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THE EFFECT OF PENALTY UPON FREQUENCY OF
STUTTERING SPASMS

C. VAN RIPER

One of the features with which the psychologist must constantly deal when investigating stuttering is the great amount of variation in the frequency of stuttering blocks or spasms. Steer¹ has shown that frequency of stuttering spasms is, at least to a certain degree, a function of the type of speech situation. Van Riper and Hull² showed a progressive decrease in frequency of spasms as the stutterer adapted to any given speech situation. However, little knowledge was gained from these experiments as to what factors in the situations were responsible for the variations in frequency.

It was this experimenter's hypothesis that in any given speech situation one of the factors which determines the frequency of stuttering spasms is the felt or expected penalty which attaches to the stuttering spasm.

In order to determine the exact rôle played by the expected penalty, the following procedure was devised and administered to 16 stutterers. The stutterer was seated in the same room with two experimenters. Electrodes connected with a Harvard induction coil were fastened to his reluctant neck. He was then given a reading passage which included all the sounds of the alphabet in their initial positions, and asked to read the passage six times, a one minute rest being given between readings. During the pause before the fourth reading, the stutterer was told that for each spasm which occurred during that reading, he would be given a severe electric shock, the shocks to be given at the conclusion of that reading. A sample shock was administered. The two experimenters, independently of each other, recorded the number of spasms per reading by underlining the words stuttered upon. It was found that this threat produced an average increase of 5.2 with an S.D. of 3 spasms over the preceding reading, all but one of the subjects showing an increased amount of stuttering. This is of the greater significance, in view of the finding of Van Riper and Hull that the number of spasms normally tends to decrease from reading to re-reading. The added penalty placed upon stuttering, therefore, produced more spasms, a finding of immediate importance to clinicians.

¹ Steer, M.D.: Influence of social and psychological factors upon severity of stuttering. Master's Thesis, 1933.

² Van Riper, C. & Hull, C. S.: The quantitative measurement of the effect of certain situations on stuttering. (Accepted for publication in the Psychological Clinic.)

In order to insure, however, that it was fear of a penalized stuttering rather than fear of electric shock which was responsible for this increase, two further readings were used as controls. No shock was threatened or given on the fifth reading, but prior to the sixth reading the subject was told that he would be given as many shocks as he had had spasms on the initial reading, but that the number of spasms which he had would in no wise affect this number of shocks to be given at the end of the reading. This threat was found to produce an average increase of only 1.5 with an S.D. of 2.7 spasms over the previous reading, approximately one-third of the subjects showing no increase whatsoever.

When computed according to the usual methods, it was found that there were 96 chances out of 100 that threat of shock per spasm would produce more stuttering than threat of shock regardless of spasms, the average difference being 4.5 with an S.D. of 2.7 in favor of the former. In order to eliminate errors due to sequence, one half of the subjects were given the threat of shock alone on the fourth reading and threat of shock per spasm on the sixth reading. No essential differences were found whether the data for the two experimenters were averaged or treated separately. The data included in Table I represent the average of the two experimenter's independent counts.

In summary, it is felt that the results of the reported experiment show conclusively that frequency of stuttering spasms is in part, at least, a function of the penalty attached to them.

Table I—Differences in Frequency of Spasms Between Readings

Compared Readings	Average Diff.	S. D.
Reading 1—Reading 2	3.9	3.6
Reading 2—Reading 3	3.3	3.1
Preceding Reading— Threat of Shock Reading	-1.5	2.7
Preceding Reading— Threat of Shock per spasm reading	-5.2	3.0
Threat of Shock per spasm reading— Threat of shock reading	4.5	2.6

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INTERRELATION OF SEVEN TESTS OF LATERALITY

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Seven tests of laterality or sidedness were applied to a group of 80 subjects, 20 each of right-handed, left-handed, ambidex-