Agent Hierarchy and Segmental Erosion: Allomorphy of dependent pronouns in Sà'án Savǐ ñà Yukúnanǐ[1,2]

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Abstract

Highly frequent bound pronouns are very likely to undergo segmental erosion (Heine & Song 2011). These processes may, in turn, lead to the emergence of inflectional tone in tonal languages. To illustrate these processes, this paper analyzes allomorphy in dependent pronouns in Sà'án Sàvǐ ñà Yukúnanǐ. Among Mixtec languages, Sà'án Sàvǐ ñà Yukúnanǐ presents a particularly complex pronominal system: it distinguishes different degrees of formality, shows considerable allomorphy, and presents distinct sets of subject and object enclitics. This paper focuses on the grammaticalization processes of personal pronouns in Sà'án Sàvǐ ñà Yukúnanǐ, the extent to which they undergo segmental erosion and the use of tone as a person marking strategy. We note how the distribution of segmental erosion among personal pronouns in Sà'án Sàvǐ ñà Yukúnanǐ mirrors Silverstein's (1976) agent hierarchy.

Keywords: subjecthood; allomorphy; agentivity; segmental erosion; tonal inflection; person marking; Mixtec; Otomanguean

1 Introduction

Pronominal paradigms often present instances of allomorphy that can be explained by differences in the degrees of grammaticalization of different pronouns. These processes of grammaticalization, understood as the shift from less grammatical to a more grammatical status (Kuryłowicz 1965), can be motivated by frequency in discourse (Bybee 1985). This can also result into processes of segmental erosion, which are commonly attested for dependent pronouns (Heine & Song 2011). In some tonal languages, these processes can lead to the maintenance of the tone even when no segment remains. These "leftover" tones may modify the tonal melody of the stem to which they attach. When this occurs, person is only encoded via inflectional tone. Inflectional tone can be defined as changes in pitch contour that mark meaningful inflectional or derivational processes (see, for instance, Hyman 2016).

In Sà'án Sàvǐ ñà Yukúnanǐ, the extent to which different pronouns undergo segmental erosion mirrors Silverstein's agent hierarchy (1976). Among Mixtec languages, Sà'án Sàvǐ ñà Yukúnanǐ presents a particularly complex pronominal system: it distinguishes different degrees of formality, shows considerable allomorphy, and presents somewhat distinct sets of subject and object enclitics (see Table 1). This paper analyzes the allomorphy resulting from segmental erosion processes in Sà'án Sàvǐ ñà Yukúnanǐ (Mixtec), spoken by approximately 87 speakers (INEGI 2010) in the village of Yucunani in the municipality of San Juan Mixtepec, in Oaxaca, Mexico. The Mixtec variety spoken in Yucunani is classified as part of Mixtepec Mixtec (ISO639-3: mix), a Mixtec language belonging to the Mixtecan branch of the Amuzgo-Mixtecan, Eastern Otomanguean languages (INALI 2008; Campbell 2017).

This article is organized as follows. First, some information on the dependent pronouns of Sà'án Sàvǐ ñà Yukúnanǐ is provided in section 2. Each case of allomorphy is described in depth in section 3, with attention to both subject and object pronouns and the processes of grammaticalization that led to the different allomorphs. This section also provides some information on how segmental erosion caused by grammaticalization may be the origin of inflectional tone as a person marking strategy in Sà'án Sàvǐ ñà Yukúnanǐ. Finally, section 4 presents the conclusions of the paper. The data used in this paper comes from different first-hand materials such as narratives, elicitations, working sessions, and free translations[3].

2   Dependent pronouns in Sà'án Sàvǐ ñà Yukúnanǐ

Sà'án Sàvǐ ñà Yukúnanǐ presents a fairly complex pronominal system, with different degrees of formality, a pluralizer enclitic, and somewhat distinct sets of subject and object enclitics. The differences between these sets of enclitics, as well as the allomorphy present among some subject pronouns, is the main focus of this paper. Table 1 shows the surface realizations of the dependent pronouns in Sà'án Sàvǐ ñà Yukúnanǐ.

Subject pronouns present more elaborate patterns of allomorphy than the object pronouns. However, most of the third person pronouns do not present any allomorphy at all, with the exception of the generic, inanimate[4] and feminine pronouns. Formal distinctions between subject and object enclitics are not constant across the paradigms. These are distinguished for the first-person singular, for both non-formal and formal second persons, and for generic, inanimate and feminine third persons. In addition, the first and the third persons subject forms only differ from objects in their patterns of allomorphy, whereas the second persons differ more substantially in their forms.

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[3] These materials are available online at: https://sites.google.com/view/saansavi-yucunani
[4] Note how the third person generic and the third person inanimate are only distinguished in the plural forms.

		SUBJECT PRONOUNS		OBJECT PRONOUNS	
		SINGULAR	PLURAL	SINGULAR	PLURAL
1st	EXC	=yù / =L	=kuê	=yù	=kuê
	INCL	—	=(kue-)kó / =H	—	=kue-kó
2nd	NFORM	=kú / =H	=kue-yú	=yô	=kue-yú
	FORM	=ní	=kue-ní	=nǐ	=kue-ní
3rd	GNR	=ì / =à(n) / =ñà	=kue-ì	=ñà / =à(n)	=kue-ì
	INAN	=ì / =à(n) / =ñà	=ñà / =à(n)	=ñà / =à(n)	=ñà / =à(n)
	PL.HUM	—	=nà	—	=nà / =kue-nà
	CHILD	=tsi	=kue-tsi	=tsi	=kue-tsi
	M	=rà	=kue-rà	=rà	=kue-rà
	F	=í / =á(n) / =ñá	=kue-ñá	=ñá	=kue-ñá
	ZOO	=tí	=kue-tí	=tí	=kue-tí
	ROUND	=tí	=kue-tí	=tí	=kue-tí
	TRUNK	=tú	=kue-tú	=tú	=kue-tú
	LIQ	=rá	=kue-rá	=rá	=kue-rá
	DEITY	=yà	=kue-yà	=yà	=kue-yà

Table 1. Dependent pronouns in Sà'án Sàvǐ ñà Yukúnanǐ[5].

Another characteristic of pronominal system of the Sà'án Sàvǐ ñà Yukúnanǐ is the use of a pluralizer enclitic preceding the dependent pronoun. The use of this pluralizer, however, is not necessary to convey a plural meaning; rather it seems to be pragmatically motivated. As we can see in example 1, the perfective form of the verb *săvà'a* 'to prepare' is followed by the pluralizer *=kue*, the third-person generic *=ì* acting as the subject, and the pronoun for animals *=tí* acting as the object. However, the purposive form of the verb *katsí* 'to eat' appears with only a generic third person pronoun *=à*. This generic third person pronoun is, nonetheless, co-referential with the previous subject.

(1) *Săvà'a-**kue**-ì-tí katsí-à.*
     să-và'a=**kue**=ì=tí   katsí=à.
     PFV.CAUS-   PURP.eat=3GNR.S
     good=PLZ=3GNR.S=3ZOO.O

     'They prepared it (the animal) to eat.' [MYUC-1009, 01:45]

The second and third person pronouns indicate different degrees of formality. Speakers of Sà'án Sàvǐ ñà Yukúnanǐ use *=kú* for second persons in non-formal settings, and *=ní* in formal settings. In the third person, however, the distinction lies on specificity: the generic

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[5] The orthographic representation of tone in the practical orthography is as follows: <á> (high tone), <a> (mid tone), <à> (low tone), <ǎ> (rising tone), <â> (falling tone).

third person pronoun =*ñà* is used for all referents in non-formal settings, whereas a specific pronoun is required in formal situations (that is, for example, =*rà* when talking about a man or =*tí* when talking about an animal). It is worth noting here that this distinction in the third person is not exclusively one of formality, as speakers also use these resources to distinguish two third person referents. In example 2 there are two participants: a coyote and a hen. Both of these are third person referents, and they are both animals. In the perfective form of the verb *ntsà'ní* 'to kill' we can observe how the subject, the coyote, is encoded by the third-person generic =*à,* whereas the object, the hen, is encoded by the third person pronoun for animals =*tí*. The coyote is the main participant in the story and is therefore a continuing referent throughout and highly topicalized. The hen, on the other hand, is a circumstantial participant, and the speaker uses a different pronoun to distinguish the hen from the coyote. It is also possible that subject animal referents are more likely to be referred to with the third-person generic pronoun, as opposed to object animal referents.

(2) *Cha iinkàâ chùún-ka ra ntsà'ní-**à-tí**.*

cha	iinkàâ	chùún=ka	ra	ntsà'ní=**à=tí**.
and	another	hen=ANA	TOP	PFV.kill=3.GNR=3ZOO

'And the other hen, it (the coyote) killed it.' [MYUC-1009, 01:36]

3 Allomorphy in Sà'án Sàvǐ ñà Yukúnanǐ

The subject dependent pronouns in Sà'án Sàvǐ ñà Yukúnanǐ show some allomorphy, namely the first-person singular (=*yù* ~ =L), the first-person plural inclusive (=*kó* ~ =H), the second-person singular non-formal (=*kú* ~ =H), the third-person generic and inanimate (=*ñà* ~ =*à(n)* ~ =*ì*), and the third-person feminine (=*ñá* ~ =*á(n)* ~ =*í*). Except for the allomorphs =*à(n)*/=*á(n)* for both the third-person generic and feminine, which have resulted from a regular sound change (Eric W. Campbell, p.c.), the other allomorphs are the result of grammaticalization that underwent segmental erosion.

Segmental erosion (Heine & Song 2011; see also Gordon 2016: 157) refers to a lenition process that consists of the loss of one or more phonological segments. One of the possible causes of segmental erosion is a process of grammaticalization, which we argue is the case for the phenomenon described in this paper. As Hyman points out, tone has a greater independence and ability to wander than segments (2016: 16), which explains why segmental erosion in tonal languages could lead to increased tonal complexity. In fact, processes of segmental erosion may well be one of the many factors behind inflectional tonogenesis (see Vydrin 2016; Léonard & Fulcrand 2016; Feist & Palancar 2016). Dwyer (1976) suggests a similar explanation for the floating low tone marking definiteness in Bambara (Mande), whereby an affix consisting of a vowel and a low tone eroded until only the tone remained. Some clitics in Sà'án Sàvǐ ñà Yukúnanǐ have undergone such erosion. For instance, in (3) we can see that the first-person singular dependent pronoun =*yù* has lost its segments and is realized as a floating low tone across word classes.

(3) *Vichi kú ntàkan**ì** iin ñàà kuéntù ñàà ntsìntàkani mátsá'n**ù** n**ùû** tá lu**ù**.*

vichi	kúntàkani=**L**	iin	ñàà	kuéntù	ñàà	ntsìntàkani
today	PROSP.tell=1SG	one	DISC	story	REL.GNR	HAB.PFV.tell

mátsá'nu=**L**	nùú=**L**	tá	luu=**L**.
grandmother=1SG	OBL=1SG	when	small=1SG

'Today I am going to tell a story that my grandmother used to tell me when I was little.' [MYUC-1011, 00:37]

This process of segmental erosion is not exclusive to Sà'án Sàvǐ ñà Yukúnanǐ, as many instances can be found in other Mixtec varieties. Many third person pronouns in Mixtec languages are descended from a set of clitics that have been often referred to as classifiers in the literature (see de León 1988; Small 1990; De Hollenbach 1995; Macaulay 1996; Ventayol-Boada 2020). These classifiers, in turn, originate from binomial constructions in which the first noun underwent segmental erosion. For some of them, the full form of the noun can still be easily recovered, such as the Sà'án Sàvǐ ñà Yukúnanǐ word *ñà'a* 'thing' for the third-person generic *ñà*, and *kitǐ* 'animal' for the third person for animals *tí*.

Similarly, we can find segmental erosion between the free and the dependent forms of person pronouns in other Mixtec varieties. For example, the first person plural inclusive *yéé* and its dependent form *=é* in San Martín Peras Mixtec (Mendoza 2020: 13-16), or the first-person singular *jú'ǔ* and its dependent form *=í* in Ixtayutla Mixtec (Penner 2019: 75). Finally, Yoloxóchitl Mixtec (Castillo García 2007: 139) and Sà'án Sàvǐ ñà Yukúnanǐ are two varieties that present cases in which only the tone of the pronoun remains. In both cases, the first-person singular dependent pronoun *=ju¹/=yù* is realized as a floating low tone (*=²/=**L***) in certain environments. These dependent forms can be traced back to the Proto-Mixtec **yu'u* (Josserand 1983), which seems to have fallen out of use in Sà'án Sàvǐ ñà Yukúnanǐ[6].

In fact, these processes in Sà'án Sàvǐ ñà Yukúnanǐ have grammaticalized mirroring the hierarchy proposed by Silverstein (1976) discussing the likelihood of different persons to become agents in ergative systems. Among other things, Silverstein (1976) explains that, in general, singular first persons tend to be more agent-like than singular second persons, which are more agent-like than plural first persons, and the latter tend to be more agent-like than third persons. This hierarchy is shown in Figure 1. In addition, according to Chafe (1994) first persons also tend to be more topical than second persons, and these tend to be more topical than third persons.

1s>2s>1pl>3
Figure 1. Agent hierarchy (adapted from Silverstein 1976).

3.1 First-person singular and first-person plural exclusive

In Sà'án Sàvǐ ñà Yukúnanǐ, the first-person singular can be realized as *=yù* when the stem to which this element is attached already ends with a Low tone. The Low tone first-person

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[6] Note that in these notations, both <j> and <y> represent the semi-vowel /j/.

singular can sometimes be realized as a Falling tone instead, depending on the tonal melody of the phrase. A stem ending with a Rising, or High tone, for example, will result in a Falling tone first-person marker. For stems ending with a Mid tone, the tonal melody of the whole stem seems to affect the realization of the first person (Belmar et al. 2020).

In contexts where the stem to which it is attached does not end with a Low tone, the first-person singular is realized as a floating Low tone affecting the last tone of the modified element. On the other hand, the first-person plural exclusive is always realized as the pluralizer clitic *kue* plus the floating Low tone, indicating the first-person singular. Thus, the first-person plural exclusive form is realized as *kuê* (this element is sometimes phonetically realized as [wê]).

Example (4) shows the two allomorphs of the first-person singular marker. The imperfective form of the verb *inkáà-yù* 'to have' ends with a Low tone, so the enclitic *=yù* is added. The same happens with the habitual perfective form of the verb *ntsìtsà'àn-yù* 'to go'. However the habitual perfective form of the verb *ntsìsáchuun* 'to work' ends with a Mid tone, so the floating Low tone is used instead.

(4) *Àhǎ tísaán kuàâ doce á trece kuìà ínkáà-**yù** tá ntsìtsà'àn-**yù** ntsìsáchu**ù**n.*

Àhǎ	tísaán	kuàâ	doce	á	trece	kuìà	ínkáà=**yù**
yes	maybe	approximately	twelve	or	thirteen	year	IPFV.have=1SG

tá	ntsìtsà'àn=**yù**	ntsìsáchuun=**ᴸ**.
when	HAB.PFV.go=1SG	HAB.PFV.work=1SG

'Yes, I was about twelve or thirteen when I used to go to work.' [MYUC-1028, 01:14]

Example (5) shows instances of the first-person plural exclusive pronoun. The perfective form of the verb *ntsà'àn-kuê* 'to go' is modified by the pluralizer particle *=kue* and a floating Low tone. The same occurs with the perfective form of the intransitive verb *ntsìtsá'an-kuê* 'to eat something.' In contrast, the verb *ntsìtsá'àn* 'to eat' and the alternative form *ntsàtsî* 'to eat' are modified by a floating Low tone, which encodes first-person singular.

(5) *Sáná ntsà'àn-**kuê** ntsìtsá'an-**kuê** ra ñàà, nùú xina ñú'u ntsìtsá'**àn** kúu ñàà, McDonald's-ka ra ñàà, ntsàts**î** iin hamburguesa.*

sáná	ntsà'àn=**kuê**	ntsìtsá'an=**kuê**	ra	ñàà	nùú	xina
then	PFV.go=1PL.EXCL	PFV.eat=1PL.EXCL	TOP	DISC	where	first

ñú'u	ntsìtsá'an=**ᴸ**	kúu	ñàà	McDonald's=ka	ra	ñàà
time	PFV.eat=1SG	COP	DISC	McDonald's=ANA	TOP	DISC

ntsàtsí=**ᴸ**	iin	hamburguesa.
PFV.eat=1SG	one	hamburger.

'After that, we went to eat, and where I ate for the first time was at McDonald's, I ate a burger.' [MYUC-1008, 02:06]

Importantly, this alternation is only observed when the pronoun refers to a subject referent. When the first person appears as an object instead, the full form *=yù* is used regardless of the phonological context. In example (6), the potential form of the verb *chinta'î-yù* 'to send' includes a first-person clitic *=yù*, encoding an object. In this context the form *=yù* would be expected by the phonological environment, as the stem to which the person marker is attached already ends with a Low tone.

(6) *Cha nìkǎchì-**yù** tsi-nà ñàà (…) cha a kúu chinta'î-**yù** sáchuùn tiéndà.*

cha	nìkǎchì=**yù**	tsi=nà	ñàà	(…)	cha	a	kúu
and	PFV.say=1SG.S	COM=3PL.HUM	COMP	(…)	and	Q	POT.be

chinta'á=ì=**yù**	sáchuun=**L**	tiéndà.
POT.send=3GNR.S=1SG.O	IPFV.work=1SG.S	store.

'And I told them (…) if they could send me to work at the store.' [MYUC-1028, 06:57]

In example (7) the floating Low tone allomorph would be expected judging by the phonological context, as the stem to which the person marker is attached ends with a High tone. However, in the form *tukú-yù* 'again' we find the full form *=yù*, which would not occur if the referent was a subject.

(7) *¡Ntànè'ě tukú-**yù**!*

ntànè'ě	tuku=**H**=**yù**
PFV.find	again=2SG.NFORM.S=1SG.O

'You found me again!' [MYUC-1034, page 22]

Nonetheless, in example (8) we can observe how the combination of the pluralizer *kue* with the first-person singular marker, which is used to express the first-person plural exclusive in Sà'án Sàvǐ ñà Yukúnanǐ, is still realized as *=kuê* as an object. This may be because the form *=kuê* has become conventionalized as the first-person plural exclusive.

(8) *A ná'a-kue-yú tá ntsìsǎ' ganâr-kue-yú-**kuê**?*

a	ná'a=kue=yú	tá
Q	IPFV.remember=PLZ=2SG.NFORM.S	when

ntsìsǎ'-ganâr=kue=yú=**kuê**?
HAB.PFV.do-win=PLZ=2SG.NFORM.S=1PL.EXCL.O

'Do you remember when you used to beat us (at something)?' [Elicitation]

Another question that may arise is why the first-person singular presents any allomorphy when encoding subjects. If this were frequent enough, one would expect it to undergo segmental erosion in all contexts and, in consequence, become just a floating Low tone. One possibility is that the first-person singular form never underwent segmental erosion when preceded by a Low or a Falling tone (see Paster 2010 on homophony

avoidance in Sà'án Sàvǐ ñà Yukúnanǐ). On the other hand, it is also possible that the first-person singular pronoun underwent segmental erosion in all contexts, in which case unmarked stems ending in a Low or Falling tone would be homophonous with those marked for the first-person singular. In fact, Paster (2010) notes how the neighboring San Juan Mixtepec Mixtec presents allomorphy between =*yù* and a floating Low tone, where the latter occurs with all words in informal contexts, regardless of the last tone of the stem. We hypothesize that Sà'án Sàvǐ ñà Yukúnanǐ regularized the floating Low tone after the pronoun **yù'ù* had cliticized to =*yù* and then eroded to just a floating Low tone =^{L}. However, speakers started using the full pronoun **yù'ù* after those words which were homophonous with their uninflected forms, which then cliticized into =*yù* again (Belmar et al. 2020).

In fact, this strategy of adding some non-cliticized pronoun is still used in the language, for instance when speakers need to indicate contrast. In example (9) the possessors are encoded through the use of the topicalizer *meé*, rather than directly modifying the noun *ve'e* 'house'.

(9) *Ká'nu-kà ve'e meê suú saán ve'e meú.*

ká'nu=kà	ve'e	meé=^{L}	suúsaán	ve'e	meé=kú.
big=more	house	TOP=1SG	more.or.less	house	TOP=2SG.NFORM

'My house is bigger than your house.' [Offered]

3.2 Second-person singular non-formal

The second-person singular non-formal pronoun can be realized by the enclitic =*kú*, with a High tone. This is often phonetically realized as [ɣú] or without any consonant but with changing the last vowel of the element to which it attaches. Depending on the tonal melody of the stem, it may be realized as a Rising tone instead of a High tone. If the last vowel of the root to which this enclitic is attached is /u/, then it is realized as a floating High tone which interacts with the last tone of the modified stem.

(10) *Và'a nchuà'a vídà yéǔ rì meú ra kuě tsíní-ñú'ú sáchúún táná sáchuùn ra ñàà né'ǔ ñàà katsǔ káchà.*

và'a	nchuà'a	vídà	yéè=**kú**		rì	meé=**kú**
good	very	life	IPFV.exist=2SG.NFORM		because	TOP=2SG.NFORM

ra	kuě	tsíníñú'u=^{H}		sáchuun=^{H}		táná
TOP	NEG	PFV.have.to=2SG.NFORM		IPFV.work=2SG.NFORM		like

sáchuun=^{L}		ra	ñàà	né'ě=**kú**		ñàà
IPFV.work=1SG		TOP	DISC	IPFV.get=2SG.NFORM		REL.GNR

katsí=**kú**		káchì=à.
PURP.eat=2SG.NFORM		IPFV.say=3GNR

'You have a very good life because you don't have to work like I work to get things to eat, he says.' [MYUC-1006, 01:05]

Example (10) shows some instances with the imperfective form of the verb *yéŭ* 'to exist' in which this enclitic replaces the vowel and changes the tone of the last vowel of the verb (from *yéè+kú* to the surface form *yéŭ*). It also occurs with the imperfective forms of the verb *tsíní-ñú'ú* 'to need' and the verb *sáchúún* 'to work,' both of which have /u/ as their final vowel. Therefore, the floating High tone is attached to the last element of the stem. This example also shows two different persons of the imperfective form of the verb *sachuun* 'to work,' the first-person singular (*sáchuùn*) and the second-person singular non-formal (*sáchúún*). Notice that the two share the same segments, but the former ends with a Low tone and the latter with a High tone, clearly showing the person distinction.

This presents a lesser stage of segmental erosion than that of the first-person singular. Interestingly, the second-person singular non-formal is the only person to present a completely different clitic for object referents (see Table 1), namely the form *=yô*. However, it is still important to highlight the fact that this clitic does not present any alternative realizations, which mirrors the behavior of the first-person singular object clitic *=yù*.

(11) *Kuè'è coronavirus mà ntăya'ì-**yô** ratù ná katsí tìkuaín **yô**.*

kuè'è	coronavirus	mà	ntăya'a=ì=**yô**
illness	coronavirus	NEG.IRR	NEG.POT.transmit=3GNR.S=2SG.NFORM

ratù	ná	katsí	tìkuaín=**yô**.
if	IRR	POT.eat	mosquito=2SG.NFORM.O

'The coronavirus illness cannot be transmitted to you if a mosquito bites you.' [MYUC-1033, 8]

In example (11) we can see that the realization of the second-person singular non-formal as an object is consistently *=yô*, regardless of whether the subject appears as a lexical NP, as in *katsí tìkuaín yô* 'the mosquito bites you', or a pronoun, as is the case in the verb form *ntăya'ì-yô* 'transmit (to you)'. In example (12), the subject of the verb *kátsŭ* 'eat' is marked by replacing the last vowel of the stem and modifying the tone pattern. The object of the verb *kĭ'in* 'grab', however, appears attached to the lexical NP functioning as the subject, and is encoded by the clitic *=yô*.

(12) *Vásù ná kats**ŭ** ájù cha mà chĭnchiî ñàà mà kĭ'in coronavirus **yô**.*

vásù	ná	katsí=**kú**	ájù	cha	mà
even.if	IRR	POT.eat=2SG.NFORM.S	garlic	and	NEG.IRR

chĭncheé=ì	ñàà	mà	kĭ'in
NEG.POT.help=3GNR.S	COMP	NEG.IRR	NEG.POT.grab

coronavirus=**yô**.
coronavirus=2SG.NFORM.O

'Even if you ate garlic, that would not help you not get coronavirus.' [MYUC-1033, 13]

3.3 First-person plural inclusive

The first-person plural inclusive in Sà'án Sàvǐ ñà Yukúnanǐ works similar to the second-person singular non-formal described above. The first-person plural inclusive enclitic =*kó* (sometimes phonetically realized as [ɣó]) can also be realized changing the last vowel of the stem to which it attaches, especially when it is the vowel /u/. In fast speech, the first person inclusive can also be realized as a floating High tone, but this does not seem to be regular.

Example (13) shows instances of the first-person plural inclusive. Here it modifies the prospective form of the verb *kú să'a* 'to do,' and it surfaces as a High tone (*kú să'á*). Moreover, it is also present on the prospective form of the verb *kú nkò'ŏn* 'to go.' In this case, it not only modifies the tone of the last segment of the stem to which it is attached but also changes the quality of the vowel. The underlying form *kú nkù'ùn* then surfaces as *kú   nkò'ŏn*.

(13) *Sua'a sua'a-ni kú să'á sua'à… sua'à kú nkòo nùú kú nkò'ŏn ra ñàà.*

sua'a-sua'a=ni	kúsă'a=ᴴ		sua'à	sua'à	kúnkòo	nùú
this-RDPL=EMPH	PROSP.do=1PL.INCL		thus	thus	PROSP.COP	where

kúnkù'ùn=**kó**	ra	ñàà.
PROSP.go=1PL.INCL	TOP	DISC

'We are kind of going to do this… then this is kind of where we are going to go.' [MYUC-1008, 01:17]

While the context for the floating High tone is clearly defined for the second-person singular non-formal, appearing only in cases where the modified element ends in an /u/ vowel, this realization of the first-person plural inclusive appears mostly in fast speech. In example (14) there are two instances of first-person plural inclusive pronouns as subjects: the verb form *ká'ăn* 'speak', where it appears as a floating High tone that modifies the underlying low tone of *ká'àn* and surfaces as a Rising tone; and the verb form *vàtsŏ* 'come', in which it changes the last vowel segment of the stem and modifies the tone. The two different realizations cannot be explained by the phonological environment and may be due to speech rate or semantic specificities[7].

(14) *Kutù'va-nà ñàà ká'ăn Sà'án Sàvǐ cha vàtsŏ Ñuù Sàvǐ tsi-nà.*

kutù'va=nà	ñàà	ká'àn=ᴴ	Sà'án-Sàvǐ	cha
IPFV.learn=3PL.HUM	COMP	IPFV.speak=1PL.INCL	Mixtec	and

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[7] Apart from fast speech, this realization seems to appear with certain words more than others. Perhaps the difference between nouns such as *tá'án* 'our relatives' and *sà'án-kó* 'our language' lies in an opposition of alienable vs. inalienable possession, but the nature of this distribution has not yet been systematically studied.

vàtsi=**kó**	Ñuù-Savǐ	tsi=nà.
PRG.IPFV.come=1PL.INCL	Mixtec.Nation	COM=3PL.HUM

'They (the Mixtec people) are learning that we speak Mixtec and we come from the Mixtec Nation together.' [MYUC-1034; 00:09]

The first-person plural inclusive presents a less grammaticalized stage of the person marking, with less segmental erosion, than those described for the first and second-person singular non-formal, in line with Silverstein's hierarchy (1976). In addition, and in accordance with both first and second-person singular non-formal, object instances of the first-person plural inclusive do not show allomorphy, as can be seen in example (15).

(15) *Ná'î tá skǎkì-kue-kó kuàâ tìtsì ùtsì órà.*

ná'a=ì		tá	s-kǎka=ì=kue=kó
IPFV.remember=3GNR		when	CAUS-PFV.walk=3GNR=PLZ=1PL.INCL

kuàâ	tìtsi	ùtsì	órà.
approximately	for	ten	hour

'He remembers when he made us walk for like ten hours.' [Elicitation]

3.4 Third-person generic and the third person feminine

Another case in which allomorphy can be found is the third-person generic and inanimate, which are often realized as *=ì*, with a Low tone. This enclitic often colors the last vowel of the stem to which it is attached, but if this stem already ends with an /i/ vowel, then the allomorph *=à(n)* is used instead. The Low tone is sometimes realized as a Falling tone.

It is necessary to briefly explain the phonological changes that led to the current allomorphs of the third-person generic and inanimate pronoun *=ñà* (that is, *=ì* and *=à(n)*) as well as the allomorphs of the third-person feminine pronoun *=ñá* (that is, *=í* and *=á(n)*). The Proto-Mixtec semi-vowel **y* (/j/) was dropped in Sà'án Savǐ ñà Yukúnanǐ when preceded by a front vowel /e/ or /i/ (Eric W. Campbell, pc.). We can see this in the current reflexes of the Proto-Mixtec words[8] **weyi > vèe* (heavy), **teye > chàa* (man), and **xiyoˀ > tsìó* (griddle). In addition to this, the semi-vowel **y* (/j/) later changed in Sà'án Sàvǐ ñà Yukúnanǐ into a palatal nasal /ɲ/ when followed by a nasal vowel or a nasal consonant at the onset of the following syllable. This can be seen in the current reflexes of the Proto-Mixtec words **yuu̲ > ñuù* (village), **yeni > ñanì* (brother of a male), and **yaˀa̲ˀ > ña'á* (woman). Therefore, with verbal roots ending in *-i*, the semi-vowel was dropped, resulting in the current allomorphs *=à(n)/=á(n)*, such as in the purposive form of the verb 'eat' *katsí-à* in example (1). In other contexts, the semi-vowel was maintained until it was all that remained, resulting in the allomorphs *=ì/=í*, as in the perfective form of the verb 'prepare' *sǎvà'a-kue-ì-tí* in example (1).

Example (16) shows the possessive form of the noun *ñu'ú* 'land' (surfacing as *ñu'î* 'his/her/its land'). In this case, the last /u/ is replaced with the person marker *=ì*, which

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[8] The Proto-Mixtec words presented here were drawn from Josserand (1983). Note that underlined vowels represent nasal vowels in her work.

surfaces with a Falling tone. Something similar occurs with the prospective form of the verb *kú nkìtsáì* 'to start' and the imperfective form of the verb *sáchuìn* 'to work'. In both cases, the final vowels of the roots are replaced with a Low tone *=ì*. However, the perfective form of the verb *ntsìnì-à* 'to see' uses the allomorph *=à* instead of *=ì*, because the stem already ends with the vowel /i/.

(16)   *Nùú ñu'î ra ñàà kú nkìtsáì sáchuìn sara ñàà ntsìnì-à.*

nùú	ñu'ú=ì	ra	ñàà	kúnkìtsáá=ì	sáchuun=ì	sara
OBL	land=3GNR	TOP	DISC	PROSP.start=3GNR	IPF.work=3GNR	then

ñàà	ntsìnì=**à**.
DISC	PFV.see=3GNR

'On his land, he was going to start to work, then he saw.' [MYUC-1006, 00:35]

Finally, the third-person feminine also shows allomorphy in Sà'án Sàvǐ ñà Yukúnanǐ. This enclitic works similarly to the third-person generic. The segments are identical, but the tone is High instead of Low, giving us the alternation *=í ~ =á(n)*. This High tone may sometimes be realized as a Rising tone.

(17)   *Ntàtsàìí ra ñàà sáná nìkǐtsi-kuê tsi-**án**.*

ntàtsàà=**í**	ra	ñàà	sáná	nìkǐtsi=kuê	tsi=**án**.
PFV.go.back=3FEM	TOP	DISC	then	PFV.come=1PL.EXCL	COM=3FEM

'She went back, and then we came with her.' [MYUC-1008, 00:59]

Example (17) shows the imperfective form of the verb *ntàtsàìì* 'to come back', in which the person marking enclitic replaces the last vowel of the stem and is then realized as a Low-Rise tone sequence *=ìí*. On the other hand, this enclitic also appears with the comitative particle *tsi*, which ends with an /i/, so the allomorph *=á(n)* is used instead.

In fact, of the eleven possible third person pronouns documented so far in Sà'án Sàvǐ ñà Yukúnanǐ, only two present cases of allomorphy: the generic and inanimate form (*=ñà, =ì, =à(n)*), and the feminine form (*=ñá, =í, =á(n)*). These forms present cases of allomorphy as a result of both a process of grammaticalization —whereby they are realized as *=ì* or *=í* respectively— and the historical loss of **y* after front vowels (Eric W. Campbell, p.c.) —whereby they are realized as *=à(n)* or *=á(n)* respectively. In example (18) we can see the common realization of the third-person generic pronoun (*=ì*) in the verb forms *nìkìtsáî* 'start', *ntávì* 'fly', *kuà'ìn* 'go' and *ntúkî* 'look for'; as well as the allomorph (*=à(n)*) in the verb forms *ntàki'àn* 'take' and *katsí-à* 'eat'. Example (19), on the other hand, shows the most common realization of the third-person feminine pronoun *(=í)*.

(18)   *Ntàki'**àn** sà'mǎ lóchí-ka ra nìkìtsáî ntávì chó'o chiká-ni, cha ñàà kuà'ìn ntúkî ñàà katsí-**à**.*

ntàki'in=**à**	sà'mǎ	lóchí=ka	ra	nìkìtsáá=**ì**
PFV.take=3GNR	body	vulture=ANA	TOP	PFV.start=3GNR

ntáva=**ì**	chó'o	chiká=ni	cha	ñàà

IPFV.fly=3GNR	from.here	to.there=EMPH	and	DISC

kuà'àn=**ì**   ntúkú=**ì**   ñàà   katsí=**à**.
IPFV.PRG.go=3GNR   IPFV.look.for=3GNR   REL.GNR   PURP.eat=3GNR

'When he had taken the body of the vulture, he started flying around, and he was looking for something to eat.' [MYUC-1011, 02:31]

(19) *Ùtsì yòó á ùtsì iin yòó ntsìí yó'o sáná ntànchikuí.*

ùtsì   yòó   á   sáná   ùtsì.iin   yòó   ntsìo=**í**   yó'o   sáná
ten   month   or   then   eleven   month   PFV.stay=3FEM   here   then

ntànchikó=**í**.
PFV.go.back=3FEM

'She stayed here for ten or eleven months, then she went back.' [MYUC-1008, 01:06]

Interestingly, the allomorphs that resulted from historical sound changes may be found in both subject and object pronouns, whereas the allomorphs that resulted from grammaticalization are only found in subject pronouns. Example (20) shows how the third-person generic pronoun is realized as =*à* after /i/, even when encoding an object. In contrast, example (21) shows the third-person generic/inanimate pronoun encoding an object and realized as the full form =*ñà*.

(20) *Vásù ná ki'in kuè'è coronavirus nǐ kuě kúnì-à káchà ñàà ntèe nǐ'na kú ntò'o-ní-à.*

vásù   ná   ki'in   kuè'è   coronavirus=nǐ   kuě
even.if   IRR   POT.grab   illness   coronavirus=2SG.FORM.O   NEG

kúnì=**à**   káchì=**à**   ñàà   ntèe.nǐ'na
IPFV.want=3GNR.S   IPFV.say=3GNR.S   COMP   all.the.time

kúntò'o=ní=**à**.
PROSP.suffer=2SG.FORM.S=3GNR.O

'If you catch coronavirus it does not mean that you will suffer from it all your life.' [MYUC-1032, 2]

(21) *Sava-nà nìkìtsáá cháa-nà-**ñà**, sava-nà nìkìtsáá tsáchúun-nà-**ñà** nùú rádiù.*

sava=nà   nìkìtsáá   cháa=nà=**ñà**,   sava=nà
some=3PL.HUM   PFV.start   IPFV.write=3PL.HUM.S=3GNR.O   some=3PL.HUM

nìkìtsáá   tsáchúun=nà=**ñà**   nùú   rádiù.
PFV.start   IPFV.use=3PL.HUM.S=3GNR.O   OBL   radio

'Some started writing it (the language), some started using it on the radio.' [MYUC-1034; 00:24]

Similar to what happens with the first-person plural exclusive, when the pluralizer *kue* is used with the third-person generic, it is always realized as =*kue*=*ì*. This suggests a

lexicalization of the form =*kue*=*ì* to express the third-person generic animate, which contrasts with the form for inanimate referents, which stays as =*ñà*. In example (22), we can observe how the third-person generic pronoun is consistently realized as =*ì* after the pluralizer =*kue*, regardless of the referent being a subject or an object. Example (23) illustrates how =*ñà* refers to inanimate objects. We can also observe how =*ñà* appears in its full form as an object, rather than the reduced form =*ì* that commonly encodes subjects.

(22) *Nìkăni-à mátsá'nù tavà ñàà nchìnchiǐ-**kue-ì** nixi să'a-**kue-ì** ñàà távî chùún-ka.*

nìkăni=à		mátsá'nu=ᴸ	tavà	ñàà
PFV.call=3GNR.S		grandmother=1SG	so.that	DISC

nchìncheé=í=**kue=ì**	nixi	să'a=**kue=ì**		ñàà
PFV.help=3FEM.S=PLZ=3GNR.O	how	PFV.do=PLZ=3GNR.S		DISC

tăvă=ì	chùún=ka.
IPFV.take.out=3GNR.S	hen=ANA

'He called my grandma so she would help them get the hen out.' [MYUC-1009, 02:40]

(23) *A tsà nìxìkú kue chaì-kú? Tsà nìxìkô-**ñà** nùú máá-kú.*

a	tsà	nìxìko=kú	kue	chaì=kú?	Tsà
Q	already	PFV.sell=2SG.NFORM.S	PLZ	chair=2SG.NFORM	already

nìxìko=ᴸ=**ñà**	nùú	máá=kú.
PFV.sell=1SG.S=3GNR.O	OBL	mother=2SG.NFORM

'Did you already sell your chairs? I already sold them to your mother.' [Elicitation]

4 Conclusion

The present study investigated the allomorphy of dependent pronouns in Sà'án Sàvǐ ñà Yukúnanǐ. We established that allomorphy in dependent pronouns in Sà'án Sàvǐ ñà Yukúnanǐ is mostly caused by segmental erosion, which consists of the deletion of one or more segments. In these cases, the tone is maintained. Mirroring Silverstein's (1976) hierarchy, this allomorphy caused by segmental erosion can be found in the first-person singular and first-person plural exclusive, the second-person singular non-formal, and the first-person plural inclusive pronouns. In addition, we also find segmental erosion in the third-person generic, inanimate, and feminine forms.

However, based on Silverstein's agent hierarchy (1976) third person pronouns would not be predicted to undergo processes of segmental erosion. This is because third person referents appear less frequently as given information (Chafe 1994) and, therefore, are less frequently encoded with pronouns. In addition, Sà'án Sàvǐ ñà Yukúnanǐ has eleven third person pronouns, which means that these pronouns, independently, are even less frequent and, therefore, are less likely to routinize and undergo segmental erosion. However, we

have established that both the third-person generic/inanimate pronoun and the third-person feminine pronoun exhibit allomorphy resulting from grammaticalization.

It is not a coincidence, however, that the third-person generic pronoun —rather than, say, the third-person masculine— underwent segmental erosion. In most contexts, this is the most common form used in Sà'án Sàvǐ ñà Yukúnanǐ to refer to any third person participant, be it singular or plural, human, animal, inanimate, etc. It works for all referents except in formal situations or when the speaker needs to disambiguate between two third person referents (as in example 2). Therefore, it is unsurprising that, of all the possible third person pronouns, the generic pronoun is the one form with allomorphy derived from grammaticalization.

However, this is not the only third person pronoun that underwent segmental erosion. As shown in examples (17) and (19), the third-person feminine pronoun also underwent segmental erosion. Yet, frequency does not seem to drive this process, as this is not a particularly frequent pronoun in our corpus. We hypothesize that the third-person feminine pronoun underwent segmental erosion by analogy with the third-person generic pronoun, since both pronouns have the same segments and are solely distinguished by tone. It seems that the third-person generic started undergoing segmental erosion as it was frequent enough to become routinized (see Bybee 1985), and the third-person feminine pronoun just mirrored that process by analogy. This can explain why these two pronouns, with different frequencies and used in different contexts, present the exact same allomorphs in the exact same contexts (see examples 16 and 17).

These processes of segmental erosion (Heine & Song 2011; see also Gordon 2016) led to personal inflection in Sà'án Sàvǐ ñà Yukúnanǐ to be expressed solely via tonal alternation in certain environments. Processes of segmental erosion as origins of inflectional tone have been observed in other languages, such as in Bambara (Mande) (see Dwyer 1976 and Vydrin 2016), Santa María Pápalo Cuicatec (Otomanguean) (Feist & Palancar 2016), and Soyaltepec Mazatec (Otomanguean) (see Léonard & Fulcrand 2016). Sà'án Sàvǐ ñà Yukúnanǐ makes use of tonal alternation to express the first-person singular (in which a floating Low tone appears as an allomorph of the enclitic =yù) (examples 3, 4 and 5), the second-person singular non-formal (in which a floating High tone appears as an allomorph of the enclitic =kú) (examples 7 and 10), and the first-person plural inclusive (in which a floating High tone appears as an allomorph of the enclitic =kó) (examples 13 and 14).

Other Otomanguean languages also feature tonal inflection to mark person, for example Zenzontepec Chatino (Campbell 2016), San Miguel Huautepec Mazatec, Soyaltepec Mazatec (Léonard & Fulcrand 2016), Itunyoso Triqui (DiCanio 2016), Santa María Pápalo Cuicatec (Feist & Palancar 2016) and Yoloxóchitl Mixtec (Castillo García 2007; see also Palancar et al. 2016). In line with the observations in Sà'án Sàvǐ ñà Yukúnanǐ, these languages feature tonal inflection to mark first or second person, but they do not rely solely on tone to mark the third person. It seems that it is the high discourse frequency of first and second person subjects that leads to the emergence of inflectional tone as a person marking strategy. This high frequency facilitated the segmental erosion of affixes. Frequency-driven morphologization (see Bybee 1985), therefore, can explain why these cases, undergo segmental erosion and to what extent they do so and, consequently, can shed some light on the processes that lead to the use of tonal alternation to express grammatical relations.

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Appendix: Abbreviations

ANA	anaphoric	O	object
CAUS	causative	OBL	oblique
COM	comitative	PFV	perfective
COMP	complementizer	PL	plural
COP	copula	PLZ	pluralizer
DISC	discourse marker	POT	potential
EMPH	emphatic	PRG	progressive

FEM	feminine	PROSP	prospective
FORM	formal	PURP	purposive
GNR	generic	Q	question
HAB	habitual	RDPL	reduplication
HUM	human	REL	relativizer
INCL	inclusive	S	subject
IPFV	imperfective	SG	singular
IRR	irrealis	TOP	topicalizer
NEG	negative	ZOO	zoic
NFORM	non-formal		