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PAPER

OH, TO UNDERSTAND THE IMPISH BEHAVIOR AND TEMPERAMENT OF ETHIOPIAN LEFT-GEMINATORS!

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Arabic and Hebrew exhibit verbs with identical second and third consonants, $C_1C_2C_2$, but no verbs with identical first and second consonants, $C_1C_1C_2$. McCarthy (1979) showed how this effect follows from his groundbreaking autosegmental treatment of Semitic roots. Chaha, an Ethiopian Semitic language, provides striking additional evidence for McCarthy's proposals. But, Chaha (like all other Ethiopian Semitic languages) also displays verbs of the type which is expected not to exist, $C_1C_1C_2$. Banksira (2000) argued that such verbs arise from the deletion of the penultimate consonant of fully reduplicated biliteral roots ($C_1C_2C_1C_2 \rightarrow C_1\cancel{C_2}C_1C_2$). But Banksira's account falls short of explaining why the alleged penultimate deletion is operative in *all* Ethiopian Semitic languages *and nowhere else*. In this article, an alternative is offered. Its contribution comprises 3 facets. It provides a rationale for full root reduplication in Semitic, in general ($C_1C_2C_1C_2$). It derives the special distribution of $C_1C_1C_2$ verbs : such verbs are exclusively attested in Ethiopian Semitic languages because of a uniquely Ethiopian particularity of their templatic system. It involves no alteration of autosegmental theory.

$C_1C_1C_2$ verbs, roots, templates, Chaha, Ethio-Semitic

INTRODUCTION

Are the $C_1C_1C_2$ verbs of the Ethiopian Semitic languages a pebble in the nonconcatenative morphologist's shoe? This is the question I try to address here. In the next section, I describe the background against which those verbs will be discussed. In section 3, I critically review two of the earlier accounts of $C_1C_1C_2$ verbs, McCarthy (1986) and Banksira (2000). In section 4, I revisit familiar assumptions regarding the roots and templates of Chaha. Finally, in section 5, I offer my own account. A brief conclusion follows.[1]

1 BACKGROUND

Arabic has many verbs with identical second and third consonants, but none with identical first and second. This asymmetry remained mysterious until John McCarthy offered a compelling solution – I assume familiarity with the autosegmental underpinnings of McCarthy (1979) and subsequent work in the same vein. I only briefly sum up the essentials of McCarthy's solution, first with respect to the attested pattern, then as regards the unattested pattern.

Consider the stem of the Arabic verb *žarar-na* 'we pulled'. Two logical possibilities exist regarding the representation of the arrangement of consonants in the stem of that form. In (1a), the consonantal root has been represented as triconsonantal and in (1b) as bi-consonantal.

1 Unless otherwise indicated, all verbal forms cited in this paper are 3rd Masculine Singular. The symbols *ɪ* and *ä* stand for central vowels, high and low, respectively. *č* is a palatoalveolar, *β* is a bilabial spirant, *č′*, *t′*, and *k′* are ejectives.

(1)

a. b.

With its two distinct, adjacent *r*'s, the configuration in (1a) violates the Obligatory Contour Principle (henceforth OCP).[2] By contrast, the arrangement in (1b) results from rightward spreading of the final root consonant (arrow). This scenario is compatible with both the association conventions and the OCP, and the representation is ruled grammatical.

The two possibilities for the representation of a verb stem with identical first and second consonant, e.g. *lalaf* the type which does not exist in Arabic, are as in (2).

(2)

a. b.

With its two adjacent identical *l*'s, (2a) violates the OCP. The representation in (2b) does not violate the OCP, but the untimely spreading of *l* constitutes a violation of the association conventions. Both configurations in (2) are thus ruled out by the theory.

In sum, a) triconsonantal roots such as √ααβ or √αββ are ruled out by the OCP, b) given a biconsonantal root √αβ and a CVCVC template, the only possible surface arrangement is [αββ]. On that view, the absence of $C_1C_1C_2$ verbs in Arabic is consistent

2 On the OCP, see Leben (1973, 1978a,b), Goldsmith (1976), McCarthy (1979, 1983), Lowenstamm & Alaoui El M'hammedi (1996). On the OCP and Ethiopian Semitic languages, see Kenstowicz (1982), Schein (1981), Buckley (1990), Lowenstamm & Prunet (1986) and, on Chaha specifically, Banksira (2000).

with the provisions of the theory, and McCarthy (1979: 264) concludes his demonstration with the statement in (3).[3]

(3)

> Given this apparatus, the Consonant Association rule can explain the absence of verbs or nouns like sasam versus the existence of samam.

Three years later, McCarthy produced striking corroborating evidence from Chaha in support of the view that surface αββ type verbs are derived from √αβ roots, crucially *not* √αββ (McCarthy 1983). Consider, the imperative masculine singular forms of two Chaha verbs, *käfät-ä* 'open' and *m^{w}ätät-ä* 'coax s.o. into doing sthg' in (4a). The corresponding feminine imperatives are formed by suffixation of +*i* to the Masculine (4b). But whereas **kɪft-i* and **m^{w}ätɪt-i* (or perhaps **m^{w}ätt-i*, or **m^{w}ät-i*) might have been expected, Chaha implements a different strategy : the feminine suffix palatalizes the rightmost palatalizable consonant turning it, if coronal, into a palatoalveolar strident, hence *kɪfč* 'open $_{\text{FEM}}$!'.[4] When the root involves identical final consonants as is the case with *m^{w}ätɪt*, both instances of *t* undergo palatalization, (4b) : *m^{w}äčɪč* (not **m^{w}ätɪč*!).[5]

(4)

a. MS imperative	b. FS imperative		
kɪft	kɪft + <$_{\text{Fem}}$ I>	→	kɪfč
m^{w}ätɪt	m^{w}ätɪt + <$_{\text{Fem}}$ I>	→	m^{w}äčɪč

3 For another striking result along the same lines, see Bohas (1990).

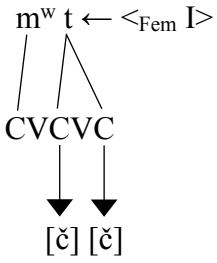
4 The behavior of Chaha non-perfective Feminine Singular formation is much richer and more complex than appears in this sketch. For details, see McCarthy (1983), Rose (1992), Lowenstamm (1996a, 2000), Banksira (2000, 2013). See also Leslau (1967), McCarthy (1983), Banksira (2000) for the behavior of the Impersonal, and (Banksira 2013) for a fundamental renewal of the discussion. As well, see Prunet (1991) and references therein for the Impersonal in Ennemor.

5 Further examples of masculine/feminine imperative forms distinguished in that manner are *dɪgɪs*/*dɪgɪš* 'give a feast !', *dɪmd*/*dɪmǰ* 'put together !', *zɪmd*/*zɪmǰ* 'pull, drag !', *agäz*/*agäž* 'shake !' and with double palatalization : *sɪdɪd*/*sɪǰɪǰ* 'drive cattle !', *nɪzäz*/*nɪžäž* 'dream !', *asɪs*/*ašɪš* 'accumulate !'.

m^{w}*äčɪč* is the crucial example. On the assumption that palatalization affects the root tier, double palatalization is fully consistent with the biliteral representation of the root in (5a) and fully inconsistent with the triliteral representation in (5b).

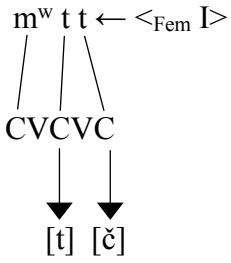
(5)

a.



m^{w}ačɪč

b.



*m^{w}ätɪč

Intriguingly, Chaha, the language which provides such strong support for McCarthy's proposals, faces us with verbs of precisely the type which Arabic does not have, $C_1C_1C_2$ verbs, e.g. *k*ʰ*w**äk*ʰ*w**äs-ä* 'become dry, roasted', *k*^{y}*äk*^{y}*är-ä* 'hold in the armpit', *g*^{y}*äk*^{y}*är-ä* 'fix, straighten out', *g*^{y}*äk*^{y}*ät-ä* 'accompany', etc. While such verbs do not directly challenge the OCP, they certainly appear to challenge the standard one-to-one and left-to-right mode of association of root consonants to the template.[6]

6 The reader may wonder whether *g*^{y}*äk*^{y}*är-ä* and *g*^{y}*äk*^{y}*ät-ä* truly have identical first and second consonants. As is the case in all Southern Ethio-Semitic languages, stress causes secondary gemination of the penultimate consonants of Chaha perfectives (this stress-induced gemination should therefore not be construed as a challenge to the normal mode of association of root consonants to templatic positions). A rule of degemination then turns those penultimate geminates into simplex consonants on the surface. Devoicing accompanies penultimate degemination *if* the last root consonant is a sonorant or *t*, cf. chapter 2 of Banksira (2000) for full discussion. Thus, *dägäs-ä* 'give a feast' is derived as follows: *däggäs-ä* > *dägäs-ä*. No devoicing takes place in this case because the last root consonant is neither a sonorant nor *t*. By contrast, *däpär-ä* 'add' is derived as follows: *däbbär-ä* > *däppär-ä* > *däpär-ä*. This time, devoicing has taken place because the last root consonant *is* a sonorant. The penultimate consonants of *g*^{y}*äk*^{y}*är-ä* and *g*^{y}*äk*^{y}*ät-ä* have similarly undergone devoicing (along with degemination) because the last root consonants of those verbs are a sonorant and *t*, respectively. Thus, the derivation of *g*^{y}*äk*^{y}*ät-ä* for instance proceeds as follows: *g*^{y}*ägg*^{y}*ät-ä* > *g*^{y}*äkk*^{y}*ät-ä* > *g*^{y}*äk*^{y}*ät-ä*. Other allophonic phenomena encountered in this paper are: *bb* > *p*, *b* > *β*, *rr* > *n*, *dd* > *t*, *zz* > *s*.

Gideon Goldenberg, an outspoken opponent of the autosegmental approach to the analysis of Semitic roots (Goldenberg 1994, 2005), saw the existence of such verbs as a fatal blow to the entire program. In (Goldenberg 2005), he notes:

(6)

> The greatest mistake of this assumption [McCarthy's proposals and subsequent work in the same vein JL] lies in the basic facts: In Ethiopian languages, which share with the other Semitic languages the same system of morphological derivation by root and pattern, roots 1-1-2, and not only 1-2-2 (or 1-2-1-2) are rather common, like the Amharic […] √*k'k'l*, √*t't'r*, √*ggm*, […].

In order to assess Goldenberg's objection, the empirical content of McCarthy's claim, as represented in, e.g. (3) above, must be carefully considered: the claim is *not* that Semitic verbs such as *sasam* cannot exist. The claim, rather, is that there is no such thing as a *root* like √ssm. Thus, if a verb of the *sasam* type does exist, it must be the case that the makeup of the root and/or its association to the template has been upset or interfered with by the occurrence of a subsequent process or series of processes.

As early as the middle of the 19th century, August Dillmann (1823-1894) had considered precisely such a scenario, one which obviates the need to recognize $C_1C_1C_2$ roots. In his 1857 grammar of Ge'ez, the great classic on Ethiopian Semitic, he suggests that $C_1C_1C_2$ verbs are nothing but assimilated versions of reduplicated biradicals (Dillmann 1907: 132).[7]

7 The presence of $C_1C_1C_2$ verbs in Ethiopian Semitic languages had been known for a long time. Hiob Ludof (1624-1704) mentions their existence in his grammar of Ge'ez (Ludolf 1661: 33) and in his grammar of Amharic (Ludolf 1698: 8).

(7)

> […] many an original doubled root in Ethiopic has been restored to the standard of triliterality by shortening; and thus have arisen several triliteral roots, formed in quite a peculiar way. In particular, by assimilating the second radical of a doubled root to the third, a number of Tri-radical roots have been produced, of which the first and second letters are identical […].

Dillmann's Ge'ez example is *sässäl-ä* 'withdraw', which he proposes to derive from *sälsäl-ä* by regressive assimilation of the medial cluster: *sässäl-ä* < *sälsäl-ä*.

In bringing up *roots*, √k'k'l, √t't'r, √ggm, etc., Goldenberg picks the right target. Indeed, only if the roots of verbs *k'äk'k'äl-ä* 'boil', *t'ät't'är-ä* 'harden', *a-gäggäm-ä* 'convalesce' are as he says, does their existence challenge the autosegmental program. Unfortunately, Goldenberg merely asserts, but does not establish that such is the case; neither does he discuss possible alternatives such as, e.g. Dillmann's. Dillmann's conjecture may not be the final word on *sässäl-ä* and other such verbs. It is simply an example of a plausible scenario whereby a verb is $C_1C_1C_2$ on the surface though its root is not.

The proposal I will offer below is informed by a bias. The bias is this: a) $C_1C_1C_2$ verbs are exclusively encountered in Ethiopian Semitic languages, b) these languages document the 'normal' operation of association conventions as richly as other Semitic languages, c) therefore the challenge of understanding $C_1C_1C_2$ verbs probably has to do, not with the association conventions themselves, but with some distinctive, uniquely Ethiopian feature of the templates of that subfamily. Consequently, I will reappraise the system of templates of Chaha in an attempt at ferreting out that uniquely Ethiopian feature in the hope of explaining why $C_1C_1C_2$ verbs only occur in that subfamily. Finally, I will put forth a proposal regarding the *morphosyntactic* architecture of root

reduplication. When that is done, autosegmental theory *in its most general form* will be shown to handle the $C_1C_1C_2$ verbs of the language in smooth fashion.

For the time being, I review two early accounts.

2 TWO ACCOUNTS OF THE $C_1C_1C_2$ VEBS OF CHAHA

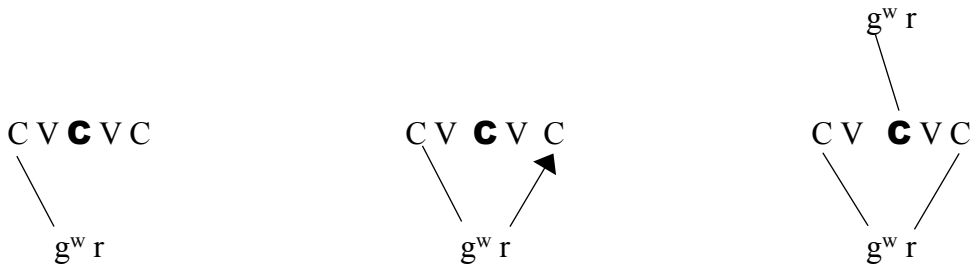
2.1 MCCARTHY (1986)

McCarthy, in an account which prefigures Yip's (1988) edge-in scheme, proposes that $C_1C_1C_2$ verbs are derived as demonstrated in (8) with the example of *g^{w}äk^{w}är-ä* 'bellow, roar'. In a first step, the initial root consonant, *g^w*, normally associates to the leftmost C position of the template (8a). The next step, (8b), is controlled by two lexical stipulations, a) the root is prohibited from deploying normally and thereby giving rise to *g^{w}änär-ä* (< *g^{w}ärrär-ä* < *g^{w}ärär-ä*), b) instead, the rightmost root consonant must link up to the last C position of the template (arrow in (8b)). In a third step, the root is copied (graphically noted above the template in (8c)). *g^w* links up to the available consonantal position. Under the circumstances of (8c), *r* has no C to link up to and remains unpronounced. At this stage, *g^{w}ägg^{w}är-ä* is derived. Devoicing and degemination take place, and *g^{w}äk^{w}är-ä* eventually surfaces.

The bold **C** in the template in (8) and elsewhere in this paper, marks the site of the stress-induced gemination (and eventual degemination with or without devoicing) of the penult. Once more, gemination, degemination and devoicing are not directly relevant to the topic of this paper. The recurrent presence of …**C**… in my representation of the perfective template is therefore solely intended to help the reader construe the occasional devoicing which affects the penultimate root consonant under the conditions described in footnote 6.

(8)

a. b. c.



The various moves described above are clear departures from the normal mode of association. Mobilizing special devices to account for minoritarian phenomena is unobjectionable, but the same question only lingers on albeit in a new form: why is the lexical stipulation responsible for the scenario in (8) so widespread in Ethiopian Semitic and absent elsewhere in Semitic? In section 5, I will propose an account of $C_1C_1C_2$ verbs in which association proceeds in unaltered fashion and without stipulations of any sort, i.e. left-to-right and one-to-one. That account will, in addition, cover more empirical ground: it will relate the makeup of $C_1C_1C_2$ verbs to a characteristic feature of their semantics (to be discussed below) and explain why such verbs are not encountered outside of Ethiopian Semitic.

I now turn to the second account.

2.2 BANKSIRA (2000)[8]

The claim in Banksira (2000) is close to Dillmann's in spirit and very similar to Buckley's (1990) in the details, namely $C_1C_1C_2$ verbs are an altered version of reduplicated biradicals. As will become clear when my own proposal is put forth, I am in sympathy with this view though I detect a technical problem with DPB's execution of his idea.

8 Degif Petros Banksira is the author of Petros (1993) and Banksira (2000, 2013, 2014), and co-author of Prunet & Petros (1996). I refer to him as DPB.

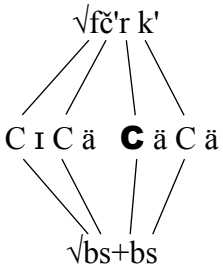
As noted in Banksira (2000), fully reduplicated biradicals display the same arrangement of consonants and vowels as verbs from quadriradical roots, viz. CɪCäCäC-ä. This is documented in (9a-d) for quadriradicals and (9e-h) for reduplicated biradicals. In the righthand side column of (9), I have added the underlying representation of each verb so the reader can verify that degemination and devoicing unravel according to the pattern described in footnote 6.

(9)

	Verb	Root	UR
a.	gɪrädäf-ä	√grdf ‘grind roughly’	/gɪräddäf-ä/
b.	sɪräpät-ä	√srbt ‘spend time away’	/sɪräbbät-ä/
c.	gɪrätäm-ä	√grtm ‘break sthg. in two’	/gɪräddäm-ä/
d.	fɪč'änäk'-ä	√fč'rk' ‘squash’	/fɪč'ärräk'-ä/
e.	zɪmäsäm-ä	√zm ‘be wet’	/zɪmäzzäm-ä/
f.	t'ɪmät'äm-ä	√t'm ‘roll’	/t'ɪmätt'äm-ä/
g.	g^{w}ɪzäg^{w}äz-ä	√g^{w}z ‘spread’	/g^{w}ɪzägg^{w}äz-ä/
h.	bɪsäbäs-ä	√bs ‘be rotten, putrid’	/bɪsäbbäs-ä/

Because of their identical profiles, verbs from both types of roots are assumed to be mapped onto the same template, as illustrated in (10) with the examples of (9d) and (9h).

(10)



fɪč'änäk'-ä ‘smash’

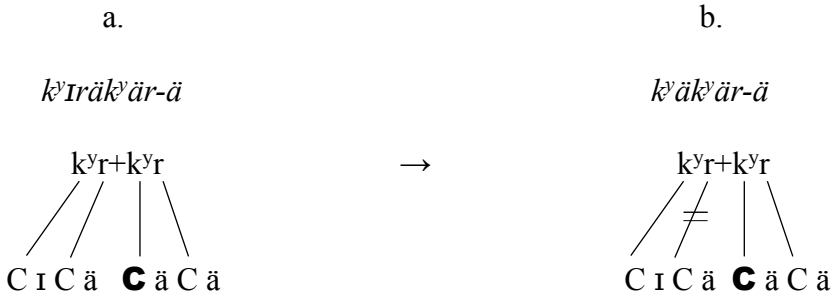
bɪsäbäs-ä ‘be rotten, putrid’

We can now turn to DPB’s account of $C_1C_1C_2$ verbs with *k^{y}äk^{y}är-ä* ‘hold something in the armpit’ as an example. As indicated above, DPB sees [k^{y}äk^{y}är-ä] as derived from

underlying /kʸɪräkʸär-ä/ (the notion that the root involved in this case is biliteral, √kʸr, receives support from the existence of the noun *kʸɪrkʸɪr* 'armpit' (Banksira 2000: 73)).

According to DPB, the difference between [kʸäkʸär-ä] and /kʸɪräkʸär-ä/ is simply the result of the process described in (11), deletion of the antepenultimate consonant (broken line in (11b)).

(11)



This is an elegant and intuitively attractive solution, and I will argue further down that most of DPB's insights are essentially sound. Nevertheless, I very much doubt whether his proposal derives *kʸäkʸär-ä*. Rather, I suspect that it derives an undesirable result, viz. **kʸɪkʸär-ä*.

My doubts are rooted in experience with a small, intriguing class of Chaha verbs, triply weak quadriradicals (Leslau 1950, Lowenstamm 1996b, Banksira 2014). The root of those verbs is of type √CrAy, where the initial consonant can be any obstruent, C_2 is *r*, C_3 is *A*,[9] and C_4 is *y*. Examples of such verbs are *sɪy-ä* 'buy' from √srAy, *k'ɪy-ä* 'wait, guard' from √ k'rAy, *gɪy-ä* 'be inhospitable' from √grAy, etc. Consider the Perfective paradigm of *gɪy-ä* in (12).

9 Chaha, as the other Southern Ethiopian Semitic languages, lost the guttural consonants it must have had at some point. Whereas the normal vocalic melody in Chaha Perfectives is *ä–ä*, a reflex of the lost gutturals appears as an *a* next to where a guttural may be supposed to have been present earlier, e.g. [d**a**qä] 'he laughed', cf. Arabic √ḍḥk; or [fät**a**] 'he released', cf. Arabic √fṯḥ 'open'; or [**a**märä] 'confess, believe', cf. Arabic √ʔmn 'believe' (for further examples, see Leslau (1956, 1957, 1960) and Lowenstamm (2000)). That *a* can thus be construed as the manifestation of a 3rd radical in those verbs, hence √dAq, √ftA, √Amr. For discussion of the properties and behavior of A, cf. Prunet & Petros (1996) and Prunet (1996). For discussion of related evidence in Modern Hebrew, cf. Enguehard & Faust (2018).

(12)

1Sg	gɪyä-x^{w}
2MSg	gɪyä-xä
2FSg	gɪyä-x^{y}
3MSg	gɪyä
3FSg	gɪyä-t^{y}
1Pl	gɪyä-nä
2MPl	gɪyä-xu
2FPl	gɪyä-xma
3MPl	gɪɾ̲a-***w***o
3FPl	gɪɾ̲a-***β***äma
Impersonal	gɪɾ̲a-***w***i

Every form in the paradigm in (12) displays *y* or *r*; no form displays both. This distribution does not mean that *y* and *r* are allophones of each other. Rather, it results from the interaction of two distinct processes. The first such process, one of the most obvious features of Chaha phonology, is the deletion of *r* by a *y* (or *i*) to its right. It is exemplified by the forms of the first block in (12): where *y* is present, no *r* survives to its left. The second process, documented in the second group in (12), is a corollary of the first one: where *y* is absent, *r* is always observed. Labial-initial subject agreement markers (bold italics in (12)) thwart the realization of the root-final *y*, which allows *r* to survive. In a nutshell, *y*-deletion bleeds *r*-deletion.

On the basis of this generalization, the underlying representation in (13a) can be inferred for the stems in (12), with *r*-deletion represented in (13b) and *r*-preservation in (13c).

(13)

a.	b.	c.
gɪräAäy-nä	gɪɾ̲äAäy-x^{w}	gɪräAäy̶-wo

The details of how the representations in (13) are further mapped into their respective surface representations are beyond the scope of this article, and the interested reader can consult Lowenstamm (1996b) and Banksira (2014) for discussion.

The value of the evidence just reviewed is as follows: *with the paradigm in (12), we can observe under controlled conditions the consequences of the deletion of an r located in the antepenultimate position of a verb from a quadriliteral root*. The reader is reminded that this is exactly the configuration of *kʸɪr̲äkʸärä*, the putative source according to DPB of verb *kʸäkʸärä*. Of crucial interest here is the resolution in such cases of the hiatus created by the deletion of *r*, #Cɪ_äCV. Is the hiatus resolved by erasing the rightmost vowel, #Cɪ_äCV…? Or the leftmost one, #Cɨ_äCV…? The paradigm in (12) unambiguously answers this question: the vowel *to the left* of the site of the deleted antepenult firmly remains in place at all times – to wit, the *gɪ*… in all the forms in (12) which have undergone *r*-deletion. If this is correct, deleting the antepenult of /kʸɪräkʸär-ä/ – as advocated by DPB – can only result in *[kʸɪkʸärä], not the desired [kʸäkʸärä].

*[kʸɪkʸärä], with its admittedly problematic initial vowel, certainly misses the mark. But this should not obscure the fact that, besides that, DPB's scheme successfully derives the $C_1C_1C_2$ pattern. The alternative scenario I will propose in the section after next shares much with DPB's. I will uphold the claim that the $C_1C_1C_2$ pattern is but an altered form of the C_1C_2+ C_1C_2 pattern and I will maintain that the two patterns differ exactly as proposed by DPB, namely by the absence in the $C_1C_1C_2$ pattern of the C_2 of the lefthand side conjunct (underscored) of $C_1\underline{C_2}$+ C_1C_2.

On the other hand, I part ways with DPB in proposing that no deletion is involved. Not only will my proposal derive the desired vocalization, it will display the absence in the $C_1C_1C_2$ pattern of the C_2 of the lefthand side conjunct of $C_1\underline{C_2}$+ C_1C_2 as the mere consequence of general principles, not by means of a stipulation as in DPB's account.

Before my proposal can be put forth, however, more background on Ethio-semitic and Chaha must be introduced.

3 A QUADRIRADICAL TEMPLATE IN CHAHA?

This section comprises two subsections. First, I introduce relevant features of the verbal system of Ethio-Semitic languages. Then, I discuss the supposed quadriliteral template of Chaha and I question its reality.

3.1 'FORMS' OR 'MEASURES' VS. 'TYPES'.

In (14), I compare perfective forms of Arabic and Tigrinya verbs.

(14)

a.			b.		c.
Arabic "Forms"			Tigrinya "Types"		Profile
I	katab-a	'he wrote'	A	säbär-ä 'he broke'	CVCVC-V
II	kattab-a	'he caused *x* to write'	B	wässäx-ä 'he added'	CVCCVC-V
III	kātab-a	'he corresponded'	C	baräx-ä 'he blessed'	CV:CVC-V

When verb forms on the same horizontal line in (14) are compared, it is obvious that they share the same profile (14c).[10] The similarity between general Semitic (represented here by Arabic) and Ethiopic 'verb types' goes no further, however. Arabic uses the resources evident in (14a) to signal various morphosyntactic operations altering the argument structure of verbs from *one and the same root*. Ethiopian Semitic languages, by contrast, do not have access to such resources. Ethiopian Semitic verbs are lexically assigned to one of the types or classes in (14b). Except for a handful of exceptions, no verb is realized in more than one type. Causative and reciprocal verbs such as are illustrated in (14a) for Arabic are formed by other means in Ethiopian Semitic

10 In Ethiopian Semitic, [ä] is the 'short a' of the system, and [a] the 'long a', cf. Lowenstamm (1991). Thus, the initial vowel in *baräx-ä* in (13) is just as long as the initial vowel of Arabic *kātab-a*.

languages. Tigrinya, for instance forms the causative by prefixation of *a-* as in, e.g. *bäddäl-ä* 'hurt *x*', *a-bäddäl-ä* 'cause *x* to hurt *y*', etc.

Chaha too allots each verb to a specific type. But, the complex interplay of gemination, geminate devoicing, and degemination which pervades the phonology of the language causes a considerable amount of surface opacity. The reader will readily realize for instance how Chaha degemination will make it impossible to distinguish between Type A and Type B perfectives as Tigrinya transparently does, (14b). As a result, the range of clues which make it possible to identify the type of a verb is much more reduced in Chaha than in, e.g. Tigrinya or Amharic. Reliable criteria exist nevertheless. One such criterion is the vocalic melody of the verb in the Jussive/Imperative paradigm. Indeed, all types are sharply distinguished in the Jussive, as shown with the 3rd Masculine Singular examples in (15).[11]

(15)

	Perfective	Jussive	Root	Characteristic Jussive melody
Type A_1	kätäf-ä	yä-kɪtɪf	√ktf 'chop meat'	ɪ-ɪ
Type A_2	sänäx-ä	yä-sɪräx	√srx 'be impure'	ɪ-ä
Type B	k'^{w}ämär-ä	yä-k'^{w}ämɪr	√k'^{w}mr 'become strong'	ä-ɪ
Type C	č'af^{w}är-ä	yä-č'af^{w}ɪr	√č'f^{w}r 'scratch'	a-ɪ

By that criterion, it is clear that all verbs from quadriliteral roots and reduplicated biradicals are realized in Type B. The reader can verify that *yä-sämbɪt* and *yä-zärzɪr*, the two examples in (16), are vocalized exactly as *yä-k'^{w}ämɪr* in (15).

(16)

sɪräpät-ä	yä-s*ä*mbɪt	√srbt 'spend time away'
zɪräsär-ä	yä-z*ä*rzɪr	√zr+zr 'cut meat into strips'

11 For the sake of completeness, I have indicated all of the possible vocalization patterns in the Jussive. Type A breaks down into two subtypes, A_1 and A_2. A_2 verbs with their Jussives vocalized as indicated in (14) are mostly intransitive. This classification is due to Marcel Cohen. I adopt it here for heuristic purposes and without discussion of its validity.

As well, *all* $C_1C_1C_2$ verbs are of Type B, as evidenced by the vocalization of their jussives. A few examples appear in (17).

(17)

yä-q^{w}äq^{w}ɪr ‘let him wring wet clothes, remove moisture out of dough!’
yä-q^{w}äq^{w}ɪs ‘let him roast!’
yä-gäkɪt ‘let him accompany!’
yä-gäkɪr ‘let him arrange, fix!’

This is in sharp contrast with $C_1C_2C_2$ verbs which can be realized in any of the types in (15) and be vocalized accordingly. This major difference should dissuade anyone from thinking that the $C_1C_1C_2$ verbs of Chaha are ‘ordinary’ verbs, perhaps simply the mirror image of the $C_1C_2C_2$ pattern.

3.2 THE QUADRILITERAL TEMPLATE

Semitic languages have the means of fitting verbs from biliteral and triliteral roots. But when the number of root consonants exceeds 3, a makeshift solution of some sort is activated for their accomodation. In Arabic or Hebrew, for instance, verbs from quadriliteral roots end up squatting a *wazn* (or *binyan*) normally utilized for verbs from bi- or triliteral roots. For instance, Arabic fits roots such as √tržm ‘interpret’ into Form II, the pattern normally hosting derived causative/intensive verbs. Thus, *taržam-a* – eventhough that verb is neither causative nor intensive – is realized (more or less) in the same pattern as *ʕallam-a* ‘he caused *x* to learn (he taught)’ or *kassar-a* ‘he shattered’. That quadriliteral verbs operate like brood parasites is especially clear in the case of Hebrew, a language in which quadriliteral verbs are realized with the characteristic *i – ē* vocalization of the *piʕʕēl* pattern (the equivalent of Form II in Arabic): *tilfēn* ‘speak on the telephone’ from √tlfn on the model of, e.g. *dibbēr* ‘say’ from √dbr.

Chaha too has quadriliteral roots. How does the language manage them? It is usually assumed that Chaha possesses a genuine quadriliteral *binyan* of its own, C_1ɪC_2äC_3äC_4-ä.

I introduced it in section 2 without questioning its reality. Supposedly, it serves as the host of verbs from quadriliteral roots, such as *mɪsäkär-ä* 'bear witness' or *kʷɪrämäz-ä* 'be ripe'; or of verbs from reduplicated biliteral roots such as *zɪmäsäm-ä* 'be wet', *dɪfädäf-ä* 'press down with the hand', etc.

I wish to question that assumption. Indeed, I will argue that there is no such thing as a quadriliteral template in Chaha. This claim does not occur in a vacuum. On the contrary, much important work on Chaha directly relies on the existence of a quadriliteral template. One example is the extremely detailed and insightful piece devoted by Jean-François Prunet and Degif Petros Banksira to the study of what they call 'local movement verbs', (Prunet & Petros 1996).

As the authors show, local movement verbs involve a) a prefix *n*+, preceded or not by the causative prefix *a*-, b) a quadriliteral template. Saturation of the quadriliteral template is automatic when the root is itself quadriliteral, e.g. *an-zɪwat'är-ä* 'stretch oneself' from √zwt'r. If the root is triliteral, spreading of the rightmost root consonant will lead up to saturation as in, e.g. *an-zɪräpäβ-ä* 'cause *x* to fold up' (< *an-zɪräbbäb-ä* from √zrb). But when the root is biliteral as, e.g. √gb, full reduplication only will satisfy the requirement of quadriliterality, hence *ɪŋ-gɪβäkäβ-ä* 'thunder' (<*ɪŋ-gɪbäggäb-ä*). In their view, the imperative of saturating the template *is* the sole cause of reduplication. Thus, Prunet & Petros not only provide a rationale for the reduplication of biliteral roots, they also derive the fact that biliteral roots *only* will reduplicate. An attempt such as my own at dispensing with the quadriliteral template must at least derive the same effects, and a proposal will be offered in the next section. In the remainder of this section, I describe my view of what the quadriliteral template really is.

Triliterals verbs are uniformly vocalized as /ä – ä/, *säpär-ä* 'break', *bäkʸär-ä* 'brew', etc. By contrast, as we saw earlier, verbs from quadriliteral and reduplicated biradical roots display a different vowel melody, /ɪ – ä – ä/. Because vowels carry information about Tense and Mood, the question naturally arises as to why quadriliteral perfectives

are not vocalized like all other perfectives, i.e. '*ä* throughout' as in, e.g. **säräpätä* or **bäsäbäsä* instead of the attested *sɪräpätä* and *bɪsäbäsä*, respectively.

An answer to that question could be that the template which hosts quadriradical verbs simply has its own vocalization. Another answer could be that the vocalization of quadriliterals is in reality not that different from the vocalization of triliterals: *except for their first vowel*, quadriliteral perfectives display *ä* throughout, just as triliterals do. This is shown graphically in (18) where tri- and quadriliteral verbs have been right-aligned. When the outstanding leftmost syllable of each quadriliteral in (18) is ignored, the remaining portion, ***CäCäC-ä***, appears to be vocalized exactly like the triliteral verb above it.

(18)

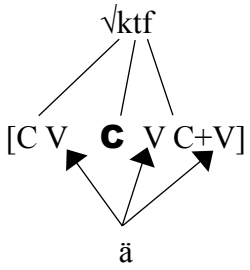
säkär-ä	kätäf-ä	säpär-ä	CäCäC-ä
*qɪ*rät'äm-ä	*gɪ*rätäm-ä	*sɪ*räpät-ä	*CɪC*äCäC-ä

I follow that lead and propose that *ä* deploys over a specific domain (enclosed in square brackets in (19)).[12] A triliteral verb like *kätäf-ä* 'chop meat' exactly corresponds to that domain. On the other hand, the first consonant of a quadriliteral verb such as *sɪräpät-ä* (19b) stands outside the domain. Chaha does not tolerate word-initial consonant clusters and the vocalization of that position is left to the care of the epenthetic system. Indeed, the vowel deletes (or is not inserted) the moment it ceases to be necessary as, e.g. when the causative prefix attaches to *sɪräpät-ä*: *a-sräpät-ä*; another example will be encountered in (23c). Note that causative formation normally does not have the effect of deleting the following vowel: *bäsär-ä* 'be cooked', *a-bäsär-ä* 'cook', not **a-bsär-ä*.

12 Cf. Petros (1993) for an early discussion.

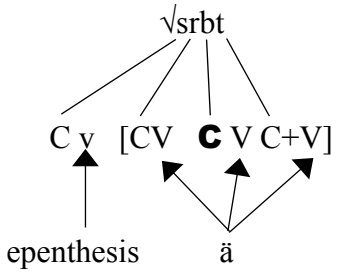
(19)

a.
Regular triliteral verb



kätäf-ä

b.
Quadriliteral verb



sɪräpätä

On this view, the 'quadriliteral template' no longer needs to be viewed as an autonomous object. Rather, I propose that it be viewed as an optionally augmented version of the template of one of the three types of verbs. As already pointed out in (16), all quadriliteral verbs vocalize in the fashion of Type B verbs. Type B is therefore the 'optionally augmented' type.

My proposal for Type B appears in (20).

(20) (C v) C V **C** V C+V

I assume that when a root selects Type B, no mention is made of which version of it, the long or the short one. Given this built-in ambiguity, the logical possibilities for the realization of a root in Type B are as follows.

When a triliteral root, e.g. √bk'ʸr, selects the short version, a verb such as *bäkʸär-ä* 'brew' arises, (21a).

When a triliteral root, e.g. √gmz, selects the long version, a verb such as *gɪmäzäz-ä* 'be numb' surfaces, (21b).

When a quadriliteral root, e.g. √srbt, selects the long version a quadriliteral verb is formed, *sɪräpät-ä*, (21c).

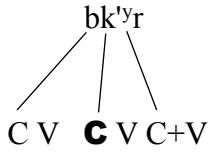
Of course, if a quadriliteral root selects the short version, the attempt aborts for lack of space. This is shown in (21d) where the loose arrow on the right represents the fact that the final root consonant has no templatic position to dock onto.[13]

When a biliteral root selects the short version, a $C_1C_2C_2$ verb is the outcome. This is just the scenario demonstrated in McCarthy (1979) and illustrated in (1b) and (5a), and exemplified anew in (21e) with *a-däfäf-ä* 'crouch down.

If a biliteral root, say √df again, selects the long version of the Type B template, no verb such as hypothetical **dɪfäfäf-ä* is possible, as multiple attachment of the kind represented in (21f) is not tolerated by the grammar of Chaha.

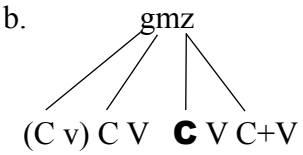
(21)

a.



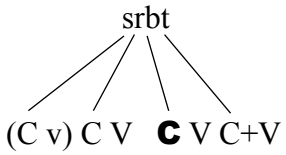
bäkʸär-ä

b.



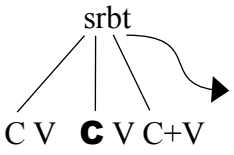
gɪmäzäz-ä

c.



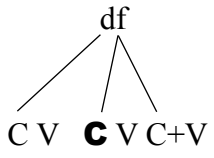
sɪräpät-ä

d.



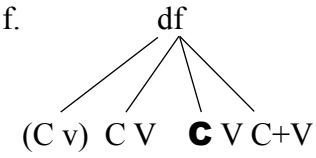
13 I return to this point after the example in (30).

e.



a-däfäf-ä

f.



**dɪfäfäf-ä*

Where do verbs such as *bɪsäbäs-ä* and other $C_1C_2C_1C_2$ examples fit in the short/long typology of Type B verbs just reviewed? With their 4 consonants and their characteristic vocalization, there can be no doubt that such verbs involve association to the 'long' version of the Type B template. But of which root? Strikingly, whereas **dɪfäfäf-ä* is impossible (in Chaha or elsewhere in Semitic), *dɪfädäf-ä* 'press down' is attested. Does *dɪfädäf-ä* result from the selection by √*df* of the long version of Type B? Is it the real-life, viable substitute for **dɪfäfäf-ä*? The actual counterpart of (*a-*)*däfäf-ä* in the typology in (21)?

More generally, are $C_1C_2C_1C_2$ verbs the 'long' variants of verbs from biliteral roots, as claimed by Prunet & Petros (1996)?

The implementation of a Semitic root both as $C_1C_2C_2$ and $C_1C_2C_1C_2$ is so familiar that that inference is very tempting. Indeed, when faced with a verb of type $C_1C_2C_1C_2$, we immediately wonder whether a $C_1C_2C_2$ verb from the same root is also attested. Such is actually often the case. In Cairene Arabic, for instance, the existence of *šamšem* 'sniff' leads to the expectation that root √šm might well be implemented in the form of a $C_1C_2C_2$ verb, too. And indeed *šamm* 'smell' is attested.

Nevertheless, I will argue the points in (22).

(22)

i. the realization of a $C_1C_2C_1C_2$ verb involves the long version of Type B
ii. the selecting root in this case is *not* of type $\sqrt{C_1C_2}$; rather it is of type $\sqrt{C_1C_2◎C_1C_2}$[14]
iii. when a $\sqrt{C_1C_2◎C_1C_2}$ root selects the short version of Type B, a $C_1C_1C_2$ verb arises

In other words, the true short counterpart of a $C_1C_2C_1C_2$ verb in the typology in (21) is a verb of type $C_1C_1C_2$, *not* $C_1C_2C_2$.

The next section is devoted to an elaboration of the reduplicative scenario whereby $\sqrt{C_1C_2◎C_1C_2}$ roots arise and their role in the formation of which verbs.

4 $C_1C_2C_1C_2$ (I.E. FULL, OVERT) REDUPLICATION, PL

Up to this point, I have deliberately restricted the discussion to root-and-pattern considerations. I submit that another feature of $C_1C_2C_1C_2$ verbs (and $C_1C_1C_2$, too) plays an important role in their architecture, viz. their pluriactional semantics.[15] My proposal is that root reduplication – the process whereby $C_1C_2C_1C_2$ roots arise from C_1C_2 – is triggered by a morphosyntactic feature, PL (for verbal plurality). At the interface with semantics, PL is interpreted as imparting reduplicated verbs with the characteristic pluriactional semantics of that class.

In a first subsection, I seek to identify the structural position of PL. A number of possibilities suggest themselves as to the location of PL: the root system, *v* and its associated layers; alternatively, PL might head its own projection. I will argue that PL is part of the root system. In a second subsection, I put forth a proposal regarding the mapping onto a verbal template of a root phrase including PL. In the third subsection, I demonstrate how $C_1C_1C_2$ verbs arise.

14 The symbol ◎ used here is meant to indicate that the relationship between the two C_1C_2 chunks has not been defined at this stage.
15 On pluriactionality and verbal plurality, cf. Greenberg (1991), Newman (1990, 2012), Fassi Fehri (2000, 2012), and closer to the topic of this article, Procházka (1993, 1995) and Greenberg (2010).

4.1 WHERE IS PL?

In Chaha, $C_1C_2C_1C_2$ verbs coexist with $C_1C_2C_2$ verbs, as we saw with examples such as *dɪfädäf-ä* 'press down' and *a-däfäf-ä* 'crouch down'; also, *aŋ-k'ɪfäk'äf-ä* 'cut down branches' and *k'äfäf-ä* 'cut edges', *an-č'ɪräč'är-ä* 'pour out in a thin stream' and *an-č'änär-ä* (< *an-č'ärrär-ä*) 'flow in a continuous, thin stream', etc. On the other hand, there are more interesting cases. Consider for instance verb *kɪsäkäs-ä* 'smash repeatedly'. Here, we may surmise that *käsäs-ä* also exists. But, we find that the non-reduplicated verb corresponding to *kɪsäkäs-ä* is not *käsäs-ä*. Rather, it is *käš-ä* 'smash'. The underlying representation of *käš-ä* is demonstrably /käsäy-ä/ and the root is therefore √ksy. In view of what *kɪsäkäs-ä* and *käš-ä* mean, I will not consider the option that two different roots – √ks and √ksy – are involved. If a common root is involved, it cannot be √ks (or the non-reduplicated verb would be unpalatalized, i.e. *käsäs-ä*). But, if the common root is √ksy, it must then be the case that its last consonant is ignored when the reduplicated verb is formed (or that verb would be **kɪšäkäš-ä*).

Further examples point in that direction. Consider the data in (23). The palatalized coronals in the forms in (23b) evidence the presence of the root's final glide. By contrast, the corresponding reduplicated verbs in (23c) display no trace of that glide.[16]

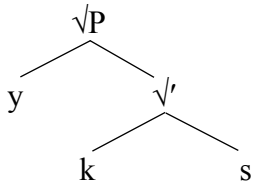
16 Dillmann (1907: 131) reports something very similar for Ge'ez and other Semitic languages: « Many multiliteral roots originate in repetition of individual radicals, or of the whole root […] A large number of those formations arose out of Biliteral roots […] ***or out of weak Triliterals***, by repetition of the whole root ***or of its two chief letters*** [my emphasis JL].

(23)

a.	b.	c.
√dky	däk^{y}-ä ‘dilute honey, v.’	dɪgädäg-ä ‘squeeze objects in a container in order to make room for more, v.’
√mt'y	meč'-ä ‘wash clothes, v.’	mɪt'ämät'-ä ‘be soaked, v.’
√bt'y	bäč'-ä ‘dilute, v.’	bɪt'äbät'-ä ‘dilute, v.’
√q^{w}zy	q^{w}äž-ä ‘have dysentery, v.’	(a)q^{w}zäq^{w}äz-ä-wä-m ‘he wasted away, v.’
√gsy	gaš-ä ‘raid, v.’	gɪsägäs-ä ‘travel fast, v.’
√ft'y	fäč'-ä ‘grind flour, v.’	fɪt'äfät'-ä ‘crumble bread, v.’

Why would that be? Following Lahrouchi (2010), I assume that roots have internal structure. I submit that the representation of the common root of *käš-ä* and *kɪsäkäs-ä* is as in (24), where the root is a head-initial branching constituent with, in the case at hand, *k* as the head, *s* as the complement of the head, and *y* sitting in the specifier of √, as shown in (24).[17]

(24)



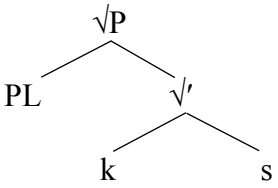
The fact that *y* is absent from reduplicated verbs can now be construed: reduplication ignores material present in the specifier of the root. The obvious question is *why*?

Because the realization of the radical glide in (24) is in complementary distribution with reduplication, I propose that PL is *also* located in the specifier of √, (25a).

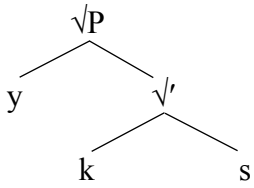
17 It follows from this proposal that no root can be monoliteral. It also follows that all roots are essentially biliteral, a vast and controversial topic which cannot be taken up here, cf. Goldenberg (2005) for much valuable information and Lowenstamm (2010) for some references. For a systematic exploration of the segmental makeup of Arabic roots, cf. Bohas & Dat (2007) and Bohas (2019).

(25)

a.



b.



As PL and the *y* of the example under discussion occupy the same position (25), they do not co-occur.[18]

No specific melody is associated with PL. Instead, the presence of PL triggers copying of the segmental material of the √P of which it is the specifier. This is what I now show as part of a more general discussion of how the root deploys.

4.2 DEPLOYMENT

Because verbs from complex roots of the type displayed in (25a) are always of Type B, I assume that such roots 'select' Type B.[19]

Realizing verbs from root phrases such as in (25a) involves dovetailing an outstanding property of the √P with an outstanding property of the template (or vice versa) in such way that *all constituents of the √P be expressed at all times*. The outstanding property of the √P in the case at hand is the segmental void of its initial constituent – the PL in the specifier. The outstanding property of the template is its intrinsic short/long ambiguity. Once more, the objective is to guarantee the eventual expression of all of the constituents of the √P, crucially its segmentless PL. I propose the procedure in (26).

18 This is not to say that *y* can never be present in a reduplicated biradical. A verb such as *č'ɪyäč'-ä* 'spread out grass or a hide on the floor' does exist. But, the underlying representation of that form is /t'ɪyät'äy-ä/ from *biliteral* root √t'y. In this case, the glide is the complement of the head, *not its specifier*. This is in sharp contrast with *käš-ä* (< /käsäy-ä/) from *triliteral* root √ksy. In that case, the glide occupies the specifier position.

19 That generalization deserves better than the crude stipulation offered here.

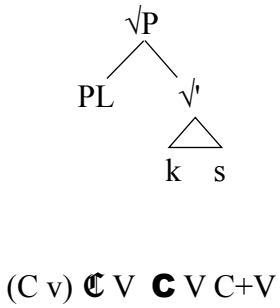
(26)

i. if √P includes PL, identify the first non-optional C of the template; then,
ii. associate root-consonants one-to-one, left-to-right *to the remaining* C-positions
iii. copy the segmental content of the root onto PL
iv. associate the segmental content of PL one-to-one, left-to-right to the remaining C-positions

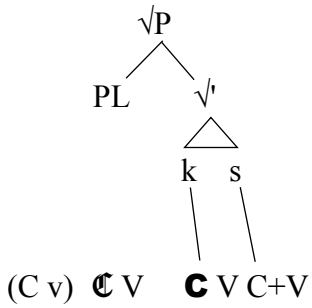
(27) depicts the execution of the first step, where the identification of the first non-optional position of the template is marked by the use of the Old English font, 𝔠. (27b) depicts the second step with the association of the root consonants. Essentially, the effect of (26i, ii) is to skip the first non-optional C-position. *Not* skipping that position and letting root consonants associate in the normal fashion would amount to ignoring one of the constituents of root [$_{√P}$ PL [$_{√'}$ ks]], viz. its specifier.

(27)

a.



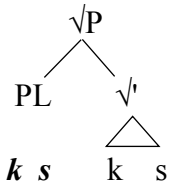
b.



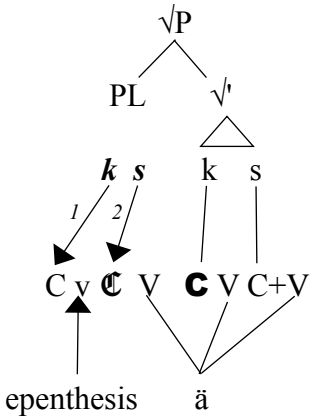
(28a) illustrates the 3rd step of the procedure in (26) whereby the melody in √' is copied (bold italics) onto PL. (28b) shows how the segments of the copy trivially associate to the template (arrows).

(28)

a.
Copy of Melody



b.
Association



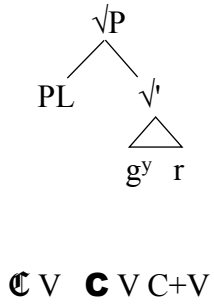
In (28b), I have numbered (*1*, *2*) the episodes of association of the copied material in order to highlight the fact that association proceeds one-to-one and left-to-right, i.e. without bending in any way the usual conventions.

We just saw how fully reduplicated biradicals arise when the 'long' version is selected. With (29), we now look at the consequences of selecting the 'short' version of Type B, as is the case with root √g^{y}r.

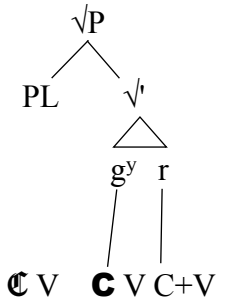
In (29a), I again show how the first non-optional position of the template is marked for skipping, and in (29b) how the consonants link up to the positions of the template.

(29)

a.



b.

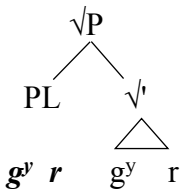


In (30a), the melody is copied (bold italics). The mapping of the copied melody onto the template proceeds as usual (30b), i.e. left-to-right and one-to-one. But this time, because the template is short, *r* the rightmost consonant of the copied melody has nowhere to go: the necessary casualty of the selection of the short version of the template, *r* remains unpronounced. The vocalic melody deploys as usual.

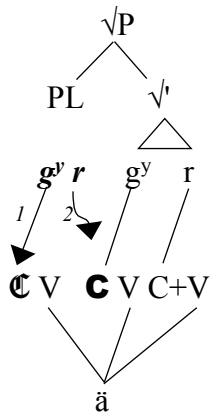
The result is *g^{y}äk^{y}är-ä* (< *g^{y}ägg^{y}är-ä*).

(30)

a.



b.



I submit this is how the $C_1C_1C_2$ verbs of Chaha arise. Two non-trivial consequences follow from this account.

In (21d), I illustrated the mismatch between the segmental load of a quadriliteral root and the short version of the Type B template: no viable verb from [$_{√P}$ srbt] could be formed in that fashion because the template could not accommodate all of the root consonants. But, we apparently have a similar situation in (30b) with one consonant remaining unpronounced. Nevertheless, a viable verb from the root involved in (30b) results. What is the difference? The difference is that, unlike [$_{√P}$ srbt], the root in (30b) does not comprise 4 consonants. It is not, in other words [$_{√P}$ g^{y} r [$_{√'}$ g^{y} r]]. That root, rather, is [$_{√P}$ PL [$_{√'}$ g^{y} r]] and the entirety of its ingredients finds expression with either

version of the Type B template. As long as PL does not remain silent, it is epiphenomenal whether it materializes in the form of a complete reduplicant – $C_1C_2C_1C_2$ as in ***kɪs***äkäs-ä – or in the form of a partial reduplicant only: $C_1C_1C_2$ as in ***g^y***ä***k^y***är-ä.

The second consequence is a prediction. If what I have dubbed the long and the short versions of Type B really are two facets of the same object, and roots attach to one version or the other, a root could in principle attach to both. In that case, free variation is expected. And indeed, Banksira (2000: 73) reports the existence of such cases:

(31)

The verbs (*a-*)*g^{w}äk^{w}är-ä*/(*a-ŋ-*)*g^{w}ɪräk^{w}är-ä* 'has roared' are in free variation.

5 CONCLUSION

In this article, I have attempted to account for the existence of $C_1C_1C_2$ verbs in Chaha. This account involves no special theory of such verbs. On the contrary, $C_1C_1C_2$ verbs are shown to be a trivial by-product of a) my more general proposal regarding the morphosyntax of reduplicated biradicals, b) the variable geometry of the Type B template. No Arabic or Hebrew template displays comparable plasticity. It follows that in neither language do $C_1C_2C_1C_2$ verbs ever morph into $C_1C_1C_2$.

One aspect of the $C_1C_1C_2$ verbs of Chaha evades my account, however. The set of Chaha $C_1C_1C_2$ verbs is very restricted: the initial consonant of their root must carry a secondary articulation, e.g. *g^y*, *k^y*, *g^w*, *k^w*, etc. The reader can verify that all my examples of $C_1C_1C_2$ verbs display that property. This restriction is not incompatible with my proposal, but it in no way follows from it. Importantly, Amharic, Tigrinya, and Ge'ez impose no such restriction on their $C_1C_1C_2$ verbs. At this point, I prefer to keep my proposal in its most general form in the hope that further scrutiny of Chaha and Ethio-

Semitic evidence makes it possible to understand why Chaha behaves as restrictedly as it does.

AKNOWLEDGEMENT

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DISCUSSION WITH GUILLAUME ENGUEHARD

(UNIVERSITÉ D'ORLÉANS/ CNRS LLL)

Enguehard, Guillaume. 2022. discussion in: Lowenstamm, Jean (auth.) "Oh, to Understand The Impish Behavior And Temperament of Ethiopian Left-geminators". *Radical: A Journal of Phonology*, 4, 487-490.

COMMENTS

Jean Lowenstamm propose une analyse des verbes pluractionnels à *Primæ Geminatæ* du tchaha, dont l'originalité est de rejeter tout processus d'ajustement phonétique. Par certains points, sa proposition peut toutefois ouvrir quelques débats.

1. La morphologie des verbes réduplicqués. Pour rendre compte du fait que, en tchaha, seules les racines d'apparence bilitère peuvent servir à la construction de verbes à *Primæ Geminatæ*, Jean Lowenstamm propose une représentation des racines trilitères dans laquelle la position de spécifieur est occupée soit par la troisième consonne radicale, soit par un trait de pluractionnalité (PL). La contrainte qui porte sur les racines des verbes à *Primæ Geminatæ* semble alors strictement structurelle. Toutefois, August Dillmann (cité par l'auteur) affirme que les formes comparables du Ge'ez sont issues de racines bilitères ou trilitères *faibles*. Faut-il comprendre qu'il existe aussi une contrainte portant sur la qualité des consonnes radicales en tchaha, ou bien que les langues éthio-sémitiques n'imposent pas les mêmes contraintes aux verbes à *Primæ Geminatæ* ?

Par ailleurs, Jean Lowenstamm admet que les racines quadrilitères sont incapables de former des verbes à *Primæ Geminatæ* à cause de leur excédent segmental. Pourtant, si l'on admet que PL peut occuper la place d'une consonne radicale, qu'est-ce qui fait obstacle à ce que la quatrième consonne radicale soit remplacée par PL, et que l'association au gabarit de la racine ainsi tronquée aboutisse à la forme $C_1äC_2äC_3$?

Enfin, sur la base d'une distinction entre gabarit court et gabarit long, l'auteur crée une symétrie entre les verbes réduplicatifs (gabarit long) et les verbes à *Primæ Geminatæ* (gabarit court), mais cela au détriment d'une symétrie entre les verbes réduplicatifs (gabarit long) et les verbes sourds (gabarit court). Il semble de prime abord problématique de donner ainsi une place centrale à des verbes marginaux tout en marginalisant des verbes plus répandus. Jean Lowenstamm n'étaye ce système qu'en toute fin d'article, lorsqu'il présente la sémantique de ces verbes. On y apprend notamment que les verbes à *Primæ Geminatæ* et les verbes réduplicatifs sont des variantes libres. Cela suppose que la taille du gabarit n'a pas de fonction particulière. Mais faut-il alors en déduire que les formes $C_1äC_2äC_3$ (construites sur un gabarit court) et $C_1ɪC_2äC_3äC_3$ (construites sur un gabarit long) sont également des variantes libres ?

2. Le formalisme de l'association. L'analyse de Jean Lowenstamm repose sur certains postulats dont le formalisme n'est pas toujours explicitement formulé. Premièrement, l'auteur explique que les racines bilitères sont incapables de s'associer à une version longue du gabarit, car ils généreraient alors un branchement triple. Pourtant, les branchements multiples ne sont pas rares dans les phénomènes d'harmonie vocalique, et on en observe un exemple dans la forme du tchaha *kätäfä*.

Deuxièmement, afin de garantir la réalisation de PL, l'auteur admet que la première position non-optionnelle d'un gabarit est laissée vide par l'association de la racine. Cette règle permet alors à la racine réduplicative d'associer au moins l'un de ses segments à la position laissée vide. Toutefois, je ne suis pas sûr que contrevenir à cette règle revienne effectivement à ignorer le trait PL. Bien qu'optionnelle, la première position du gabarit long est accessible, et le spécifieur a donc toujours la possibilité de se réaliser. Donc, à moins que cette règle n'ait un rapport avec la position de l'accent (fonction démarcative), sa motivation fonctionnelle semble affaiblie par l'existence d'un gabarit long.

Par ailleurs, il me semble que cette règle fait également double emploi avec la représentation morpho-syntaxique de la racine. La seconde permet d'expliquer pourquoi seules les racines d'apparence bilitères sont concernées par la pluractionalité, mais la première l'explique aussi : la première consonne radicale s'associant à la position C_2, la troisième consonne d'une racine trilitère n'a plus aucune position à laquelle s'associer.

Troisièmement, la linéarisation des objets appartenant à la structure morpho-syntaxique proposée par l'auteur semble être variable. En tant que spécifieur, la troisième consonne radicale s'associe à la droite du gabarit, mais la racine réduplicuée par l'action du trait PL, s'associe à la gauche du gabarit. Pourquoi cette différence ?

3. L'hypothèse Dillmann. L'analyse de Jean Lowenstamm est une variante de l'hypothèse de Dillmann, selon laquelle les verbes éthio-sémitiques à *Primæ Geminatæ* sont d'anciennes formes réduplicuées subissant une assimilation totale de la première occurrence de C_2 par la seconde occurrence de C_1. L'auteur réfute l'idée d'une assimilation et préfère voir la non répétition de C_2 comme l'effet d'un phénomène strictement gabaritique propre aux langues éthio-sémitiques, voire au tchaha. Pourtant, le mécanisme évoqué par Dillmann à l'avantage d'être attesté dans d'autres langues. Un mécanisme similaire permet de dériver les hypocoristiques du français : *papatte*, *baballe*, *pépère*, etc. L'effacement de C_2 est notamment manifeste dans l'exemple *cocotte*, lequel provient de la réduplication onomatopéique *cot-cot*.

Pour finir, Jean Lowenstamm mentionne que les racines concernées par les verbes à *Primæ Geminatæ* sont toutes composées d'un premier constituant affecté par une articulation secondaire. Ajoutée au fait que l'auteur a dans son travail parfois représenté comme bipositionnels ces types de consonnes, cette contrainte fait penser au processus de palatalisation que l'on trouve dans *√ksy > käšä*. On peut donc être tenté par le scénario selon lequel les verbes à *Primæ Geminatæ* du tchaha sont originellement des racines trilitères dont C_2 serait un glide et dont C_1 et C_2 s'assimileraient mutuellement,

comme c'est le cas pour les rares géminées initiales du français (ex : *ʒəsɛpa* > *ʃʃɛpa*) . Un bref aperçu de quelques cognats aurait sans doute permis d'évacuer cette hypothèse.