Recent studies on simultaneous bilinguals report interaction between their two L1s [1, 2, 3]. Other studies show that the speech patterns of simultaneous bilinguals are different from that of monolinguals [4] and that the performance of simultaneous bilinguals is intermediate between native speakers and second language learners [5]. In terms of intonation studies, simultaneous bilinguals have been reported to employ a ‘fusion’ intonation of both languages into a single intonational grammar [6]. Other studies report the use of intonational features of both languages in one context, but maintaining monolingual like intonation in another context [7].

The main objectives of this study is to explore if simultaneous bilinguals of Indian English and Hindi have two different systems of intonation or if they employ one system for both their native languages (L1s). More specifically, this study explores if these simultaneous bilinguals use only the Hindi pitch accent (L*H) or a combination of the Hindi pitch accent and the most common British English pitch accent (H* or H*L) in a given intonational phrase (which in this case is the sentence) and if there is a difference between the use of pitch accents by late bilinguals and simultaneous bilinguals.

Hindi has one pitch accent (L*H), which is found on every non-final content word [8, 9, 10]. While in British English (and American English) pitch accents mark discourse entities as important or salient in relation to other entities in the conversational context. The most common pitch accent in British English declarative sentences is a rising contour (H*) or a rising falling contour (H*L) [11, 12]. Thus, one would predict the use of a combination of these pitch accents if they were using a fusion intonational grammar and the use of for instance just L*H in Hindi and just H* or H*L in Indian English if they are using two different grammars. To test this prediction, sample of Hindi and English speech were collected from four late and four simultaneous bilinguals in Delhi, India. Using a Praat script the F0 was extracted for the target vowels at every 5ms starting at 10% into the target vowel and ending at 90%. A quadratic polynomial equation (ax² + bx + c) was calculated for each pitch contour (in Hz). The polynomial coefficients were used to classify F0 contours into three classes, corresponding to L*H, H* or H*L. The results of this study show that the late bilinguals only use L*H in both Hindi and Indian English. On the other hand the simultaneous bilinguals use a wider variety of F0 contours in their speech with the most common contour in English productions being the convex curve or a rising convex curve like the British English H* or H*L. They are also shown to use L*H. I conclude that late bilinguals of Hindi and English maintain one intonational grammar for both their languages, whereas simultaneous bilinguals use a combination of the Hindi pitch accent (L*H) and the most common British pitch accent (H* or H*L) within the same intonational phase.
References


http://www.personal.umich.edu/~jharns/hindi.html