

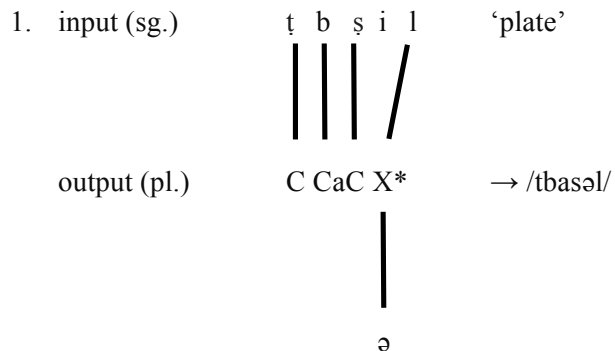
## Moroccan Arabic plurals and gemination: Some data to sleep on

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appeared in: Alan Kaye (ed.), *Semitic studies in honor of Wolf Leslau on the occasion of his eighty-fifth birthday November 14<sup>th</sup> 1991*, vol. 1, pp. 627-633. Wiesbaden: Harrassowitz, 1991.

One of several tricky details in any effort to model Arabic derivational ablaut is how to handle geminates. In a study (Heath 1987) of the phonology of a dialect of Moroccan (the kind of dialect one is likely to encounter in cities like Fes, Meknes, and these days even Rabat), I found that surface geminates in inputs to ablaut require special treatment, whereas ungeminated identical Cs (separated by Vs) behave like nonidentical C sequences.

In the nominal plural, input (singular) stems with four consonants, e.g., /CCCVC/, /CCCVC-a/, /CCCəC/, and /CCCC-a/ typically have an output (plural) of the shape /CCaCəC/. This is produced by the combination of a) mapping of segmental features, in this case consonantal, from the input stem onto a partial fixed template /CCaC/ with empty C positions and a prespecified vowel /a/, and b) the projection of portions of the remaining "tail" of the input onto a flexible projection variable that I represent as /X\*/. In this version of Moroccan Arabic, a vowel in the tail of the input is disregarded. A representative example:



The first three input consonants are mapped unproblematically onto the three empty C positions of /CCaC/. The remaining input consonant, /l/, is projected onto the /X\*/ variable ("variable" since, with other types of input, it has surface shapes from  $\emptyset$  to V to CV, in addition to /əC/).

In addition to the mapping and projection, various minor rules apply as part of the ablaut process (i.e., not as regular phonological rules). For example, templatic C positions that remain empty after mapping are filled by nonlexical segments (usually /w/ or /y/). The rule of most central interest here is the one inserting schwa /ə/ between the final consonant of the /CCaC/ template and a projection variable consisting of a single C, as in (1). It is best to regard this schwa as an inserted,

nonlexical segment rather than as a (reduced) form of an input vowel (such as /i/ in /t̪βsil/), since it frequently occurs in plurals derived from inputs showing no vowel in the relevant position: /kambu/ 'country bumpkin' [< Spanish *campo* 'field'], plural /kwanəb/ (Heath 1989:142).<sup>1</sup>

When the input has ungeminated but identical C<sub>3</sub> and C<sub>4</sub>, the output is unremarkable:

2. input (sg.)	z n t̪ i t̪	‘tail
	<div style="display: flex; justify-content: space-around; width: 100px;"> <div style="text-align: center;"> </div> <div style="text-align: center;"> </div> <div style="text-align: center;"> </div> <div style="text-align: center;">/</div> </div>	
output (pl.)	C CaC X*	→ /znat̪ət̪/
	<div style="display: flex; justify-content: center; width: 100px;"> <div style="text-align: center;"> </div> </div>	
	ə	

However, when the input has a geminate C<sub>3</sub>C<sub>4</sub> cluster, things are not so clearcut. There are very few singulars with final geminate C<sub>3</sub>C<sub>4</sub>, possibly all frozen instrument/location nominals of the \*mV-CVCC(-a). type. The only one I know of that is elicitable in most Moroccan dialects is /mxdd-a/ (dialectally also /mxadd-a/) 'pillow, cushion'.<sup>2</sup>

Excluding the occasional suffixal plural /mxdd-at/, which is of no phonological interest, three plural variants for /mxdda/ 'pillow' have turned up in my ongoing survey of Moroccan dialects:

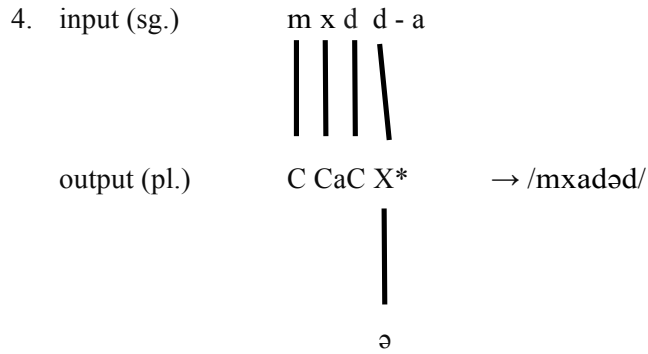
3. a. /mxadəd/
- b. /mxadd/
- c. /mxayəd/

/mxadəd/ (3a) is phonologically straightforward, the final input cluster /dd/ behaving like ordinary clusters, so the first input /d/ is mapped onto the output C3 position, while the second input /d/ goes into the /X\*/ projection variable and schwa-insertion applies. Although (3a) is the most "regular" (on its own terms) of the three alternatives, it goes against the (structural) grain of the language in permitting an input geminate to be broken up by a short V in an ablaut derivative.

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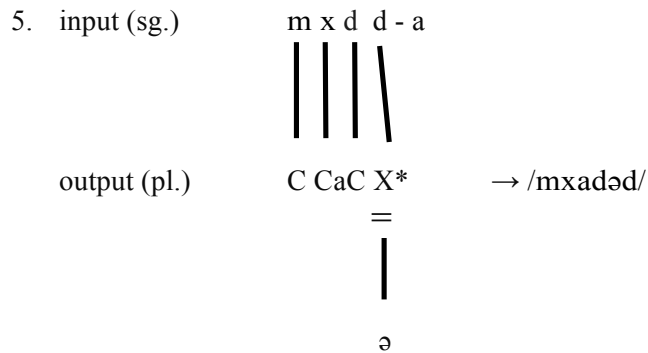
<sup>1</sup> The schwa is optionally elided in surface forms under certain conditions. Since /kwanəb/ elides as /kwanb/, not \*/kwamb/, it is necessary to recognize a basic plural form /kwanəb/, the schwa of which accounts for the conversion of /m/ to /n/. In cases like /znat̪ət̪/ (2) and (dialectal) /mxadəd/ (3), the identical but ungeminated Cs are always separately released.

<sup>2</sup> Classical *mixadd-a*. Reflexes of Classical *miqaṣṣ* 'pair of scissors' are common in Morocco, but are usually restructured with ungeminated ṣ, hence /mqəṣ/, pl. /mquṣa/. It should be noted that some Moroccan dialects do not use /mx(a)dd-a/, preferring /wsad-a/, dialectally also /wssad-a/.

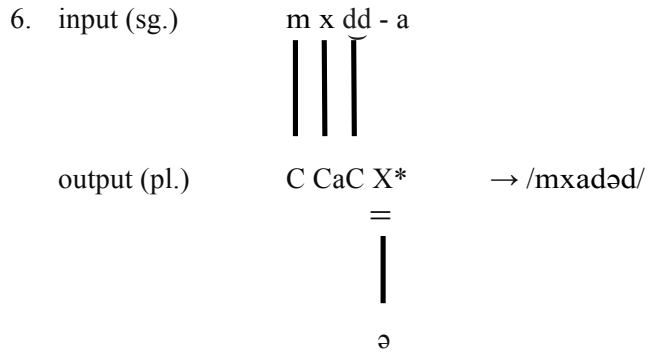


(3b) and (3c) respect the special status of input geminates—specifically, an avoidance of schwa-insertion in ablaut when the schwa would break up two Cs forming a geminate in the input. However, they achieve this in different ways, neither of which is perfectly straightforward phonologically.

/mxadd/ (3b) is difficult to model, but two possibilities suggest themselves within the formalism I use. First, we allow mapping/projection to apply as usual, whereby the first /d/ is mapped onto the final C of the fixed template /CCaC/ and the second /d/ is projected into /X\*/. In this event, there must be some kind of memory or trace of the input-geminate status of the /dd/ sequence in the plural output, and the schwa-insertion rule would have to be blocked in this case:

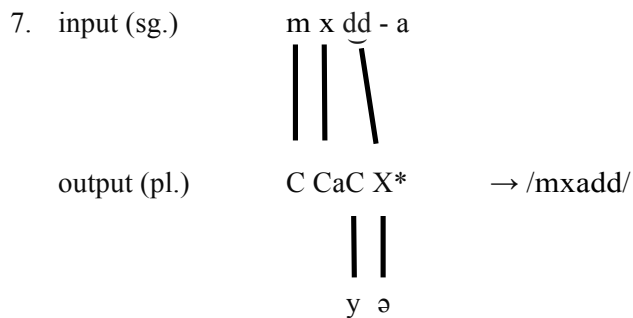


An alternative would be to suggest that the input geminate must be mapped or projected as a single unit. In the case of (3b), the input /dd/ would have to be mapped jointly onto the final C of the /CCaC/ template. Schwa-insertion would not apply to such a form since the /X\*/ projection would be empty.



This derivation could be taken as evidence for recognizing "long Cs" that can function for mapping purposes as single consonants. Wider consideration of the phonology rules this out, at least as a generalization. If the input were treated as a /CCC-a/ stem, we would expect a plural output /CCaCi/, in this case the incorrect \*/mxad(d)i/.<sup>3</sup>

/mxayəd/ (3c) is a somewhat strange form. It reduces the input /dd/ to a single output /d/ projected onto /X\*/. However, the very fact that it goes into /X\*/, rather than being mapped onto the final C of the /CCaC/ template, indicates that the singular input /mxd-d-a/ is interpreted (for *this* purpose) as having four (not three) consonants. Aside from a handful of irregular /CVC-a/ singulars (/ħaž-a/ 'thing', pl. /ħwayəž/), Moroccan nouns do not project a stem consonant onto /X\*/ unless it is preceded by at least three full segments (consonants and/or full Vs, not schwa). As with (3b), then, (3c) is a slightly skewed variation on the regular treatment of four-consonant inputs. The /y/ of /mxayəd/ is a nonlexical filler, inserted by a regular ablaut-related rule to occupy an unfilled obligatory C position in the template.



It is possible that /mxayəd/ was partly suggested by the (entirely regular) plural /wsayəd/ of the near-synonym /wsad-a/. However, there are sporadic parallel formations in plurals of recent French loans, showing that (3c) does not require ad hoc analogical pressures: /slipp/ 'underpants' (Fr. *slip*), pl. /slay(ə)p/ alongside suffixal /slipp-at/ (Heath 1989:309).

My dialectal data are not complete on this lexical item, but the distribution of (3a-c) within Morocco is approximately as follows:

<sup>3</sup> cf. /qrʕ-a/ 'gourd', pl. /qraʕi/, and many similar examples. This pattern is quite productive in Moroccan and applies to French loans: /žrd-a/ 'garden', pl. /žradi/.

## 8. Distribution of variants (Morocco)

/mxadəd/ (3a):

Muslims: —

Jews: north (Ouezzane); central cities (Meknes, Sefrou)

/mxadd/ (3b):

Muslims: central cities, south, Atlantic coast

Jews: south, Atlantic coast

/mxayəd/ (3c):

Muslims: northern cities (Tangier, Tetouan, Ouezzane) ; Rif mountains

Jews: —

For the rest of the Maghreb, I can provide the following limited information.

For Algeria, Beaussier's dictionary (1931:268) gives all three plural types, but no subdialectal breakdown.

/mxadəd/ (3a) is dominant in Tunisia (my fieldnotes), at least in the north. The most appropriate representation in the context of Tunisian phonology is /mxaadəd/, but for our purposes this is an unimportant detail. For Takrouna, Marçais & Guiga (1959:II,1035) give both (3a) and (3b) types.

The extinct Spanish Arabic dialects appear to have used (3a) and (3c), perhaps alongside (3b); references to medieval sources are given in Dozy (1967:I,353).

This term for 'pillow' does not seem to be in use in Hassaniya (Saharan) Arabic (Mauritania, Mali).

Although we can offer precise ablaut models for all three types, it should not be assumed that each dialect is consistent in making the same choice whenever a similar ablaut derivation is needed. For example, for the Tangier region, alongside a type (3c) plural for /mx(a)dd-a/ 'pillow', we have a type (3b) plural for /mhll-a/ 'squadron', namely /mhall/. In other words, while our modeling of individual forms may be correct, the dialect communities may in fact be under conflicting structural pressures, with different outcomes cropping up on a lexical basis within the same morphological type.

That this can also apply from one morphological type to another within a dialect is shown by comparison between these nominal plurals and another ablaut pattern, the active participle of verbs. For geminate trilateral verbs, the inherited Moroccan form would be /CaC<sub>x</sub>C<sub>x</sub>/ with final geminate cluster. By analogy to the plural forms given above, we might expect the following variants, using the root √hll 'to open':

## 9. active participle (geminate trilateral)

a. [cf. 3a] /ħaləl/

b. [cf. 3b] /ħall/

c. [cf. 3a] \*/ħayəl/

To the best of my knowledge only (9b) is used in Morocco (all dialects), and I believe it to be usual in Algerian and Saharan dialects. Type (9a) is common in (northern) Tunisia (/ħaaləl/), which is also the strongest bastion of (3b) in the Maghreb. Talmoudi (1980) gives (9a) alongside (9b) for the dialect of Sūsa. (9c), which would involve merging the participle of geminate trilaterals with that of hollow verbs, is not known.

In summary, ablaut forms based on certain types of final-geminated input stems pose a challenging structural puzzle to speakers of Maghrebi Arabic dialects. The most regular solution (3a, 9a) is favored in Tunisia, but elsewhere the trend is either to hang onto the inherited Classical pattern with intact geminates in output forms (3b, 9b) or much less often to have the input geminate projected as a single output consonant, whereupon a nonlexical semivowel is inserted to fill the gap in the template (3c). These facts attest to the continuing special status of geminates in dialectal Arabic phonology.<sup>4</sup>

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<sup>4</sup> My research on Moroccan Arabic has been supported by three small grants from the National Science Foundation between 1979 and 1984. I have spent additional periods in Morocco and neighboring countries during an NEH fellowship in 1981 and as a Fulbright research fellow in 1986.