

## GEMINATION IN TARIFIT BERBER

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### ABSTRACT

This research is dedicated essentially to a study of consonantal quantity in Tarifit Berber, spoken in the North Eastern region of Morocco.

In order to analyse this phonetic and phonological phenomenon in this language, it is important to examine the case of singleton and geminate consonants by establishing a data of minimal pairs: singletons/geminates.

The importance of this study is phonological contrast in its grammatical and lexical functions. There are many ways of exploiting consonantal quantity contrasts in tarifit Berber. The linguistic function is either efficient among grammatical categories, especially in adverbs or their reduplication in the majority of cases.

- (A) / *ðazðað*/ (he is thin)  
/ *ðazðað att<sup>ʰ</sup>as* / (he is very thin)  
/ *ðazzðað*/ (he is very thin)
- (B) / *ðazðað att<sup>ʰ</sup>as att<sup>ʰ</sup>as* / (he is very very thin)  
/ *ðazðað att<sup>ʰ</sup>a:s* / (he is very very thin)

In example (A), consonantal duration assumes the role of the adverb, but the duration in (B) is vocalic, it plays the role of reduplication of the adverb, which is usually used in Berber to express temporality, place, and modality; this rare phenomenon concerns only adverbs, adverbials, and prepositions with an adverbial function, like/θma θma/( eng. all along adverbial of place), /ziç ziç/( eng. very early morning adverbial of time); for more details see [3].

It can be noticed that the durational contrast concerns the adjective in (A), and the adverb in (B), but they have an adverbial function in both cases.

This phenomenon can be found in the case of consonants as well as vowels.

- |                               |               |                                |                    |
|-------------------------------|---------------|--------------------------------|--------------------|
| / <i>ðaməzjan</i> /           | (he is small) | / <i>ðaməzzjan</i> /           | (he is very small) |
| / <i>ðmiz<sup>ʰ</sup>ið</i> / | (it is sweet) | / <i>ðmi:z<sup>ʰ</sup>ið</i> / | (it is very sweet) |

Gemination has another grammatical function; it represents the imperfective, concerning the opposition simple/imperfective tense, like in the following examples:

- |                   |                      |                    |                 |
|-------------------|----------------------|--------------------|-----------------|
| / <i>ibna</i> /   | (he has constructed) | / <i>ingəz</i> /   | (he jumped)     |
| / <i>ibənna</i> / | (he is constructing) | / <i>inəggəz</i> / | (he is jumping) |

Lexical contrast concerns the different meanings of a word according to the nature of consonants, being singletons or geminates. The phenomenon is very frequent in Berber, as is depicted in the following examples:

- |                  |            |                    |             |
|------------------|------------|--------------------|-------------|
| / <i>nəʃ</i> /   | (me)       | / <i>nnəʃ</i> /    | (of you)    |
| / <i>maʃ a</i> / | (but)      | / <i>maʃ ʃ a</i> / | (food)      |
| / <i>asam</i> /  | (jealousy) | / <i>assam</i> /   | (lightning) |

Considering phonetic realizations, it can be noticed that assimilation may produce gemination. Here are

some examples:

/arjaz ð θamyarθ /	(man and woman)
/arjaz ttəmyarθ/	(man and woman)
/ ða ð ðih̄a/	(here and there)
/ða ddih̄a/	(here and there)
/ad-θas/	(she will come)
/attas/	(she will come)

A preliminary acoustic investigation is presented; it should enable evaluating the robustness of the phonological feature by analysing experimental data collected.

The speakers, chosen for the recording of the data, were two adult, male, native speakers of Tarifit Berber without any speech pathology and their audition was normal.

The recordings were carried out in a soundproof room. The target items, inserted in carrier sentences, were transcribed and presented in random order such that two sounds of the same item did not follow each other. The speakers, who had to repeat the sentences of the corpus, were positioned one after the other in a soundproof room at a distance of 20 cm from a Neumann K54 microphone. Each sentence was repeated 10 times at a normal speaking rate, in order to obtain sufficient data and carry out statistical analyses (mean durations and standard deviations). The syllabic structures measured were of the type [VCV].

Recordings were digitised with the help of a software (PROTOOLS®), which was installed in a Mac G3 computer. The recorded data were then transferred to an audio CD, type 44100/16 bits/AIFF

A sound editor (PRAAT®) served to process the audio and to measure durations.

The data, based on acoustic analyses, support the existence of such a phonological distinction in Berber. The objective of these acoustic analyses concerns particularly the consonants in intervocalic position, and examines the effect of gemination on the acoustic duration, and the duration of occlusion and of VOT for stops. The results show that geminates are longer than their singleton counterparts. It has also been noticed that consonantal gemination did not affect the duration of adjacent vowels; duration of vowels are quite similar in both categories. But the duration of aspiration (and VOT) is the same for both categories.

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