

## Acoustic properties of geminates in Rural Jordanian Arabic

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This study investigates the durational cues of geminates and their singleton counterparts in Rural Jordanian Arabic (RJA), comparing word-medial and word final positions in terms of surrounding vowels, voicing, pharyngealization, manner and place of articulation. We build on work investigating geminates by Khattab 2007; Khattab and Al-Tamimi 2009; Abu-Abbas et al. 2011; Khattab and Al-Tamimi 2014. Unlike these authors, however, who focus on word-medial geminates, the present study investigates acoustic correlates of both word-medial and word-final germination.

Our research is based on word list data comprising 204 words uttered by six native speakers of RJA, recorded and acoustically analyzed in Praat (version 5.4.04) for a total of 1224 words. Duration of the targeted geminate and singleton consonants as well as that of the preceding and following vowel was measured. Each consonant was also coded for a number of independent variables including word position, place and manner of articulation, voicing, pharyngealization, following vowel, preceding vowel, and speaker gender.

The results of this study yield three particularly interesting findings which are the focus of this talk. First, we found that the proportional differences between geminates and singletons based on word position are significantly different: in final position, we see a duration ratio of 1.4:1 of the geminate as compared to the singleton, whereas in medial position we see a ratio of 2.1:1, an observation that has not been reported. In RJA, word-final gemination can be argued to be disappearing, with speakers not always able to make the distinction between minimal pairs. Second, we found that all vowels in the geminate context are significantly longer for females than for males, contra Khattab & Al-Tamimi (2008), while gender plays no role when it comes to the consonant duration in the geminate context. Third, we found that *short* vowels in the geminate context are significantly *shorter* than those in singleton context while *long* vowels in geminate context are significantly *longer* than those in singleton context. These findings for RJA are contrary to Khattab & Al-Tamimi (2008) for Lebanese Arabic, where post-geminate vowels were unaffected by the previous consonant. We further discuss how our findings support others which find that duration plays an important role in phonetic cues to gemination (Lahiri & Hankamer 1988, Khattab & Al-Tamimi 2008), and add to evidence of no phonological compensatory lengthening or shortening in geminate contexts (Khattab & Al-Tamimi 2008).

## References

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