



**P1-6**

**Perceiving tonal targets in Italian questions and statements**

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In Italian, a yes/no question can be signaled by intonational means alone. Moreover, in the Neapolitan variety the shape of both question and narrow focus statement contours is very similar, being characterized by a rise-fall that can be analyzed as a L(ow)H(igh)L(ow) tonal target sequence (D'Imperio, 2000). A previous study (D'Imperio and House, 1997) suggested that Neapolitan listeners rely on the alignment of the H peak in order to identify a question or a statement. Other plausible cues to the question/statement distinction might be the fundamental frequency ( $F_0$ ) level of the H peak and/or the rise and fall slopes. This study shows that only the alignment of the rise-fall as well as the shape of the peak strongly affect the perception of the question/statement contrast. This is taken as evidence for a shift of the temporal location of the perceived target. A read speech corpus, produced by two speakers of Neapolitan Italian, was first analyzed to acoustically characterize tonal targets in both yes/no questions and narrow focus statements, with target words differing in syllable structure and segmental environment. Later, a set of PSOLA resynthesized stimuli was created, which constituted the basis for the perception experiments. Results show that, when tonal targets for the entire rise-fall are displaced later in time, more questions are identified. The results also suggest that  $F_0$  height has a minor role in signaling pitch accent differences, while rise and fall slope have no effect. Additionally, when the shape of the peak in the rise-fall is modified, so that a high plateau is created, more questions are perceived. This phenomenon cannot be accounted for in terms of a parsing difference between the question and the statement phonological tone structures, since those structures are the same. The plateau effect cannot even be interpreted as a pitch height effect, since the  $F_0$  height manipulation was not significant. Moreover, the plateau effect was also found for non-native listeners. Namely, American English listeners showed an effect of peak shape, as well as a similar use of the alignment contrast, when identifying questions vs. statements of Neapolitan. These results suggest a universal use of alignment in the identification of pitch accent category as well as a psychoacoustic effect of perceived target displacement due to peak shape. More generally, the findings lend additional support to theories of intonational phonology whose primitives are tonal targets, and not contours (cf. Ladd, 1996).