The Historical Development of Secondary Articulation in Gurage
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The Historical Development of Secondary Articulation in Gurage*

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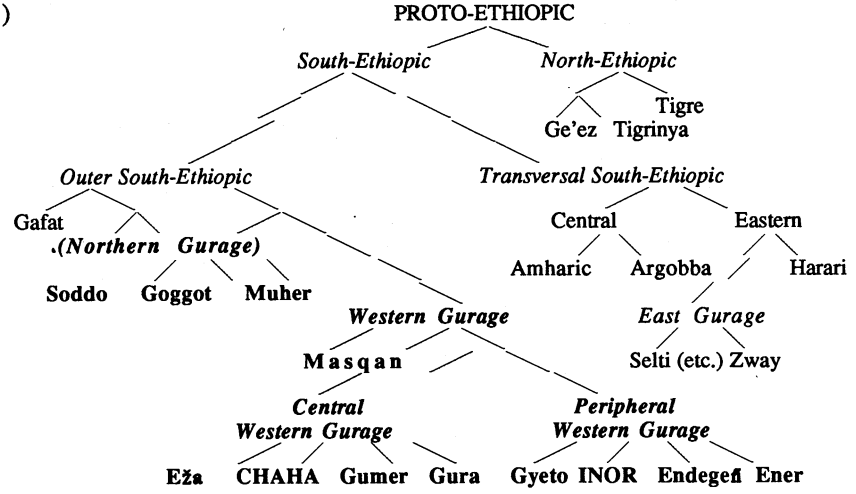
1. Introduction

Gurage (South Ethio-Semitic) languages are characterized by widespread palatalization and labialization processes, often with no obvious trigger. These secondary articulations often mark morphological classes either alone or in combination with other affixes. In addition, only a subset of palatalizable or labializable consonants are affected in different contexts and across the languages. Building on proposals by Hetzron (1971, 1975, 1977) and Leslau (1967), I address how secondary articulation arose in Gurage, and propose three separate stages corresponding to the types of consonantal targets. I also examine the interaction between palatalization and labialization in certain verb forms such as the impersonal, and conclude that there is no interaction. In section 2 I introduce the Gurage languages and discuss the process of palatalization and labialization. In section 3 I discuss previous analyses of the impersonal form of the verb and in section 4 I propose a modified analysis, which represents the first stage of palatalization. In sections 5 and 6 I discuss the second and third stages of palatalization and in section 7 I show synchronic phonological representations.

2. Classification of Gurage and Some Preliminary Data

I will follow Hetzron's (1977) classification of the Gurage languages (shown in 1).

(1)



He argues that East Gurage (Selti, Zway, Wollane, etc.) are more closely related to Amharic and Harari than the Western and Northern Gurage languages, and as a result the term "Gurage" more aptly characterizes a geographical region rather than a linguistic family. Due to this split, and the fact that information on East Gurage is

somewhat scant, I will restrict my focus to the Northern Gurage and Western Gurage languages.

Chaha will be the representative language of the Central Western Gurage (CWG) group, and data on this language holds for the other dialects, and also for Gyeto, which patterns with the CWG dialects as far as palatalization and labialization are concerned. Inor (often referred to by its Amharic name Ennemor) will represent Peripheral Western Gurage (PWG), although differences with Endegeñ will be pointed out where applicable. Soddo, Goggot, Muher and Masqan all have crucial differences as regards secondary articulation, so I will treat them separately. The main focus of the discussion will be on verbal contexts, as the patterns are more readily identifiable, although see Rose (1992b) for some discussion of noun forms in Chaha.

2.1. Palatalization and Labialization

Palatalization turns alveolar obstruents into palato-alveolar in all Gurage languages. In Western Gurage and Muher, velars and coronal sonorants may also be palatalized (T=alveolar ejective, C=palato-alveolar affricate ejective, q=velar ejective):

(2)

All Gurage	Western Gurage and Muher
t --> č	k --> k^y
d --> ǰ	x --> x^y
T --> C	q --> q^y
s --> š	g --> g^y
z --> ž	r --> y (CWG & PWG)
	n --> ň (some dialects of PWG)

Palatalization of coronals when triggered by a suffix is restricted to the final consonant of the stem, but palatalization of velars when triggered by a suffix affects the rightmost velar, and occurs in fewer contexts.

Labialization targets labials and velars in Western and Northern Gurage, and when triggered by a suffix affects the rightmost labializable consonant:

(3)

p --> p^w	k --> k^w
b --> b^w	x --> x^w
(β --> w)	q --> q^w
f --> f^w	g --> g^w
m --> m^w	ʔ --> $ʔ^w$ (PWG only)

2.2. 2nd Singular Feminine Subject[1]

Palatalization is the sole indicator of the 2nd singular feminine subject marker in all of Western Gurage and in Muher. The final coronal (including /r/, except in Masqan and Muher (Hetzron 1977)) or velar is palatalized.

(4) Chaha

	2sg masc	2sg fem	
a.	kɨft	kɨfč	'open!'
b.	nɨkɨs	nɨkɨš	'bite!'
c.	sɨβɨr	sɨβɨy -> sɨβi	'break!'
d.	dɨrg	dɨrgʸ	'hit!'

If a velar consonant occupies the first or second radical position, it may be palatalized, providing all the consonants to its right are labial (labials are never palatalized):

		2sg masc	2sg fem	
(5)	a.	nɨxəβ	nɨxʸəβ	'find!'
	b.	qɨfɨf	qʸɨfɨf	'cut the edges!'

However, if a coronal is in the first or second radical position, it cannot be palatalized, and palatalization is instead realized on the second vocalic position (between C2 and C3) through fronting the vowel: ɨ or no overt vowel becomes i, ə becomes e or a becomes ɛ. Furthermore, palatalization of a velar in stem-initial position is blocked by an alveolar in medial position (6d):

		2sg masc	2sg fem		
(6)	a.	nɨzɨβ	nɨziβ	*nɨžɨβ	'be flexible!'
	b.	sɨrəf	siref	*siyəf	'be scared!'
	c.	Tɨməm	Timem	*Čiməm	'be contrary!'
	d.	kɨtɨf	kitɨf	*kɨčɨf *kʸɨtɨf	'chop meat!'

There are other complications associated with the realization of the 2sf subject marker, but these will not be dealt with here (see Rose 1992b, 1993 for more details).

In Soddo, there is a suffix /-i/ marking a 2sfem. subject, and this triggers palatalization of the immediately preceding coronal obstruent. In addition, the first vowel of the stem is fronted. In Goggot, the /-i/ is not present, but the same pattern occurs (data from Goldenberg 1969 - /-u/ and /-n/ are main verb markers):

(7) Soddo

	2s masc	2s fem	
a.	tɨsəbr-u	tɨsebri-n	'you break'
b.	tɨləbs-u	tɨlebši-n	'you dress'
c.	tɨsnəbbɨt-u	tɨsnebbiči-n	'you pass time during the week'

In contrast with Western Gurage, Soddo and Goggot do not have palatalized velars, and in this manner, the forms in (7) are similar to Amharic, whose 2sfem. suffix /-i/ triggers palatalization of the final coronal. However, Soddo and Goggot do not allow palatalization of the sonorants /l/ and /n/ in this form, whereas Amharic does.

2.3. Plural Forms (Peripheral Western Gurage)

Peripheral Western Gurage dialects are unique in having secondary articulation in

their plural verb forms (see Bahru Lilaga 1988, Habte Mariam Marcos 1974 and Hetzron & Habte Mariam Marcos 1966 for discussion of Inor). The 3rd masculine plural (past and non-past) and the 2nd masculine plural (non-past) are marked by labialization of the rightmost velar or labial and palatalization of the final coronal obstruent. The 3rd feminine plural (all forms) and the 2nd feminine plural (non-past) display palatalization of the final coronal obstruent only[2]:

(8) Inor

		3masc.pl.	**3fem.pl.**	
a.	√kfd	kəf^{w}əj-u-m	kəfəj-a-m	'they opened'
b.	√nks	nək^{w}əš-u-m	nəkəš-a-m	'they bit'
c.	√drg	dənəg^{w}-u-m	dənəg-a-m	'they hit'
d.	√sbr	səp^{w}ə-m	səpər-a-m	'they broke'

2.4. Impersonal

The plural forms in PWG are similar to the Impersonal form in Western Gurage in general. The impersonal verb forms (perfective, imperfective and jussive) are used when the subject is unspecified, although they may also be used for stylistic reasons when there is an explicit subject (see Leslau 1967 for more details). In Western Gurage (including Masqan), the impersonal is characterized by palatalization of the final coronal obstruent and labialization of the rightmost velar or labial. The impersonal almost always appears with a heavy object suffix (for the light/heavy distinction see Polotsky 1951). If there is no object, the 3smasc. object marker /-i/ will be used, even for intransitive verbs:

(9) Chaha

		Perfective	
a.	√kft	kəf^{w}əč-i-m	'one opened'
b.	√rks	nək^{w}əš-i-m	'one bit'
c.	√drg	dənəg^{w}-i-m	'one hit'
d.	√gtr	g^{w}ətər-i-m	'one put to bed'

In Northern Gurage, however, different patterns obtain. In Goggot, only the final segment undergoes palatalization or labialization, according to Leslau (1979). But Hetzron (1968, 1971 1977:81) claims that this language only has palatalization.

(10) Goggot (Leslau 1979)

a.	√sykt	šəkkəč-i-m	'one made'
b.	√Tbs	Təbbəš-i-m	'one roasted'
c.	√drg	dərrəg^{w}-i-m	'one hit'
d.	√lygm	leggəm^{w}-i-m	'one mounted a horse'
e.	√qbr	qəbbər-i-m	'one buried/planted'
f.	√kdn	kəddən-i-m	'one thatched a house'

Hetzron (1971) reports that only palatalization of the final coronal obstruent marks the Impersonal in Muher. (Leslau (1981) claims that Muher also has labialization.)

(11) Muher (Hetzron 1971)

a.	√qbT	qəbbəC-i-m	'one missed (it)'
b.	√aks	ɛkkəš-i-m	'one waited'
c.	√agd	y-agǰ-i-t	'one ties'
d.	√sbr	yɨ-səbr-i-t	'one breaks'
e.	√srq	yɨ-sərq-i-t	'one steals'

In Soddo, no palatalization or labialization occurs:

(12) Soddo

a.	√grf	gərrəf-u-t	'one freed'
b.	√sbr	səbbər-u-t	'one broke'
c.	√lbs	ləbbəs-u-t	'one dressed'

3. Previous Analyses of the Impersonal

Various proposals have been advanced to account for the origin of secondary articulation found in the impersonal form of the verb in Gurage. Most researchers agree on one point: labialization is due to the Proto-Ethiopic 3rd person plural marker /*-u:/. The loss of a length contrast between peripheral vowels in Ethio-Semitic rendered it unstable. This view is accepted by Polotsky (1938), Leslau (1967) and Hetzron (1968, 1971, 1977). Nevertheless, the origin of palatalization remains an unresolved issue.

Polotsky (1938) and Leslau (1967) propose that palatalization is due to the 3smasc. object marker /-i/. This marker is found on all impersonal forms which do not take another object marker. It may even appear on intransitive verbs: ex. fenəqʷ-i-m 'one burped' (Chaha). Polotsky and Leslau argue that once palatalization was triggered by the object marker, it was extended throughout the paradigm and became a property of the impersonal even before other object markers. A potential problem with an analysis in which /-i/ is the trigger is that palatalization in Gurage always involves loss of the trigger. It is what Bhat (1978) labels 'absorbing' type palatalization.

Hetzron (1971) takes a different view. He proposes that once labialization was triggered by the /u:/ suffix, this suffix underwent a dissimilation to /i/, which triggered palatalization:

(13) *kə(f)fətu: --> kə(f)fʷətu --> kə(f)fʷəti --> kə(f)fʷəč

Hetzron backs up his claim with other examples of dissimilation of /u/ to /i/, such as the 1s. perfect subject marker /ku/ plus the main verb marker /u/ yielding /ki/ in Soddo, and /kwi/ in Goggot. However, all his examples involve cases of strictly adjacent segments, whereas the impersonal form often involves labialized consonants several segments away from the suffix /-u/. A more serious objection to this analysis is that palatalization is intrinsically dependent on prior labialization, yet other palatalized forms (Inor 3plfem., Muher impersonal) have no labialization. In addition, labialization in Gurage is always absorbing: /Cu/ results in the sequence [Cʷɨ].

Finally, Elmedlaoui (1992) compares the impersonal form to the middle

passive CuCiC of Classical Arabic. He suggests that the short /u/ and /i/ of the passive were set afloat and are responsible for the secondary articulation we find in Gurage. While intriguing, this analysis does not coincide with other properties of palatalization and labialization in these languages. These processes are suffixal; they affect the rightmost velar or labial, or the final coronal. In addition, palatalization of coronals may only occur preceding the trigger, as in Type B verbs (see Rose 1992a,b for more details). There are adjectival/nominal forms in Gurage which resemble the passive form, however. In these cases, we do not find the typical suffixal secondary articulation, but rather labialized and palatalized (coronal) segments *within* the stem. The forms in (14) illustrate that those consonants affected are not necessarily the final coronal or the rightmost velar or labial. In (14a,b), palatalization of a coronal occurs in C2, a form ruled out by suffixal palatalization (see forms in (6)). In (14c,d), the initial or medial labial is labialized, despite the presence of velars in final position:

(14) Chaha

a.	√xdr	x^{w}ɨjɨr	<	CuCiC	'clothes'
b.	√fTm	f^{w}ɨCɨm	<	CuCiC	'cruel (person)'
c.	√nfg	nɨf^{w}ɨg	<	CuCC	'stingy (person)'
d.	√fg	f^{w}ɨgɨg	<	CuCC	'last night of the full moon'

4. Impersonal and Plural Forms

4.1. Impersonal

The analysis I propose to account for the impersonal verb essentially follows that of Leslau (1967) and Polotsky (1938). The impersonal was formed from a 3rd person plural marker /-u/ and the 3smasc. object marker /-i/. However, I will offer an account to solve the problem of the 'absorbtion of palatalization'. Gurage languages in general do not tolerate vowel-vowel sequences. If both vowels are high, a glide is always inserted between them: ex. /abi-u/ --> [abiyu] 'It is Abi'. The sequence /u-i/ requires glide insertion in Gurage: /uyi/. The /-u/ triggered labialization and became the exponent of the impersonal:

(15) *kəfəd-u-i -> kəfəduyi -> kəf^{w}ədyi

The /y/ palatalized the preceding coronal obstruent: (Note Polotsky (1938) proposes an original /*-yi/, being aware of the absorbtion property.)

(16) kəf^{w}ədyi --> kəf^{w}əji

It is worth noting that Soddo, the only Northern or Western Gurage language with no palatalization in the impersonal, is also the only one of the group to have /-u/ and not /-i/ as the 3smasc. object marker.

4.2. Plural Forms

Labialization in the plural forms of PWG can also be attributed to the Proto-Ethiopic 3rd plural subject marker /*-u:/. in PWG, where it labialized the rightmost labializable consonant. As compensation, one might propose that the 3rd person

plural object marker was adopted as a subject marker: /-yu/. The /y/ would then be responsible for the palatalization:

(17) *kəfəd-u: --> kəfədu --> kəf^{w}əd --> kəf^{w}əd-yu --> kəf^{w}əj-u

In the feminine forms, which only have palatalization, the feminine plural object marker /-ya/ would have been adopted by analogy with the masculine form, despite the presence of a subject marker /a/. This marker also triggered palatalization:

(18) *kəfəd-a: -> kəfəd-a-ya -> kəfəd-ɛa -> kəfə̆ja

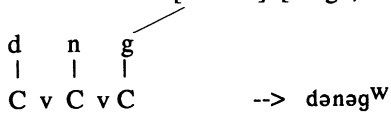
While in PWG, the original subject markers /*-u:/ (and /*-a:/) were either reduced to floating features or shortened, in the other Gurage languages, they came to be supported by other vowels and consonants:

(19)		**PWG**	**CWG**	**Masqan/N. Gurage**	**Gura/Gyeto**
	3mp	-u(a)	-əw -> o	-mu / m^{w}	-əw -> o
	3fp	-a(a)	-əma	-(ə)ma	-əβa

4.3. Interaction of Labialization and Palatalization

In this section, I will address the question of whether labialization and palatalization interact in those forms which have both. McCarthy (1983), Lieber (1988) and Elmedlaoui (1992) argue that labialization and palatalization potentially target the same consonant (velars) and since labialization occurs, it must be ordered first, and the features representing palatalization are not realized. The following illustration is taken from McCarthy (1983):

(20)



However, recall that the Muher impersonal has no labialization, and yet velars are still not palatalized (21c), this despite the fact that velars may be palatalized in other forms in the language, such as the second person singular feminine (21f):

(21)	**Impersonal**			**2s.fem.**	
a.	yag**j**-i	'one ties'	d.	tag**ij**	'she ties'
b.	y**ɨ**səbr-i	'one breaks'	e.	t**ɨ**səb**ɨ**r	'she breaks'
c.	y**ɨ**sərq-i	'one steals'	f.	t**ɨ**sərq^{y}	'she steals'

Thus, the first problem with their proposal is that it is based on the assumption that velars can be palatalized in the impersonal, since they can be in the 2sfem. But, the 2sfem. also allows palatalization of /r/ and vowels, which the impersonal does not.

Another problem is that labialized consonants routinely succumb to palatalization in other contexts, but not vice versa. Thus the 3smasc. light object marker which consists of labialization (^{w}) and /-n/ in CWG, will have no effect on palatalized consonants (22a-b), but labialized consonants do become palatalized in

the 2sfem forms (22c-d) (palatalization is represented as /- ^{i}/):

(22) Chaha

a.	/yɨ-gʸəkʸɨr - ^{w}..n/	-->	[yɨgʸəkʸɨnn]	'he arranges it'
b.	/yɨ-məkʸɨr - ^{w}..n/	-->	[yɨmʷəkʸɨnn]	'he burns it'
c.	/kʷərkʷɨm - ^{i}/	-->	[kʷɨrkʸɨm]	'hit on the head! (f)'
d.	/qʷɨm - ^{i}/	-->	[qʸɨm]	'stop! (f)'

I conclude that palatalization in the impersonal and in the plural forms of PWG only targets final coronal obstruents, reflecting an early stage in which only coronal obstruents could undergo palatalization across Western Gurage and Muher (and Goggot if Leslau (1979) is correct). This represents Stage I in the development of secondary articulation.

5. Type B Verbs

Type B is a group of verbs which have gemination of the medial radical in geminating languages (i.e. Eža, Amharic). In Gurage, they are also characterized by either palatalization of the initial or medial radical or by a front vowel in the first vocalic position of the stem in the perfective and imperfective forms. Rose (1992a,b) and Degif Petros (1992) propose that Type B verbs are quadriliterals, the second segment being /i/ or /y/, triggering palatalization.[3] In Western Gurage, initial velars and coronal obstruents are palatalized (23). This is also true in Muher, but Goggot has only palatalized coronals:

(23) Chaha

		Perfective	**Imperfective**	
a.	√dygm	jəkəm-ə-m	yɨ-jəkɨm	'strike'
b.	√sygt	šəkət-ə-m	yɨ-šəkt	'repair'
c.	√kys	**k**ʸəsəs-ə-m	yɨ-**k**ʸəsɨs	'be near'
d.	√gytm	**g**ʸətəm-ə-m	yɨ-**g**ʸətɨm	'sell on credit'

When the initial consonant is labial or a coronal sonorant and the penultimate stem consonant is velar, the latter is palatalized (except in Endegeñ where only initial velars may be palatalized):

(24)

		Perfective	**Imperfective**	
a.	√mygr	mə**k**ʸər-ə-m	yɨ-mə**k**ʸɨr	'burn'
b.	√rykm	nə**k**ʸəm-ə-m	yɨ-rə**k**ʸɨm	'mount a horse'
c.	√byqr	bə**q**ʸər-ə-m	yɨ-bə**q**ʸɨr	'brew'

Finally, when the first consonant is not palatalizable, that is, labial or coronal sonorant, and the second consonant is coronal, the vowel /e/ appears following the initial consonant (except in Eža, where there is /ə/):

(25)		**Perfective**	**Imperfective**	
a.	√bysr	besər-ə-m	yɨ-besɨr	'observe'
b.	√myTs	meTəs-ə-m	yɨ-meTɨs	'break a rope'
c.	√fyrq	fenəq-ə-m	yɨ-feniq	'burp'

Soddo has no palatalization, but an /i/ vowel in the first vocalic position (Leslau, 1968b, 1979; Hetzron, 1977):

(26)	**Perfective**	**Imperfective**	
	zibbər-ə-m	yɨ-zibbɨr	'return'
	tikkəm-ə-m	yɨ-tikkɨr	'take a mouthful'
	gibbər-ə-m	yɨ-gibbɨr	'pay taxes'
	miTTər-ə-m	yɨ-miTTɨr	'choose'

Type B verbs represent Stage II of the development of palatalization in Gurage, during which palatalization was extended to velars in Western Gurage and Muher.

6. 2nd Singular Feminine

Finally, let us reconsider the 2nd singular feminine subject forms. The palatalization in these forms is clearly due to an /-i/ suffix, which is found in Amharic optionally, and in Ge'ez and Tigrinya. In Western Gurage, not only are coronal and velar obstruents palatalized in these forms (27a-d), but coronal sonorants and vowels, too (27e-h, 28):

(27) Chaha

	2sg masc	**2sg fem**	
a.	kɨft	kɨfč	'open!'
b.	dɨrg	dɨrgʸ	'hit!'
c.	nɨxəβ	nɨxʸəβ	'find!'
d.	qɨfɨf	qʸɨfɨf	'cut the edges!'
e.	sɨβɨr	sɨβɨy -> sɨβɨ	'break!'
f.	sɨrəf	sɨref	'be scared!'
g.	Tɨməm	Tɨmem	'be contrary!'
h.	kɨtɨf	kɨtɨf	'chop meat!'

(28) Inor

a.	tən	təň	'come!'
b.	tɨ-mʷən	tɨ-mʷəň	'you are jealous'

The 2nd singular feminine represents Stage III, the final stage of palatalization development. At this stage, the palatalization of coronal sonorants was introduced in Western Gurage, and the palatalization of coronal obstruents was introduced in Soddo.

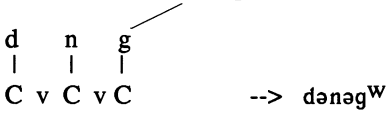
7. Synchronic Representation of Palatalization and Labialization

In this section, I will briefly discuss the representation of palatalization and labialization from a synchronic point of view. I will propose that the three stages correspond to two different representations of floating features or segments.

7.1. Features [labial] and [posterior]

Labialization may be represented as a floating feature or node [labial], which attaches to preceding consonants:

(29)

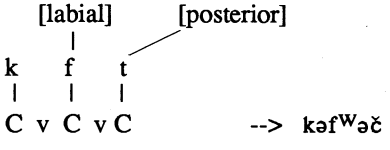


If no labializable consonant is found, it is not realized and remains floating:

(30) a. nəTər-i-m 'one melted'
b. q^yəCə-i-m 'one measured'

Palatalization in the impersonal and PWG plural forms is also a feature: [posterior], which attaches to segments bearing a Coronal node or feature. It targets final coronal obstruents only. If none are found, it is not realized.

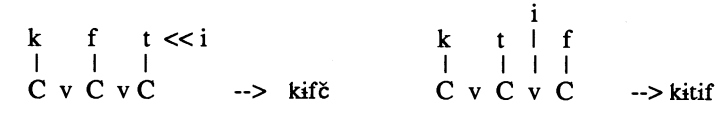
(31)



7.2. Floating Segment /i/

In contrast, palatalization in Type B and in the 2nd singular feminine, is a full floating segment /i/ or /y/. As such, it must be realized, and will be realized on the vowel as a last resort.

(32)



This approach also explains why palatalizing velars will overpower labialized velars, and not vice versa. Realizing (or licensing) the full segment /i/ is more important than realizing a single feature such as [labial].

8. Conclusion

In this paper I have proposed three stages in the development of palatalization in Gurage: I. coronal obstruents (Impersonal, PWG Plurals); II. velars (Type B) and III. coronal sonorants (2nd singular feminine) in Western Gurage and coronal obstruents in Soddo. These results are summarized in the following table:

(33)

	Impersonal	Plurals	Type B	2s.fem.
CWG	Cor Obs		Cor Obs, Vel	Cor Obs, Vel, Cor Son
PWG	Cor Obs	Cor Obs	Cor Obs, Vel	Cor Obs, Vel, Cor Son
Muher	Cor Obs		Cor Obs, Vel	Cor Obs, Vel
Goggot	Cor Obs		Cor Obs	Cor Obs
Soddo				Cor Obs

In addition, I have proposed a new analysis of the impersonal form of the verb which does not rely on the interaction of labialization and palatalization, but rather reflects the stages of palatalization development.

Notes

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1. Palatalization in the converb or pseudo-gerundive operates in parallel fashion to the 2nd singular feminine forms (Leslau 1969, Hetzron 1975). However, it is unlikely to result from the vowel /i/ in the Ge'ez converb səbir-, as Hetzron (1975) suggests, since palatalization of coronals occurs preceding the trigger in the language (see section 3), and the feminine forms are clearly suffixal. It is more likely to have originated from a suffix /-i/ whose origin remains obscure at present. Note also that I have not discussed all cases of verbal secondary articulation, for lack of space. Labialization occurs with the 3smasc. light object marker in Western Gurage, as discussed in section 4.3. Palatalization and labialization parallel to the impersonal and plural forms are found in the PWG infinitive.
2. All central vowels adjacent to labialized consonants in Inor are realized as rounded vowels. Thus kəf^{w}əj-u-m is phonetically kofoj-u-m (Prunet 1991 and Paradis & Prunet (to appear)). In the form səp^{w}ə-m, the /r/ is deleted.
3. Grover Hudson objected to this portrayal of Type B verbs as quadriliterals on the grounds that these verbs parallel Akkadian and other non-Ethiopic South Semitic geminating triliteral forms. However, there are several reasons to believe that they are quadriliterals in Gurage, although their origin may have been a geminating triliteral with a vowel /e/: (1) The pervasive palatalization is akin to weak triliterals such as səčə-m 'to drink' (Chaha) from the root √sty (Tigrinya: Sətəyə). (2) The close parallel with labialized forms, such as b^{w}ənəsəm 'to feel alone' which have almost identical conjugation patterns (Rose 1992a,b, Degif Petros 1992 who labels these Type D). (3) The large number of regular quadriliteral forms in Ethio-Semitic not found in languages like Arabic suggests that triliterals were augmented in different ways: with a coronal sonorant in regular forms (approximately 75% of regular quadriliterals in Chaha have /r/ in C2), with /y/ in Type B, with /w/ in Type D, and perhaps with /a/ in Type C.

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