

# Preceding Vowel Duration as a Cue for Voicing

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Speech perception in children is an area of focus in the past 2 decades. The presence of developmental trends in children perception has triggered several studies in this area using various cues to perception. Variation in adult perceptions across different languages has necessitated the study of speech perception in children from different linguistic backgrounds.

The present study was aimed, at determining the cuing strength of preceding vowel duration in the perception of voicing of the following stop consonants, in Kannada speaking children (3-6 years), and to investigate the developmental trend, if any, in the perception of voicing of stop consonants with preceding vowel duration as a cue.

Three plosives - voiced unaspirated velar plosive /g/, voiced unaspirated dental plosive /d/ and voiced unaspirated bilabial plosive /b/, as embedded in the medial position of four meaningful bisyllabic Kannada words, (baga, kade, taba, saba) were selected.

These words as uttered by a seven-year old normal Kannada speaking male, were recorded and digitized by a 12 bit ADC at 20KHz sampling rate. These digitized words were edited using the wave form editor. "DSW". The words were displayed on the screen of the computer and the steady state portions of the vowel were truncated in steps of two waves until there was no steady state.

In total there were 32 stimuli. These were randomized and iterated twice and then audio recorded in a metallic cassette. These synthetic stimuli were audio presented to 30 Kannada speaking children (5 males and 5 females each in the age range of 3-6 years with one year interval). The children were tested individually. Children in the age range of 3-4 years were conditioned to the toys representing the word pairs (Eg. baga-baka). On hearing the synthetic stimuli the child was to point to the appropriate toy and the examiner wrote the responses immediately on a printed forced-choice format. In 4-5 and 5-6 year old children, verbal alternate forced choice responses were obtained.

The percent responses for each stimuli was calculated on the basis of which the identification and discrimination functions were plotted for each stimuli.

The results indicated the following :

1. Preceding vowel duration is not a cue for voicing in Kannada in children (3-6 years).
2. No consistent developmental trend is present for preceding vowel duration.
3. The perceptual data concurred with the production data.

In English PVD is a strong cue for voicing of stop consonants in final position. Several reasons could be attributed as to why PVD is not a voicing cue in Kannada. One of the reasons is that in production data (Kannada), the ratio of the PVD voiced and voiceless stop consonants is not high and significant (Savithri, 1992). However, the ratio of closure duration for voiced and voiceless stop consonants is high. Thus, in Kannada the perceptual trend may follow the production trend. Also, the results of the study by Satya (1992) indicate that