

Cypriot Greek geminates: the contrast between [j] and [j:]

Spyros Armosti¹, Kyriaki Christodoulou²,
Marianna Katsoyannou², & Athanassios Protopapas³

¹*Department of Classics and Philosophy, University of Cyprus*

²*Department of Byzantine and Modern Greek Studies, University of Cyprus*

³*Institute for Language & Speech Processing, Greece*

The use of [j:] in Cypriot Greek (CyG) has been noted by Christodoulou (1967) and Arvaniti (1999). In both cases, this sound was presented as an alternative pronunciation for [ɰ]. However, its precise phonological and phonetic status remains unspecified. Here we examine the acoustic properties that sustain an observed contrast between [j] and [j:] in CyG. In particular, we test the hypothesis that [j:] is a phonetically distinct geminate segment.

The temporal and frequency characteristics of [j] and [j:] in a medial position were examined in order to establish the contrast between these two consonants. Six words representing minimal and quasi-minimal pairs with singleton and (putative) geminate [j] (e.g. [ma'ja] 'yeast' vs [ma'j:a] 'hair') were produced by 5 native CyG speakers 6 times each (3 in slow and 3 in fast tempo) in matched sentence context. The target segments always occupied the C₂ position in a C₁V₁C₂V₂C₃V₃ 3-syllable mid-sentence sequence. Measurements included the duration of all six segments (and thus of the syllable containing each target segment and of the preceding and following syllable) as well as the mid-segment RMS amplitude, pitch, and first two formant frequencies (F₁ and F₂) of the target segments and the adjacent vowels.

The results indicate that the two sounds are distinguished by duration and intensity, with [j:] being consistently longer and less loud than [j] for every speaker. In addition, [j:] was found to reach higher F₂ values than [j] in the slow tempo only, an effect that may be attributed to the availability of sufficient time to reach canonical articulation. In agreement with findings for other CyG geminates (Tserdanelis & Arvaniti, 2001), the duration of the adjacent vowels was unaffected by [j] lengthening, thus resulting in significant differences of syllabic and total duration.

The findings support the interpretation of this [ɰ]-alternative pronunciation as a geminate [j:] according to the CyG system of gemination.