

## STUTTERING AND HEARING LOSS

N. Rathna and N. P. Nataraja

The story often been recounted of the American Indian who stood up to stutter a defiance to Wendell Johnson's paper "The Indian's have no word for it", at a conference of the American Speech and Hearing Association. Mention has also been made that after Robert West had hypothesized the impossibility of a diabetic stuttering a gentleman in the audience announced that he was a diabetic who stuttered. The Indian was a fake and was part of a practical joke ; the diabetic was not. The main point is that the exception proves that rule is a good repartee at casual conversation, but it is irrelevant in scientific explanations. It is important that any theory which tries to be comprehensive explains or at least takes note of the exceptions. The theory should not only include and explain exceptions to the theory directly but it should also explain exceptions to the inferences that are drawn directly from the theory. Thus the exceptions when explained helps to expand the pre-view of the theory or when it is not explained limits the scope and strength of the theory. While it is generally conceded that a theory works only within the limited framework in which it is formed, theories when propounded sound dangerously comprehensive. Therefore the exceptions become extremely important in challenging such postures of comprehensiveness.

The present paper is to pose one more exception, again to the theory of stuttering. The relationship between hearing and stuttering has engaged the attention of researchers continuously for a long time. M. E. Wingate in his excellent review of the relationship indicates Bluemel (1913) as the first person to point out a possible relationship. We may also recognise the unstated belief in the use of masking noise as therapeutic device for stuttering in the age old remedy of shouting against the roaring waves of the sea. Repeatedly have people searched for stuttering among the deaf and hard of hearing and repeatedly have they drawn blanks. Gutzmann (1912) felt it was well known that congenitally deaf never stutter. Gallaudet said that throughout his fifty years of teaching the deaf he had met thousands of deaf people but could not recall ever having known a congenitally deaf person who stuttered. Considering Gallaudet was among the pioneers of education of the deaf in the United States (and an advocate of the manual approach at that) and the state of education of the deaf at that time it would be interesting to know how many of the thousands of congenitally deaf people he met could speak in the

- Dr. N. Rathna, Professor of Speech Pathology and Director.in-charge.  
Mr. N. P. Nataraja, a final MSC. Student.

first place. Some reports have reported cases of deaf and hard of hearing children who stuttered. Voelker and Voelker (1937), Backus (1938), Hans and Malone (1939) and Albright and Malone (1942) have reported occurrence of stuttering in deaf and hard of hearing children. However this has been rare. Albright and Malone (1942) have concluded that stuttering among the deaf is negligible but that it does occur in association with reduced but usable hearing. Several hypothesis have been put forth to explain this absence of or at least reduced incidence of stuttering among the deaf and the hard of hearing. In recent times greater interest has been evinced in this relationship because of the reported effects of D.A.F., masking and disturbed feedback on stuttering. Cherry and Sayers (1956) felt that blocking both air conduction and bone conduction pathways of speech feedback results generally in virtually complete suppression of stammering. However, they felt that the inhibition of stammering by temporary deafening may have no therapeutic value (and may even involve risk). Masking noise, especially masking of the low frequency sounds of the speakers voice has been found to suppress stammering. Bone conduction feedback has to be masked, say Cherry and Sayers "In some cases the elimination of bone conducted sounds of whispering they felt, was highly rewarding. Bloodstein (1950) reported that stutterers seldom have difficulty when they whisper. Sklar (1961) applying the mathematical models of feedback says that mathematically a reduction in the intensity of feedback should stabilise the oscillatory mechanism and should thus reduce stuttering. Several techniques of therapy Which have been used are based on the concept that interference with the auditory feedback will bring about reductions in stuttering. However as already indicated reports of stutterers among the deaf and hard of hearing are available. Waltz and Vogt (1932) found slight hearing losses in college-age stutterers. Based on their study Hams and Malone hypothesized that loss of hearing acuity in the period of speech formation is a cause of stuttering.

The present note reports the presence of hearing loss among stutterers. We have on the files of All India Institute of Speech and Hearing at least one stutterer who stuttered severely with secondary stuttering behavior even while whispering. He was found to be going through severe blocks even during silent reading. It was then that his whisper was tried. There was no difference in the frequency or severity of stuttering in all the conditions. This case seriously questions the validity of the comments made by Bloodstein and Cherry and Sayers.

In addition we found stutters, from mild to moderate in severity, who also had hearing losses, mild unilateral conductive type of severe bilateral sensory neural hearing loss, in the age range of 3-60 years. The data is presented in Table 1.

These stutterers formed a part of 707 stutterers who were examined at the Institute between 1966 to 1970. The Institute as a policy subjects all cases to a complete examination including psychological tests, speech tests, audiological tests,



and medical examinations. The approach to diagnosis is eclectic. Therefore even stutters get routine audiological investigations. Some of the cases included in the table have had repeat audiometry done. The audiograms consulted can be taken as reliable.

Therefore we see that 47 out of 707 stutters (6.6%) had hearing loss. This hearing loss varied from mild unilateral conductive to severe bilateral sensory neural loss. Table 2 is an abstract of Table 1 indicating types of loss. The percentage is small but it does indicate the possibility of hearing loss and stuttering being found in the same individuals.

These individuals presenting both these problems should question the hypotheses of several workers who have built up theories of stuttering and therapies for them based on the assumption that they do not go together (e.g. Cherry and Sayers). Alternate hypotheses need to be put forth to explain the continuance of stuttering in the cases reported here. The present note does not attempt to present such hypotheses. The only purpose of the note is to indicate a need for more study in this area.

Table 2. *Showing types of hearing losses among stutters*

Type of loss	Severity	No. of Males	No. of Females	Total
Conductive Unilateral	Mild	10	2	14
	Mod.	2	0	
	Sev.	0	0	
Bilateral	Mild	9	0	17
	Mod.	6	1	
	Sev.	0	1	
Mixed Unilateral	Mild	0	0	1
	Mod.	0	0	
	Sev.	1	0	
Bilateral	Mild.	0	0	2
	Mod.	1	0	
	Sev.	1	0	
Sensory Neural Unilateral	Mild	2	1	3
	Mod.	2	1	
	Sev.	1	0	
Bilateral	Mild	0	0	7
	Mod.	0	0	
	Sev.	2	0	
Total		42	5	47

## Summary

707 stutterers who came to the All India Institute of Speech and Hearing had been subjected to routine audiometry. 47 of them (6.6%) have shown hearing loss ranging from mild unilateral conductive loss to severe bilateral sensory neural loss. One case who stuttered even during whisper and silent reading is also mentioned. The incidence of the two problems together questions theories and therapies based on the assumption that hearing loss and stuttering cannot co-exist.

## REFERENCES

- Albright, M. A. H. and Malone, J. Y., The relationship of hearing acuity to stammering, *J. of expt. child.*, 8, 186-190, 1942.
- Backus, O., Incidence of stuttering among the deaf, *Ann. Otol. Rhino Laryng.*, 47, 652-635, 1938.
- Bloodstein, O, A rating scale study of conditions under which stuttering reduced or absent, *J.S.H.D.* , 15, 29-36, 1950.
- Bloomel, C. S., *Stammering and Cognate defects of speech*, New York, G. E. Stechert, 1913.
- Cherry, C. and Sayers, B., Experiments upon total inhibition of stammering by external control and some clinical results, *J. of Psychosom. Res.*, 1, 232-246, 1956.
- Kent, L. R., The use of tranquilizers in the treatment of stuttering, *J.S.H.D.*, 28, 288-294, 1963.
- Mysak, E. D., Servo theory and stuttering, *J.S.H.D.*, 25, 1960.
- Sklar, B., The 16 faces of feedback, *IEEE, Trans. Educ.*, E-10, 161-166, 1967.
- A feedback model of stuttering problem—An Engineers view, *J.S.H.D.*, 226-230, 34, 3, 1969.
- Voelker, E. S. and Voelker, C. H., Spasmophonia in dyslalia copotica, *Ann. Oto. Rhino, Laryngo.*, 46, 740-743, 1937.
- Waltz, R. H. and Vogt, A. N., The relation between speech defects and hearing acuity, *Pro. Amer. Speech, Corr. Assn.*, 2, 74-76. 1932.
- Wingate, M. E., Effects on stuttering of changes in audition, *J.S.H.R.*, 13, 861-873, 1970.