

## Pharyngealization in Loanword Adaptation

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The present study investigates the phenomenon of pharyngealization in loanword adaptation. The focus of this paper is on French loanwords in Moroccan Arabic (henceforth MA). We shall discuss the different factors motivating this phenomenon and its variability.

It is well known that redundant features in a vowel can signal a phonemic contrast in an adjacent consonant. For example, English vowel duration and nasality are tied directly to the voicing and nasality of a following consonant. In Mandarin Chinese [ $\pm$ back] in a vowel correlates with coronal vs. velar nasal in the following consonant. Hsieh et al (2005) show that when western loanwords with conflicting vowel and coda nasal combinations [an] and [æng] are adapted into Mandarin, the redundant vowel rather than the distinctive consonant determines the outcomes -a result they attribute to the relative saliency of the phonologically redundant vocalic difference vis a vis the consonant. Heath (1989) identified another example of this phenomenon, observing that the mid vowels of French <moquette> are preserved by introducing emphasis (pharyngealization) on the consonants in the loan /MokeT/. He also pointed to the variability of this phenomenon.

The present paper investigates the different factors determining variability of pharyngealization in French loanwords in MA. We will present the results of a detailed study of this phenomenon from a corpus of c. 1,800 French loanword in MA.

MA has three vowel phonemes /a/ /i/ /u/ (as well as an epenthetic schwa). They take lowered and retracted allophones [ɑ], [e] and [o] respectively, when tautosyllabic with an emphatic consonant. The latter are redundant and predictable variant of the corresponding phonemes. This would lead one to predict that they should play no role in loanword adaptation. Also, since French lacks emphatic consonants, we expect that the above mentioned allophones should be absent completely from French loanwords in MA. However, consideration of French loanwords in MA shows that French /ɑ/, /e/ and /o/ can be identified with the MA allophones that appear in emphatic contexts in the native phonology. Consider the following examples (emphatic consonants are marked in capitals):

French	MA	Gloss
a- botte	BoT	Boot
b- taupe	ToBB $\alpha$	Rat
c- tete	TeT	Head
d- tableau	T $\alpha$ BLo	Board
e- saumon	SoMo	Salmon
f- regler	Rigla	To sort out
g- graisse	la-gris	Grease
i- credit	Kridi	Loan
j- gouter	Guti	Snack
l- dechet	diʃi	Garbage
m.fourneau	FoRNo	oven
n- bonjour	BoJoR	Good morning/ day

We notice that in examples (a-e) the French phonemes / $\alpha$ /, /o/ and /e/ are identified with MA allophones [ $\alpha$ ], [o] and [e], respectively, which results in the pharyngealization of the consonants. However, in examples (f-l) we find that they are mapped to MA corresponding phonemes /a/, /u/ and /i/. More surprisingly, in the last two examples, the French vowel /u/ is unexpectedly mapped to the MA allophone [o], and the tautosyllabic consonants become emphatic. We shall examine and evaluate the competing phonological and phonetic factors that underlie the asymmetry manifested in adaptations and appear to give rise to its variability.

Among the issues that the paper will rise is the difference in adaptation of French /e/ and /o/ and the impact they have on the neighbouring consonants. We will argue that this is the result of their phonetic make up. Unlike /e/, /o/ occupies a larger space in French, and hence may better accommodate the change in F2. We will argue how this affects their adaptation. We will conclude that Faith /o/ is stronger than faith /e/ reflecting the markedness of emphatic /e/ vs emphatic /o/. We shall also embrace a phonological-phonetic explanation to account for the rest of asymmetries manifested in the data.

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