

**Singing in Tashlhiyt Berber, a language that allows vowel-less syllables**

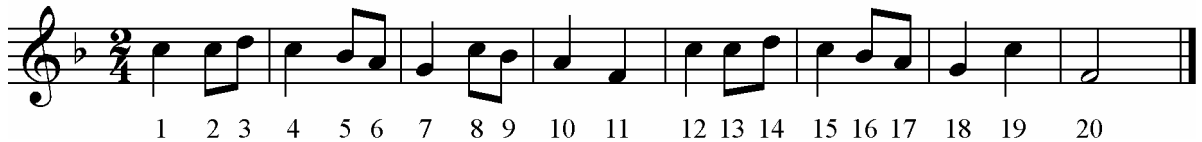
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**(1) THE LINGUISTIC OBJECT: four stanzas:**

- a Au bois joli l'y a des violett[**e**]s, de l'aubépine et de l'églantier.  
*In the pretty woods there are violets, hawthorn and eglantine.*
- b J'en cueillis tant, j'en avais plein ma hott[**e**]. Pour les porter j'ai dû les lier.  
*I gathered lots of them, so that my basket was full. To carry them I had to tie them up.*
- c En revenant j'ai rencontré un princ[**e**]. Avec mes fleurs je l'ai salué.  
*On my way back I met a prince. With my flowers I greeted him.*
- a' Au bois joli l'y a des violettes, de l'aubépine et des ros[**e**]s. (construct) | 19 syllables

**(2) THE MUSICAL OBJECT: a melody (a sequence of 20 pitch events of 'notes')**



**(3) THE TWO OBJECTS COMBINED**



a au bois jo li l'y a des vi o let tes  
 b j'en cueil lis tant j'en a vais plein ma hot te  
 c en re ve nant j'ai ren con tré un prin ce



a' des ro — ses *Stanza a' meets condition (5). Pitch C, which does not have an associated syllable (see the dash), is realized on the final portion of the preceding syllable (|ro|).*

a de l'au bé pine et de l'é glan tier  
 b pour les por ter j'ai dû les li er  
 c a vec mes fleurs je l'ai sa lu é

**(4)** 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

2	x			x				x				x					
1	x		x	x		x		x		x		x		x		x	
0	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
P	C		C	D	C		Bb	A	G		C		F				
a	de		l'au	bé	pine		et	de	l'é		glan		tier				
a'							des	ro					ses				
b	pour		les	por	ter		j'ai	dû	les		li		er				
c	a		vec	mes	fleurs		je	l'ai	sa		lu		é				

(5) BASIC PRINCIPLE (UNDERLYING LEVEL): Every syllable is linked to a note of its own (but not every note needs to be linked to a syllable, see (3a'-4a')).

(6) THE PHONEMES OF TB

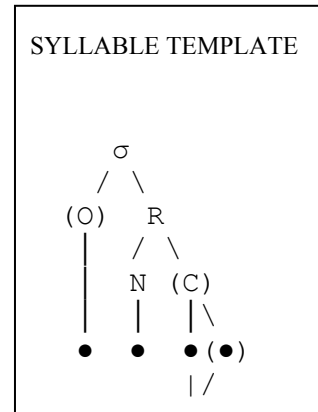
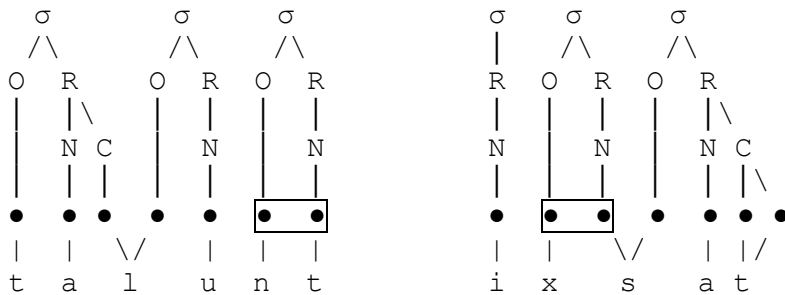
	t	tʰ		k	kʷ	q	qʷ		
b	d	dʰ		g	gʷ				
f	s	sʰ	ʃ	ʃʰ		χ	χʷ	ħ	
			ʒ	ʒʰ		ʁ	ʁʷ	ʕ	ħ
m	n	nʰ							
w	l	lʰ	r	rʰ	y				
u				i				a	

except for /a, i, u/, every phoneme in the table has a geminate counterpart not listed there.

(7) THE CENTRAL TENETS OF SYLLABIFICATION IN TB VERSE (A and B are inviolable; they take precedence over C when they conflict with it):

- A Syllables must satisfy the syllable template (see box in (8)): Except for /a/ which can only be a nucleus, any simplex segment can be an onset, a nucleus or a coda. Only geminates can act as complex codas.
- B Except at the beginning of lines, syllables must have an onset (no hiatus allowed).
- C Sonority peaks are syllable nuclei.

(8) tal.lu.nt *frame drum*      i.xs.satt *she needs*



(9) iqqand akk asiw, nšbr issaʃtnk nzzritnt[i]

iq qan dak ka si ʁn sb ris saʃ tn knzz ri tn <t[i]

*I must take you (as you are), accept this episode with you and live through it.*

(10)

(11) When two lines follow the same meter, they have the same number of syllables, with heavy (H) and light (L) syllables arranged in the same order (Jouad 1983).

(12) 1 2 3 4 5 6 7 8 9 10 11 12 13  
 L H L L L L L L H L H L L [i]

1a a daʁ su lu ri ri na ra ʁitt mu nad wa ya d[i]  
 2a ha- nur da sg ga su la si nad la- ɣlx ba rn k Ø  
 3a n ʁrk di wn ma du ra- tu nar ki ʁngg za ka l[i]  
 4a a- lah ta md dn ma yz dr naʁ di mlɔd wa- na ʁ[i]

the syllabic  
 parses of  
 four lines

1b a daʁ su lu ri ri na ra ʁitt mu nadə wa ya d[i]  
 2b ha- nur da səg ga su la si nad la- ɣlxə ba rɔ k Ø  
 3b nə ʁrək di wɔnə ma du ra- tu nar ki ʁnəggə za ka l[i]  
 4b a- lah ta məd dnə ma yəz drə naʁ di mlɔddə wa- na ʁ[i]

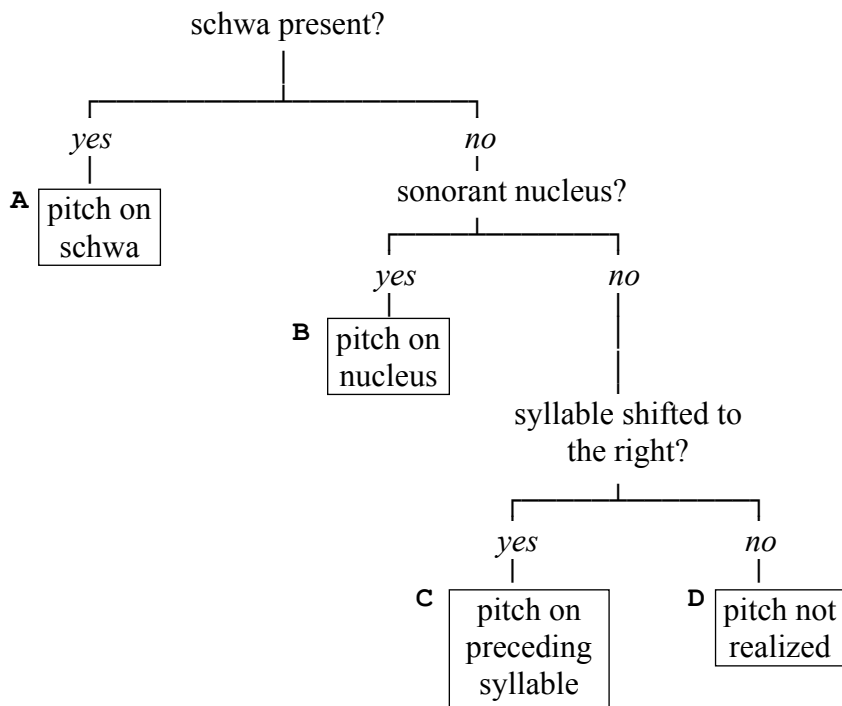
the same lines  
 as heard in  
 the recording

(13) TB schwa does not play any role in the phonology (e.g. in syllable structure) nor in versification (on ‘intrusive vowels’, v. Hall 2006). In text-to-tune alignment, however, schwa acts as a carrier for pitch, like *bona fide* vowels.

(14) SCHWA PLACEMENT IN SONGS: Not all syllables whose nucleus is a consonant contain a schwa. When schwa occurs, it precedes the nucleus if the nucleus belongs to a geminate (geminate inseparability). Otherwise,

- a. If the nucleus is a sonorant, schwa immediately follows it (in most instances).
- b. If the nucleus is an obstruent, schwa immediately precedes it (virtually exceptionless).

(15) PITCH ON SYLLABLES WITH CONSONANTAL NUCLEI. (Syllables with two pitch spans are not included, e.g. syllables 11 in (10) and (12).)



(16) TWO LEVELS OF REPRESENTATION FOR TEXT-TO-TUNE ALIGNMENT:

UNDERLYING: Correspondence between structural units (between notes and syllables).

SURFACE: Correspondence between points in the melody and points in the flow of speech (between the attacks of notes and the beginnings of 'pitch spans').

(17) FRENCH VS. TB (SURFACE LEVEL): While in French singing every syllable projects exactly one pitch span, TB singing also allows syllables with two pitch spans and syllables with none.

(18)

	1	2	3	4	5	6	7	8	9	10	11	12
a	yan	mu	ta	ka	ta	ri	sa	wal	sl	žih	_	tn nu<n
b	ix	ku	ri	ni	na	xk°	nin	niz	ra	yad	_	ra sn<t

(19) RIGHTWARD SHIFT (15C)

		5	6	7
		x		x
melody	{	x	x	x
	time grid			
	pitch events	F#	G#	B
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(a) UNDERLYING ALIGNMENT

na xk<sup>w</sup> nin

(b) |xk<sup>w</sup>| is delinked from G#. As a result, |xk<sup>w</sup>| shifts to the right and G# is realized on the final portion of of |na|. (Compare with stanza (3a') in the French song.)

na xk<sup>w</sup> nin  
 F# G#

If |xk<sup>w</sup>| shifted to the left, |nin| would also have to shift to the left so as to act as a carrier for G#.

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