

DYSFLUENCIES IN NORMALS UNDER DAF : IN THREE CONDITIONS OF VOICING

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Several studies have reported that the normals show stuttering like behaviour under DAF. There are also studies showing that the stutterers show different degrees of adaptation under different degrees of voicing. The present study was conducted to find out the adaptation in 15 male and 15 female normal adults under DAF in 3 different voicing conditions (silent, whisper and loud reading). The results indicate greater adaptation in these subjects under silent reading compared to other conditions.

The laryngeal function in stutterers has been found to be different from that of normals. For example, the Voice Onset Time (VOT), transition from voiced to voiceless and *vice versa*, different conditions of voicing and prosodic variations. Many investigators have noted these differences in laryngeal function and related them to stuttering (Schwartz, 1974; Wingate, 1969; Venkatagiri 1980).

On the other hand, explanations have been offered based on DAF. After Lee's (1951) experiments, attempts have been made to study the similarities and differences between stuttering and speech dysfluencies in normals under DAF.

There is a difference of opinion about the similarities between stuttering and artificial stuttering. Thus, both the laryngeal dysfunction and DAF in stutterers have been the focus of study. But they have been studied separately. No attempts have been made to combine these two points of views and to find out the outcome. At All India Institute of Speech and Hearing, attempts have been made to study the laryngeal behaviour of normals under DAF and to find out the similarities and differences between speech behaviour of stutterers and normals under DAF (Nataraja and Ramesh, 1983). The present study is an attempt to find out the adaptation effect on speech of normals under DAF in three different voicing conditions (loud reading, whispered and silent reading). Earlier investigations have shown that the adaptation varies with the degree of voicing, *i.e.*, more with loud reading and least with silent reading (Wingate, 1969 ; Gayathri, 1980).

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Therefore, it was considered that it will be interesting and useful to observe the behaviour of normals, specifically adaptation under DAF in three different voicing conditions.

Method

The present study is an attempt to investigate the adaptation efficacy under DAF in repeated readings of Kannada passages in normals, in three different voicing conditions, *i.e.*, (1) a loud rehearsal, (2) whispered rehearsal and (3) silent rehearsal.

Subjects

15 males and 15 females having no speech or hearing problems served as subjects for the study. The age range was 17-32 years. All subjects were native speakers of Kannada and were able to read Kannada.

Test Material

Three passages in Kannada were selected. They were meaningful and non-emotional. The passages were about trees. Each passage had 166 syllables.

Instruments

1. Delayed auditory feedback unit with circum-aural earphones and 1/4 inch microphone, which had provision to provide delay varying from 50 msec to 300 msec and intensity control of the output.
2. Cassette Tape Recorder were used for the study.

Experiment

The subject was seated comfortable on a chair with the earphones placed on the ears and microphone clipped to the cloth, worn by the subject so that it would be approximately 6 inches away from the mouth. The subject was given instructions using another microphone (Therapists microphone) through the DAF instrument. The instructions were as follows :

Condition 1 : Aloud rehearsal

" When I say ready, please read this passage five times aloud. "

The subject was made to read the passage five times loudly with a delay of auditory feedback of 200 msec at 60 db SPL at the earphones. The first and fifth readings were recorded using the tape recorder.

Condition 2 : Whispered rehearsal

For this part of the experiment the subject was given the following instructions :

"When I say 'ready' please read this passage aloud. After completing this, read the passage three times using whispering—Like this (demonstration). After this, read the passage once again aloud. So you will be reading the passages five times—the first time loudly ; second, third and fourth time with whisper and the last time loudly again. Please ask me, if you have any doubts. "

The subject was made to read the passage 2, under DAF of 200 msec at 60 db SPL for 5 times, 1st and 5th being loud reading, 2nd, 3rd and 4th were whispered rehearsals (reading). In all the rehearsals the DAF was on. The 1st and 5th readings were recorded using the tape recorder.

Condition 3 : Silent reading

The subject was given following instructions to carry out this part of the experiment :

" When I say 'ready ' please read this passage once aloud. When you complete this, read the same passage to yourself silently. When you read silently, you should not move your lips, tongue and you should not make any movements in the throat. And then, read the passage again aloud. So, you will be reading the passage five times—the first time aloud, second, third and fourth time silently and last time aloud again. Please ask me, if you have any doubts. "

The subject was made to read the passage 3, under the similar conditions as in conditions 1 and 2. However, the 2nd, 3rd and 4th rehearsals were silent readings. The 1st and 5th readings (loud reading) were recorded using the tape recorder. Each subject underwent all the three conditions. However, the order of reading the passages and the conditions were randomized. All the recorded samples were analyzed with the help of three post-graduates in Speech Pathology and the number of blocks (repetitions, hesitations, prolongations) in each recorded readings were noted.

The mean, S.D. and further statistical analysis using significant mean difference were done.

TABLE I ; Mean and standard deviation of dysfluencies under three dillicunt conditions of voicing

In all the three conditions there was statistically significant reduction in the number of blocks when the number of blocks in trial 1 were compared with number of blocks in trial 5, thus showing the adaptation in each condition which is similar to the behaviour of stutterers under repeated reading conditions.

Further to note whether there was any significant difference in the amount of adaptation within these three conditions each condition was compared with other 2 conditions.

It was found that there was more adaptation under conditions . *i.e.*, under silent rehearsal than under whispered rehearsal. The difference was statistically significant at 0-05 level.

The whispered rehearsal, *i.e.* condition 2 showed more adaptation than the loud rehearsal, *i.e.*, condition 1. Again the difference was statistically significant at 0-05 level. This finding thus shows that the normals while reading under DAF with repeated rehearsals show adaptation which is similar to the behaviour of stutterers. They show more adaptation under silent rehearsal than in whispered rehearsals and more in whispered rehearsals compared to loud rehearsals.

However, this finding is just opposite to the findings of Gayathri (1980) using stutterers. That is, stutterers have shown more adaptation under loud rehearsal condition than in whispered rehearsal condition and in whispered

rehearsal condition than silent rehearsals. Gayathri (1980) has concluded that with more involvement of laryngeal activity more adaptation is found. Whereas in the present study the normals reading under DAF have shown less adaptation with greater involvement of laryngeal activity. Thus the findings of the present study have led to more interesting questions. It is hoped that future studies will be able to answer these questions.

References

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