Frequency and diffusion as indicators of French noun borrowing in Moroccan Arabic

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A common difficulty in studies on code-switching (CS) is categorizing a single word insertion as borrowing and CS. Poplack maintains that morphology is the key distinction (Poplack 2012, and prior) while others challenge her criteria and rely instead on the concept of *listedness* (Stammers & Deuchar 2012) as introduced by Muysken (2000). Vernacular Arabic presents a challenge to this debate because Arabic dialects are not standardized and comprehensive dictionaries that might supply proof of *listedness* do not exist. French in contact with Arabic is of interest to CS researchers due to the typological distance between the two languages, combined with the widespread societal bilingualism in the western Maghreb region introduced through colonialism (Bentahila 1983, Sayahi 2007, 2011, Ziamari 2008, 2009, etc). In addition, definite articles cannot be easily categorized for language due to phonetic similarity between Arabic, /l-/ and French, /lə la le/. This study explores the use of French nouns by native speakers of Moroccan Arabic in written and spoken informal discourse. We take a neutral stance in the CS-Borrowing debate by using four metrics to classify nouns: 1) observed morphology, 2) frequency, 3) diffusion, and 4) presence of Moroccan Arabic translation equivalents in the corpus.

The corpus for this study consists of communication between 14 pairs of friends (7 male, 7 female) in two modes: written chat and spoken conversation. The participants, all residents of Morocco, range in age from 18-27. The written portion comprises 8913 words from 13.5 hours of chat. The spoken portion adds approximately 34,000 words, representing 15 minute segments from each pair. Nouns were considered French if they were recognizable as French by an advanced speaker of Moroccan Arabic who speaks French fluently. The Python programming language was used to find the frequency and diffusion of the previously identified nouns. Frequency was defined as the number of tokens as a percent of the full corpus. Diffusion was defined as an unsimplified ratio for a given noun representing [number of tokens]:[number of unique users]. French nouns make up approximately 3% of the full corpus, virtually all of which are relevant in this debate as few are found in bilingual Moroccan Arabic dictionaries (Mercier 1949, Harrell 1960, Aguadé & Benyahia 2013) or a bilingual Standard Arabic-English dictionary (Wehr 1994.)

The results reveal a small class of nouns that have replaced their Arabic counterparts, particularly in the domains of technology and education, that are likely established borrowings in light of Mackey's (1970) notion of *availability*. However, morphological variation within this class would obscure this result if morphology were the only factor considered. The analysis suggests that lack of translation equivalents attested here is the strongest indicator of noun borrowing in this language pair, supported by high frequency and widespread diffusion. These results point to the importance of including speakers' use in the notion of *listedness*, not dictionary inclusion, as this may be a better indicator of the status of a word as a borrowing.

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