVE			INTRANSITIVE		
püpalaita	/pü-palai-ta/	'turn (it)!'	püpalaitaa	/pü-palai-ta-a/	'turn!'
püsi'wata	/pü-si'wa-ta/	'untie (it)!'	püsi'wataa	/pü-si'wa-ta-a/	'untie yourself!'
püpalasira	/pü-palasi-la/	'lay (it)!'	püpalasiraa	/pü-palasi-la-a/	'lie down!'
püpüchirala	/pü-püchira-la/	'straighten (it)!'	püpüchiralaa	/pü-püchira-la-a/	'be straight!'
pujutala	/pü-juta-la/	'open (it)!'	pujutalaa	/pü-juta-la-a/	'open yourself!'
punujula	/pu-nuju-la/	'hide (it)!'	punujulaa	/pu-nuju-la-a/	'hide yourself!'
pükaüsira	/pü-kaüsi-la/	'fatten (it)!'	pükaüsiraa	/pü-kaüsi-la-a/	'get fat!'

3.8. Progressive

In some cases, moraic doubling causing the lengthening of the final vowel of the stem (which is, generally, the vowel of the thematic suffix) is used to distinguish a progressive meaning from a nonprogressive one, as illustrated in [22].

[22] Progressive marked by vowel lengthening

NONPROGRESSIVE			PROGRESSIVE		
tekapa	/ta-ka-pa/	'when I eat'	tekaapa	/ta-ka-a-pa/	'when I'm eating'
toikapa	/ta-ika-pa/	'when I sell'	toikaapa	/ta-ika-a-pa/	'when I'm selling'
tasapa	/ta-sa-pa/	'when I drink'	tasaapa	/ta-sa-a-pa/	'when I'm drinking'

3.9. Idiosyncratic Changes

With certain stems, moraic doubling causing vowel lengthening creates semantically-related forms with meanings not entirely predictable in a unified pattern [23].

[23] Idiosyncratic changes by vowel lengthening

SHORT THEME			LONG THEME		
pa'aja	/pü-'a-ja/	'burn!'	pa'ajaa	/pü-'a-ja-a/	'bake (vegetables)!'
pimi'ija	/pü-mi'i-ja/	'celebrate!'	pimi'ijaa	/pü-mi'i-ja-a/	'play!'
püsika	/pü-sika/	'screw (her)!'	püsikaa	/pü-sika-a/	'have intercourse!'
püpüta	/pü-pü-ta/	'leave (it) behind!	püpütaa	/pü-pü-ta-a/	'say good-bye!'
putunka	/pü-tunka/	'sleep!'	putunkaa	/pu-tunka-a/	'sleep out!'

3.10. Vocative

Vocatives also manifest a complementary way of formation according to the shape of the final syllable of the stem. If there is a light syllable, the final vowel is lengthened. But if the last syllable of the stem is heavy, *-waa* will be used. Examples of this complementary formation of vocatives due to moraic lengthening are given in [24].

[24] Vocative forms in sentences

a.

Toikü**ii**n	paawakat,	*tawala**a***
ta-ika-ni	paawa-ka-lü	ta-wala-a
1S-sell-CS	turkey-SP-F	1S-brother-VOC

'I sold the turkey, my brother.'

b.

*Tachon**waa***,	pü'lakata	si'waraikalü	sümaa	wüin.
ta-chon-waa	pü-'laka-ta	si'warai-ka-lü	sü-maa	wüin
1S-son-VOC	2P-prepare-TS	boiler-SP-F	3F-with	water

'My son, prepare the boiler with water!'

3.11. Superlative

Jusayú (2002:17) gives us "ejemplos del alargamiento debido al superlativo", where the final vowel of a (pro)noun is lengthened in a construction involving a nominalized form of the verb with the definite article (M: *-kai*, F: *-kalü*, PL: *-kana*) plus *-ya* [25]. Clearly we have really two outcomes in this case of moraic doubling, as the addition of *–waa* to the final heavy syllable in *atpana**a*** 'rabbit' shows, versus the plain vowel lengthening in the rest of the cases.

[25] Superlative lengthening in (pro)nouns

Kaüsikaiya alijuna**a**.	'He is a very fat Creole.'
Kawachirakaiya püliiku**u**.	'It is a very fast donkey.'
Mojulaakalüya jia**a**.	'She is very wicked.'
Shokulakanaya tepichi**i**.	'How very lazy these boys are!'
Kawachirakaiya atpanaa**waa**.	'It is a very fast rabbit.'

Conclusion

In Guajiro mora augmentation is required by the morphology, not by the prosody. It constitutes a multi-purpose morphological operation which examines the weight of the final syllable of the base and adds one or two moras according to that weight. This prosodic operation can be employed for several purposes. In Guajiro the operation of moraic doubling acts on various bases and is used for infinitive formation, indefinite possession, verb gradation, formation of dual verbs, formation of denominal stative verbs, detransitivization,

progressive, idiosyncratic changes with verbs, vocative, and superlative. There can be more than one instance of moraic doubling in a word, as this operation can take place on a base already formed by moraic doubling.

Davis and Ueda claim that the preferred strategy of morphological mora augmentation should be consonant insertion. However, Guajiro massively implements it as vowel lengthening. Although morphological mora augmentation is almost always realized as vowel lengthening in Guajiro, its representation cannot simply be *a floating vocalic mora*, as Davies and Ueda suggest, because such vowel lengthening is just one of the two possible outcomes of the reduplication-like process of moraic doubling. But because morphological mora augmentation has various (namely, two) realizations in Guajiro, it cannot be represented as a floating mora *tout court*. the other option that Davies and Ueda prpopose. The outcome of such process can be either the addition of *one* mora through the lengthening of the final vowel or the addition of *two* moras by adding the default suffix *-waa*. Thus, Guajiro seems to constitute a unique case among languages making use of vocalic mora augmentation in the morphology.

Notes

1. The practical orthography used for Guajiro conveys phonetic values mostly similar to those of Latin American Spanish, except when indicated: VOWELS: **a**, **e**, **i**, **o**, **u**, **ü** (high central vowel); CONSONANTS: **p**, **t**, **k**, **'** = glottal stop, **j** = glottal fricative, **s**, **sh** = alveopalatal fricative, **ch** = palatal affricate, **m**, **n**, **l** = lateral flap, **r** = trill, **w**, **y** = palatal glide. Double vowels represent long vowels, while double consonants are hetero-syllabic. Sequences **ai**, **au**, **aü**, **ei**, **eu**, **oi**, **ou** are diphthongs, while sequences **ia**, **ua**, **üa**, **ie**, **ue**, **io**, **uo** are hetero-syllabic. Stress is fully predictable. The stressed syllable is the second syllable if the first syllable is light: *a.**pá**.la.si.raa* 'to lay down', *ka.**shá**.ja.laa* 'to have writings'. If the first syllable is heavy (that is, it has a long vowel, a diphthong, or is checked), then this very initial syllable receives stress: ***áa**.sha.ja.waa* 'to speak', ***éi**.sa.la.waa* 'to lie down', *ó**n**.ju.laa.sü* 'she hid herself'. If at the beginning of a word the syllable has a short vowel followed by a glottal stop, such syllable is extra-metrical: *(sha').wa.**táa*** 'to be standing', *(a').la.**ká**.jaa.sü* 'she cooks'.

2. In the interlinear glosses the following abbreviations have been used: 0: zero person/indefinite, 1P: 1 plural, 1S: 1 singular, 2P: 2 plural, 2S: 2 singular, 3F: 3 singular feminine, 3M: 3 singular masculine, 3P: 3 plural, AT: attributive, AUX: auxiliary, DEM.F: demonstrative feminine, DEM.M: demonstrative masculine, DEM.P: demonstrative plural, DU: dual, F: feminine, FU: future, INF: infinitive, IPOSS: indefinite possession, M: masculine, NEG: negative derivative, NEG.F: negative feminine, NEG.M: negative masculine, PL: plural, POSS: possessive, SP: specifier, VLZR: verbalizer, VOC: vocative.

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