

Intonation in contact: Athenian, Cretan, Corfiot and Venetian declaratives

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Little work exists on the impact of long-term historical language contact on intonational features. We examine the declarative tunes in Cretan and Corfiot Greek, two varieties with a history of long-term contact with speakers of the Venetian dialect of Italian. We compare the declarative in these two varieties to the corresponding tune in Athenian Greek and Venetian. We hypothesise that, given the history of Venetian occupation of the respective islands for more than four centuries, Cretan and Corfiot will pattern with Venetian, not Athenian.

Drawn from pre-existing corpora, our data comprises spontaneous and semi-spontaneous speech, in contrast to the controlled laboratory speech analysed in the majority of intonational studies. The preliminary results reported below are based on three of the four varieties to be presented: recorded between 2001 and 2015, they comprise 157 Athenian utterances (5M speakers, mean age 50; 5F speakers, mean age 53), 120 Cretan (5M, 54; 5F, 54.4), and 44 Venetian ones (1M, 21; 1F, 19). This is work in progress and more recordings per language variety will be investigated. Standard Autosegmental–Metrical (AM) phonological analysis [1, 2] was combined with statistical modelling of f_0 curves (Functional Data Analysis, FDA), to examine the nuclear part of declarative utterances. Figure 1 shows examples of declaratives in Athenian, Cretan and Venetian as well as the region of interest (RoI) to be modelled, defined through the AM analysis and delimited by phonological landmarks P, the pre-stress vowel and V, the nuclear vowel. The RoI f_0 curves were modelled as 4th-order orthogonal (Legendre) polynomials [3], to capture both phonological and continuously varying phonetic properties of the f_0 curves which have been reported to contribute to the utterance interpretation [4, 5]. Statistical significance of differences between varieties was tested using t-tests.

Preliminary results show that while declaratives in all three varieties end in a fall, there are important differences in the timing and scaling of the fall. Figure 1 shows that the f_0 fall in Athenian starts during the stressed vowel and falls faster than in Venetian and Cretan where it starts earlier and is more gradual, forming a plateau from about the middle of the stressed vowel to the end of the utterance. This impressionistic description is confirmed by the statistical analysis of the modelled curves. The slope of the Athenian fall (Figure 2 top left), reflected by the larger negative coefficient of the linear term of the polynomial (μ : -5.7; σ : 13.4), is significantly steeper than in Venetian (μ : -.29; σ : 13.4; $p < .01$), while the slopes of the Cretan fall (μ : -3.7; σ : 29.2) are not significantly different from those of the other varieties (Ath/Cretan, $p = .452$; Ven/Cretan, $p = .451$), due to their large variance. The quadratic coefficient for the Cretan curves (μ : 1.1) is significantly larger than in Athenian (μ : -14.1; $p < .001$) but not significantly different from Venetian (μ : .52; $p = .955$; Figure 2 top right). The sign of the mean quadratic coefficient shows that the Athenian f_0 curves steeply downwards, i.e. forms a concave downwards peak, while the Cretan f_0 curves gently upwards, i.e., it falls from a peak to form a trough (cf. Figure 1).

The AM and FDA analyses converge on a consistent picture, promising less labour intensive/costly and more reliable analyses of large datasets. These results confirm our hypothesis that the shape and scaling details of Cretan tunes pattern more like Venetian than Athenian. They suggest that declaratives in Cretan resemble Venetian both in the nuclear shape and the location of the peak. In Venetian and Cretan there is a fall that starts in the prenuclear syllable and a L pitch aligned with the stressed syllable (tentatively analysed as H+L*), as opposed to Athenian, where there is an H on the stressed syllable (H*) followed by a fall. This work showcases a promising direction for investigating the effect of language contact on regional intonational variation using natural linguistic data by combining the insights of the AM framework with a data-driven statistical analysis of f_0 curves.

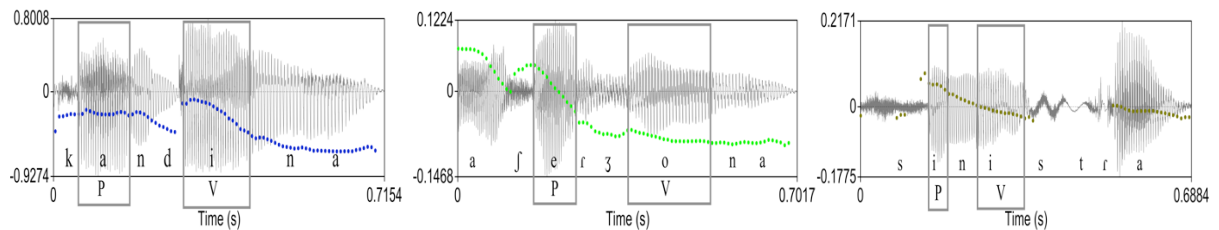


Figure 1. Illustrations of declaratives (mean contours re the quadratic coefficient) in SMG (a), CrG (b) and Venetian (c); p = pre-stress vowel; v = last stressed vowel.

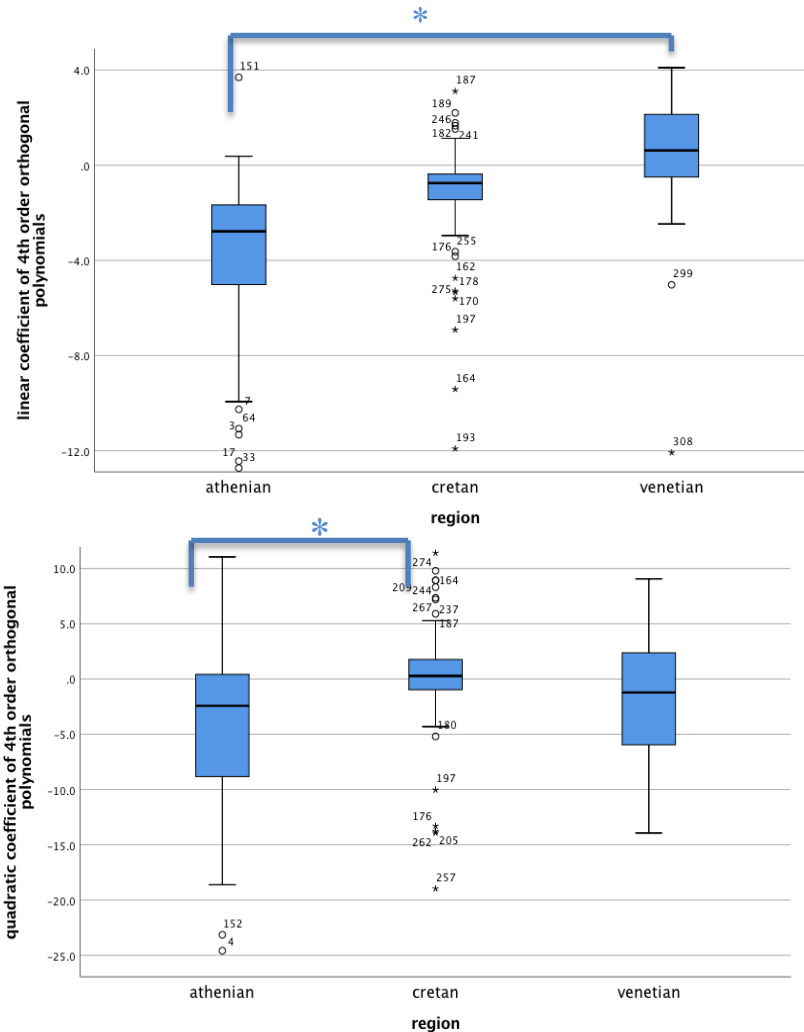


Figure 2. Shape characteristics of the f_0 curves based on the linear (top) and quadratic (bottom) coefficients of the polynomial (see text for details).

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