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Interrelation of Seven Tests of Laterality

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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-

trous and stutterers. Except for the stutterers, the groups were classified on the basis of a laterality index questionnaire. A major purpose of the investigation was to determine whether or not a technique developed by Dallenbach (1, 2 and 3) for investigating conditions of visual clearness could be applied to naive observers. The essential point of the apparatus he used is an arrangement by which two areas of light are presented simultaneously to the subject who reports as to their comparative clearness or brightness. One of these remains at constant intensity, the other is variable. Only two areas, on opposite sides of the fixation point, were shown at any one time. By comparing these areas in the various positions the subject reveals his positional preference in the visual field in terms of the intensity of the stimulus. Dallenbach's right-handed observers (2) preferred the positions to the left and above fixation, his left-handed observer (1) the position to the right and below.

The other tests given were the Miles ABC vision test, (5) an adapted hole-in-card sighting test, a test of convergence strength, a test of speed in star tracing, and the Van Riper critical-angle board test. (6 and 7). The tests were all scores in terms of a dextrality quotient, giving the percentage of right-handedness (4), making possible direct comparisons. Table I shows the correlations of each of the tests with the laterality index questionnaire. It will be noted that the correlation coefficient of the Dallenbach test is practically zero. The other correlations are low but positive.

The study shows that the Dallenbach technique bears small promise as a test of laterality. Perhaps it is not suitable for naive observers. Perhaps the few cases investigated by Dallenbach were not typical. Each of the other tests discriminates the right-handed from the left-handed groups and each of the tests discriminates in one or more additional cases, as right-handed from stutterers, etc.

The study reaffirms the need of a more adequate single test of laterality or a battery, the individual tests of which will compen-

Table I — Correlation of each of the tests with the laterality index questionnaire

	Laterality Index Questionnaire
1. Dallenbach, position *vs* intensity	−.07
2. Miles ABC vision test	.25
3. Adapted hole-in-card sighting test	.42
4. Convergence strength	.39
5. Star tracing	.14
6. Van Riper critical-angle board	.30

sate for each other's weaknesses, for one is strong where another is weak and visa versa. To establish the degree of differentiation of the tests used, when considered as a battery, the scores of the subjects were examined in various groupings or combinations of the tests. Fourteen such combinations or groupings were made. Each combination or battery discriminates more or less satisfactorily, right-handed from left-handed and from stutterers, left-handed from stutterers and from ambidextrous subjects, and tends to discriminate stutterers from right-handed and from ambidextrous subjects.

In conclusion, it can be said that the various batteries appear quite satisfactory for group discrimination, but quite unsatisfactory for individual diagnosis. A single test or a battery of tests, satisfactory in all respects, is yet to be devised.

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FACTORS INFLUENCING THE FREQUENCY OF STUTTERING REACTIONS

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The purpose of this investigation is to ascertain, in terms of frequency of stuttering reactions, the influence of stuttering experienced in certain troublesome situations upon the stutterer's speech in non-troublesome situations, when certain cues representative of the former are also present in the latter. It is further the purpose of this study to show the influence of certain cues