Tashlhiyt Berber triconsonantal roots
A binary branching head-complement structure

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This paper deals with the constraints which limit the nature and the distribution of segments in Tashlhiyt Berber triconsonantal roots. Unlike in Classical Arabic, where a root may consist entirely of voiceless obstruents (e.g. kʃf "pull away", kfs "be bandy-legged", ksf "be or become dark"), in Tashlhiyt Berber:

[1] (i) each triconsonantal root contains at least one sonorant[1]
(ii) the sonorant is most often preceded by an obstruent
(iii) if a root contains two adjacent sonorants then the second one is necessarily more sonorous (e.g. *knw* "lean", *rmy* "be tired").

For the purpose of the analysis, 221 triconsonantal roots[2] without initial or medial vocoids and 25 biconsonantal roots were collated from various sources including Dell & Elmedlaoui (1988), Boumalk (2003) and El Mountassir (2003). The examples in [2] illustrate the constraints listed in [1]:

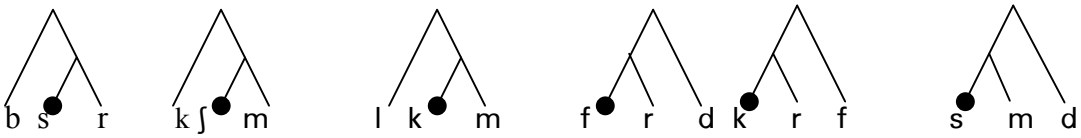
[2]	*Root*	*Imperfective*			*Root*	*Imperfective*	
a.	kʃm	kʃʃm	« enter »	*b.*	frd	ffrd	« nibble »
	bsr	bssr	« spread out »		krz	kkrz	« plough »
	zgr	zggr	« cross »		krf	kkrf	« tie up»
	bdr	bddr	« evoke »		smd	ssmd	« add »
c.	mgr	mggr	« reap »	*d.*	knw	knnu	« lean »
	lkm	lkkm	« arrive »		ʒlw	ʒllu	« loose »
	nkr	nkkr	« stand up »		bry	brri	« scratch »
	rgl	rggl	« knock »		kmy	kmmi	« smoke »

The structural and distributional constraints in [1] are argued to convey a particular organisation of segments in triconsonantal roots. The paper proposes that these *roots have a binary branching head complement structure* where two and only two segments, namely those which stand for the head and the complement, are constrained. The structure is rendered by means of a tree diagram analogous to those that represent syllabic and syntactic constituencies. The segments that act as the head and the complement share the same node in the tree. The remaining segment – linked to a higher node in the tree – is a *satellite* which occurs indifferently at the left or at the right of the head-complement pair (examples follow in [4]). In addition, the head and the complement are constrained as follows:

[3] a. *The head never accommodates a sonorant except when it is followed by another sonorant*
b. An obstruent never occurs as the complement
c. The head is immediately on the left of the rightmost sonorant in the root.

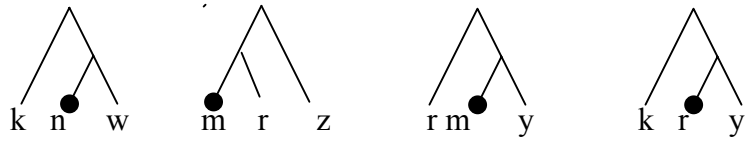
To illustrate these theoretical devices, some of the roots given in [2] are represented below in [4] (the head position is indicated by the point at the end of the branch):

[4] *Head obstruent*



[1] A few roots (11 out of 226 examined) such as *k*^{w}*fs* "sow", *ftk* "sprain", *bzg* "swell" and *bdg* "be wet" are sonorant-less. We will return to them later.
[2] Loans from Arabic such as *xdm* "work", ħ*km* "judge" and *zlg* "slide" are not included in the data.

Head sonorant



The binary branching structure locally determines the phonological constraints the roots undergo. These constraints are limited to the inferior node in the tree. The remaining position in the root, namely the one which is linked to the superior node in the tree, is free to accommodate any kind of segments, an obstruent (e.g./b/ in *bsr*) as well as a sonorant (e.g. /n/ in *nkr*). In addition, the careful reader will have noticed that one major property evolves from the tree-based structures given in [4]:

The head is systematically located on the left branch of the inferior node in the tree.

This is a notable outcome of the analysis, comparable to similar proposals for syntactic structures (*cf.* the *Linear Correspondence Axiom* proposed by Kayne 1994).

Evidence for the binary branching head-complement hypothesis is provided with the imperfective formation: it is suggested that (i) only verbs that display such a structure geminate a consonant at the imperfective stem, and (ii) the way this gemination is achieved depends on how roots are internally structured.

Among all Berber varieties, Tashlhiyt is the only variety where gemination at the imperfective stem is *unstable:* it involves either the first or the second segment of the root (see examples given above in [2]). The challenge is to explain how the geminated segment is determined. Our analysis predicts that:

[5] *The segment which is geminated in the imperfective stem is that segment which is the head of the root.*

Thereafter, the difference between verbs which geminate the first consonant and those which geminate the second consonant lies in that the first are head-initial and the second head-medial.

My proposal is compared with Dell & Elmedaloui's syllable-based approach (Dell & Elmedlaoui 1988, 2002). We will focus on those triconsonantal verbs which resist their analysis. According to them (1988:11) "not all geminable verbs resort to gemination in the imperfective but most of them do (…) The distribution of the geminating verbs among the geminable verbs seems to be a matter of lexical idiosyncrasy". We will see that the geminating verbs vs. geminable verbs is a matter of root structure rather than lexical idiosyncrasy. Dell & Elmedlaoui's analysis is unable to explain why sonorant-less verbs such as *bdg* "be wet", *zdg* "purify"and $k^{w}fs$ "sow" and verbs in which the only sonorant is initial as in *rkz* "dance" and $rk^{w}s$ "hide" do not form their imperfective by means of gemination. My analysis predicts this behaviour: because such verbs do not display the same internal structure as verbs which contain at least one sonorant in a non-initial position, they do not undergo the same process at the imperfective stem.

References

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