*2↓ (=No Two Low)

Noam Faust (université paris 8, CNRS SFL) Nicola Lampitelli (Université de Tours, CNRS LLL)

This talk provides an account of several related processes in Tigrinya (1).[1] The IMP.M is usually of the form C_1ɨC_2əC_3 (1a.i; [ɨ] is epenthetic). However, when either C_2 or C_3 is a guttural (G), the vowel [ə] alternates with [a]. Secondly, if C_3 is a G, the same vowel is syncopated upon suffixation (1c.ii). Thirdly, the vowels [ɨ] and [ə] harmonize with the following vowel across a G (1b.i and 1b.iii resp.). Other vowels, like /i/ in (1c.iii) do not. Note, too, that the underlying /ə/ before the G in (1b.iii) does not syncopate like its counterpart in (1c.ii).

(1)	i.IMP.M	ii.IMP.F	iii.PASS.GER.PST
a. √grf 'whip'	gɨrəf	gɨrəf-i	tɨ-gərif-u
b. √ʃhb 'pull'	saħab	saħab-i	tɨ-siħib-u
c. √smʕ 'hear'	sɨmaʕ	sɨmʕ-i	tɨ-səmiʕ-u

Rose & Walker (2015) analyze the facts in (1b) as resulting from a requirement that the two vowels flanking a G be identical. However, they do not account for the syncope in (1c.ii), and they do not explain the violation of this requirement in (1c.iii). While the latter can be explained by a high ranked faithfulness to high vowels, such an explanation misses a crucial point: it seems that there is something especially vulnerable about the specific vowels /ə/ and /ɨ/, but only before a G. Our analysis brings these facts to the front.

We submit that all these alternations stem from a rule "No two low", which dissociates the first of two A elements in a row from its skeletal position and fuses it with the following A (everything except green line in (2)). This creates a situation of *multiple correspondence*, whereby the melody lexically associated to x_1 is realized by x_2. Because of this, if x_1 is a governed V (in the strict CV sense, Lowenstamm 1996), it will then remain empty: /smaʕi/ => [sɨmʕi] (1c.ii). If x_1 is an ungoverned V, or if it is a consonant, it must be realized, in which case it is associated to the fused A_1+A_2 melody (dotted green line in (2)). Assuming that [ə]=A, and [a]=A+A (Faust 2017), this results in the lowering of /ə/ before or after a G: /smə**ʕ**/ => [sɨma**ʕ**] (1c.i), and /ʃhə**b**/ = [saħa**b**] (1b.i,ii). Importantly, A_2 is never dissociated; accordingly, it never syncopates, even if it is a governed vowel, as in [saħa**b**i] (1b.ii).

(2)

A_1	A_2		A_1	$\underline{A_2}$
|	|	=>	⋮	|
x_1	x_2		x_1	x_2

To explain the identity between stem vowels in (1b), we adopt Rose & Walker's guttural transparency analysis (preceded in fact by Angoujard 1995): /ʃhəb/ => [sa**ħ**a**b**]. The lack of syncope in /tɨ-sə**ħ**ib-u/ => [tɨ-si**ħ**ib-u] (1b.ii) is explained following Buckley (2000): syncope is blocked if it results in misalignment between the left edge of the stem and the left edge of a syllable. While both [i] and [a] in this position would satisfy this requirement, [a] would violate the transparency requirement.

Since coalescence drives syncope in our account, there is no syncope in either [gɨrəfi] (1a.ii) or [səmiʕu] (1c.iii). It remains to be explained why there is no compliance with transparency in the latter. Based on distributional patterns, Lowenstamm & Prunet (1985) propose that [ɨ] and /ə/ are the only headless vocalic expressions in Tigrinya. Assuming that only unheaded positions can syncopate, consider now a harmonized output to /səmi$_1$ʕ$_2$u/, namely *[səmu$_1$ʕu$_2$]. In this output, [u$_1$] is a copy of [u$_2$]. In other words, there is a non-head in a governed position. One expects the position to syncopate, yet *[səmʕu] would be unfaithful to the underlying presence of /i$_1$/. Thus, neither syncope nor harmony takes place.

Having covered the facts in an autosegmental account, we elaborate using the constraint ranking in (3). For an input with a sequence /əG/, keeping the vowel (or lowering it) constitues a violation of an OCP requirement on lowness (candidates a,b). This requirement can be satisfied in three ways. The first, namely reducing the number of [low] features in the

[1] Data is based on fieldwork and Berhane (1990).

output (candidate c), violates $Max_{[low]}$. The second and third consist of letting the [low] feature of /ə/ be realized by the G and then either deleting the vowel (candidate d) replacing it with a featureless [ɨ] (candidate e). The former solution violates the alignement of prefix and stem, and so it is candidate (e) that emerges as optimal.[2]

(3)	input: /tɨsə$_1$ħ$_2$ɨb/	$Max_{[low]}$	$OCP_{[low]}$	Align(syll,stem)	NoGov[ə/ɨ]	*HiatusV_iV_j
Tigrinya	a. [tɨsa$_1$ħ$_2$ɨb]		*!			*
	b. [tɨsə$_1$ħ$_2$ɨb]		*!		*	*
	c. [tɨsa$_2$ħ$_2$ɨb]	*!				
	d. [tɨsħ$_{12}$ɨb]			*!		
	☞ e. [tɨsɨħ$_{12}$ɨb]				*	

We then expand our analysis to two other related facts. First, we consider /**a**ʕ/ sequences (as opposed to the /əG/ sequences in (1)). These are of interest because /a/ is a headed vowel. Nevertheless, it does alternate with other vowels when governed: /mɨsmaʕ/ => [mɨsmaʕ] 'hearing', but /mɨsmaʕ-u/ => [mɨsmuʕu] 'his hearing' (e.g. [mɨsbar-u] 'his breaking'). We show that our account covers these facts, too, since /aG/ also corresponds to (2). Second, the closely-related language Tigre exhibits the same patterns as in (1), except that syncope is preferred over harmony in cases like (1b.iii): /t-səħib/ => [tɨ-sħib], *[tɨsɨħib]. A minimal difference in ranking between the alignment and syncope requirements (in special font) derives this difference, as in (4).

(4)	input: /tɨsə$_1$ħ$_2$ɨb/	$Max_{[low]}$	$OCP_{[low]}$	**NoGov[ə/ɨ]**	**Align(syll,stem)**	*HiatusV_iV_j
Tigre	a. [tɨsa$_1$ħ$_2$ɨb]		*!			*
	b. [tɨsə$_1$ħ$_2$ɨb]		*!	*		*
	d. [tɨsa$_2$ħ$_2$ɨb]	*!			*	
	☞ c. [tɨsħ$_{12}$ɨb]				*	
	e. [tɨsɨħ$_{12}$ɨb]			*!		

Selected References

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[2] NoGov[ə,ɨ] is violated by governed nuclei containing these vowels. The constraints *HiatusV_iV_j, which is not relevant for the form /tɨsəħib/, is active in the computation of other forms.