

The Domain of Emphasis Spread in Arabic: Evidence from Urban Jordanian Arabic

Abstract

Several studies, primarily phonological, have shown that emphasis in Arabic spreads from the emphatic sound to its neighboring segments (Broselow 1976, Younes 1982; 1993, Davis 1995, Watson 1999, Zawaydeh 1999, Jaber 2001, Bin-Muqbil 2006, Jongman et al. 2011, among many others). These studies reveal that Arabic dialects show differences in the phonological domain of emphasis spread. According to Broselow (1976), Jaber (2001), and Jongman et al. (2011), the domain of emphasis spread is the syllable, but to Watson (1999), Zawaydeh (1999), and Al-Khatib (2008) it is the entire word, and to Younes (1982; 1993), it is the uninflected word. We strongly believe that one reason why previous research on emphasis spreading still produces conflicting findings is that these studies still assume an immediate correspondence between the phonetics of emphatic sounds and their phonological realization, relegating the role of the morphological make-up of the word. Furthermore, most previous studies on emphasis spreading have used the Arabic triggering emphatic sounds (whether primary or secondary) indiscriminately, yet making generalizations that they think are applicable to all of them.

To demonstrate a fuller account of the domain of emphasis spreading in Arabic, in general, and Urban Jordanian Arabic (UJA), in particular, the current study provides an acoustic analysis of emphasis spreading in polysyllabic words (monomorphemic vs. polymorphemic) as produced by ten native speakers of UJA (5 males; 5 females). The stimuli consisted of a list of (56 words) minimal pairs containing the emphatic sound /t^ʕ/ and its plain counterpart /t/ in word-initial and word-final position. Vowel formant frequencies (F1-F3) were measured at the midpoint of the vowels preceding or following the target sound.

To this end, we hope to show that the morphology of the word is a real confounding force that constrains the operation of emphasis spreading on the entire word. The point of departure from probably all previous work on emphasis spread is the assumption that emphasis is not merely a phonological but a morphophonological component.

The findings of the current study, F2 results in particular as F1 and F3 prove to be slightly irrelevant to the identification of the domain of emphasis in UJA, show the effects of morphological complexity in identifying the nature and domain of emphasis spreading in this dialect. The F2 of all the vowels in polysyllabic monomorphemic words was significantly lowered (significant by a 1-tailed t-test, $p < 0.0000$). However, the F2 of the vowels in the neighboring morphemes in polymorphemic minimal pairs did not significantly change in the presence of the emphatic consonant (not significant by a 1-tailed t-test, $p=0.741$ for first syllable, and $p= 0.828$ for final syllable). The results also show that there is a significant difference in F2 measurement in monomorphemic emphatic words depending on the position of the target emphatic sound (/t^ʕ/) within the word. The mean difference of F2 between emphatic and non-emphatic monomorphemic words with the emphatic/plain sound in the first syllable (156.886 Hz.) was lower than that of the syllable with the emphatic/plain consonant in the final syllable of the word (215.357 Hz.). More evidently, in trisyllabic monomorphemic words containing the emphatic consonant, F2 in the distant vowels was significantly lowered as opposed to those containing the plain counterpart. However, no significant difference in F2 measurement in the distant vowels in trisyllabic polymorphemic words has been attested. This apparently indicates that spread is a property of the morpheme. The results of the current study contradict the older 'distance from trigger' model.