

The Construction and Evaluation of a Scale to Measure Attitudes of Stutterers Toward Any Social Situation

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Introduction

During the past decade the psychology of stuttering has become a matter of growing interest and concern. Attitudes of stutterers have been determined by case histories, biographies, questionnaires, and rating scales. It is desirable to replace these crude methods with more rigorous and exact methods of measurement. The primary purpose of this study was to construct an attitude scale to measure attitudes toward any social situation.

The Thurstone technique of attitude scaling, based on the assumption that equally often observed differences are equal, was used throughout the study.¹ By applying the Remmers' modifications,² a master scale was constructed which can measure attitude toward several social situations at the same time. The acceptance or rejection of statements of opinion was used as the index to affect measurement.

Scale I construction:—A number of statements of opinion, general in nature and applicable to both stutterers and non-stutterers, was collected and submitted to five members of the psychology staff at Purdue for rating on a 3-point scale: (1) excellent, (2) fair, (3) worthless. All statements checked worthless by two or more judges were eliminated. Remaining statements were mimeographed and administered to 223 college students for allocation on an 11-point scale, according to the degree of favorableness³ or unfavorableness to any social situation indicated by the statement. Frequency distributions were then set up for each of the statements, and their respective medians and Q-values computed. The median value of a distribution for a statement became the scale-value for that particular statement. All statements having a Q-value of over three were discarded as being ambiguous. In assembling the scale, statements were selected so as to cover the whole range of favorableness and so as to be approximately equi-distant. Alternate forms were constructed by using as parallel statements those having approximately the same median and Q-values. The reliabilities of the scale-values were:

Form A, Standard Error of the Scale Value $.108 \pm .07$ scale units

Form B, Standard Error of the Scale Value $.109 \pm .07$ scale units

Scale I evaluation.—To determine reliability of the instrument, it was given to 200 college students. The correlation of Form A with Form B was $.79 \pm .02$.

Validity was found by administering the scale to 2 groups judged to differ in attitude toward a social situation. Judges were the Assistant

¹ Thurstone, L. L., and Chave, E. J., 1929. The measurement of attitude. Univ. Chicago Press.

² Remmers, H. H., and Silance, Ella B., 1934. A generalized attitude scale technique. *Journ. Social Psychol.* 5:298-312.

³ Seashore, R. H., and Hevner, Kate, 1932. A time-saving device for construction of attitude scales. *Journ. Social Psychol.* 3:367-373.

Dean of Women, the Director of the Women's Residence Halls, and two sponsors in the Men's Residence Halls. There were 75 subjects in each group. The reliability of the difference between the means of the two groups yielded 97 chances in 100 of a true difference; using difference as determined by percentages, the chances were 100 in 100 of a significant difference.

Scale II construction.—Scale II, constructed specifically for stutterers, contained some items relating directly or indirectly to stuttering. Therefore, the statements were criticized by members of the Purdue Speech Clinic Staff and after revision sent to various speech clinics for stutterers to allocate on the 11-point scale of favorableness. Because of the extreme difficulty in obtaining subjects, there were only 76 raters. These statements were submitted to the same statistical procedure as Scale I. It is significant that, when the objective measure of ambiguity was applied, the majority of statements relating to stuttering proved to be ambiguous. The reliability of the scale-values were:

Form A, Standard Error of the Scale Value $.213 \pm .15$ scale units

Form B, Standard Error of the Scale Value $.211 \pm .14$ scale units

Reliability and Alternatives of Response.—The Problem: Does increasing $2\frac{1}{2}$ times the alternatives for response to each statement of opinion increase the reliability of an attitude scale as predicted by the Spearman-Brown prophecy formula?

Two scales were constructed, identical in every respect except the possibilities of response. Each scale had equivalent forms. In the first scale, Forms A and B, the directions were to either agree or disagree with each statement of opinion. The other scale, Forms X and Y, offered the subject a choice of 7 responses to each statement: (1) Strongly agree; (2) Agree; (3) Mildly agree; (4) Indifferent; (5) Mildly disagree; (6) Disagree; (7) Strongly disagree. All four forms were given to 50 students.

The reliability of the test having but two alternatives of response was found to have approximately the same reliability as the scale having seven alternatives for response.

Correlation of Form A with Form B = $.732 \pm .04$

Correlation of Form X with Form Y = $.734 \pm .04$

Therefore, the tentative conclusion is that the reliability of an attitude scale is not increased by the addition of alternatives for response.

Conclusions

1. Scale I, the general scale applicable to both stutterers and non-stutterers, would be efficient as a means of measuring group attitudes toward any number of social situations.

2. Scale II, constructed specifically for stutterers, does not differ appreciably from Scale I, since most of the statements relating to stuttering had to be discarded.

3. Increasing alternatives for response to statements in an attitude scale does not increase the reliability of the scale as predicted by the Spearman-Brown prophecy formula. Conclusions, based on a population of less than 100, must be considered tentative. It is for further research to determine the accuracy of the indications of this experiment.