LABIALITY AND STRICTURE IN BERBER

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0. Introduction

Co-occurrence restrictions on labiality in Berber have been argued to support a theory in which consonantal and vocalic labiality are tier-distinct (Clements 1990), or "primary" and "nonprimary" (Selkirk 1989, 1993). In this paper I argue that instead, the patterning of labiality in Berber is explained when stricture specifications are directly referred to in the labiality co-occurrence restrictions themselves.

In Section 1 I present the Berber facts (from Selkirk 1989). In Section 2 I briefly present Selkirk's (1989,1993) and Clements' (1991) analyses of the Berber data. In Section 3 I reanalyze the data in light of McCarthy's (1989) discussion of Semitic root co-occurrence constraints. This reanalysis argues that the Berber labiality constraints refer directly to stricture values, thus obviating the need to posit feature tier-distinctness.

1. Labiality in Berber

Berber displays rather complex constraints involving labiality. These are presented and exemplified in (1).

(1) The Berber facts (from Selkirk (1989):

1. a labiovelar consonant loses its labiality when immediately preceded by a segment with a [labial] component:

a.	g^wra	(glean, pret.)	imgra	(gleaners)
b.	g^w:ra		imgrad	
c.	amda:k^{w}l		imd:uk:al	

2. prefixal /m/ and /m/ introduced by templatic morphology dissimilate to [n] when followed in the stem by a primary labial consonant, not necessarily adjacent to it:

a.	Gza	(dig)	mGza
b.	siggl	(look for)	msaggal
c.	!sawr	(ask for advice)	msawar
d.	zla	(lose)	mmzla
e.	fra	(disentangle)	nfara
f.	hssm	(be shy)	nhassam
g.	xalf	(place crosswise)	nxalaf

h. 9zb (please) n9azab

(note that Selkirk assumes labial vowels to possess secondary labiality, not primary labiality, and thus they are non-triggers (cf. (c)))

3. The labiovelar obstruents dissimilate to their non-labial counterparts when /w,u/ and also the labiovelar obstruents, follow in the same root:

a.	zdr	(be located below)	azddayru	(the one below)
b.	x^wsn	(be ugly)	axssaynu	
c.	!(g)g^wzd	(chip a corner of)	a!gzzaydu	
d.	(g)g^wzm	(be amputated)	agzzaymu	

4. Labiovelars do not dissimilate when primary Labial follows:

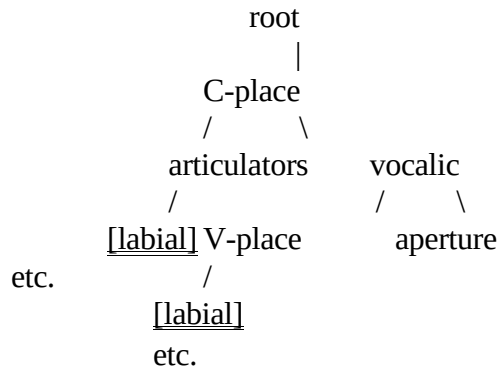
a. (g)g^wzm (be amputated)

2. Clements (1991), and Selkirk (1989,1993)

2.1. Clements (1991)

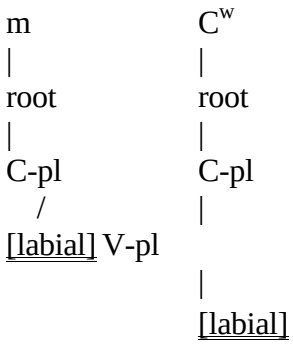
Clements (1991) proposes a "C-place - V-place" geometry (shown in (2)), that, while segregating consonantal labiality from vocalic labiality, nonetheless allows their interaction via "cross-tier assimilations" and "cross-tier dissimilations".

(2)



In this geometry, Clements allows C-[labial] and V-[labial] to interact in terms of assimilatory and dissimilatory processes despite their being on distinct autosegmental tiers. Labiality in Berber has been argued in Clements (1991) to be an instance of "cross-tier dissimilation". That is, primary labiality may, for part of the derivation at least, interact with secondary labiality. Clements relies on the supposed templatic nature of Berber morphology (McCarthy 1979), defining constraints both pre- and post-Plane Conflation. Clements theory requires that the sequence /mk^w/, which is in fact unattested on the surface, have the following representation:

(3)



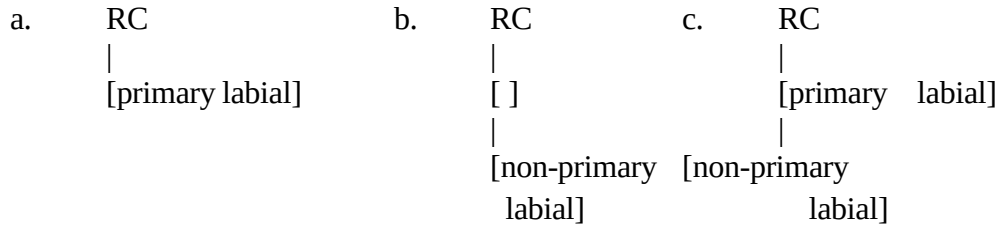
To quote directly from Clements, "Here we see that the two occurrences of [labial] are not on the same tier, yet they are still ill-formed...This fact requires us to extend our analysis of the OCP so that it can generalize across tiers..."(p.14).

As we will see in Section 3, labiality in Berber may be accounted for without positing the interaction of distinct autosegmental tiers.

2.2 Selkirk (1989, 1993)

Selkirk (1989, 1993) proposes that labiality may exist in both primary and non-primary form in a given system. Non-primary [labial] is tier-depednent upon primary [labial], as shown in (4).

(5)



In (5a) is a primary labial, in (5b) is a secondary labial, and in (5c) is a labialized labial.

Primary labial specifications will pattern distinctly from non-primary labiality specifications, and further, may interact among themselves under certain circumstances.

As already stated, Selkirk assumes labial vowels to possess nonprimary labiality, not primary labiality, and thus explaining their patterning with labio-velars.

3. Labiality and Stricture

I suggest that the Berber facts may be readily explained along the lines outlined in McCarthy (1989) in his analysis of articulator co-occurrence restrictions in Arabic roots.

Extracting the essence of McCarthy's presentation, he observes three parameters at

work in these co-occurrence restrictions: place, locality, and stricture.

With respect to place restrictions, McCarthy reports that roots disfavor identical articulators to a statistically significant degree ($p<.01$). Thus, for example, two coronals within a root are disfavored. This articulator co-occurrence restriction is schematized in (6).

(6) XYX, XXY, YXX: disfavored
(where X and Y are variables over articulator nodes)

With respect to locality, McCarthy reports that the restriction on articulator identity is eased somewhat for non-adjacent identical articulators. Thus, for example, coronals are very rarely observed in strict root-adjacent position, though somewhat more readily observed in root non-adjacent position.

(7) XYX: disfavored
XXY: more disfavored

Unlike place, stricture does not appear to be an independent parameter, but instead operates within the domain of the place parameter. That is, there does not seem to be a general root constraint in Semitic limiting particular stricture specifications. However, if a particular articulator is investigated in isolation, statistically significant constraints on stricture co-occurrence is observed. Thus, for example, within the class of coronals, strictly adjacent stops. or strictly adjacent fricatives, are observed less often than strictly adjacent coronals which differ in stricture. Nonadjacent coronals relax the stricture constraint to a certain degree, though the co-occurrence of stricturally distinct nonadjacent coronals is still restricted.

(8) Order from most disfavored to least disfavored:

1.	2.	3.	4.
XXY || AA	XXY || AB	XYX | | A A	XYX | | A B

(where A and B are distinct stricture values)

With McCarthy's observations of Semitic in mind, the characterization of Berber becomes rather straightforward.

First, I assume that labiovelars are underlying clusters, and thus possess distinct root, place, and stricture nodes. Now, just as in Semitic, locality, stricture, and place crucially interact, stricture playing a role solely within the confines of place, and not independently. So, no two [labial] specifications may be string adjacent in Berber, regardless of stricture

specifications, as shown in (9).

(9) *[lab][lab]

Second, no two labial specifications may co-occur in non-adjacent position, should their stricture specifications agree in consonantality. This is shown in (10).

(10) *[lab] [lab]
[αcons]...[αcons]

These interrelated constraints would seem to account for all the data presented in Selkirk, without making any assumptions regarding "primary" and "nonprimary" specifications, or "C-[labial]" - "V-[labial]" asymmetries. Still more in this approach's favor is the fact that it need not consider glides and vowels nonprimarily labial, as Selkirk's analysis requires, but instead relies solely on their [cons] value, thus explaining their patterning with the labial portion of surface labio-velars. Finally, note Selkirk's primary and nonprimary feature specifications could not be invoked to account for the distinct patterning of Semitic coronals or velars that differ in stricture. Instead, allowing cooccurrence restrictions to make direct reference to stricture values explains this patterning in Berber, and the patterning of labiality in Semitic, in a fully generalized manner.

4. Conclusion

We have seen that when co-occurrence restrictions refer to stricture values, the patterning of consonantal and vocalic labiality in Berber may be accounted for without positing tier-distinctness, or their primary versus nonprimary status.

References

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