

Lexical accent effects on the perception of fundamental frequency peaks in Japanese

A perceptual experiment was conducted to examine the effects of lexical accent on the perceptual prominence of fundamental frequency peaks (F0) in Japanese. Listeners judged the relative prominence of two peaks (P1 and P2) in sentences in which the peak values and accentedness were varied. When the accentedness of the two peaks did not differ (accented-accented (*aa*) and unaccented-unaccented (*uu*), the results confirmed earlier observations that P2 needs to be lower than P1 to be perceived to be as equally prominent. Moreover, P2 in *aa* needs to be even lower than P2 in *uu* to sound equal to P1, due to the perceptual compensation for downstep. However, when accentedness of P1 and P2 differed, to sound equally prominent, P2 had to be lower in *au* than in *aa*, and P2 had to be higher in *ua* than in *uu*. These patterns can be accounted for if the perceived height of an accented word is discounted. The experimental results revealed that lexical accent plays an important role in the perception of intonational prominence in Japanese and provide evidence for hitherto unknown compensation processes involved in it: downstep compensation and accent discounting.