

Syllabic Consonants and Syllabification in Imdlawn Tashlhiyt Berber

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I. Preliminaries

- Tashlhiyt dialect of Berber spoken in the Imdlawn valley (ITB)
- ITB has syllabic consonants (sonorants and obstruents).
- The regularities are independent of grammatical categories or of the morphological make up of words.
- ITB has three vowels: a, i and u, and the semivowels y and w. All of these (except a) are called High vocoids (HV).
- y and i are in complementary distribution, as well as u and w.
- If a HV is adjacent to a syllabic segment, it must be a semivowel. Elsewhere, it must be a vowel.

(1) a. *y-attuy* 'it is high' b. *i-skR* 'he does'

(2) a. *imi-nn-un* 'your mouths' b. *i-kRz-a-wn* 'he ploughed for you'²

Consonantal sonorants can appear as syllabic peaks, as well as fricatives and stops.

(4)	<i>tRgLt</i>	<i>tRglas</i>	'lock'
	<i>tSkRt</i>	<i>tSkras</i>	'do'
	<i>tXzNt</i>	<i>txZnas</i>	'store'
	<i>tZdMt</i>	<i>tZdmas</i>	'gather wood'
	<i>! tLbZt</i>	<i>! tLbzas</i>	'step onto'
	<i>tLbŽt</i>	<i>tLbžas</i>	'idem'
	<i>tRkSt</i>	<i>tRksas</i>	'hide'
	<i>tNšFt</i>	<i>tNšfas</i>	'graze (skin)'
	<i>tMsXt</i>	<i>tMsxas</i>	'transform'

- i and y can be derived as two variants of the same underlying segment (I), as well as u and w (U)
- Capital letters represent a head.
- The apostrophe indicates that the preceding element is a head, and the parenthesis indicate an S

(sU'I), (tM), (zi'mt)

Look at onsets, codas and rimes.

Syllable Types in ITB

- /t-agrUr-t/ [tagrurt] ‘stable’

(ta'g) (ru'rt)

- /saUl-x/ [sawLx]

(sa') (wLx)

Therefore, ITB allows CV'C, CV'CC, CV', and CC'C

- [ratlult] /ra-t-IU-t/ ‘you will be born’

(ra’t) (IU’t)

- But the syllabification should also allow (ra’) (tl’) (U’t), which is equivalent to [ratLwLt].
- This syllabification, however, is ill-formed, although neither the syllabic structure, nor the segmental sequence is in itself ill formed.
- **Conclusion:** a definition of the set of possible syllables is not enough to syllabify any string of segments in ITB.
- Think of the word “extra” [ek.stra] vs [eks.tra] (syllable boundaries)

In ITB, the syllabic peak cannot be taken for granted, because any segment is able to occur as syllabic peak.

Two important considerations:

- 1) No hiatus (adjacent nuclei): “abutting syllabic peaks are never allowed to occur in the phonetic representations of ITB”
 - Abutting = not separated by a silence

- Voiceless stop, voiced stop, voiceless fricative, voiced fricative, nasal, liquid, HV, [a]

- 2) CMSS (choose more sonorous segment): “the only syllabification allowed by ITB is the one that takes as a syllabic peak the more sonorous segments”

In /ra-t-IU-t/, /U/ is more sonorous than the preceding /I/, so:

(ra't) (IU'lt) is better than (ra') (tI') (U'lt)

For /t-IUa-t/, CMSS expects (tIU') (a't) (contradicts No hiatus); it can only be pronounced as (tI') (Ua't) .

No hiatus >> CMSS

More evidence is in GR syllables (where G means glide and R means resonant).

GR only occur immediately after a syllabic peak.

/t-IUn-t-a-s/ = [ti.wN.tas]

II. Core Syllables

The grammar of ITB contains in particular a set of rules which build core syllables.

(YZ') and (Z')

- Core Syllabification (CS): associate a core syllable with any sequence (Y)Z, where Y can be any segment and Z is a segment of type T, where T is a variable to be replaced by a certain set of specifications.
- Apply in the order specified in the sonority scale.

(16) CS(*a*) associate a core syllable with any sequence (Y)Z, where Z is an *a*

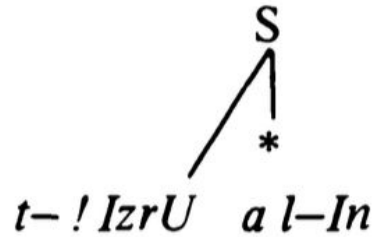
(17) CS(HV) associate a core syllable with any sequence (Y)Z, where Z is a HV

(18) CS(L) associate a core syllable with any sequence (Y)Z, where Z is a liquid

(19) CS(N) associate a core syllable with any sequence (Y)Z, where Z is a nasal consonant

- Every segment must be associated to one S node.
- A segment can be associated to at most one S node.

(23) (i) CS(a)



(ii) CS(HV)



(iii) CS(L)



(i) CS (Y)a

(ii) (Y)HV; */U/ is not available any more

(iii) Anything else (following the sonority scale)

/tIUrtnt/

1. HV, t(IU')rtnt
2. Nasals, t(IU')r(tn')t

Other rules might apply to syllabify those segments that haven't been assigned to a S node, and result in (tIU'r)(tn't)

- The CS rules earlier predict that no rime will have a sequence where the first segment has a lesser degree of sonority than the second one.

For example: /kmr/ *k(Mr)

- In ITB, all segments belong to a category where sometimes they occur as peaks and sometimes they don't. One cannot simply examine the individual features of the segments, but of those surrounding them.

ITB allows onsetless syllables, but these can occur only immediately after a pause. This includes vocoids, as well as consonants.

/rgl/ - (R)(gL)

No hiatus was presented as a constraint on pairs of adjacent syllables.

Therefore:

- Onset: “all syllables in ITB must have an onset. (does not apply after pauses).

/l-haUl-tn/ = i.ha.wL.tN

/kiUt/

There are two adjacent segments which are eligible for syllabicity.

[ki'wt] or [kyu't] ?

Rule proposed: (LTR) “during each pass corresponding to a step of the sonority scale, CS operates iteratively from left to right”

[ki'wt]

(27)	<i>/rks-x/</i>	<i>R . kSx</i>	* <i>Rk . sX</i>	'I hid'
	<i>/baIn-n/</i>	<i>ba . yNn</i>	* <i>bay . nN</i>	'they (m.) appear'

LTR is not the complete story.

/Ugm-n/, according to LTR, should be [u.gMn] as the only correct syllabification.

However, [ug.mN] is also possible.

III. Discerning Syllabic Consonants

- Native speaker intuitions (specifically Elmedlaoui's) vary regarding number and location of syllabic peaks in some strings
 - /nšf-at/, /!rzzm-at/ – first syllable peak?
 - /ss-rks-x-t/, /t-!ngd-t/ – second syllable peak?
- Judgements only deal with peaks; boundaries hashed out via analysis

Reduced Vowels

- /ə/ next to syllabic consonants?
- Ultra-short vowels occur beside voiced consonants, but never voiceless
 - Manifests as slight aspiration after voiceless consonants
- Do not occur between homorganic consonants
- Follow syllabic consonants, but can appear in codas or elsewhere
 - tS(ə).bʏt, R.gL(ə)x, i.xN(ə)g(ə)t
 - Do not appear when consonants are in different syllables in some cases (i.xN.gas), but do in others (tS(ə).bʏt)
- Other reduced vowels between HV onsets and syllabic consonants
- No systematic analysis (as of 1985)
- Syllabic consonants as product of inserting and deleting epenthetic /ə/?

Emphatic Transfer

- If an underlying representation contains an emphatic segment, the whole word is realized as emphatic
 - An onset and peak must share emphasis, including in syllables that cross word boundaries
 - *yazdisdu* /I-!az-d=I-sdu/ (emphatic transfer: d → i)
 - *yiwitittSdarun* /I-IUI=t-!It-t=s=dar-Un/ (emphatic transfer: t → S)
- [i] (vowel) and [S] (consonant) seem to serve equally as peaks for this
- Emphasis follows !A=BC pattern, where spreading to a peak across a word boundary does not spread to a following segment, even as part of the same syllable
- If reduced vowel is present and gets deleted (təS), transferring emphasis to [S], the same must not occur in (dis) and transfer to [s]
 - Emphatic transfer relies on both syllabification and segmental features of peak

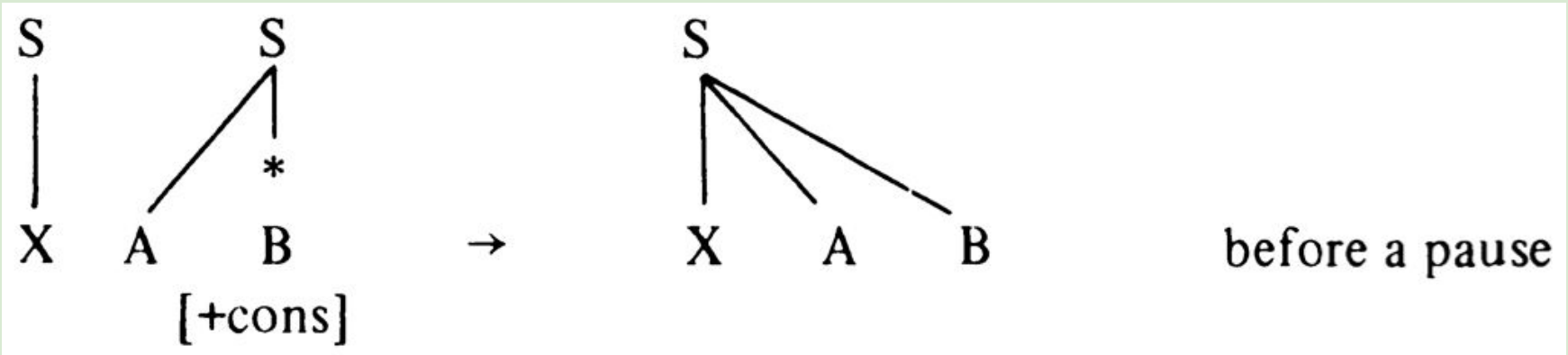
IV. Prepausal Annexation

- Prior to pauses, some word-final peak consonants may freely vary between syllabic (column A) and non-syllabic (column B)

a.	<i>igidR</i>	b.	<i>igidr</i>	<i>/IgIdr/</i>	‘eagle’
	<i>yurM</i>		<i>yurm</i>	<i>/I-Urm/</i>	‘he tasted’
	<i>RgL</i>		<i>Rgl</i>	<i>/rgl/</i>	‘lock!’
	<i>ugLxkM</i>		<i>ugLxkm</i>	<i>/Ugl-x-km/</i>	‘I hung you (fem.)’
	<i>dumN</i>		<i>dumn</i>	<i>/dUm-n/</i>	‘they (m.) last’

Prepausal Annexation

- Detectable via tone in questions (HR-L): final TBU in a word is the last syllable with a voiced peak
 - [igidř̩] vs. [igǐdr]
- Prepausal Annexation: post-CS; changes final open consonantal syllable into complex coda for previous syllable before pause



Prepausal Annexation

- When this final consonant is an obstruent, it *must* become a coda prepausally, and remain syllabic when followed by a word (see below)
- Rule is optional for sonorants
- Outliers exist; no clear analysis
 - ra.tK.šM – final syllable can never lose syllabicity

<i>! is . bu . kD . ba . bas</i>	<i>/I-!sbUkd=baba-s/</i>	‘he poked his father eye out’
<i>ir . kS . ba . bas</i>	<i>/I-rks=baba-s/</i>	‘his father hid’
<i>if . tK . ba . bas</i>	<i>/I-ftk=baba-s/</i>	‘his father suffered a sprain’
<i>is . tγ' . tif . lut</i>	<i>/I-stγ=t-IfIU-t/</i>	‘he cracked the door’

V. Geminates

- Underlying long segments vs. identical segments across morpheme boundaries: /lgr-a-nn/ vs. /lgran-n/
- Treated as two units for the sake of syllabicity: /grU/ vs. /grrU/ – gru vs. gR.ru
 - Never subject to Prepausal Annexation; string must be at least disyllabic
- CS iterates left to right, so geminates serve as peak followed by coda/next syllable's onset: /šUUr/ – šu.wR or šu:r (annexation; HVs as vowel lengthening in codas)

<i>/!mIId/</i>	<i>!miyd</i>
<i>/!zIIr/</i>	<i>!zi . yR</i>
<i>/fUUt/</i>	<i>fuwt</i>
<i>/hUUU/</i>	<i>hu . wL</i>

Geminates

- What doesn't make sense, then?

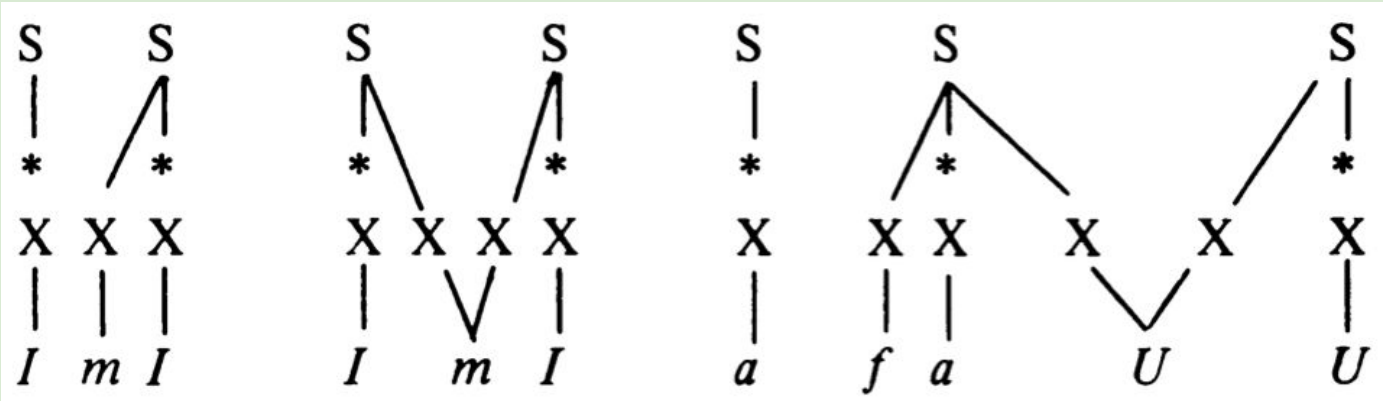
<i>! az . munnk</i>	<i>/! azmu-nn-k/</i>
<i>ill . mas</i>	<i>/I-llm-a-s/</i>
<i>tayy . dart</i>	<i>/t-a-Ildar-t/</i>
<i>! ašš . bar</i>	<i>/! aššbar/</i>

Geminates

- What doesn't make sense, then?
- Second unit in a homomorphemic geminate is never syllabic
- S-nodes associated with autosegmental timing units?

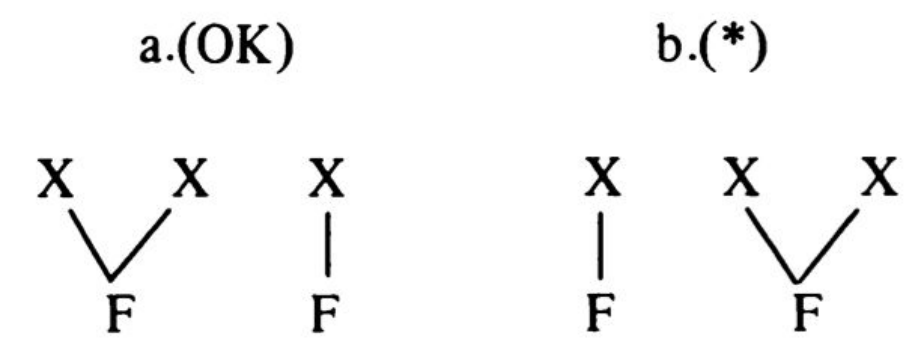
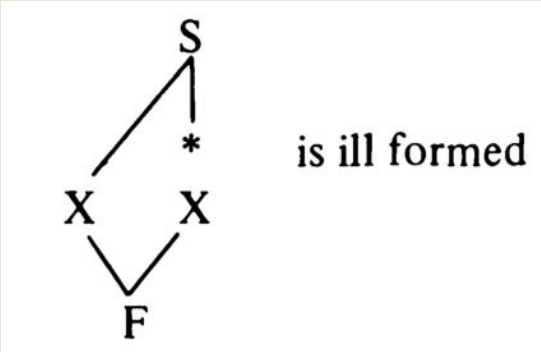
!az . munnk /!azmu-nn-k/
 ill . mas /I-llm-a-s/
 tayy . dart /t-a-Ildar-t/
 !ašš . bar /!aššbar/

/aIIIs/ 'horse' ayyis
 /t-aUUUrI/ 'work' tawwuri
 /afaUUU/ 'blanket' afawwu



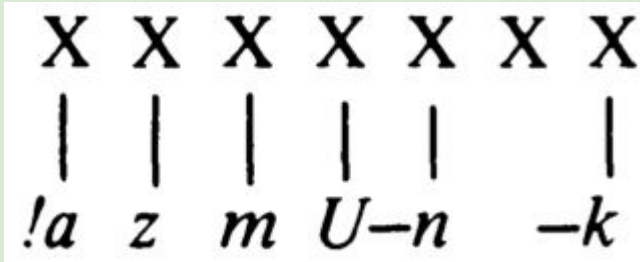
Geminates

- No morpheme may contain adjacent identical segments (columns of featural specification) linked to separate timing units, as in →
- A geminate does not syllabify as onset and nucleus, then, given the following →
 - Triple HV sequences must then be realized as geminates followed by singles, rather than vice versa



Geminates

- However, another way to think about it: if the right unit of a geminate never syllabifies, imagine it's first an unassociated unit....

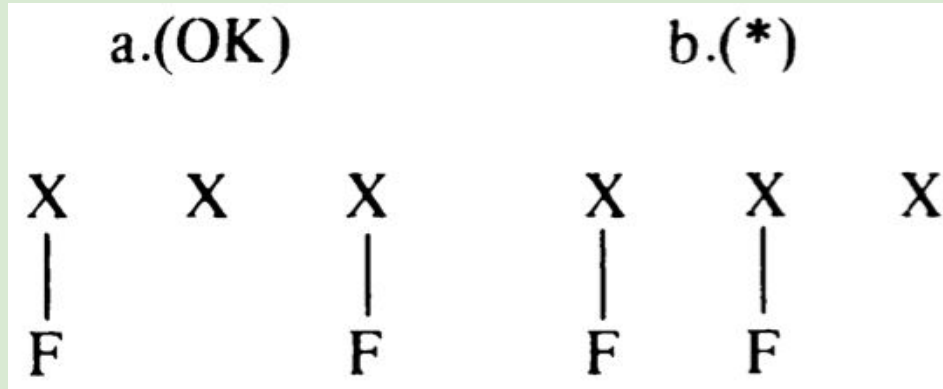


-that gets tied to a segment to its left after CS.



Geminates

- Additionally, a syllabic peak must be featurally specified, because CS iterates along the sonority scale; a unit without a segment can't be a nucleus
 - They can become onsets, though
- Ergo, triple vowels can be reframed as containing empty units that tell us where the geminate is:



Praise and critique

- Demonstrates that some ITB data follow systematic patterns of syllabification.
- Provides potentially valid examples that illustrate their explanations (although we do not know to what extent these examples represent the majority of the data).
- Their analysis intends to match the syllabic intuitions of one speaker. This is mentioned towards the end of the paper.
- Several constraints and generalizations seem stipulative, lacking in any sort of explanation (see (47) for example). Argumentation in geminate section seems circular.
- Provides systematic coverage of a process, only to arrive at examples that cannot be explained by this coverage, leading reader to believe they are not following the analysis. Explains the issue later, without informing reader beforehand.

References

- Dell, François & Mohamed Elmedlaoui. 1985. Syllabic consonants and syllabification in Imdlawn Tashlhiyt Berber. *Journal of African Languages and Linguistics* 7: 105-130.