

Spectrographic Analysis of Speech of the Hearing Impaired

Sowmya Narayan

Student, A.I.I.S.H, Mysore

"Great strides have been made in understanding the speech of the hearing impaired, but our knowledge in this area is far from complete" (Osberger and McGarr1986).

In the present study the speech of five severe/or profoundly congenital hearing impaired and five normal hearing Kannada speaking subjects has been analyzed spectrographically. Spectrographic analysis was done with the help of the computer and the following conclusions were drawn.

A list of ten nouns were used as stimuli. The carrier phrases 'idu' was elicited used along with the stimulus words.

Vowels of Kannada such as /a/, /a:/, /i/, -/i:/, /u/, /u:/, /e/, /e:/, /o/, /o:/ and stop consonants /p/, /b/, /t/, /d/, /k/, /g/, /t/ & /d/ were analyzed.

From the analyses the following parameters from the vowels and consonants were obtained.

- Formant frequencies of the vowels (F1, F2 and F3)
- Vowel duration
- Formant Frequencies of stop consonants (F1, F2 and F3)
- Voice onset time of stop consonants
- Closure duration of stop consonants

All the vowels of hearing impaired showed a higher F2 values than that of normals. F1 and F3 value of hearing impaired were found to be similar than that of normals.

All hearing impaired children had higher mean vowel duration than that of normals indicating prolongation of the vowels.

The formant frequencies F1, F2 and F3 of stop consonants were similar in both groups.

There was no significant difference in the mean VOT values of both the groups at 0.05 level though the hearing impaired group showed longer VOT values.

The closure duration of hearing impaired group was more than that of the normals which was statistically significant.