

# Development of Perception of Coarticulation

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The term coarticulation denotes an overlap in the production of gestures for successive segments of an utterance (MacNeilage '80). In the past, studies have been conducted on coarticulation and there has been some light thrown on the development of coarticulation in children. However, the research is not very conclusive and much remains to be done in this regard. The present study was an attempt to investigate and gain insight into the development of the perception of coarticulation in Kannada speaking children from 4-7 years of age.

Four voiceless stop consonants velar - l k l, retroflex l t l, dental l t l & bilabial l p l embedded in the medial position of four meaningful kannada words were selected. Five synthetic stimuli for each word were prepared using the cut and splice technique (Voice & speech systems, Bangalore). 20 synthetic tokens were prepared with five tokens in each set. Each set had the words arranged in the following sequence.

1. Original word - vbtv (Consonant Vowel burst transition Vowel)
2. Stimuli from the beginning of initial consonant till the burst of the key stop - vcb (Consonant Vowel Consonant burst)
3. Stimuli from the beginning of the initial consonant till the transition of the key stop consonant. Burst was removed using the cut and splice technique - vt. (Consonant Vocalic transition)
4. Original word with the burst removed using cut & splice technique - vtv. (Consonant Vocalic transition Vowel)
5. Stimuli from the beginning of the initial consonant till the transition of the key stop consonant. The steady position of the end vowel was removed using the cut and splice technique - vcbt. (Consonant Vowel Consonant burst Transition).

These stimuli were randomized and iterated five times to make 100 stimuli. They were then audio recorded onto a metallic cassette with an inter-stimulus interval of one second and inter-iteration interval of five seconds.

These stimuli were presented one at a time through loud speakers to six normal Kannada speaking children (three males and three females) in the age range of 4-7 years. They were given two pictures for each word where he or she had to point one word when he perceived the final vowel and to another picture when he or she did not. The responses were recorded by the experimenter on a forced choice response sheet after the child's repetition. The responses were recorded and graphs are plotted.

The results revealed that

1. The % response decreased from token one to token five indicating that coarticulation of stops plays a role in the perception of vowel.
2. Also, the % response increased from four to seven years indicating developmental trend in the coarticulatory perception. It is apparent that the ability to perceive coarticulation linearly increases from the age of four to seven years.
3. There also exists a correlation between production and perception of coarticulation to some extent.

The results indicate that maturation may play a major role and the auditory processing capacity appear to develop in children. However, it is not completed yet by the age of seven years. While considering the pattern of development of coarticulation perception, one could well understand that caution should be taken to implement these research findings in the rehabilitation of the handicapped.