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Foreward

We are pleased to make the proceedings of the 14th annual Workshop on American Indigenous Languages (WAIL) available as the 22nd volume of the Santa Barbara Papers in Linguistics. We are grateful for the continuing support of the University of California, Santa Barbara as a whole and the faculty, staff and students of the Department of Linguistics. We extend our special thanks to our advisor Marianne Mithun who offers us her continued support of our endeavors.

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Nahow. Miigwech.

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Temporal Expression in Wichí Nominals

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1. Introduction. Morphosyntactic categories make up the core of typological study. These can range from issues of co-occurring word orders to more unique phenomena, including nominal tense – defined as "grammatical items with temporal properties attached to noun phrases" (Tonhauser 2007). Until relatively recently, it was debated whether nominal tense (or even nominal temporal markers in general) was a valid typological category (Nordlinger & Sadler 2004); however, with the further examination and documentation of many lesser-known languages, nominal tense has emerged as a valid phenomenon, and one worthy of further study. It challenges the idea that languages universally treat tense as a purely verbal (or even predicate) notion. Many of the indigenous languages of South America have nominal tense as a grammatical feature (Campbell, in press), and employ it in an internally diverse set of ways. Evidence from these languages provides new viewpoints from which we can examine nominal tense and other non-verbal temporal marking systems – as an areal feature, a genetic feature, and as a typological feature.

This paper will focus on data from the Wichí language (Matacoan) and its treatment of temporal markers on nouns. Wichí has an intricate system of tense on verbs, which also manifests itself inside noun phrases. Beginning with a brief overview of the language itself, I will show several grammatical and ungrammatical examples of these nominal constructions, and their function in the language, including in discourse. From there, I will use the semantic criteria for nominal tense set forth in Tonhauser (2006, 2007) and comparative criteria from Nordlinger & Sadler (2004, 2008) to tease apart the finer nuances of temporal expression in Wichí nominals and examine the evidence for additional categories. I intend to demonstrate that there is evidence in Wichí supporting a further division of temporal markers on nominals in languages from a typological perspective – that aspect (or aspect-like markers) can be a valid separate category in languages which have temporal marking on nouns, and can be distinct from nominal tense.

2. Wichí. The Wichí language is spoken in the Gran Chaco area of South America, including parts of Paraguay, Bolivia, and northern Argentina. Wichí, meaning 'people', is the endonym preferred by the speakers; alternate names for the language include Mataco (given by missionaries, now considered pejorative) and Wichí Lhamtes, meaning 'the people's language'. The Wichí and other Chaco people arrived in the area between 12,000 and 10,000 BP (Terraza

2009:3), and they are traditionally hunter-gatherers. Since the Spanish established control, the Wichí have lived in small communities in the Chaco area. Notable features of the Wichí grammar include ejective consonants, alienable/inalienable possession, object classifier clitics, glottalized resonants[i], and nominal tense, which I will discuss below.

In this section, I will provide some preliminary examples of nominal tense in Wichí and describe how this feature operates in the language. Then I will compare nominal tense in Wichí to the established structural criteria from Nordlinger & Sadler (2004, 2008) and the semantic criteria from Tonhauser (2006, 2007, and 2008). This will help demonstrate where Wichí should be placed within nominal tense typology. The data presented here (unless otherwise noted) was collected in the summer of 2010 at the Misión La Paz community on the northern border of Argentina and Paraguay, along the Pilcomayo River.

2.1. Tense. Tense is expressed by clitics in Wichí. These are lexical clitics, not phonological clitics like the *'ll* in *she'll* in English. The same set of clitics can attach to nouns or verbs to indicate tense; there are not two separate sets of tense clitics, one for nouns and one for verbs. There are seven of these clitics in Wichí, expressed along a temporal continuum. There are five degrees of past, zero marker for present, and one marker for future. See Table 1.

(+) Past (distance from utterance) (-)					Present	Future
=ṗantɛʔ	=tɛʔ	=naxiʔ	=matiʔ	=nɛʔ	=∅	=hila
'long ago, remote past' (REM.PAST)	'some time ago' (PAST)	'yesterday' (YESTERDAY)	'earlier today' (EARLIER)	'a moment ago' (MOMENT)	(PRES)	(FUTURE)

Table 1: Tense markers in Wichí

All tense markers in Wichí are enclitics, whether they appear on nouns or on verbs. The relation between the multiple past markers varies from speaker to speaker, but all speakers agree on the temporal ordering of the clitics; *=nɛʔ* is more recent than *=matiʔ*, etc. (Terraza 2009:78).

Nouns with no modifiers simply appear with the tense attached after the root, as in 1 and 2[ii].

1) ax^{w}ɛnk^{j}ɛ**matiʔ**
   ax^{w}ɛnk^{j}ɛʔ=**matiʔ**
   bird=**EARLIER**
   'The bird/parrot (from earlier tonight)'

2) latɑxp̣antɛʔ
latɑx = p̣antɛʔ
horse = **REM.PAST**
'The horse (from a long time ago, that used to be here but has since left, etc.)'

The noun marked with tense, however, does not carry tense for the entire clause or proposition. Nouns, including arguments, can carry a tense different from that on the verb. In examples 3 and 4, we can see the 'mismatch' between the tense on the noun and the tense on the verb (zero marker for present). It is grammatical for both to coexist in the same clause.

3)	axʷɛnkʲɛ**matiʔ**	ikʲɛʔ	toxa	(Terraza 2009:79)
	axʷɛnkʲɛʔ = **matiʔ**	∅-i = ∅-kʲɛʔ	toxa	
	bird = **TEMP**	3-be = ***TEMP***-DIST	PROdem	
	'This bird (earlier tonight) comes here (now).'			

4)	asinɑxp̣antɛʔ	iʔkʲutiɬiʔa	atana
	asinɑx = p̣antɛʔ	iʔ-kʲutiɬiʔa-∅ = ∅	atana
	dog = **REM.PAST**	3-sick-SG = ***PRES***	now
	'The dog (from a long time ago) is sick (now).'		

2.2. Determiner phrases. Noun phrases with modifiers, including demonstratives and directionals can also have tense markers in them. However, there is a specific order in which the tense marker can attach once these other pieces are added. When a demonstrative is added, the tense marker must attach to the demonstrative, which follows the head noun. The tense marker cannot attach to the head noun if a modifier is present. There also cannot be more than one tense marker modifying a noun phrase. This is illustrated using the demonstrative in examples 5-7.

5) axʷɛnkʲɛʔ tɑxp̣antɛʔ
axʷɛnkʲɛʔ tɑx = p̣antɛʔ
bird DEM.large = **REM.PAST**
'This (large[iii]) bird (from a long time ago)'

6) *axʷɛnkʲɛ**ɲantɛʔ** tɑx
axʷɛnkʲɛʔ = **ɲantɛʔ** tɑx
bird = **REM.PAST** DEM.large

7) *axʷɛnkʲɛ**ɲantɛʔ** tɑx**ɲantɛʔ**
axʷɛnkʲɛʔ = **ɲantɛʔ** tɑx = **ɲantɛʔ**
bird = **REM.PAST** DEM.large = **REM.PAST**

2.3. Directional/distance markers. Wichí also has distance and directional markers. These are also clitics, and these can also attach to nouns or verbs. Table 2 shows the spectrum of directions in distance, movement, and degrees of evidentiality with respect to the speaker.

(+)	Distance from speaker			(-)	Movement	
= lini	= paʔ	= tsi	= ni	= na	= hn̥i	= tso
'far, neither see nor touch' (FAR)	'close, neither see nor touch' (CLOSE)	'to the side, can't touch' (SIDE)	'near, can see but not touch' (SEE.NOT.TOUCH)	'near, can touch' (NEAR.TOUCH)	'towards speaker' (TOWARDS)	'away from speaker' (AWAY)

Table 2: Directional markers in Wichí

However, if there is a demonstrative in the noun phrase, the directional enclitic is attached to the demonstrative the tense marker is attached to the head noun, as in examples 8-11.

8) latas***tɛʔ*** tɑsaʔ**lini**
latas = ***tɛʔ*** tɑsa = **lini**
horse.PL = ***PAST*** DEM.large.PL = **FAR**
'The horses (from some time ago) that are near (can't touch but can see)'

9) * latas***tɛʔlini*** tɑsa
latas = ***tɛʔ*** = **lini** tɑsa
horse.PL = ***PAST*** = **FAR** DEM.large.PL

10) latɑx tɑhn̥i
latɑx tɑx = hn̥i
horse DEM.large = TOWARDS
'The horse (that's) coming this way'

11) *latɑhn̥i tɑx
latɑx = hn̥i tɑx
horse = TOWARDS DEM.large

These clitics can also occur on nouns without demonstratives. The subtraction of the demonstrative places tense and directional markers on the head noun, in a specific order:

[head noun] = tense = directional
Figure 1: Clitic order in a Wichí noun phrase

Figure 1 is an illustration of Wichí noun phrase cliticization without a demonstrative. Without the demonstrative, the noun phrase loses its specificity. With a demonstrative, the noun phrase is assumed to refer to a specific object, at least familiar to the listener. Without a demonstrative, the referent is unspecific or unknown to the listener. These combinations are illustrated in examples 12-15.

12) asinɑx tɑxnɑxiʔ
asinɑx tɑx = nɑxiʔ
dog DEM.large = YESTERDAY
'The (specific) dog (from yesterday)'

13) asinɑx tɑhn̥i
asinɑx tɑx = hn̥i
dog DEM.large = TOWARDS
'The (specific) dog (coming towards speaker)'

14) asinɑxnɑxiʔ
asinɑx = nɑxiʔ
dog = YESTERDAY
'The (unspecific or unknown to speaker) dog (from yesterday)'

15) asinɑxlini
asinɑx = lini
dog = FAR
'The (unspecific or unknown to speaker) dog far away'

16) asinɑxnɑxlini
asinɑx = nɑxiʔ = lini
dog = YESTERDAY = FAR
'The (unspecific or unknown to speaker) dog (from yesterday) far away'

One directional in Wichí, *=tsi,* has the primary main semantic notion 'cast to the side, to the side (of the speaker)'. When used in combination with any past tense marker, however, it takes on modified meaning. When used on an animate object or food, it carries the notion of 'dead or rotten' more so than directionally 'to the side.' This is shown in examples 16-20. When used in reference to a person, it indicates that the person is laying down, rather than deceased. Later when I address the semantic criteria of Wichí nominal tense, this particular directional clitic will be examined further. Here we see these enclitics applied to the nominals 'dog' and 'egg'. When only *=tsi* is applied, it has directional semantic meaning, as in examples 17 and 19; when *=tsi* is combined with a past temporal, it turns to the 'ruined' or 'dead' meaning as in examples 18 and 20.

17) asinɑx**tsi**
asinɑx = **tsi**
dog = **SIDE**
'A dog to the side'

18) asinɑxnɑx**tsi**
asinɑx = nɑxi = **tsi**
dog = YESTERDAY = **SIDE**
'The dead dog laying there'

19) ɬiʔkʲuʔ**tsi**
ɬiʔkʲuʔ = **tsi**
egg = **SIDE**
'An egg to the side'

20) ɬiʔkʲuʔnɑxtsi
ɬiʔkʲuʔ = nɑxi = tsi
egg = YESTERDAY = SIDE
'A rotten egg, a ruined egg'

2.4. Question words. Tense also appears on question words. When a question is asked, the tense is marked on the question particle. There are different question particles in Wichí dependent upon the part of speech being asked about: *astiʔ* asks for nouns ('who, which, what'), *kʲi* asks for quantity, reason, manner or time ('how much, how many, why, how, or when'). Both of these can take tense markers; the tense marker implies that the thing or action asked about occurred within the time frame of the tense marker used. When used to ask 'when', the structure translates literally as 'how much time-temporal marker' (see example 21). When asking about a noun, the tense marker on the question particle assumes a time frame for the entire clause. This differs from when temporal markers are used with nouns in non-interrogatives. In non-interrogatives, temporal markers on nominal phrases only affect the temporal interpretation of the nominal, not the whole clause (later defined as independent nominal tense); in interrogatives, temporal markers on the nominal question particles affect the temporal interpretation of the entire clause (later defined as propositional nominal tense). When the time frame is unknown, speakers tend to default to using *=naxiʔ*, as in 21.

21) kʲinɑx	mahn̥jɛj	ta	lakʲɑx	hiʔluʔ
kʲi = nɑxiʔ	maq-PL	ta	la-kʲɑx	hiʔluʔ
Q = YESTERDAY	thing-PL	SUB	2.SG-buy	yica

'When did you buy the yica[iv]? (time of purchase unknown)'

22) atsitɛʔ	ta	latijɑxpɛʔ	tɛwoqʰ
atsi = tɛʔ	ta	la-tijɑx-pɛʔ	tɛwoq
Q = PAST	SUB	2.SG-jump-into	river

'Who jumped into the river (some time ago)?'

23) atsinɛʔ	hiʔluʔ	ta	lakʲɑx
atsi = nɛʔ	hiʔluʔ	ta	la-kʲɑx
Q = MOMENT	yica	SUB	2.SG-buy

'Which yica did you buy (a moment ago)?'

24) atsi**matiʔ** ta lakʲɑx
atsi = **matiʔ** ta la-kʲɑx
Q = **EARLIER** SUB 2.SG-buy
'What did you buy (earlier today)?'

We can see that in questions, tense is not indicated on the verb but the question particle. These question particles function as nominal arguments, however, in the underlying syntactic structure. In 22, the question particle is functioning as the subject; in 23 and 24, it is functioning as the object.

3. Cross-linguistic comparison. The Wichí language has independent nominal tense (in non-interrogatives) as defined by Nordlinger & Sadler (2004). In their paper *Nominal tense in cross-linguistic perspective*, the authors define two different types on nominal tense: independent and propositional. Independent nominal tense "operates completely independently of the [tense/aspect/mood] of the clause and serves to locate the time at which the property denoted by the nominal holds of the referent or, in the case of possessive phrases, the time at which the possessive relation holds" (Nordlinger & Sadler 2004:779). In contrast, propositional nominal tense (as in Wichí interrogatives, examples 21-24) operates as the tense/aspect/mood for the entire clause. Examples (3) and (4) are clear demonstrations of this independent nominal tense – the nominal tense takes scope only over the noun phrase, not the entire clause.

3.1. Possession and recognitional use. Another feature discussed in Nordlinger & Sadler (2004) in connection to independent nominal tense is possessive tense. Nominal tense of this sort expresses the temporal location of the reference with respect to the possessor. Wichí has this interpretation when the noun phrase is accompanied by a possessive marker and an object classifier. Classifiers are required in possessive constructions where the possessed noun refers to animals and subsets of inanimate objects (humans, such as kinship terms, do not require classifiers), as in 25 and 26, which demonstrates the classifier for possessed objects which can be ridden.

25) owutɛp̀antɛʔ latɑx
o-wutɛʔ = p̀antɛʔ latɑx
1SG.POS-CLASS = REM.PAST horse
'My previous horse (that I rode all the time[v]) that was stolen, lost, run away, etc.'

26) *oẇutɛʔ latɑxṗantɛʔ
o-wutɛʔ latɑx=ṗantɛʔ
1SG.POS-CLASS horse=REM.PAST
'My former horse'

27) oẇuqɛṗantɛʔ
o-wuqɛʔ=ṗantɛʔ
1SG.POS-house=REM.PAST
'My (former) house, what used to be my house (and is no longer my house)'

28) ana jataxtɛʔ
ana jatax=tɛʔ
Ana fat=PAST
'Ana used to be fat (but is not fat anymore)'

The horse in 25 and the house in 27 were formerly possessed by the speaker. My consultant informed me that, although it is marked for remote past, this phrase makes no indications that the horse is dead. This utterance only indicates that possession of the horse is no longer that of the speaker. Example 26 is seen as ungrammatical because the temporal clitic is attached to the head noun and not the classifier (a disallowed order), and this is further demonstration that is it the temporal location of possessive relation being expressed by the nominal tense clitic. This means that in Wichí, possessive tense is unambiguously different from unpossessed nominal tense (compare examples 2 and 25). This has similar implications with attributive adjectives, as in 28. The subject formerly 'possessed' this attribute, but no longer does due to the addition of the past temporal affix.

An important distinction when interpreting the semantics of nominal temporal affixes is presented in Tonhauser (2007). In some languages with independent nominal temporal markers, a bare noun plus a temporal affix has the semantics similar to English *ex-* or *–to-be*. It indicates what Tonhauser calls 'temporal shift':

> "A noun phrase that is marked… is temporally interpreted such that the relation denoted by the noun or the possessive is true for the individual(s) denoted by the noun phrase at a time t prior to t_c […] or subsequent to t_c […], where t_c is a contextually given time (e.g., utterance time or reference time). (2007:3)"

This would indicate that a phrase glossed as *house=PAST* would have the semantics 'this used to be a house (but is not anymore, was destroyed, etc.); this is a former house' and another glossed as *house=FUTURE* would be 'this will be a house (but is not a house right now); this is a future house'. This could be extended to the meaning of 'death' when attached to animate objects: *dog=PAST* would signify 'this used to be a dog; a dead dog'. However, this is not the case in Wichí. My consultant was firm and sure that 12 and 14 above would not indicate that the dog in question is dead. (Death of an animate object is expressed either through the past-plus *=tsi* construction or, for humans, full sentences using the subordinator *ta* plus 'dead'.) These past tense markers indicate former location or reference, as in 12 which would indicate a specific dog that was around the previous day but has since left (and is presumed alive); and in 14 as an unspecific dog that was around the previous day but has since left (and is presumed alive). Terraza (2009:78) discusses this, leading from Diessel (1999:105) that this is nominal tense of 'recognitional use'. In Diessel (1999), the recognitional use has two specific properties: 1) it is always adnominal, and 2) it does not have reference in the preceding discourse. This information is called 'discourse new, hearer old, and private'. The term 'private' indicates that this referent is a past experience that both the listener and speaker have in common. This is implicit in Wichí examples 12 and 14. In example 12, it refers to the dog which both participants experienced at one time, but the dog has left and is no longer around; in 14 it refers to any dog that both participants have experienced but is no longer present. This is further demonstrated in example 4, where the dog from the past is now infirm in the present time.

3.2. Definiteness. The notion of shared participant reference plays a role in the definiteness of the noun phrase. These temporal markers contribute significantly to the specificity, definiteness, and identifiability of the referent in the noun phrase. This is stated outright by Nordlinger & Sadler (2004:787): "since the deictic and anaphoric functions of tense and definiteness are rather similar, finding a direct relationship between tense and the determiner system is not surprising". For this reason, it is also not surprising that Wichí syntax demands that tense marking inside determiner phrases goes on the demonstrative, not the noun, as in examples 5-7 above. This would indicate that the tense marker takes scope over both the determiner (demonstrative) as well as the noun. In determiner phrases that include a directional marker, however, the directional marker takes scope over both the noun and the tense marker and is therefore attached to the demonstrative, and the tense marker is now forced to attach only to the noun.

3.3. Evidentiality. Also associated with independent nominal tense is independent nominal evidentiality (Nordlinger & Sadler 2004:783). As discussed above in examples 8 through 16, Wichí has a degree of evidentiality encoded in the directionals. These directionals encode sensory evidence (visibility, audibility), distance, and direction. In Adelaar (2004:494),

the author notes that Mataco's (Wichí's) elaborate tense system includes a difference between witnessed and non-witnessed past – if the tense clitic is preceded by a glottal stop, it indicates a witnessed event. Examples in 29 are from Claesson (1994:9). I have no personal experience finding this distinction between witnessed and non-witnessed past in the dialect of Wichí that I have personally studied; when asked, my consultant rejected this construction and interpretation. This is most likely due to the fact that Claesson (1994) examines the Noctenes (Bolivian) dialect of Wichí. These differ only slightly (in both form and specific semantics) from the tense markers presented above in Table 1.

29)	neʔ/ʔneʔ	(non)witnessed immediate past
	mheʔ/ʔmheʔ	(non)witnessed habitual recent past
	mát(hiʔ)/ʔmát(hiʔ)	(non)witnessed past of today and night
	náx(iʔ)/ʔnáx(iʔ)	(non)witnessed past of yesterday and back some weeks
	mháx(iʔ)/ʔmháx(iʔ)	(non)witnessed habitual from yesterday back to remote past
	(h)teh/pʔanteh	(non)witnessed remote past for single action

As we can see, these evidentials are tense markers differing in initial glottalization. They distinguish two degrees of evidence and several degrees of past. The tense clitics resemble those presented in Table 1, though those in Table 1 are purely tense temporal markers, while those from 29 in Claesson (1994) are 'observational' or evidentiality markers as well. A similar case is shown in Nordlinger & Sadler (2004:785) in two analyses of Nambiquara, where Lowe (1999) describes similar markers in Nambiquara to be observational/evidential plus tense, while Kroeker (2001) analyzes the same affixes purely as tense. Whether this is a difference in dialect or analysis, it demonstrates that "…evidentiality can also be nonpropositional, modifying a nominal independently of… the proposition as a whole" (Nordlinger & Sadler 2004:785).

3.4. Tense vs. aspect analysis. One of the core issues between the Nordlinger & Sadler analysis and the Tonhauser analysis is the distinction between nominal tense and nominal aspect. Can the system found in Wichí be called 'tense'? As defined through semantics by Tonhauser (2007), there are three intervals of linguistic temporal markers:

- t_{np}: the time at which the whole noun phrase is interpreted
- t_{nom}: the time at which the property denoted by an (intransitive) nominal predicate is true of the individual(s) denoted by the noun phrase
- t_{poss}: the time at which the possessive relation denoted by a possessive or transitive nominal predicate is true of the possessor and the possessed

For a temporal marker to be called 'tense', it needs to relate t_{np} to the utterance time (UT) or the reference time (RT). This is shown in examples 1 and 2, where the head noun ('parrot' in 1, 'horse' in 2) is marked with a past tense morpheme. These phrases express the idea that the noun 'occurred' or used to be referenced, but is no longer around for reference. It does not indicate change of state; in Wichí, *noun=PAST* does not indicate death of an animate noun, but rather its absence in the current discourse. This draws the distinction between 'a parrot from yesterday (that we saw) which is no longer present' and 'this is an ex-parrot (a dead parrot).'

However, it should not be assumed that the temporal markers in Table 1, since they are also used on verbs, indicate transparency of (specifically, exclusively) tense across all instances of use inside nominal phrases. Aspectual marking (i.e., changes in state) do occur in Wichí as well using the temporal markers and the directional marker *=tsi*. As we saw in examples 25-28, these temporal markers shown in Table 1, when used in possessive phrases or on adjectives, indicate a change of state. In example 28, Ana 'used to be fat (but no longer is fat)'. In example 25, 'the horse' is the possessor's former horse; this horse ran away or was stolen; regardless of the context it expresses that a change of ownership has occurred. As stated in Tonhauser (2008:336), if we, as linguists, "assume these categories to have well-defined properties that distinguish tenses from aspects…" then, yes, it is "necessarily inappropriate to use the term tense for a marker expressing a temporal relationship between t_{np} and $t_{nom/poss}$'" (Nordlinger & Sadler 2008:328). This expresses a crucial difference between examples 2 and 25 – in example 2 we see distance (temporally) expressed between UT and t_{np}, while in 25 we see distance expressed between t_{np} and t_{poss}.

This is also true for the clitic *=tsi* 'side' when combined with a temporal marker. This clitic changes the state of an object into some sort of deprecated state, death for living things and ruin for non-living things (as in examples 17-20). According to Tonhauser, verbal tense does not encode state change; this would extend analogously to nominal temporal markers. Verbal aspect, however, encodes this kind of state change. This semantic quality of both Wichí temporal markers in possessive phrases and temporal markers combined with *=tsi* 'side' would imply that these uses of nominal temporals are more like nominal aspects, rather than nominal tense.

This can be visually examined in Table 3[vi]. This table is adapted from Tonhauser (2008:333), and here Wichí forms have been substituted for the Guaraní forms present in the original paper. This is a summary of semantic criteria which Tonhauser uses to define the difference between tense an aspect, especially as it applied to temporal marker usage on nominals. It is assumed that verbal tense encodes (or presupposes) a relation between the UT and the RT, and verbal aspect encodes a relation between RT and event time. This table

contains a comparison of Wichí temporal markers and the directional clitic *=tsi* 'side' (examined in examples 17-20 above).

PROPERTY	VERBAL TENSE	VERBAL ASPECT	WICHÍ NTM/DTM	WICHÍ PTM/ATM/ T + TSI
exhibit lexical restriction	no	possible	no	no
encodes state change	no	possible	no	yes
anaphoricity	yes	no	yes	no
form grammatical paradigm (cannot co-occur)	yes	possible	yes	possible
temporal modifier can constrain relation	yes	yes	yes	yes

Table 3: Properties of verbal tense, verbal aspect, and temporal markers in Wichí

Verbal aspect also has other components to its semantic nature, such as telicity, and is not as easily definable as 'change of state', especially in other languages with highly complex aspectual systems, such as the Slavic languages. Since the defining feature of the Wichí PTM/ATM/T + *tsi* is change of state, it may be better, perhaps, to call this distinction aspect-*like* nominal tense. In all examples above concerning possession or ruin, there still is a distinct 'past' element to the expression. None of these are indicated in the present. The clitic *=tsi* without a past marker is a directional, not a change of state. Therefore, while the category containing PTM, ATM, and T + *tsi* may contain information about changes of state (much more aspect-like), it still carries a definite tense element to it as well.

4. Conclusions. This paper has presented different ways nominal tense is expressed in Wichí. This system uses the same tense markers as those found on verbs, and it carries semantics expressing the relation between the utterance or reference time and the time at which the complete noun phrase is interpreted (t_{np}). It can be found on question particles referring to nouns, noun phrases, and determiner phrases, and can express degrees of direction and evidentiality. However, nominal tense in Wichí seems to have additional sub-categorical features in particular constructions, such as the directional marker *=tsi* and possessive phrases. These structures convey an additional aspectual frame to them, specifically, a change of state. They also still carry a definite past tense to them, so they are not entirely separable from tense.

To summarize, some of the salient attributes of the nominal tense system in Wichí are:

- Independent nominal tense
- One set of tense clitics for both nouns and verbs
- Possessive nominal tense
- Nonpropositional evidentiality (on nominals)
- Recognitional discourse use
- Additional aspectual marker *=tsi*

Most importantly, it presents additional evidence that there may be a separate category for 'nominal aspect' as put forth by Tonhauser (2007, 2008). These manifestations of temporal markers on nominals in Wichí fall into two distinct categories – nominal tense and nominal aspect. This demonstrates that sub-categories of nominal tense, including possible aspectual interpretations, are worthy of further examination.

Notes

[i] The phonemic status of these segments is debated, and seems to vary between dialects of Wichí.

[ii] All glosses are per the Leipzig Gloss rules.

[iii] In Wichi, there are two demonstrative stems, one for large things (*tax*) and another for small things (*x^{w}ax*). These denote size when applied to things or animals, but when applied to humans, denote whether the referent is standing (*tax*) or sitting/lying down (*x^{w}ax*).

[iv] A 'yica' is a traditional handbag woven from the chaguar fiber, usually made by women in the communities; Spanish pronunciation varies between /jika/ and /ʒika/.

[v] The classifier *-wutɛʔ* is used for objects which are ridden, such as horses and motorcycles. In the Wichí community, motorcycles and dirtbikes are quite common, so speaking of *owutɛʔ moto* is acceptable (from Spanish borrowed *moto* 'motorcycle').

[vi] Abbreviations used are: NTM = noun temporal marker; DTM = determiner temporal marker; PTM = possessive temporal marker; ATM = adjective temporal marker; T+TSI = temporal marker plus directional *=tsi*.

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Negation and Focus in K'iche'

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1 Introduction

It has been claimed that negation in K'iche', a Mayan language of Guatemala, is indicated by the negative particle *ma(n)* before the predicate and the so-called irrealis particle *ta(j)*[1] after the predicate (Larsen, 1988)[2]:

(1) a. x-Ø-ik-tij kab' ri ak'alaab'.
CMP-A3-E3p-eat candy the children
'The children ate candy.'

b. **Man** x-Ø-ik-tij **ta** kab' ri ak'alaab'.
NEG CMP-A3-E3p-eat NEG candy the children
'The children didn't eat candy.'

K'iche' is a predicate-initial language and has a pre-predicate position for focused constituents (throughout the paper, the pre-predicate constituents in the focus position are italicized):

(2) *Context: What did the children eat?*
Kab' x-Ø-ik-tij-o.
candy CMP-A3-E3p-eat-STAT
'They ate CANDY.'

When a sentence containing such a focused expression is negated, the negation particles are placed around the focused expression (Larsen, 1988):

(3) *Context: What did the children eat? Candy?*
Man *kab'* **ta** x-Ø-ik-tij-o. X-Ø-ik-tij lej.
NEG candy NEG CMP-A3-E3p-eat-STAT CMP-A3-E3p-eat tortilla
'They didn't eat CANDY. They ate TORTILLAS.'

In (3), *man...ta(j)* does not occur around the predicate, *x-Ø-ik-tij-o* 'CMP-A3-E3p-eat-STAT', as it does in (1b), but rather around the pre-predicate argument *kab'* 'candy'. Given this behavior of the negation particles in focus constructions, the literature has claimed that in a negated focus construction, it is the focused constituent that is "negated" (Larsen, 1988, and see also Mondloch 1978; López Ixcoy 1997; Can Pixabaj 2010) and that this constituent is a non-verbal predicate (Larsen, 1988).

In this paper, I develop an analysis of negation in K'iche' based on data gathered in original fieldwork and challenge the claims outlined above. First, I show that in the negation of

simple declarative sentences, the negation particles do *not* always occur around the predicate of the sentence as a whole. These are the cases where the predicate of the sentence is a complex one or is formed by a verb or an auxiliary taking another verbal complex as a complement. As for negated focus sentences, I show that it is also *not* always the whole pre-predicate constituent that the negation particles are placed around. These are the cases where the negation particles occur around a proper sub-constituent of the pre-predicate constituent. These two cases show that the claims in the literature about the surface distribution of *man...ta(j)* are descriptively inadequate. I follow Henderson (to appear) and argue that phonological restrictions on the particle *ta(j)* account for the distribution of the negation particles. Moreover, I claim that, just as in the case of negated simple declaratives, *man...ta(j)* always yields propositional negation in a negated focus sentence and does not involve "negating" a constituent, as the traditional analyses can be taken to suggest (Mondloch, 1978; Larsen, 1988; López Ixcoy, 1997; Can Pixabaj, 2010, see also England 1983, 1989; Broadwell 2000; Duncan 2003). I argue that the common intuition about the focused constituent being "negated" is due to the pragmatic interaction between focus and negation. In particular, it is due to fact that, as has long been observed, when a focus construction is negated what is asserted is targeted by negation, whereas what is presupposed, the existence of a Question Under Discussion (Roberts, 1996), survives as an implication (Jackendoff, 1972; Kratzer, 1989). I argue that combining the facts about the distribution of *man...ta(j)* and the pragmatics of focus and negation gives us a unified account of negation in K'iche' where we can predict the variable surface distribution of *man...ta(j)* which invariably yields propositional negation.

The rest of this paper is organized as follows. In section 2, I give some background on K'iche' morpho-syntax. In section 3, I talk about negation in basic declaratives, illustrate the shortcomings of the traditional analyses and provide a better descriptive generalization. Section 4 is where I explain what I mean by focus in more detail, discuss its interaction with negation and present a generalization about the behavior of negation. I conclude in section 5.

2 Background

K'iche' has an ergative-absolutive agreement system (Larsen, 1988), and preserves this system throughout changes in aspect and clause type (Pye, 2001). The basic word order is VS in intransitive clauses and VOA in transitive clauses (Larsen, 1988; Pye & Poz, 1988; England, 1991) where S stands for the single argument of an intransitive, A for the more agent-like argument of a transitive, and O for the more patient-like argument of a transitive verb (Dixon, 1994)[3]. These two word orders characterize the basic, non-emphatic sentences where pronominal arguments are usually dropped. First, here are some examples that illustrate intransitive clauses in K'iche'.

(4) x-Ø-war ri achi.
CMP-A3-sleep the man
'The man slept.'

(5) x-at-war-ik.
CMP-A2-sleep-STAT
'You slept.'

There is no case-marking on noun phrases to identify grammatical relations or semantic roles; they are read off of the verbal complexes via the ergative and absolutive cross-reference markers given in Table 1.

Ergative	Preconsonantal	Prevocalic
E1	-in-	-inw-/-w-
E2	-aa-/-a-	-aw-
E3	-uu-/-u-	-r-
E1p	-qa-	-q-
E2p	-ii-	-iw-
E3p	-ki-	-k-

Absolutive	
A1	-in-
A2	-at-
A3	-Ø-
A1p	-uj-/-oj-
A2p	-ix-
A3p	-e'-/-eb'-/-ee-

Table 1. Ergative and absolutive agreement prefixes, adapted from Trechsel (1993).

The absolutive markers are used to cross-reference, i.e. register the number and person features of, the S argument of an intransitive verb and the O argument of a transitive verb. In an intransitive verbal complex, e.g. in *x-Ø-war* 'CMP-A3-sleep' in (4), the sole argument *ri achi* 'the man' is cross-referenced by the phonologically null, third person singular absolutive marker *-Ø-* 'A3' preceding the verb root *war* 'sleep'. There are two more markers in an intransitive verbal complex in the active voice: (i) the aspect marker, here *x-* 'CMP', which precedes the absolutive marker, and (ii) the status marker *-(i)k* 'STAT' which marks phrase-finality (5), in particular, the end of an intonational phrase (Henderson, to appear) for intransitive verbs in the imperfective and perfective aspects.

The ergative markers, on the other hand, are used to cross-reference the A argument of a transitive verb as exemplified below:

(6) x-Ø-a-to' ri achi.
CMP-A3-E2-help the man
'You helped the man.'

(7) x-at-u-to' ri achi.
CMP-A2-E3-help the man
'The man helped you.'

(8) x-at-u-to'-o.
CMP-A2-E3-help-STAT
'S/he helped you.'

In a transitive verbal complex, e.g. in *x-at-u-to'-o* 'CMP-A2-E3-help-STAT' in (8), the absolutive marker *-at-* 'A2', which marks the O argument of the verb, precedes the ergative

marker *-u-* 'E3', which marks the A argument. The ergative marker, in turn, precedes the verb root *to'* 'help'. Since there is no overt marking on the noun phrases, the only thing that identifies, say, *ri achi* 'the man' as the O argument in (6) but as the A argument in (7) is the absolutive marker *-at-* 'A2' and the ergative marker *-u-* 'E3', respectively (Trechsel, 1993). Similar to intransitive verbs, transitive verbs may carry phrase-final suffixes when they occur at the end of intonational phrases. The form of the suffix can be *-u*, *-o* or *-j* depending on the derivational status of the stem (Trechsel, 1993). Although the status suffixes seem to have no semantic contribution, they are used to distinguish transitive and intransitive verbs in K'iche'. They also simultaneously register (in)transitivity, aspect and, in the case of transitive verbs, the derivational status of the stem (Pye, 2001).

Having provided a basic description of the morpho-syntax of K'iche', I now turn to the main topic of the paper, namely how negation is encoded across different constructions.

3 Negation in K'iche'

It has been traditionally claimed that negation in K'iche' is indicated by the negative particle *man*[4] before the predicate and the so-called irrealis particle *ta(j)* after the predicate, with the form of *ta(j)* changing depending on where it occurs (Mondloch, 1978; Larsen, 1988; López Ixcoy, 1997; Can Pixabaj, 2010)[5]:

(9) a. X-Ø-war-ik.
CMP-A3-sleep-STAT
'S/he slept.'

b. **Man** x-Ø-war **taj**.
NEG CMP-A3-sleep NEG
'S/he didn't sleep.'

(10) a. X-Ø-inw-il ri achi.
CMP-A3-E1-see the man
'I saw the man.'

b. **Man** x-Ø-inw-il **ta** ri achi.
NEG CMP-A3-E1-see NEG the man
'I didn't see the man.'

Although the traditional claim can account for the data above, as the particles occur around the predicates both in (9b) and (10b), it is not hard to find counter-examples to it. With a compound verb like *b'an jab'* 'rain', for instance, or a with a finite complement-taking verb like *aj* 'want', the particles *man* and *ta(j)* do *not* enclose the predicate as a whole. As (11) and (12) illustrate, the negation particles occur around *x-Ø-u-b'an* 'CMP-A3-E3-make' and *k-Ø-inw-aj* 'INCMP-A3-E1-want', respectively, which are proper sub-constituents of the predicates of the sentences in each case:

(11) a. **Man** x-Ø-u-b'an **ta** jab'.
NEG CMP-A3-E3-make NEG rain
'It didn't rain.'

b.***Man** x-Ø-u-b'an jab' **taj**.
NEG CMP-A3-E3-make rain NEG
(intended reading) 'It didn't rain.'

(12) a. **Man** k-Ø-inw-aj **ta** k-in-wa'-ik.
NEG INCMP-A3-E1-want NEG INCMP-A1-eat-STAT
'I don't want to eat.'

b.***Man** k-Ø-inw-aj k-in-wa' **taj**
NEG INCMP-A3-E1-want INCMP-A1-eat NEG
(intended reading) 'I don't want to eat.'

These examples clearly show that the distribution of the negation particles, even in basic declarative clauses, cannot be captured by a solely syntax-semantics based generalization as has been traditionally claimed, e.g. by saying that the particles occur around the verb or the predicate of a negated sentence. Perhaps a way to get around this problem is to claim, as Pye (2001) does, that the particle *ta(j)* in K'iche' follows the finite verb form. Yet, there are cases where this is not so, as (13) shows:

(13) a. **Man** tajin **ta** k-in-wa'-ik.
NEG PROG NEG INCMP-A1-eat-STAT
'I am not eating.'

b.***Man** tajin k-in-wa' **taj**
NEG PROG INCMP-A1-eat NEG
'(intended reading) I am not eating.'

In (13), *ta(j)* occurs after the progressive particle *tajin* rather than the finite verbal complex *k-in-wa'-ik* 'INCMP-A1-eat-STAT'. If we analyze *tajin* as a progressive particle, then Pye's claim will not work since *ta(j)* cannot follow the finite verb form, as (13b) shows. Alternatively, if we follow Larsen (1988) and analyze *tajin* as the head of the clause, where the finite verbal complex is analyzed as its argument co-referenced by the absolutive marker *-Ø-* 'A3', then the traditional claim will not work. This latter scenario is similar to the case of the compound verbs above because the negation particles are not around the predicate of the sentence, *Ø-tajin k-in-wa'-ik* 'A3-PROG INCMP-A1-eat-STAT', but only around *Ø-tajin* 'A3-PROG'. In sum, the claims in the literature fail to capture the distribution of *man...ta(j)* in simple declarative clauses.

Following Henderson (to appear), I claim that the distribution of *ta(j)* is in fact phonologically conditioned. Henderson observed that the particle *ta(j)* behaves like a clitic and, in particular, that it needs a prosodic host to attach to. According to Henderson, this host is

the first prosodic word in the domain of negation, which for the cases above is the predicate of the sentence (p.6). According to Henderson, prosodic words in K'iche' are larger than a single light syllable and light syllables are monomoraic. That is to say, a prosodic word has to contain at least one heavy syllable which is bimoraic. Moreover, coda consonants bear a mora in K'iche'. Stress falls on the final syllable of a prosodic word, unless that syllable is light non-root material, in which case it falls on the final root syllable (p.26).

Given these assumptions, Henderson's generalization captures the distribution of *ta(j)* in the cases we have seen so far. In (14), for example, the first prosodic word in the domain of negation, which Henderson takes to be the predicate, is the predicate itself and *ta(j)* attaches to the right of this word. In (15), on the other hand, *ta(j)* attaches to *tajin* 'A3-PROG' as the latter is the first prosodic word in the domain of negation. Yet, in this latter case *tajin* 'PROG' is only a proper sub-constituent of the predicate of the sentence:

(14) **Man** x-∅-inw-il **ta** ri achi.
NEG CMP-A3-E1-see NEG the man
'I didn't see the man.'

(15) **Man** tajin **ta** k-in-wa'-ik.
NEG PROG NEG INCMP-A1-eat-STAT
'I am not eating.'

Given the above arguments about the distribution of the negation particles, I will adopt the following generalization.

(16) DISTRIBUTION OF ***man...taj*** (1st version)
In a negated simple declarative sentence, *ta(j)* attaches to the right of the first prosodic word of the predicate, which the optional particle *man* can precede.

Later, when we discuss the distribution of *man...ta(j)* in negated focus sentences, we will see how the particle *ta(j)* shows a low degree of selection with respect to its host, and its requirement for a phonologically appropriate host, namely a prosodic word, will become much clearer, an observation which supports its status as a clitic Henderson (to appear). In the next section, we will see how this insight can be generalized to the cases of negated focus sentences after we elaborate more on focus in K'iche'.

4 Focus in K'iche'

Although the basic word in K'iche' is VS/VOA, in texts it is relatively uncommon to find the A, O or the S arguments in post-predicate positions unless they are realized as non-pronominal arguments. Larsen (1987, p.40) claims that independent pronouns, although their occurrence in these positions is rare, are indeed used in some cases to indicate "contrastive emphasis" or change of subject. These pronouns, given in Table 2 below, are identical to absolutive markers except for the third person.

1sg	In
2sg	At
3sg	Are'
1pl	Oj
2pl	Ix
3pl	E a're'/A're'/Ke

Table 2. Independent pronouns, adapted from Larsen (1987).

A general claim about Mayan languages, dating back to Norman (1977), has been that they are generally predicate-initial but that there are two special positions preceding the predicate that constituents can occupy for pragmatic purposes. It is the discourse relations that these constituents denote, called *topic* and *focus*, that govern the changes in the basic word order in K'iche'. Immediately preceding the predicate is a position which is called the *focus* position. Focus sentences have been traditionally analyzed as involving a movement operation or a syntactic binding relation whereby the focused constituent is realized in the pre-predicate position and linked to a gap in the post-focal portion of the sentence (Larsen, 1988; Aissen, 1992; Trechsel, 1993).

(17) *Aree ri achi* x-Ø-q'ab'ar-ik.
FOC the man CMP-A3-get.drunk-STAT
'It was the man who got drunk.' (Larsen, 1988, p.503)

The constituents occupying this position are generally understood to be "prominent" in some sense (Larsen, 1988), as reflected in the cleft translation into English. Aissen (1992, p.43), among many others (Larsen, 1988; Trechsel, 1993; Pixabaj & England, 2011) claims that focus sentences are indeed interpreted like clefts in English. I, however, choose not to use cleft translations for the data that I am presenting as I suspect not all foci are interpreted as clefts. I leave it for future research to investigate this issue.

Before presenting the data on focus in K'iche', which is crucial in understanding the behavior of negation, I would like to make clear what I take focus to be in this paper. As has been noted in the literature, at least at an intuitive level, focus involves a way to mark highlighted or emphasized information in the discourse. But a more useful characterization of focus is to consider it as indicating what question is under discussion (Jackendoff, 1972; Roberts, 1996), which, according to Kadmon (2001), is the most basic and crucial intuition about focus.

A widely-held view about focus is that it is taken to evoke alternatives in discourse (Rooth, 1992). Consider the following example where capitals indicate prosodic prominence on *Michael*:

(18) MICHAEL ate tortillas.

In (18), *Michael* has *Robert*, *Jane*, *Peter*, etc. as his alternatives with which one constructs an alternative set, "x ate tortillas", for the original sentence where x ranges over possible al-

ternatives drawn from a contextually restricted set. This set of alternatives that focus evokes helps determine an additional semantic value for an utterance which Rooth (1992) calls *the focus semantic value*. In other words, the focus semantic value of a focused expression α, denoted by $[\![\alpha]\!]^{\mathrm{f}}$, is obtained by making a substitution in the position corresponding to the focused constituent in the sentence. For instance, the focus semantic value of (18) is (19) and the ordinary semantic value of the former is drawn from the latter:

(19) $[\![[\textsc{Michael}\text{ ate tortillas}]]\!]^{\mathrm{f}}=\{\mathbf{ate}(x, \mathbf{tortillas})|x \in E\}$

Another important characteristic of focus is that in a constituent question-answer pair, the phrase corresponding to the *wh*-word is focused. So, for instance, (18) can constitute an answer for *Who ate tortillas?* but not, say, *What did Michael eat?*. If we indeed take *Who ate tortillas?* as the question under discussion (QUD) (Roberts, 1996) in this case, then in (18) *Michael* will correspond to *who* whereas the rest of the sentence, *ate tortillas*, will be congruent to the QUD in the sense that abstracting on the *wh*-word in the question yields the property *ate tortillas*. Crucially, the set we obtain by such an abstraction is the same set as the focus semantic value (18), hence the congruence (Roberts, 1996). Roberts (1996) claims that prosodic focus in English presupposes the QUD, a presupposition which, together with contextual clues, enables the hearer to reconstruct, or *retrieve*, the question. A QUD is basically a semantic question, i.e. a set of propositions, that corresponds to the current discourse topic (p.93). It may be an actual question that is asked or may be implicit in the discourse (Roberts, 1998).

However, Roberts (1996) also points out that the prosodic realization of focus is not universally assumed by those working on the semantics of focus. There are cases where foci are not realized as such or are realized together with other means, i.e. focus may involve more than pitch accents and that many languages use cleft-like structures, marked word order or special morphemes to indicate focus in addition to intonational marking (Büring, 2011). Therefore, the common core of focus is arguably the observation that it evokes alternatives and, moreover, that it is intuitively linked to the question-answer congruence irrespective of the actual means of realizing focus (Roberts, 1996; Rooth, 1996).

Traditionally, Mayanists have subsumed pre-predicate focus constructions, content questions and relative clauses under the heading of focus because they characterized these constructions by the obligatory presence of a sentential constituent immediately preceding the predicate, the obligatory gap in the post-focal portion of the sentence, and a dependency between them (Larsen, 1988; Trechsel, 1993). Given what I have discussed about focus above, what I will take focus to be in K'iche' in this paper will be characterized as follows: (i) the focused constituent is an expression that is an answer to the QUD, (ii) the focused constituent precedes the predicate. There are a couple of points that I would like to make about this characterization. First, I am not assuming a cleft-like translation for focus, as I had mentioned earlier. Second, as far as my data suggest, focus *can* be realized in post predicate positions in K'iche' despite the tendency to realize it in the pre-predicate position.

This is also true for nominal foci if the focus particle *aree* does not accompany the focused expression[6]. In this paper, however, I am only interested in pre-predicate foci because in negated focus sentences, the focused expression is realized only in this position. Third, I say that the focus is realized in the pre-predicate position but I do not mean that focus always immediately precedes the predicate: whatever is actually focused can be a proper sub-constituent of the pre-predicate constituent as we will see below. Lastly, I would like mention what is called *agent focus*, a much discussed phenomenon in Mayan languages (see e.g. Mondloch, 1981; Larsen, 1988; Trechsel, 1993; Aissen, to appear, for K'iche' and Dayley, 1981; Aissen, 1999; Stiebels, 2006 for other Mayan languages). Agent focus can be used with transitive verbs when the ergative argument is focused as in the example below:

(20) Al Maria x-Ø-tij-ow ri kab'.
female Maria CMP-A3-eat-AG the candy
'MARIA ate the candy.'

The verbal complex in (20), *x-Ø-tij-ow* 'CMP-A3-eat-AG', is in the agent focus form which is characterized by (i) the absence of an ergative marker on the verb, and (ii) the presence of the agent focus marker[7] *-ow* 'AG' attached to the verb. Although, it is indeterminate as to whether it is the agent or the patient that the absolutive marker agrees with, the interpretation is always that the pre-predicate argument, the agent of the action, is focused. As Larsen (1988) points out, this form of the verb can never be used in simple declarative transitives or intransitives. However, Larsen also reports that using agent focus is optional even in the cases where its use is felicitious. This optionality is also reflected in the data I am presenting as my informants were not making use of this form as often. In any case, to the best of my knowledge, whether agent focus is used or not to convey the focus meaning does not affect the distribution of *man...ta(j)*.

Before concluding this section, I am going to present a set of focus sentences whose negated counterparts will help us re-evaluate the traditional claims and to reach a better generalization about the behavior of negation in K'iche'. The set of expressions that can occur in the pre-predicate focus position is diverse[8] and includes pronouns (21a), noun phrases (21b), the focus particle *aree* preceding a pronoun (21c) or a noun phrase (21d), nouns (22), adverbs (23), prepositional phrases (24), (25) and quantificational phrases (26):

(21) *Context: Who slept?*
a. *Oj* x-oj-war-ik.
we CMP-A1p-sleep-STAT
'WE slept.'
b. *A Raul* x-Ø-war-ik.
male Raul CMP-A3-sleep-STAT
'RAUL slept.'

c. *Aree oj* x-oj-war-ik.
FOC we CMP-A1p-sleep-STAT
'WE slept.'

d. *Aree a Raul* x-Ø-war-ik.
FOC male Raul CMP-A3-sleep-STAT
'RAUL slept.'

(22) *Context: What did the children eat?*
Kab' x-Ø-ik-tij-o.
candy CMP-A3-E3-eat-STAT
'They ate CANDY.'

(23) *Context: How did Raul run?*
Nojim x-Ø-u-tzaq aniim.
slowly CMP-A3-E3-fall quickly
'He ran SLOWLY.'

(24) *Context: Where is the dog?*
P-u-wi' ri tem k'o wi.
PREP-E3-on the chair exist PART
'It is ON THE CHAIR.'

(25) *Context: Who did you go to the market with?*
R-uk' ri in-tat x-im-b'ee wi.
E3-with the E1-father CMP-A1-go PART
'I went with MY FATHER.'

(26) *Context: Who came to the party?*
K'ii winaq x-ee-pet-ik.
many people CMP-A3p-come-STAT.
'MANY PEOPLE came.'

We will revisit these data while discussing the possible interpretations of the traditional claims about negation and focus in K'iche' in the next section.

4.1 Negation and focus in K'iche'

Because of the way negation particles pattern with respect to the focused expression in a focus construction, the literature has claimed that focused constituents are "negated". As many different constituents can be focused, we encounter claims like the following:

1. "*Not only verbs, but nouns, pronouns, adjectives, adverbs and prepositions can be negatized.*" (Mondloch, 1978, p.38)

2. "*Niegan el resultado de una acción o alguno de los constituyentes en la oración. La partícula ma(n) antecede a la palabra que niega y se complementa con la partícula ta(j).*" (López Ixcoy, 1997, p.225)

   The negation particles "negate the result of an action or some of the constituents of a sentence. The particle *ma(n)* precedes the word which it negates and is complemented by the particle *ta(j)*."

3. "*Los sintagmas nominales que desempeñan funciones de objeto, sujeto y adjuntos pueden ser negados*." (López Ixcoy, 1997, p.284)

   "The noun phrases which function as the object, subject and adjunct can be negated."

4. "*Los constituyentes que pueden negarse son el sujeto intransitivo, el objeto transitivo, el sujeto transitivo, el sujeto estativo, el objeto indirecto, el instrumento, el beneficiario, el tema, adjuntos de lugar, and predicados verbales y no verbales.*" (López Ixcoy, 1997, p.394)

   "The constituents that can be negated are the subject of an intransitive, the object of a transitive, the subject of a transitive, the subject of a stative, indirect objects, instrumentals, beneficiaries, themes, place adjuncts, and verbal and non-verbal predicates."

5. "*La negación [e interrogación] de constituyentes requiere de las mismas partículas se utilizan para negar una oración. Los constituyentes que se niegan son los que encuentran entre cada par de partículas. Por lo tanto estos constituyentes se encuentran enfocados.*" (Can Pixabaj, 2010, p.8)

   "The negation [and interrogation] of the constituents requires the same particles used to negate a sentence. The constituents that are negated are those which are found between each pair of particles. Therefore, these constituents are focused."

As far as I can see, there are two ways that these claims can be interpreted. The first is that they are nothing more than a description of the surface distribution of *man...ta(j)* in negated focus sentences. If this is the intended sense, then the claim that focus constituents are "negated" should not be taken literally as it is not about constituents being "negated" *per se* but about the variable surface distribution of the negation particles. Indeed, *man...ta(j)* can occur around the whole pre-predicate constituent as in (27), or the particle *ta(j)* can attach to the right of this constituent as in (28)-(30) when *man* is omitted:

(27) *Context: How did Raul run? Slowly?*

Man *nojim* **taj** x-Ø-u-tzaq aniim. *Aninaq* x-Ø-u-tzaq aniim.
NEG slowly NEG CMP-A3-E3-fall quickly quickly CMP-A3-E3-fall quickly
'He didn't run SLOWLY. He ran QUICKLY.'

(28) *Context: Who slept? You?*

Oj **taj** x-oj-war-ik. *Aree a Miguel.*
We NEG CMP-A1p-sleep-STAT FOC male Miguel
'WE didn't sleep. MIGUEL slept.'

(29) *Context: Who slept? Raul?*

A Raul **taj** x-Ø-war-ik. *Aree a Roberto*
male Raul NEG CMP-A3-sleep-STAT FOC male Roberto
'RAUL didn't sleep. ROBERTO slept.'

(30) *What did the children eat? Candy?*

Kab' **ta** x-Ø-ik-tij-o. X-Ø-ik-tij lej.
candy NEG CMP-A3-E3-eat-STAT CMP-A3-E3-eat tortillas
'They didn't eat CANDY. They ate TORTILLAS.

Just as we saw in negated simple declaratives, however, the traditional claim fails to adequately describe the distribution of *man...ta(j)* in negated focus sentences. The examples in (31)-(36) below illustrate the fact that the particle *ta(j)* does *not* always occur at the end of the pre-predicate constituent. In each of these sentences, *ta(j)* attaches to a proper sub-constituent of the pre-predicate constituent[9], a pattern not predicted by the traditional claim:

(31) *Context: Who slept? You?*

Aree **ta** *oj* x-oj-war-ik. *Aree a Miguel.*
FOC NEG we CMP-A1p-sleep-STAT FOC male Miguel
'WE didn't sleep. MIGUEL slept.'

(32) *Context: Who slept? Raul?*

Aree **ta** *a Raul* x-Ø-war-ik. *Aree a Roberto.*
FOC NEG male Raul CMP-A3-sleep-STAT FOC male Roberto
'RAUL didn't sleep. ROBERTO slept.'

(33) *Context: Where is the dog? On the chair?*

P-u-wi' **ta** *ri tem* k'o wi. *Ch-u-xe' ri tem* k'o wi.
PREP-E3-top NEG the chair exist PART PREP-E3-base the chair exist PART
'It is not ON the chair. It is UNDER the chair.

(34) *Context: What did you see in the forest? A white rabbit?*

Jun saq **ta** *imul* x-Ø-inw-il-o. *Aree jun q'eq imul.*
a white NEG rabbit CMP-A3-E1-see-STAT FOC a black rabbit
'I didn't see a WHITE rabbit. I saw a BLACK rabbit.'

(35) *Context: Who did you go to the market with? With your father?*
R-uk' **ta** *ri in-tat* x-im-b'ee wi. *R-uk' ri in-nan* x-im-b'ee wi.
E3-with NEG the E1-father CMP-A1-go PART E3-with the E1-mother CMP-A1-go PART
'I didn't go with MY FATHER. I went with MY MOTHER.'

(36) *Context: Who came to the party? Many people?*
K'ii **ta** *winaq* x-ee-pet-ik. *Keb' oxib' winaq* x-ee-pet-ik.
many NEG people CMP-A3p-come-STAT two three people CMP-A3p-come-STAT.
'Not MANY people came. SOME people came.'

The fact that the negation particles do not always occur around the focused constituent as a whole undermines Larsen's (1988) claim that these constituents are non-verbal predicates. As we have seen in section 3, it is not true that predicates in K'iche' are always surrounded by the negation particles in negated sentences. But, even if this was a sufficent condition for an expression to be a predicate, which seems to be Larsen's assumption for claiming that focused expressions are non-verbal predicates, the examples above would constitute counter-examples to his claim.

The second interpretation of the claims I cited in the beginning of this section can be that the relative position of *man...ta(j)* in a sentence indicates what sub-sentential constituent is "negated" in a more literal sense. Informally, the reasoning can be that because *man...ta(j)* occurs around (some part of) the predicate in a basic declarative sentence and it negates the predicate, when it occurs around some other constituent of a sentence, it should be that constituent that is "negated". In the case of negating a predicate, perhaps the authors refer to what is sometimes called VP-negation, which semantically would take the denotation of the VP, a one-place predicate denoting a set of individuals, and turn it into its complement set, or more precisely, into the characteristic function of that set (Dowty et al., 1981). Yet, when the claim is made for focused constituents, none of the works I cite here has an explanation or an analysis as to what it would amount to. Nevertheless, I do not think that taking the claims in this literal sense is unfounded. For one thing, similar claims are made for closely related languages of the Mayan family. England (1983, p.244), for example, writes that in Mam "[n]egation is accomplished through the use of negative particles which are first in the sentence and followed immediately by the phrase or clause being negated. This automatically focuses negated nominals". Thus, according to England, negation involves a change in basic word order in Mam, just as focusing and question formation, in that "[t]he constituent that is negated, focused, or fronted is moved in front of the verb" (England, 1989). I take this argument to be very similar to what Can Pixabaj (2010) claims for K'iche' when she says "[t]he constituents that are negated are those which are found between each pair of particles. Therefore, these constituents are focused". It seems as though the common argument is that these languages have an operation of constituent-negation which involves fronting constituents. If this is the claim, then what happens in the examples above is not the negation of focus sentences, but the extraction of constituents so that they can be "negated". Broadwell (2000) makes a somewhat similar claim for Kaqchikel.

He argues that there are in fact two different structural positions in Kaqchikel, one for what he calls contrastive focus (ConFoc) and one for negated focus (NegFoc), and he claims that focused NPs reside in the former whereas "negated" NPs reside in the latter. Duncan (2003), in his analysis of Tz'utujil, adopts the same proposal where negated NPs necessarily occupy the pre-predicate NegFoc position. I take these arguments as evidence that for other languages of the Mayan family, a distinction has also been made between focusing, as a way to highlighting information, and negation of constituents, both of which seem to use the same means, namely fronting.

Given the distribution of the negation particles we observed so far, a theory of negation in K'iche' which adopts the constituent-negation claim literally has to maintain that in the examples above pronouns, noun phrases, functional particles, prepositions, nouns, adverbs, adjectives and quantifiers are "negated". If the structural assumption is that these constituents are extracted from their canonical positions by a fronting operation, then I believe it is correct to assume that they will retain their syntactic and semantic categories in the negated focus position. But, this would require positing many different syntactic and semantic translations for *man...ta(j)*, i.e. as many as the number of expressions that can be extracted and "negated". Moreover, we have seen that the negation particles are able to occur around proper sub-constituents of these pre-predicate arguments, too, which will increase the number of different negation particles. The burden of proof is on those researchers who would like to develop a theory of negation with several different negation particles and clarify how they capture constituent-negation in each case and what would that amount to semantically. What I will do in the remainder of this section is to combine the observation we made about the distribution of the particle *ta(j)* with a long-standing claim about how negation and focus interact pragmatically to argue that *man...ta(j)* always yields propositional negation. This will also give us a principled way of explaining the intuition that in a negated focus sentence, the focused constituent is "negated".

First of all, the variable distribution of *ta(j)* can be explained by Henderson's observation that it is a clitic which requires a phonologically appropriate host, namely a prosodic word. Consider the examples below:

(37) a. **Man** *pa k'ayib'al* **ta** x-Ø-u-tij-o.
NEG in market NEG CMP-A3-E3-eat-STAT
'S/he didn't eat it IN THE MARKET.' (adapted from Henderson, to appear, p.6)

b.*__Man__ *pa* __ta__ *k'ayib'al* x-Ø-u-tij-o.
NEG in NEG market CMP-A3-E3-eat-STAT
'(intended reading) S/he didn't eat it IN THE MARKET.'

(38) **Man** *aree* **ta** *ri a Raul* x-Ø-el-ik.
NEG FOC NEG the male Raul CMP-A3-leave-STAT
'RAUL didn't leave.' (adapted from Henderson, to appear, p.6)

(39) **Man** *ruk'* **ta** *ikaj* x-Ø-u-ch'ay-b'e-j.
NEG E3-with NEG axe CMP-A3-E3-cut-INSTR-STAT
'S/he didn't cut it WITH THE AXE'. (adapted from Henderson, to appear, p.6)

Given the requirement that *ta(j)* has to attach to a prosodic word, in (37a), it cannot attach to *pa* 'in' as the latter is a light syllable and hence not heavy enough to host *ta(j)*. In (38) and (39), on the other hand, *ta(j)* can attach to *aree* 'FOC' and *r-uk'* 'E3-with', respectively, as both constitute heavy syllables. Similar to these cases, in (27)-(36) we observe that what *ta(j)* attaches to is the first prosodic word of the pre-predicate argument in each case. Henderson, therefore, claims that in these cases *ta(j)* attaches to the right of the first prosodic word in the domain that negation operates over, which for Henderson is the pre-predicate argument in a focus sentence. As the reader may recall, this is the same claim for the distribution of *ta(j)* in simple declarative sentences modulo the domain of negation. I now revise the earlier generalization by adding this observation.

(40) DISTRIBUTION OF ***man...taj*** (2nd version)
- In a negated simple declarative sentence, *ta(j)* attaches to the right of the first prosodic word of the predicate, which the optional particle *man* can precede.
- In a negated focus sentence, *ta(j)* attaches to the right of the first prosodic word of the pre-predicate constituent, which the optional particle *man* can precede.

However, contra Henderson, there are cases of negated focus sentences where *ta(j)* does not attach to the first prosodic word of the pre-predicate constituent. By way of example, consider the data below:

(41) *Context: Where is the dog? On the chair?*

a. *P-u-wi'* **ta** *ri tem. Ch-u-xe'* *ri tem* k'o wi.
PREP-E3-top NEG the chair PREP-E3-base the chair exist PART
'It is not ON the chair. It is UNDER the chair.

b. *P-u-wi'* *ri tem* **taj**. *Ch-u-xe'* *ri mexa* k'o wi.
PREP-E3-top the chair NEG PREP-E3-base the chair exist PART
'It is not ON THE CHAIR. It is UNDER THE TABLE.

c. *P-u-wi'* *ri tem* **taj**. *P-u-wi'* *ri mexa* k'o wi.
PREP-E3-top the chair NEG PREP-E3-top the table exist PART
'It is not on THE CHAIR. It is on THE TABLE.

In (41b-c) the clitic *ta(j)* attaches to *ri tem* 'the chair' and not to the first prosodic word of the pre-predicate constituent. However, *p-u-wi'* 'PREP-E3-top'is heavy enough to host *ta(j)* as (41a) shows. Note the difference between these cases and the example below where it is *not* possible for *ta(j)* to attach to *pa* 'in' as the latter is a light syllable, and hence not a proper host for *ta(j)*:

(42) *Context: Where is the dog? In the house?*

a. *Pa jaa* **ta** k'o wi. *Chi-r-ij* *jaa* k'o wi.
in house NEG exist PART PREP-E3-behind house exist PART
'It is not IN the house. It is BEHIND the house.'

b.**Pa* **ta** *jaa* k'o wi. *Chi-r-ij* *jaa* k'o wi.
in NEG house exist PART PREP-E3-behind house exist PART
(Intended reading) 'It is not IN the house. It is BEHIND the house.'

The reason why *ta(j)* cannot attach to *pa* 'in' is not only because the latter will be prosodified with its argument, i.e. prosodically incorporate into its argument, as it usually happens for functional heads in K'iche' (Henderson, to appear, p.23). As the examples below illustrate, even when its argument is absent, *ta(j)* cannot attach to *pa* 'in'. Recall that the locus of stress in K'iche' is prosodic words. Yet, *pa* 'in' cannot carry stress and hence cannot be a prosodic word. Compare (43)-(44):

(43) *Context: Where is the dog? On the table?*

P-u-wi' **taj**. *Ch-u-xe'* k'o wi.
PREP-E3-top NEG PREP-E3-base exist PART
'It is not ON (the table). It is UNDER (the table).'

(44) *Context: Where is the dog? In the house?*

Pa* **taj. *Chi-r-ij* k'o wi.
in NEG PREP-E3-behind exist PART
(Intended reading) 'It is not IN (the house). It is BEHIND (the house).'

In the acceptable (41b-c) above, on the other hand, there *are* heavy enough hosts preceding the words that *ta(j)* actually attaches to and yet it is possible for *ta(j)* to not attach to them. Furthermore, when there is more than one appropriate host in the pre-predicate constituent, the attachment of *ta(j)* is in fact indeterminate. For instance, (41a) and (41b) are three-way ambiguous in that both can be used when the focus is on the preposition *p-u-wi'* 'PREP-E3-top', on the noun phrase *ri tem* 'the chair', or on the entire prepositional phrase *p-u-wi' ri tem* 'PREP-E3-top the chair'. In other words, when *ta(j)* attaches to *p-u-wi'* 'PREP-E3-top', the interpretations in (45) are also possible alongside (41a):

(45) *Context: Where is the dog? On the chair?*

a. *P-u-wi'* **ta** *ri tem. P-u-wi'* *ri mexa* k'o wi.
PREP-E3-top NEG the chair PREP-E3-top the chair exist PART
'It is not on THE CHAIR. It is on THE TABLE.

b. *P-u-wi'* **ta** *ri tem. Ch-u-xe'* *ri mexa* k'o wi.
PREP-E3-top NEG the chair PREP-E3-base the chair exist PART
'It is not ON THE CHAIR. It is UNDER THE TABLE.

Similarly, when *ta(j)* attaches to *ri tem* 'the chair', (46) is a possible interpretation alongside (41b) and (41c):

(46) *Context: Where is the dog? On the chair?*
P-u-wi' *ri tem* **taj**. *Ch-u-xe'* *ri tem* k'o wi.
PREP-E3-top the chair NEG PREP-E3-base the chair exist PART
'It is not ON the chair. It is UNDER the chair.

In sum, it is possible for *ta(j)* to not attach to the first prosodic word of the pre-predicate constituent, contra Henderson's claim. Moreover, *ta(j)* can attach to a prosodic word of this constituent irrespective of context. Therefore, I will analyze the attachment of *ta(j)* as essentially indeterminate and adopt the following generalization about the distribution of the negation particles *man...ta(j)*:

(47) DISTRIBUTION OF ***man...taj*** (final version)
- In a negated simple declarative sentence, *ta(j)* attaches to the right of the first prosodic word of the predicate, which the optional particle *man* can precede.
- In a negated focus sentence, *ta(j)* non-deterministically attaches to the right of a prosodic word in the pre-predicate constituent, which the optional particle *man* can precede.

This revised generalization concludes my discussion about the distribution of *man...ta(j)*. In the next section, I am going to talk about the second observation that I am building my proposal on, namely the interpretation of negated focus sentences.

4.2 Interpretation of negated focus sentences

There seems to be some truth to the common intuition in the literature about negated focus sentences, namely that the focused constituent is "negated" in some sense. In this section, I intend to clarify what this sense is. Rather than claiming that constituents are "negated", however, I will show that this intuition can be tied to how focus behaves when embedded under negation, which, in turn, depends on the definition of focus I have adopted earlier. We start with a long-standing observation about how focus and negation interact. Jackendoff (1972, p.254), for instance, notes that "often negation does not seem to apply to an entire sentence, but only to part of it". To illustrate, consider the following examples:

(48) Michael didn't eat TORTILLAS yesterday.

(49) Michael didn't eat tortillas YESTERDAY.

In (48), the speaker denies that Michael ate tortillas yesterday without denying that he ate something yesterday, whereas in (49) she denies that the time Michael ate tortillas was yesterday, without denying that he ate tortillas some other time. This is why Jackendoff (1972,

p.255) says that negation associates with focus as its meaning depends on the focal structure of the utterance, namely what the answer to the QUD is. As Kadmon (2001, p.259) points out, this is not a truth-conditional effect, however, given that both (48) and (49) assert the same proposition. What differs is the QUD they presuppose, i.e. the alternatives that they evoke, which is reflected in the placement of the prosodic prominence in each case. In (48), the alternatives range over things that Micheal could have eaten yesterday whereas in (49) they range over times that Michael could have eaten tortillas.

Recall that, in section 3, I adopted the assumption that focus is an answer to the Question Under Discussion (QUD) (Roberts, 1996), the current discourse topic when the focus sentence is uttered. What this definition requires is question-answer congruence in that in a focus construction like (50) the *focused* part correlates with the *wh*-word, and the *non-focused* part is congruent to the QUD:

(50) *Context: Who ate tortillas?*
MICHAEL ate tortillas.

A long-standing observation about the interaction between focus and negation is that when, say, (50) is negated as in (51), negation affects what is being asserted. In (50), the assertion is that among the alternatives that the focus evokes, it is Michael who ate tortillas. When the sentence is negated, the assertion is reversed in that now Michael is not in the set of tortilla-eaters. Yet, what is presupposed, the QUD, is not affected by negation as it is a presupposition (Jackendoff, 1972; Kratzer, 1989; Kadmon, 2001; Beaver & Clark, 2008).

(51) MICHAEL didn't eat tortillas.

I claim that the common intuition that the focused constituents are "negated" in K'iche' is precisely because of this interaction between focus and negation. Yet, the present analysis does not posit an operation that fronts constituents and "negates" them, which, as we have seen, is problematic both descriptively and theoretically. Rather, it utilizes the definition of focus as an answer to the QUD and the observations about how focus behaves when embbedded under negation. Combining the generalization in (47) with the observations about how negation affects focus, thus, enables us to unify the different-looking behavior of the negation particles in K'iche', where negation, regardless of the type of the sentence, always yields propositional negation. In the particular case of focus, the negation operator acts differently on what is presupposed and what is asserted.

5 Conclusion

This paper discussed how negation is encoded in K'iche'. I reviewed descriptive and theoretical problems with the traditional analyses which claim (i) that the negation particles *man...ta(j)* occur around the predicate in a basic declarative sentence and (ii) that, in a negated focus sentence, it is the focused constituent that is "negated". Following Henderson (to appear), I developed an alternative account where the particle *ta(j)* is analyzed as

a clitic which attaches to a prosodically appropriate host. In particular, I argued that it attaches to the first prosodic word of the predicate in negated basic declarative sentences. As for negated focus sentences, I claimed that *ta(j)* attaches to a prosodic word of the pre-predicate constituent, but, contra Henderson, not necessarily to the first prosodic word. I presented evidence that in these cases *ta(j)* can attach to other prosodic words in the pre-predicate foci and that this attachment is in fact indeterminate. Lastly, I argued that the common intuition about the focused constituent being "negated" is due to the pragmatic interaction between focus and negation, namely that when a focus construction is negated what is asserted is targeted by negation, whereas what is presupposed, the existence of a Question Under Discussion (QUD) (Roberts, 1996), survives as an implication (Jackendoff, 1972; Kratzer, 1989). I argued that combining the facts about the distribution of *man...ta(j)* and the pragmatics of focus and negation gives us a unified account of negation in K'iche' whereby we can predict the variable surface distribution of *man...ta(j)* which invariably yields propositional negation.

The generalization I have formulated about the distribution of *man...taj* suggests that negation in simple declaratives and negation in focus sentences must be handled differently since the distribution of the particles in these cases is different. Alongside the language-internal motivations for such an analysis, some support for having different lexical entries for these two cases comes from other members of the Mayan family. For example, Kockelman (2003) notes that Q'eqchi' has two negators which are non-homophonous: (i) *ink'a'* for negation in simple declaratives and (ii) *moko...ta* for negation in negated focus sentences. Similarly, according to England (1983), Mam has a number of different negative particles which are in complementary distribution. In particular, the marker *miti'*, which is used to negate declaratives with verbal predicates cannot be used to negate focus sentences and declaratives formed with stative predicates which require the particle *miyaa'*. If my analysis is on the right track, then it would mean that K'iche' also makes a similar distinction despite using homophonous negators in each case.

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Notes

[1]This particle has been traditionally glossed as an irrealis particle in K'iche' and it does have an irrealis meaning when it is used in counterfactual constructions (Larsen, 1988). However, as Larsen points out, the negative particle *man* is optional in many dialects of modern K'iche'. In the speech of all but one of the consultants that I worked with, *man* is almost always omitted and only the so-called irrealis particle *ta(j)* is used. Since it is also possible to use *ta(j)* as the sole negator, I follow Pye (2001) and treat *ta(j)* as a negation particle and gloss it as NEG.

[2]In the orthography, all symbols have their standard phonetic value except the following: ' = glottal stop, C' = glottalized consonant, VV = long vowel, ch = [č], tz = [ȼ], x = [š], and j = [x] or [x̱]. The following abbreviations are used in the morphological glosses of the examples: A1(p), A2(p), A3(p) = absolutive first, second, third person singular (plural) affix; E1(p), E2(p), E3(p) = ergative first, second, third person singular (plural) affix; AG = agent focus; CMP = completive; DET = determiner; FOC = focus particle; INCMP = incompletive; INSTR = instrumental; NEG = negative particle; PREP = preposition; PART = particle; STAT = status suffix. Unless otherwise stated, all the data in this paper is from original fieldwork in Santa María Tzejá, Ixcán, El Quiché, Guatemala and Columbus, Ohio, USA.

[3]I am using the standard terminology for ergative languages but I do not intend to imply that all A arguments are agents and/or all O arguments are patients.

[4]It has been reported that the negative particle exhibits dialectal variation. In some dialects it is *man*, in some dialects it is *ma* and yet in some it is *na* (Larsen 1988; Henderson, to appear).

[5]Henderson (to appear) claims that, just as the status suffixes *-ik* and *-o* which attach to verbs, the phrase-final form *taj* appears at the end of Intonational Phrases. In the speech of my consultants, the non-phrase-final form *ta* is always realized as [t] cliticized to the preceding word.

[6]I leave it for future research to determine whether there are any differences between these two possibilities.

[7]This marker comes in two forms: *-(V)w* for root transitive verbs, and *-n* for derived transitive verbs (Trechsel, 1993).

[8]According to Davies & Sam-Colop (1990), the only known exception to this diversity is the 'demoted' agent of a passivized sentence.

[9]In (34), *ta(j)* cannot attach to *jun* 'a' because in speech this determiner does not bear stress and its coda consonant is usually omitted, i.e. it will not count as a prosodic word.

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On the syntax of coordination in Menominee[i]

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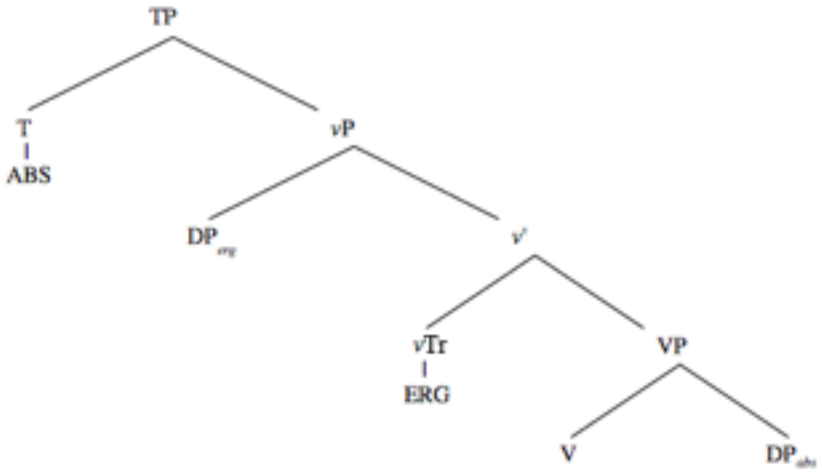
1 Introduction

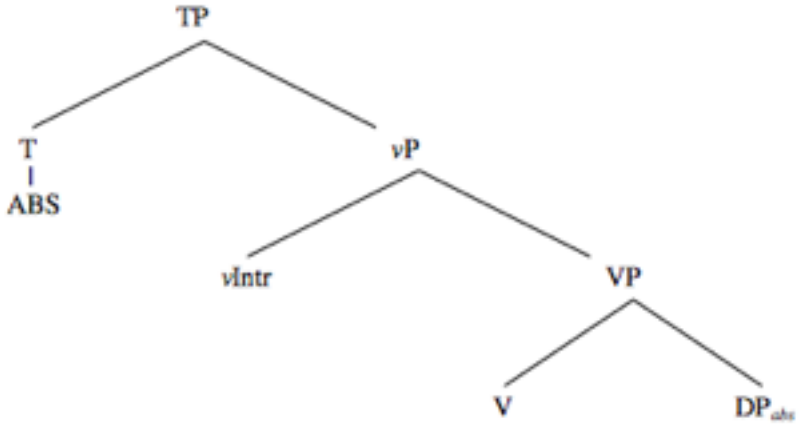
Menominee is an Algonquian language that shows ergative verb agreement: transitive verbs agree with their objects, and intransitive verbs agree with their subject. This paper investigates the two coordinators in Menominee: *taeh* and *mesek*. We argue that *taeh* coordinates TPs while *mesek* coordinates *v*Ps.

To account for the distribution of the two coordinators, we propose a minimalist syntactic analysis of ergativity based on Murasugi 1992 and Campana 1992. We argue that absolutive arguments are always base-generated as the complement of V, and check their case against T. In contrast, ergative arguments are base-generated in spec, *v*P and receive case from *v*. This is exemplified in (1a) for a transitive verb and (1b) for an intransitive verb.

1. a.



b.



Crucially for our analysis, absolutive arguments of transitive verbs are case-checked in a higher position than ergative arguments are.

The paper is structured as follows: section 2 reviews the Menominee coordination data first presented in Johnson, Macaulay & Rosen 2011 (henceforth JMR). Section 3 outlines the syntactic analyses of ergativity proposed in Murasugi 1992 and Campana 1992. Section 4 illustrates how our analysis makes the correct predictions for Menominee coordination data. Finally, section 5 concludes the paper and suggests typological implications.

2 Coordination data from Menominee

JMR 2011 conducted a study of coordination in Menominee based on a corpus of 50 texts, in addition to elicited data. In this section we review their findings. As they describe, *taeh* is a second position clitic that can attach either after the first word or phrase of the sentence. These two possibilities are shown below in (2a) and (2b). (2a) shows *taeh* attaching after *akom*, which is the first word of the noun phrase 'these old people.' In (2b), *taeh* attaches after the entire noun phrase 'four winters.' *Mesek* always appears between its two coordinands, as in (2c), where it joins the verbs 'laugh' and 'cry.'[ii]

2. a. Akom taeh keckīwak nekēs-kenuakok 's pas kahkānemaeseyan
these *taeh* old.person.PL 1.CP-they.stop.me AOR might I.rush.ahead
's kataēw-macēq-nāp-kehtekaēwenaeniweyan.
AOR going.to-in.pitiful.pretense-I.be.a.farmer
'And these old people stopped me from rushing to be a pitiful excuse for a farmer.' (PE 005)

b. Nīw pepōn taeh nekēs-awēh-kanapac-wāpahtan emes
four winter *taeh* 1.CP-go.and-maybe-I.go.to.school there
'I went to school there for four winters.' (BLS 017)

c. Sosaēt kēs-āyaēniw mesek kēs-māw.
Joseph CP-laugh *mesek* CP-cry
'Joseph laughed and cried.' (SS 6/1/01)

When two noun phrases are joined, *mesek* is always used, and again appears between the two coordinands:

3. Sosaēn kēs-mīcwah mēnan mesek ataēhemenan.
Susan CP-she.eat.them blueberries *mesek* strawberries
'Susan ate blueberries and strawberries.' (MF 6/10/10)

However, both *taeh* and *mesek* can be used to join verb phrases. The relevant data illustrating the environments in which *taeh* and *mesek* are used are given in (4)-(9) below:

As seen in (4), *mesek* is the coordinator used to join intransitive verbs with same subject:

4. Kēs-kesīqnehciwaēw mesek ketaēw-cēpāhkow
CP-**she**.wash.dishes *mesek* going.to-**she**.cook
'She washed dishes and she's going to cook.' (MF 10/7/10)

(5) illustrates that *taeh* coordinates intransitive verbs that have different subjects:

5. Nekot metaēmoh wāwēkew; okīqsan taeh taēwan.
one **woman** RED.she.live **her.son**.OBV *taeh* he.exist.OBV
'A certain woman lived there; and she had a son (her son existed).' (FP 001-002)

As example (6) demonstrates, *mesek* is used to join transitive verbs with the same object:

6. Nekēs-tepāhan anaēcēmenan mesek Sāpatīs pas kēsam.
1.CP-I.buy **peas** *mesek* John might he.cook.**them**
'I bought peas and John might cook them.' (MF 3/31/11)

In contrast, (7) shows that *taeh* used to coordinate transitive verbs with different objects:

7. kaeqceh new ohsāpameken; kan taeh onaēwānan
near EMPH he.look.at.**him**.from.there NEG *taeh* he.did.not.see.**him**
'He$_i$ was watching him$_j$ from close by; but he$_j$ didn't see him$_i$.' (TAT 089-090)

In all cases of coordination of one transitive verb with one intransitive verb, *taeh* is used. (8) exemplifies coordination of a transitive and intransitive verb with same subject, and

the example in (9) shows *taeh* is used when the subject of the transitive verb and object of the transitive verb are the same.

8. Nekot kaeqc-enaēniwan ahkīheh ahpākenaewen, enes taeh
one old-man on.the.ground **he**.throw.him.onto.ground there *taeh*
wahkēc wēyōh cew-kaēqc-nīmit.
on.top his.body EPIS-intensely-**he**.dance
'He threw one old man down on the ground, and he must have danced hard there on top of him.' (BM 045-046)

9. Nahāw, ayāpaēw, kekātaew-nīmihen kaēh; yōm taeh
well.then stag 2.going.to-I.make.**you**.dance at.any.rate this *taeh*
nēk kena-kiaqtāhsemim.
my.house 2.will-**you**.dance.round.a.circle.AI
'Now then, Stag, I am going to have you dance; and around my house you will dance.' (LNX 047-048)

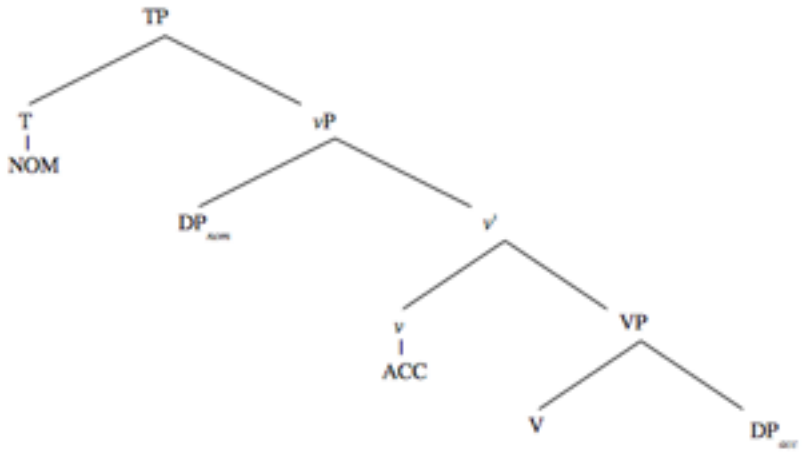
JMR 2011 argues that the syntactic distribution of the two coordinators is determined by the status of the absolutive argument: when the absolutive arguments of the two verb phrases are identical, *mesek* is used (cf. (4) & (6)). Conversely, when the two absolutive arguments are distinct, *taeh* is used. (cf. (5) & (7)). Furthermore, the absolutive argument must stand in the same relation to both verbs: if the absolutive argument is the subject of one intransitive verb and the object of a transitive verb, then *taeh* is required (cf. (9)). In the next section, we will review previous approaches to the syntax of ergativity in order to provide a syntactic analysis of this data.

3 Syntax of ergativity: Murasugi 1992 & Campana 1992

Murasugi 1992 and Campana 1992 both use an early minimalist approach to explain the syntax of ergative case assignment. Before we review their proposals, however, we will first outline some basic contemporary minimalist assumptions about case assignment.

In the Minimalist Program, the subject (in a nominative-accusative language) is base-generated as the specifier of *v*P, which is located above VP. *v* is responsible for assigning ACC case, and T assigns NOM case. The object, when present, is always base-generated as the complement to the verb. The structure of a transitive verb and its arguments is shown in (10):

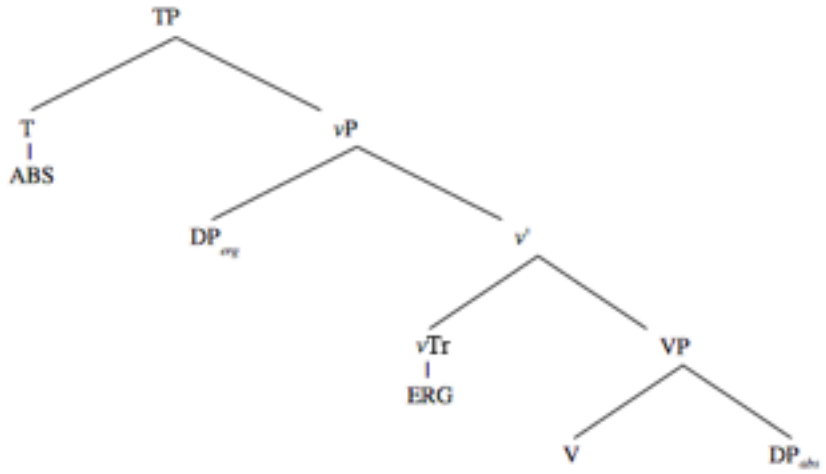
10.



Campana 1992 uses an earlier minimalist framework in which nominative case is checked[iii] by the head AgrS(ubject) and accusative case is checked by the head AgrO(bject). In a parallel analysis, Murasugi 1992 argues that nominative case is checked by T, and accusative case is checked by a lower head, Tr(ansitivity). As for ergative-absolutive languages, both Campana and Murasugi argue that the head that is responsible for checking nominative case in nominative-accusative languages checks absolutive case in ergative-absolutive languages, and the head that checks accusative case also checks ergative case. Thus, for Campana 1992, AgrS checks absolutive case, and AgrO checks ergative case, and for Murasugi 1992, T checks absolutive case and Tr checks ergative case. Crucially, the notion of 'logical subject' or 'logical object' plays no role in case-assignment in these analyses.

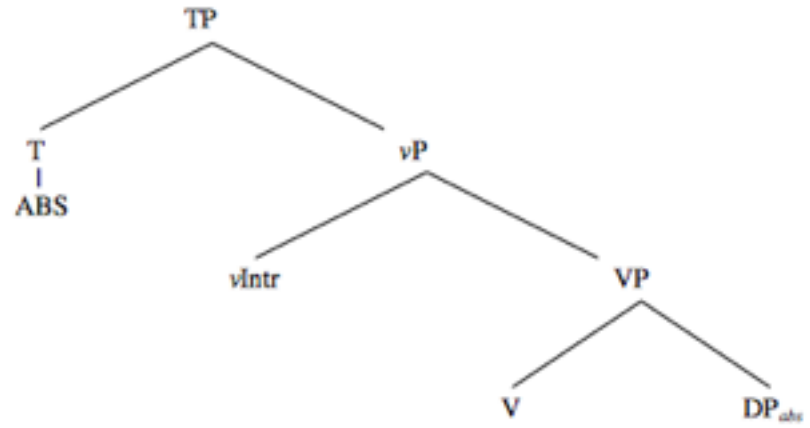
In our analysis, we follow the approaches used by Campana and Murasugi, and update them using more recent minimalist terminology. We argue that T is responsible for checking absolutive case, and *v* is responsible for ergative case. For transitive verbs, the ergative argument is base-generated in the specifier of *v*P and receives case from *v*Tr. The absolutive argument is base-generated as the complement of V, and is case-checked by T. This can be seen in (1a), repeated as (11):

11.



For intransitive verbs, the absolutive argument is still base-generated as the complement to the verb and is case-checked by T. Since there is no external argument, *v* is Intr instead of Tr. This is shown in (1b), repeated as (12) below:

12.



Crucially, the absolutive argument is case-checked in a high position in both transitive and intransitive clauses. In transitive clauses, the absolutive argument is case-checked by a structurally higher head than the ergative one.

4 Syntactic analysis of Menominee coordination

In this section we present our syntactic analysis of Menominee coordination. To account for the difference between the two coordinators, we propose that the same T head can

case-check two absolutive arguments if the arguments are co-indexed and in the same structural relationship. Note that this proposal is not unlike the constraints on across-the-board movement (Ross 1967, Postal 1974): if two arguments are identical and in the same structural relationship, then they can both be extracted, as seen in the examples in (13)-(15):

13. I wonder what$_i$ [John bought e$_i$] and [Peter sold e$_i$].

14. * I wonder what$_i$ [John bought e$_i$] and [Peter sold e$_j$].

15. * I know a man who$_i$ [Bill saw e$_i$] and [e$_i$ likes Mary].

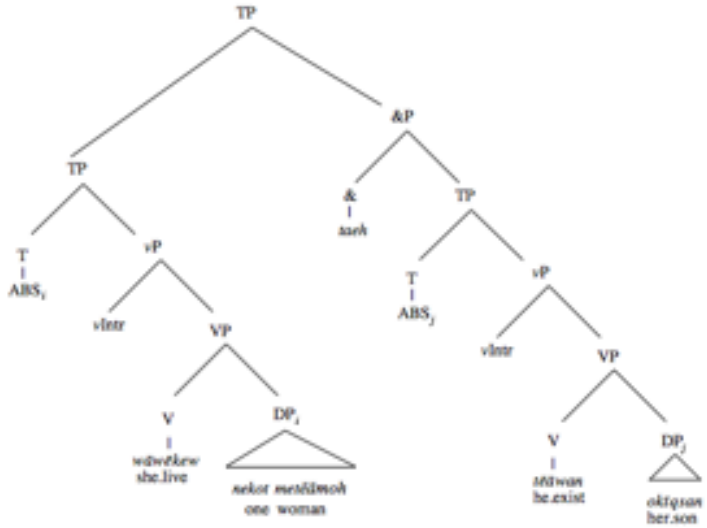
In (13) above, the *wh*-word 'what' corresponds to the object of both verbs, and thus can undergo *wh*-movement from both conjuncts. (Here, the 'e' stands for 'empty category', and serves as a notional device indicating that movement has occurred from that position.) In contrast, the sentence in (14) is ungrammatical because the two objects are not identical, as indicated by the differing indices. In (15), the two arguments that are extracted are identical, but they not in the structural relationship: since one is an object and one is a subject, across-the-board movement is blocked.

With this proposed constraint on absolutive case-checking in mind, we can then capture the facts of coordination by appealing to a distinction in the size of the coordinands of the two coordinators: *taeh* joins TPs, while *mesek* joins *v*Ps. Since *taeh* coordinates TPs, the two verb phrases will each have a position for their own absolutive argument.

The trees for examples (5) and (7) above are shown in (16) and (17).[iv] In (16), the absolutive arguments of the two intransitive verbs are case-checked by two separate T heads:

16. a. Nekot metaēmoh wāwēkew; okīqsan taeh taēwan.
one **woman** RED.she.live **her.son**.OBV *taeh* he.exist.OBV
'A certain woman lived there; and she had a son (her son existed).' (FP 001-002)

b.

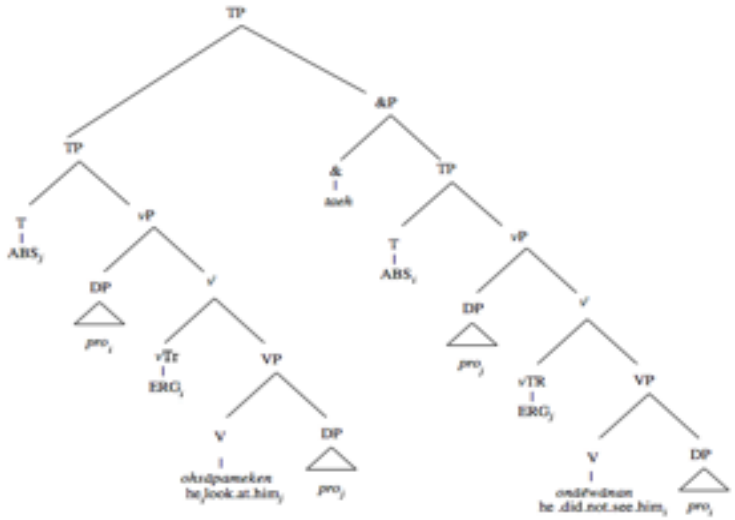


In the first coordinand, the T head assigns case to the subject ‘that woman’, and in the second coordinand, the T head assigns case to ‘her son.’

In (17), both the absolutive and ergative arguments of the two transitive verbs are case-checked by separate T and *v*Tr heads.

17. a. kaeqceh new ohsāpameken; kan taeh onaēwānan
near EMPH he.look.at.**him**.from.there NEG *taeh* he.did.not.see.**him**
‘He$_i$ was watching him$_j$ from close by; but he$_j$ didn't see him$_i$.’ (TAT 089-090)

b.



In this first coordinand, the subject 'he$_i$' receives ergative case from *v*Tr, and the object 'him$_j$' gets absolutive case from T. In the second coordinand, the subject 'he$_j$' is case-checked by *v*Tr, and the object 'him$_i$' receives absolutive case from T.

In contrast, if *mesek* joins *v*Ps, the T head checking absolutive argument will be outside the scope of coordination for both transitive and intransitive verbs, and thus the absolutive arguments necessarily must be the same for both verb phrases. The trees for examples (4) and (6) above are given in (18) and (19). In (18), we see that the absolutive arguments ('she' and 'she') of the two intransitive verbs are both case-checked by the same T.

18. a, Kēs-kesīqnehciwaēw mesek ketaēw-cēpāhkow
CP-**she**.wash.dishes *mesek* going.to-**she**.cook
'She washed dishes and she's going to cook.' (MF 10/7/10)
b. [tree]

In (19), the absolutive arguments ('peas' and 'them', which are coreferential) of the two transitive verbs are both case-checked by the same T. The two ergative arguments ('I' and 'John') are distinct, and each are case-checked by their own *v*Tr.

19. a, Nekēs-tepāhan anaēcēmenan mesek Sāpatīs pas kēsam.
1.CP-I.buy **peas** *mesek* John might he.cook.**them**
'I bought peas and John might cook them.' (MF 3/31/11)
b. [tree]

The fact that coordination of one transitive and one intransitive verb must involve *taeh* can be explained by the difference in structural relationship between the absolutive argument of a transitive verb and the absolutive argument of an intransitive verb. While they are both complement to V, a transitive verb does have additional structure and an ergative argument, which thus means that they do not not stand in the same structural relationship. This is illustrated in (20) below.

20. a. Nahāw, ayāpaēw, kekātaew-nīmihen kaēh; yōm taeh
well.then stag 2.going.to-I.make.**you**.dance at.any.rate this *taeh*
nēk kena-kiaqtāhsemim.
my.house 2.will-**you**.dance.round.a.circle.AI
'Now then, Stag, I am going to have you dance; and around my house you will dance.' (LNX 047-048)
b. [tree]

Note that we are not showing movement of the absolutive argument for case-checking. At this time, we are remaining agnostic about the nature of case-checking in Menominee: either the absolutive arguments move into the specifier of TP to check their case under Spec-Head agreement (Chomsky 1993), or case is assigned through a form of long distance agreement called Agree (Chomsky 2000).[v] Furthermore, the word order

facts do not immediately lend themselves to one analysis over another. Shields 2004 concludes that most preverbal arguments contain new or focused information. Therefore, we can not conclude that preverbal absolutive arguments moved to receive case; instead, it is possible that they underwent a focus movement.

5 Conclusion

As we have shown above, the choice of coordinator in Menominee is sensitive to the status of the absolutive arguments in the coordinands: *taeh* is used is the absolutive arguments are distinct and/or in differing structural positions with respect to the verb, while *mesek* is used only when the two absolutive arguments are identical and in the same structural relation. We have argued that this data is consistent with a syntactic analysis of ergativity in which absolutive arguments are always base-generated as the complement of V, and check their case against T, and ergative arguments are base-generated in spec, *v*P and receive case from *v*. By proposing that absolutive case-assignment is sensitive to the same conditions as across-the-board movement, we are able to account for the distribution of the two Menominee coordinators: *taeh* coordinates TPs and *mesek* coordinates *v*Ps.

In future research, we plan on determining if the intransitive verbs in Menominee can be split into unaccusative and unergative categories, and what relevance, if any, this may have for the coordination data. We also plan on continuing work to see if the two approaches to case-checking can be empirically teased out, and what implications this may have for theories of ATB movement. Lastly, we hope to investigate this phenomenon in other Algonquian languages. A preliminary text-based study done by Johnson & Rosen 2010 found similar facts for Potawatomi. It would be interesting to know if other languages in the family pattern the same.

Notes

[i] We would like to thank the members of the UW-Madison Algonquian syntax reading group, especially Becky Shields and Monica Macaulay for their helpful insights into the Menominee language. We are grateful to Menominee elders Marie Floring and the late Sarah Skubitz for providing language data, and to the Menominee Language and Culture Commission for their guidance. We also thank Mark Baker for invaluable discussion about syntactic theory.

[ii] Abbreviations used in examples include the following: AOR – aorist; CP – completive; EMPH – emphatic; EPIS – epistemic; NEG – negative; OBV – obviative; PL – plural; RED – reduplication. Elicited data are noted with the speaker's initials and are followed by a date. Data that come from stories are indicated with a source code and line number. The following codes represent stories from Bloomfield 1928: FP – Frog Prince; LNX – Lynx Tries to Kill a Stag; PE – Personal Experiences; TAT – Tales of Ancient Times. BLS is the code for the elicited story Bill's Life Story, and BM is the code for Bead Man, a story found in Bloomfield's Notes in the Smithsonian archives.

[iii] In more recent minimalist literature, case assignment has been replaced with the operation of case 'checking'. Since there are no empirical differences between the two, we will not distinguish between the two analyses here, and instead use the terms interchangeably.

[iv] We are assuming, following LeSourd 2006's arguments for Maliseet-Passamaquoddy, that Algonquian languages are not pronominal argument languages. Instead, both null and overt arguments are represented syntactically.

[v] If case is assigned through Agree, the ergative argument in the specifier of *v*P would be case-checked first, and thus would become "invisible", allowing T to "see" the DP in the complement of V.

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Topics in Chukchansi Yokuts Phonology and Morphology

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1. INTRODUCTION. Chukchansi Yokuts is a dialect of the Yokuts language family native to Central California. Yokuts dialects were spoken in the San Joaquin Valley and the surrounding foothills from the Fresno and Chowchilla rivers in the north down to the where the valley ends in the Tehachapi mountains in the south (Kroeber 1963). There were originally around forty Yokuts tribes, each speaking a distinct yet related dialect. Kroeber (1963) estimates that most of these dialects were mutually intelligible; Whistler and Golla (1986) state that this is probably not true, though dialects within a branch of the Yokuts family likely could understand each other. The Chukchansi tribe inhabits the foothills in the north of Yokuts territory, around present-day Ahwahnee and Coarsegold. Many Chukchansi still live in these foothills about 30 miles north of Fresno; this is where the headquarters of the tribe, Picayune Rancheria, is today. According to Kroeber's (1963) system of classification, based on the presence of the imperative suffix [-ka] and the form of the negative morpheme [ohom'], Chukchansi is a Valley dialect of the Yokuts family, not a Foothill dialect, despite its location in the Sierra foothills. While Whistler and Golla (1986) disagree with Kroeber over the integrity of Foothill group, they do agree that Chukchansi is a Valley dialect. Specifically, it is in the Northern Hill subgroup of the Northern Valley branch, closely related to the Yokuts dialects Chawchila and Dumna.

Chukchansi has all the major features common to the Yokuts family. Both stops (including affricates, which pattern with stops) and sonorants have contrastive glottalization, while stops also have contrastive aspiration. On the surface there are the five cardinal vowels, with contrastive length; unlike the Yokuts dialect of Wikchamni, there are no front rounded vowels (Gamble 1978). Stress is usually penultimate, though there are some complicating morphological factors. Chukchansi morphology is almost entirely suffixing, and is dependent-marking: nouns have cases, while possessors are marked in the genitive; adjectives optionally agree with nouns in case marking. Verbs have suffixes to indicate tense, aspect, voice, and mood, but do not mark participants,

neither subject nor object. Word order in Chukchansi is very free: all six canonical orders of subject, object, and verb have been elicited. Chukchansi is not polysynthetic: there is no productive process of incorporation.

Probably the most salient feature of the Yokuts language family is its complex verbal morphophonology, i.e., how the morphological structure of verbs interacts with and influences their phonological structure. Chukchansi is certainly no exception to this: the sound and shape of verbs, especially the vowels of the verb roots, can vary in profound and interesting ways. Much previous research on Yokuts languages has focused on how these verb roots vary, and there have been several different accounts describing their variation. In this paper I present three thorny points of Chukchansi verbal morphophonology: epenthesis and syllabification, the inventory of prosodic templates, and vowel quality changes, such as lowering and harmony. I exemplify these phenomena with the Chukchansi data I have collected and give several arguments in favor of my analysis of these areas.

1.1 LANGUAGE CONSULTANTS. Every fully-formed Chukchansi word in this paper was spoken by either of my two language consultants, Holly and Jane Wyatt of Coarsegold, California. They were raised by their Chukchansi-speaking grandmother, and thus are native speakers of Chukchansi. They are of course English speakers as well, and seem to be more comfortable in English than Chukchansi. However, while their Chukchansi speech contains many English loanwords, these all conform to Chukchansi phonology. Moreover, their use of Chukchansi syntax seems to be free of English influence, testifying to the robustness of their native-speaker intuitions and the resistance of their mental Chukchansi grammars to encroachment by English.

All the Chukchansi data in this thesis were elicited from the Wyatt sisters in two separate semesters of a field methods class at California State University, Fresno, as well as a few individual sessions outside of this class. My fellow researchers and I elicited the verb forms that are the focus of the analysis by asking them to loosely translate English sentences into Chukchansi, often with a supporting context given. I transcribed their Chukchansi speech by hand, while checking it for accuracy with fellow researchers. Because the focus of this thesis is on the forms of the verbs themselves and

not on the associated syntax and semantics, there should be few worries that the elicitation method has caused English interference on the Chukchansi data.

2. EPENTHESIS AND SYLLABIFICATION. The first phenomenon I investigate in this thesis is syllabification in Chukchansi and its effects on the surface forms of verbs. A strict maximum on syllable size and the stability of consonants requires the epenthesis of vowels in some surface forms and the shortening of vowels in others. The following surface verbs show the complementary distribution of high vowels with zero in different surface forms of certain verb roots, and of short vowels with long vowels in the surface forms of other verb roots. These surface forms all conform to a general CVX maximum on syllables. Syllables in Chukchansi can be either CV, CV:, or CVC, but not smaller or bigger: e.g., there are no VC, CV:C or CVCC syllables on the surface.[1] The fact that syllables can have a long vowel (CV:) or a coda (CVC) but not both is evidence for a bimoraic maximum and moraic codas. CVC and CV: are both bimoraic on this account, while bigger syllables such as CV:C would exceed the bimoraic maximum. Combined with constraints against onsetless syllables and complex onsets, nuclei, and codas, this describes the Chukchansi syllable as CV(X), with an onset, a vocalic nucleus, and up to two moras, either due to a long vowel or a coda consonant.

2.1. HIGH VOWEL~ZERO DISTRIBUTION. Many verb roots have an alternation where one form has a high vowel that does not appear in another form. For example, the root /ʃawk/ "buy" has the two forms [ʃawk-] (1) and [ʃawik-] (2) below:

1) ʃawk-eʔ
   buy non past
   "he will buy/buys"

2) ʃawik-taʔ
   buy remote past
   "he bought (a long time ago)"

Notice that both [ʃaw.k-eʔ] and [ʃa.wik-.taʔ] have syllables that fit the CVX syllable maximum. However, without the extra vowel [i], [ʃa.wik-.taʔ] cannot fit the CVX

maximum: both *[ʃaw.k-taʔ] and *[ʃawk-.taʔ] contain illegal tautosyllabic consonant clusters.

Certain suffixes display this alternation as well. The recent past suffix /-t/ has the two forms [-t] (3) and [-it] (4) below:

3) hu:ʃe-t
   drive-recent past
   "he just drove"

4) ʧiʃ-it
   cut-recent past
   "he just cut"

Again, both [hu:.ʃe-t] and [ʧi.ʃ-it] conform to the CVX syllable maximum. Note that without the extra vowel [i], [ʧi.ʃ-it] cannot fit this maximum: *[ʧiʃ-t] contains an illegal tautosyllabic consonant cluster. These examples show that a Chukchansi word epenthesizes the high vowel [i] so that all the underlying consonants can fit into CVX syllables: [ʃa.wik.taʔ], [ʧi.ʃit] . If all these consonants fit into CVX syllables without the extra vowel, that vowel does not appear: [ʃaw.keʔ], [hu:.ʃet].

2.2. SHORTENING. Many verb roots also have an alternation where one form has a long vowel that appears short in another form. For example, the root /bala:ʃ/ "crawl" has the two forms [bala:ʃ-] (5) and [balaʃ-] below:

5) bala:ʃ-eʔ
   crawl-non past
   "he will crawl/crawls"

6) balaʃ-hil
   crawl-middle past
   "he crawled (yesterday)"

Once again, these forms, [ba.la:.ʃ-eʔ] and [ba.laʃ-.hil] follow the CVX maximum. Without a short vowel in the second syllable, *[ba.la:ʃ-.hil] contains a superheavy CVVC syllable [la:ʃ], which is bigger than the CVX maximum allows. This

phenomenon must be shortening of an underlying long vowel to satisfy the CVX maximum, not lengthening of an underlying short vowel in an open syllable, because there are many words with CV syllables (i.e., open syllables with short vowels): [ʃa.wik.taʔ], [ʧi.ʃit], even [ba.la:.ʃeʔ] itself. Thus there is no phenomenon of lengthening (contrary to Collord 1968), but instead there is a general phenomenon of closed syllable shortening (as in Newman 1944, and all subsequent research using his data).

Some roots require either shortening or epenthesis, depending on whether the suffix attaching to them begins with a vowel or a consonant. For example, the root /be:wn/ "sew" has the two forms [bewn-] (7) and [be:win-] (8) below:

7) bewn-eʔ
   sew non past
   "he will sew/sews"

8) be:win-taʔ
   sew remote past
   "he sewed (a long time ago)"

Like all the preceding examples, [bew.n-eʔ] and [be:.win-.taʔ] fit the CVX maximum. Neither *[be:wneʔ] or *[be:wntaʔ] can be syllabified to fit this maximum. Note that when shortening can syllabify all the underlying consonants, it is used instead of epenthesis: [bew.n-eʔ], not *[be:.wi.neʔ]. Only when shortening cannot syllabify all these consonants does epenthesis occur: *[bewn-taʔ] has too many consonants in a row to fit into CVX syllables, so the form [be:.win.taʔ] with the epenthetic vowel surfaces. Thus shortening takes precedence over epenthesis.

2.3. EPENTHESIS, NOT SYNCOPE. Above I described the phenomenon of epenthesis where certain words have high vowels in some situations that do not appear in others; the epenthesis is driven by a CVX syllable maximum. For example, the root /ʃawk/ "buy" has the non-past form [ʃaw.k-eʔ] and the remote past form [ʃa.wik.-taʔ]; the vowel [i] that appears in the second form but not the first is epenthetic. This epenthesis account is present in Newman (1944), who calls this vowel an "interpolation" (Newman 1944, p. 25); the analyses that use his data, starting with Kuroda (1967), all agree with this. Collord (1968) gives the mirror-image account where the [i] vowel is actually

underlying, and syncopates in some forms: e.g., the underlying form of "buy" would be /ʃawik/, with the high vowel [i] syncopating to prevent the appearance of a weak open syllable in *[ʃa.wi.keʔ]. In Collord's account, high vowels syncopate in the environment VC_CV, while non-high vowels do not do so. This in itself is not troubling, since many phonological processes are sensitive to vowel height.

However, this account creates a puzzling situation: while he does give disyllabic roots with the same vowel in both syllables (e.g., /hewet/ "walk," /holoʃ/ "sit," and /balaʃ/ "crawl"), when there are mixed vowel qualities in a disyllabic root, the second vowel is always high; e.g., /ʃawik/ "buy," /lihim/ "run," /be:win/ "sew", /ha:tim/ "sing," /hoyin/ "fly," /yunuʃ/ "shake." There are no roots with other combinations of vowel quality; e.g., there are no roots with any of the forms /CeCaC/, /CiCaC/, /CaCeC/, /CaCoC/, or /CuCoC/. This gap does not follow from any general cross-linguistic principle, but must be accounted for by simply stipulating that disyllabic roots cannot have a mix of vowels when the second vowel is non-high. It is probably not an accident of data collection, either: Collord gives dozens of disyllabic verb forms, but none with these underlying shapes. Nor can any of the dozens of three-consonant verbs elicited from my consultants fit into these underlying patterns.

Under the syncope account, we either have to ignore or live with this uncomfortable gap. The epenthesis account easily solves this: the reason that the second vowel must be high is because this vowel is not really present underlyingly, but instead is an epenthetic vowel, which is always high in Chukchansi. In addition, this yields the generalization that only one vowel quality is ever present in the underlying form of most roots; the appearance of other vowel qualities on the surface is due to epenthesis. This suffices to make the epenthesis account superior to the syncope account.

3. SUFFIX-CONDITIONED PROSODIC TEMPLATES. As I wrote above, Archangeli (1983) was the first to analyze verb roots in Yawelmani, a Yokuts language, as having shape templates. Following the theory of Prosodic Morphology, proposed in McCarthy and Prince (1986), Archangeli (1991) described these templates as prosodic units: L (light syllable), H (heavy syllable), and LH (iambic foot). The templates take the one underlying vowel quality of the root and associate that quality to fill the moras of the prosodic unit. Certain suffixes condition the occurrence of specific templates in the

roots they attach to. When there is no such suffix to assign a template to the verb root, the root chooses its own "default" template. In Archangeli's analysis, both suffixes and roots must pick one of the three templates above (L, H, or LH) in the Yawelmani inventory.

In this section I show how prosodic templates work in Chukchansi. While the general outline above can account for some verbs, it cannot account for all of them. More templates than the three above occur in Chukchansi verb roots: there are HL roots, e.g. /we:le/ "stir," and there are suffixes that impose LL templates on certain roots, e.g. [maxa-ʔa-n'] "he is collecting" from /ma:x/ "collect." Roots and suffixes draw from different sets of templates: roots can choose an H, LH, or HL template, while suffixes either choose an LL or an LH template. Roots with apparent L templates are more accurately described as not having a template (Russell 1999). There are also many roots that act differently: they have more than one vowel quality, and no suffixes assign templates to them.

I do not have space in this paper to address all the issues surrounding where these templates occur in Chukchansi phonology, whether they are underlying or imposed by the grammar, and what exact linguistic mechanism is responsible for the association of roots, suffixes, and templates. These issues could take up the space of a whole paper much larger than this one, and they involve thorny areas of theoretical abstraction (e.g., richness of the base, co-phonologies vs. lexical constraints, etc.). I strive here to present a solid empirical foundation to the study of Chukchansi verbal morphophonology, and leave these theoretical questions to the future. Hopefully these data will provide a good basis for solving these questions.

Verb roots in Chukchansi fall into two main classes: roots that can be characterized with one underlying vowel that fills a root- or suffix-conditioned shape template, and roots that cannot. These latter roots have a mixture of underlying vowel qualities, and never receive a template from a suffix. I present these two kinds of roots, "one-vowel" and "multi-vowel," separately.

3.1. ONE-VOWEL ROOTS. Newman (1944) first noticed that most verb roots in Yokuts languages have one underlying vowel quality, which can come in three shapes. Kuroda (1967) supported this, positing a rule of epenthesis that accounts for the

presence of different vowel qualities on the surface. Section 2 showed how the CVX syllable maximum forces vowel epenthesis and shortening in verb roots. Other than epenthesis and shortening, there are no changes to the surface shape of verb roots before most suffixes, i.e., suffixes that do not condition specific root templates.

In Chukchansi, there are four suffixes that condition a certain template to appear in one-vowel roots: the progressive /-ʔa-/, the adjunctive /-ʔhiy-/, the gerundive /-tʃ'-/, and the causative, which has the various forms /-la-/, /-e-/, and /-a-/, all of which can condition templates in roots. The progressive and causative are both non-final verbal suffixes; I show them with the final non-past /-n'/ and remote past /-taʔ/ suffixes, respectively. The adjunctive and gerundive are both nominalizing suffixes, so noun cases attach to them. I show the adjunctive in the nominative case, which causes glottalization of the final /y/, and the gerundive in either the nominative or accusative, whichever form surfaces without shortening of the root template vowel (predictable from syllable structure and epenthesis, as shown in Section 2). These suffixes condition different templates depending on where the root has two or three consonants; two-consonant LH roots moreover act differently from two-consonant L and H roots. Also, these suffixes do not condition template changes on any of the HL roots I have found; these roots always surface with HL template. I look at each of three groups of one-vowel roots (2C L and H; 2C LH; and, 3C) in turn.

3.1.1. Two-Consonant L and H Roots. The progressive and adjunctive suffixes condition an LL template in the two-consonant L and H roots they attach to, such as /xat/ "eat," /tʃiʃ/ "cut," and /se:p/ "tear (intr.)," and /ma:x/ "collect", as in (9-12) below. The second syllable always has the vowel [a]; I argue in Section 4 that this vowel is part of the templatic root, not the suffix.

9) xata-ʔa-n' (LL template)
eat-progressive-non past
"he is eating"

10) sipa-ʔa-n' (LL)
tear-progressive-non past
"it is tearing (intr.)"

11) tʃiʃa-ʔhiy-' (LL)
cut-adjunctive-nominative
"the cutting place"

12) maxa-ʔhiy-' (LL)
collect-adjunctive-nominative
"the collecting place"

The gerundive and causative suffixes condition an LH template in the two-consonant L and H roots they attach to, as in (13-16). Like with the LL template, the second syllable vowel is always low, i.e. [a:]. However, the causative suffix, which is always /-la-/ with these roots, does not always condition a template on the root, as with the root /xat/ (17). Sometimes, the LH template conditioned by the causative suffix ends in a glottal stop, as with the root /waʃ/ "tell a story" (18). The distribution of different root forms (suffix-conditioned vs. root-conditioned template, LH template with long vowel vs. glottal stop) with the causative is random, as far as I can tell.

13) xata:-tʃ'-i (LH template)
eat-gerundive-accusative
"one who eats (acc.)"

14) sipa:-tʃ'-i (LH)
tear-gerundive-accusative
"one that tears (intr.) (acc.)"

15) tʃiʃa:-la-taʔ (LH)
cut-causative-remote past
"she made him cut"

16) maxa:-la-taʔ (LH)
collect-causative-remote past
"she made him collect"

17) xat-la-taʔ (L – Default root template)
eat-causative-remote past
"she made him eat"

18) waʃaʔ-la-taʔ (LH with ʔ)
tell a story-causative-remote past
"she made him tell a story"

3.1.2. Two-consonant LH Roots. Two consonant LH roots such as /pana:/ "arrive" and /xaya:/ "put down" have different forms with different suffixes. The adjunctive and gerundive suffixes do not cause any templatic changes on these roots (19-20); since the root has a default LH suffix, it is unclear whether the suffix conditions the same LH template on the root or conditions no template at all. The long root-final vowel predictably shortens before the adjunctive /-ʔhiy-/, due to the CVX syllable maximum. The progressive suffix also occurs with an LH template in these roots; however, the second syllable ends in a [y] (21). The causative form conditions an H template on the root, so that the second, long vowel disappears (22). This is the only verb form I have found in Chukchansi where the root is shorter with a template-conditioning suffix than in its regular form.

19) pana-ʔhiy-' (LH)
arrive-adjunctive-nominative
"the arrival place"

20) xaya:-ʧ'-i (LH)
put down-gerundive-accusative
"one who puts down (acc.)"

21) panay-ʔa-n' (LH)
arrive-progressive-non past
"he is arriving"

22) xay-la-taʔ (H)
put down-causative-remote past

"she made him put down"

3.1.3. Three-consonant Roots. Three-consonant one-vowel roots, such as /ʃawk/ "buy," /tʃ'ibn/ "get skinny," /diʔʃ/ "make" (L template), /ha:tm/ "sing," /be:wn/ "sew" (H template), /hewe:t/ "walk," and /bala:ʃ/ "crawl" (LH template), act similarly before all four of these template-conditioning suffixes. These suffixes condition an LH template on the three-consonant roots they attach to, as in (23-28); the appearance of a long or short root vowel in the heavy syllable is predictable from the account in Section 2. The adjunctive /-ʔhiy-/ appears as [-hiy-] because the third root consonant fills the coda position; Hansson (2005) explains the disappearance of this consonant as a ranking of Dep-V over Max-C for templatic suffixes. Notice that L roots with the high vowel /i/, like /tʃ'ibn/ and /diʔʃ/, surface with mid vowels [e] when they have the LH template, as in (23) [deʔeʃ-ʔa-n'] and (31) [tʃ'ebe:n-a-taʔ].

23) deʔeʃ-ʔa-n' (LH template)
make-progressive-non past
"he is making"

24) bewen-ʔa-n' (LH)
sew-progressive-non past
"he is sewing"

25) hatam-hiy-' (LH)
sing-adjunctive-nominative
"the singing place"

26) hewet-hiy-' (LH)
walk-adjunctive-nominative
"the walking place"

27) ʃawa:k-itʃ'-Ø (LH)
buy-gerundive-nominative
"one who buys (nom.)"

28) bala:ʃ-itʃ'-Ø (LH)
crawl-gerundive-nominative
"one who crawls (nom.)"

The causative suffix shows a split: the /-la-/ suffix does not condition a template on the three-consonant roots it attaches to (29), but the suffixes /-e-/ and /-a-/ condition an LH template on three-consonant roots (30-31). Like in (25) above, these causative suffixes sometimes condition an LH template that ends in a glottal stop (18). Again, this distribution of different root forms with the causative suffix is probably random; sometimes the same root forms the causative in multiple ways, like /ha:tm/ (33-34).

29) ʃawik-la-taʔ (L – Default root template)
buy-causative-remote past
"she made him buy"

30) bewe:n-e-taʔ (LH)
sew-causative-remote past
"she made him sew"

31) tʃ'ebe:n-a-taʔ (LH)
get skinny-causative-remote past
"she made him get skinny"

32) balaʔʃ-a-hil (LH with ʔ)
crawl-causative-middle past
"she made him crawl"

33) ha:tim-la-taʔ (H – Default root template)
sing-causative-remote past
"she made him sing"

34) hataʔm-e-t (LH with ʔ)
sing-causative-recent past
"she made him sing"

3.2. MULTI-VOWEL ROOTS. There is a long list of roots that do not fit the above patterns. These roots are usually two or three syllables and contain more than one vowel quality. They can have any shape, and can end in a vowel or consonant, e.g., /hu:ʃe/ "drive," /tʃ'edma/ "think," /ʔoyi:sa/ "be happy," /gewe:wa/ "lie down," /hayk'it/ "finish," and /lak'wun/ "get down from." The mixture of different vowel qualities may be evidence for Collord (1968)'s suggestion that these roots were once morphologically complex, but have become opaque and unanalyzable. In fact, there is a group of multi-vowel roots that do appear analyzable: inchoative deadjectival verbs ("get/become X") that have the pattern CVCe:Ca. While the C's and V are supplied by the adjective root, their shape is strongly reminiscent of the other Chukchansi suffixes above that demand a template in the root. Examples include [gaye:sa-] "get better" from /gays/ [gayis] "good," [hoʃe:wa-] "get cold" from /hoʃw/ "be cold," and [leme:k'a-] "get dark" from /limk'/ [limik'] "dark" (the second vowel in [gayis] and [limik'] is epenthetic). I analyze these verbs as having a suffix /-a-/ that imposes an LH template on the root and demands the last vowel be mid and front, i.e. [e:]: /gays-a-/ → [ga.ye:.s-a-].

Like HL roots, multi-vowel roots never change before the template-conditioning suffixes above. The adjunctive /-ʔhiy-/, causative /-la-/ and /-e-/, and gerundive /-tʃ'-/ never change the form of these roots. The progressive uses the suppletive form /-xo-/ that appears when it does not condition a template on the root. The forms below show multi-vowel roots with all these suffixes:

35) ʔoyi:sa-ʔhiy-'
be happy-adjunctive-nominative
"the happy place"

36) hu:ʃe-la-taʔ
drive-causative-remote past
"she made him drive"

37) lak'wun-e-taʔ
get down from-causative-remote past
"she made him get down from"

38) hayk'it-itʃ'-Ø
finish-gerundive-nominative
"one who finishes"

39) tʃ'edma-xo-n'
think-progressive-non past
"he is thinking"

There is one exception to multi-vowel roots not being changed by suffixes: in the gerundive forms for /hu:ʃe/ "drive" and /ʔohyo/ "search," the last vowel of the root is long:

40) ʔohyo:-tʃ'-i
search-gerundive-accusative
"one who searches (acc.)"

3.3. TEMPLATE INVENTORY. I now turn to look at the template inventory. From the data section, the inventory for default, root-chosen templates is L, H, LH, and HL, while the inventory for suffix-conditioning templates is H, LL, and LH. Following Russell (1999), I dispense with the L template, since the form of L roots is predictable without a template. Moreover, unlike other one-vowel roots that appear with the template on the surface before all non-template-conditioning suffixes, L roots can have heavy first syllables, as with the verbs [tʃiʃ.-taʔ] from /tʃiʃ/ "cut" (41) and [ʃaw.k-eʔ] from /ʃawk/ "buy" (42, copied from 1).

41) tʃiʃ-taʔ
cut-remote past
"he cut (a long time ago)"

42) ʃawk-eʔ
buy non past
"he will buy/buys"

This does not make sense if an L template is demanded of these roots by an alignment constraint, but is predictable if there is no L template and these roots syllabify like other Chukchansi words.

The data section also shows an important difference between Chukchansi and the related Yawelmani Yokuts dialect. Archangeli (1983) and subsequent analyses of Yawelmani have used the same prosodic templates for roots as for suffixes, but the LL suffix-conditioned template posited here does not occur in Chukchansi roots as a default template. It can be argued that in a language, both suffixes and roots should draw from the same inventory of templates. However, while I posit an HL default root template, there are no suffixes that condition HL templates in the roots. Chukchansi also has many H roots (about ten percent of all verb roots elicited), but the lone suffix-conditioned H template is the causative form of two-consonant LH roots such as /xaya:/ "put down," e.g., [xay-la-taʔ] in (43).

43) xay-la-taʔ
put down-causative-remote past
"she made him put down"

Such two-consonant LH roots are exceedingly rare in the Chukchansi speech of my consultants: out of over 250 verb roots that have been elicited by fellow researchers and me, only four two-consonant LH roots have been found, less than two percent of the total. I think they constitute a closed set of lexical exceptions with a special morphology, so that the H template (and the progressive [xayay-ʔa-n'] with the mysterious [y]) is not a regular or active part of Chukchansi grammar. Thus the inventory of suffix-conditioned templates in Chukchansi is LL and LH, while the inventory of default root templates is H, LH and HL.

4. A-ABLAUT. In this section I turn from the prosodic structure of verb roots to look at the segmental changes that occur in them. One such changes in Chukchansi is [a]-ablaut, where the second vowel of a two-consonant root with a suffix template becomes [a(:)]. I argue that this [a(:)] is part of the verb root, not the suffix. I then propose a novel analysis, that all template-conditioning suffixes in Chukchansi impose disyllabic templates on one-vowel roots, along with certain of the different segmental changes above. This analysis unites the behavior of all such suffixes before both two- and three-

consonant roots; however, it needs more data and more argument to decide firmly whether this is indeed the best account of root templates in Chukchansi.

I present verb forms that show the effects of [a(:)]-ablaut of the second syllable of roots. [a(:)]-ablaut occurs when two-consonant roots receive suffix-conditioned templates, e.g., the progressive form of /t'ul/ "burn" (44) and the gerundive form of /ʧiʃ/ "cut" (45):

44) t'ula-ʔa-n'
burn-progressive-non past
"he is burning (tr.)"

45) ʧiʃa:-ʧ'-i
cut-gerundive-accusative
"one who cuts (acc.)"

These forms are similar to the L and H two-consonant roots from Section 3 with [a(:)] in the second syllable. I repeat (10-11) and (14-15) below as (46-49):

46) sipa-ʔa-n' (LL)
tear-progressive-non past
"it is tearing (intr.)"

47) ʧiʃa-ʔhiy-' (LL)
cut-adjunctive-nominative
"the cutting place"

48) sipa:-ʧ'-i (LH)
tear-gerundive-accusative
"one that tears (intr.) (acc.)"

49) ʧiʃa:-la-taʔ (LH)
cut-causative-remote past
"she made him cut"

I now investigate the segmental change of a(:)-ablaut that occurs when LL and LH templates are conditioned on two-consonant roots (that are not LH by default). I argue that contrary to some analyses (such as Collord 1968), the [a(:)] must be part of the template root, not the suffix. This leads me to examine how these roots differ from three-consonant roots that receive suffix-conditioned templates. I argue that other than segmental changes, there is no difference between the two types of roots when they receive these templates. I go on to suggest that the four template-conditioning suffixes in Chukchansi may be imposing the same templates on these roots, too.

When two-consonant roots (that are not LH) receive suffix-conditioned templates, an [a]-vowel appears before the suffix. For instance the root /ʧiʃ/ has the adjunctive form [ʧiʃa-ʔhiy-'] (47) and the causative form [ʧiʃa:-la-taʔ] (from 49), while the root /se:p/ has the progressive form [sipa-ʔa-n'] (from 46) and the gerundive form [sipa:-ʧ'-i] (from 48). I assumed before that this [a]-vowel is part of the root with the suffix-conditioned template, rather than part of the suffix; I now argue that my assumption is correct. Note that the [a(:)] is not a special case of low-vowel epenthesis, since *[sip-ʔa-n'] and *[ʧiʃ-la-taʔ] fit the CVX syllable maximum. As in the case of epenthesis vs. syncope, there are two alternate analyses possible: either the template-conditioning suffixes that attach to two-consonant L and H roots begin with /a(:)/, or when these roots receive an LL or LH template, their second vowels must become low.

If the [a(:)] is part of the suffix, it must impose an L template on the root, or in the Russell (1999) analysis, select the no-template grade: e.g., /se:p/ would become [sip-], as in [sip-aʔa-n'] and [sip-a:la-taʔ], and /ma:x/ "collect" would become [max-], as in [max-aʔa-n'] and [max-a:la-taʔ]. The forms of the suffix allomorphs would be [-aʔa-] (progressive), [-aʔhiy-] (adjunctive), [-a(:)ʧ'] (gerundive), and [-a:la-] (causative). Compare these with the allomorphs of the same suffixes for three-consonant roots: [-ʔa-], [-hiy-], [-(i)ʧ'], and [-la-]. The main difference is that in the former set an [a(:)] occurs at the beginning of each suffix, while the rest of the suffix is identical to the forms in the latter set (the [ʔ] of the adjunctive suffix cannot be syllabified with three-consonant roots, and is deleted, while the [i] of the gerundive suffix is epenthetic). There would appear to be a massive coincidence that all the template-conditioning suffixes begin with an extra /a/-vowel when they attach to two-consonant roots, and no good explanation is at hand.

If the [a(:)] is part of the root with the suffix-conditioned template, two important parallels emerge. First, all the suffixes now have the same underlying forms for two- and three-consonantal roots, as in the progressive forms repeated from (10) and (23) above, as (50) and (51), and the gerundive forms repeated from (14) and (27) above, as (52) and (53), respectively:

50) sipa-ʔa-n' (not [sip-aʔa-n'])
tear-progressive-non past
"it is tearing (intr.)"

51) deʔeʃ-ʔa-n'
make-progressive-non past
"he is making"

52) sipa:-tʃ'-i (not [sip-a:tʃ'-i])
tear-gerundive-accusative
"one that tears (intr.) (acc.)"

53) ʃawa:k-itʃ'-Ø
buy-gerundive-nominative
"one who buys (nom.)"

This takes care of the odd coincidence that template-conditioning suffixes all begin with an extra /a(:)/ after two-consonant roots. In its place is the stipulation that the second syllable of such a root with a suffix-conditioned template must have a low vowel. Though this may seem just as arbitrary, segmental changes in roots associated with templates occur elsewhere in Chukchansi. Such changes includes the high vowel lowering of three-consonant L roots with the LH template (see 23-26, 30-31 above), the glottal stop codas in the roots of some causative forms with the LH template (see 32 and 34 above), and the multi-vowel roots that are composed of the suffix /-a-/ and a root with an LH template and an [e:] vowel, e.g. /gays/ "good" → [ga.ye:.s-a-] "get better."

Second, the gerundive /-tʃ'-/ and causative /-la-/, /-e-/, /-a-/ suffixes now condition the same LH templates on both two- and three-consonant roots (52 and 53). Thus these

suffixes have a single form and template selection for all one-vowel roots, instead of having a split between two- and three-consonant roots. The progressive /-ʔa-/ and adjunctive /-hiy-/ suffixes condition LL templates on two-consonant roots (50) and LH templates on three-consonant roots (51). However, I argue that this split is only apparent. Both root shapes are accounted for by having a disyllabic [σσ] template, with no specification for syllable weight. Two-consonant roots will surface as LL since both consonants are onsets ([si.pa.-ʔa-n'] in 50), while three-consonant roots will appear as LH with the third root in the coda ([de.ʔeʃ.-ʔa-n'] in 51).

This analysis can be extended to the gerundive and causative suffixes, which attach to roots that have an LH template. If this template is simply disyllabic, these suffixes would also have to demand that the root have a heavy second syllable, either through a long vowel ([si.pa:-ʧ'-i] in 52) or a coda ([ʃa.wak.ʧ'-i] "one who buys (acc.)," the accusative counterpart to [ʃa.wa:.k-itʃ'] in 53). There is separate evidence for such a demand by the gerundive suffix: some multi-vowel roots have a lengthened final vowel in the gerundive form, such as /hu:ʃe/ "drive" (54) and /ʔohyo/ "search" (55, repeated from 40).

54) hu:ʃe:-ʧ'-i
drive-gerundive-accusative
"one who drives (acc.)"

55) ʔohyo:-ʧ'-i
search-gerundive-accusative
"one who searches (acc.)"

Of course, I need to find more data like (54) and (55) to support this analysis, and argue out all that this analysis entails, integrating it with the picture of root templates in general. For now this remains a very interesting alternative analysis that unites all template-conditioning suffixing in Chukchansi.

5. CONCLUSION. I have presented a lot of new data on Chukchansi verbs, and explored how best to account for the morphophonology of the verbs presented. The first phenomenon I investigated in this thesis was the distribution of high vowels with zero in different surface forms of verbs with the same roots and suffixes. I argued that this

distribution is due to epenthesis, not syncope, of the high vowels. I then explored the position of prosodic templates in Chukchansi. Like in other Yokuts languages studied, both roots and suffixes can condition these templates. Unlike in some descriptions of other Yokuts languages, the inventory for root-conditioned templates is different from the inventory for suffix-conditioned templates. I argued that the former inventory comprises H, LH, and HL templates and the latter LL and LH templates. I finally examined the segmental change of a-ablaut in two-consonant roots that accompany templates. I argued that when template-conditioning suffixes attach to two-consonant roots, the [a] vowel that appears between them belongs to the root, not the suffix. This led me to suggest that these suffixes condition the same disyllabic template on both two- and three-consonant verbs, rather than different LL and LH templates.

There are several avenues for future research in the morphology and phonology of Chukchansi verbs. I proposed that all template-conditioning suffixes in Chukchansi condition a disyllabic template, and some further demand that the second root syllable be long, resulting in an LH root. More data need to be elicited to see if there are other suffixes that make this demand. I suggested that two-consonant LH roots are a closed class that is not morphologically productive in Chukchansi. If a significant number of such roots are elicited, this suggestion is definitely wrong. The phenomenon of segmental changes in verb roots, such as the a-ablaut explored above, is another ripe avenue for Chukchansi research. There are several suffixes that require more elicitation: the distributive and inchoative suffixes, which demand [e]-ablaut, and the causative, which sometimes causes glottal stop infixation. It also needs to be seen if other suffixes cause segmental changes, and if these changes occur in any situation other than with root templates. Lastly, I want to know if the template inventory of Chukchansi has been completely examined, or if there are other root- or suffix-conditioned templates.

Notes

1 A handful of words with syllables exceeding the CVX maximum have been elicited: [ʃi:ʃwi.lit] “was embarrassed” (CVVC [ʃi:ʃ] or CCV [ʃwi]), [maal.deʔ] “sticks tongue out” (CVVC [maal]), [lee.li.layʧ'] “teacher” (CVCC [layʧ']), [k'a.maa.newʃtaʔ] “dried himself a while ago” (CVCC [newʃ] or CCVC [ʃtaʔ]). Note that all the examples involve the glides or liquids [w y l].

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