A Comparison of the Minnesota Personality Scale and the Bell Adjustment Inventory for Student Counseling

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Introduction and Purpose

The purpose of this study is to report the findings concerning the comparative diagnostic value of two personality tests, the Bell Adjustment Inventory (Student form) and the Minnesota Personality Scale, for use in student counseling. The Bell Adjustment Inventory has been used for the past six years as a part of the battery of tests given during New Student Days at Grinnell College, with apparently satisfactory results. However, with the development of the new Minnesota Personality Scale, it was felt by the college personnel department that perhaps this test would prove of even greater diagnostic value in the counseling program.

Background

The Minnesota Scale is a combination of three tests developed at the University of Minnesota: the Minnesota Scale for the Survey of Opinions, and two Minnesota Inventories on Social Attitudes. After administration of these three tests, a factor analysis was made, on the basis of which non-differentiating and overlapping items were eliminated. The revision and combination of the three tests, now known as the Minnesota Personality Scale, measures Morale, Social adjustment, Family Relations, Emotionality, and Economic Conservatism. Student response to questions such as, "Do you get along as well as the average person in social activities?" consists of marking standard answer blanks; Almost Always, Frequently, Occasionally, Rarely, or Almost Never. When administered to groups of 1,500 freshmen students entering the University of Minnesota, the scale gave no odd-even correlation lower than .93.

The Bell Adjustment Inventory measures four areas: Health, Home, Emotional and Social Adjustment. In response to questions such as, "Do you often feel lonesome even when you are with people?" students circle on the test booklet "yes," "no," or "?," the latter indicating that the student is uncertain how to answer the question or that it does not apply to him. The test claims high reliability, having been revised in 1938 and administered to sixteen groups of college freshmen and juniors from different parts of the country. The reported reliability coefficient for Home Adjustment was .89, for Social Adjustment, .89, for Health, .80, for Emotional Adjustment, .85.

An experiment similar to the one to be reported compared results of the Bell and Washburne Inventories to results of faculty rating reports. The correlations between the Bell Inventory and the faculty

ratings ranged from -.316 to .165: between the Washburne Inventory and the faculty ratings, from -.298 to .348. (Clark, 1942).

Procedure

The procedure for the comparison of the two Inventories was as follows:

1.   The Minnesota Personality Scale was administered to a General Psychology class during a regularly scheduled class hour with no advance notice that such a test would be given. The class of 83 students, 27 male and 56 female, was composed largely of students of sophomore standing, with a few juniors and seniors. The students were informed at the time of administration that a study was being made of the Minnesota test and their results would in no way affect their class grades. The class gave gratifying cooperation.

2.   Since, in the majority of cases, scores of the Bell Adjustment Inventory for each student were already available from past testing programs, it was not necessary to administer the Bell test. However, in some cases, because of a change in the method of recording the Bell Scores, only word descriptions covering a certain numerical range were available. For these terms, Good, Average, Satisfactory, etc., the midpoint of the numerical range which the term included was assigned as the students' Bell scores. The number of such cases was small enough not to affect the results materially.

3.   As a basis for comparison of the two tests, a personality rating scale was developed. The questions of both tests were analyzed to secure the objective components of the personality traits as indicated by the questions. According to Freyd, (1923) Furfey(1926) and Guilford, (1924) a five-step graphic scale has been found to be the best measuring device to be used by untrained raters. Short questions were used: for example, "How does he react to criticism?" Opposite the question, below a continuous line, were five objective descriptions representing a continuum of the behavior. In order to counteract the "halo effect," the high-low direction of the continua was varied.

Because of the nature of the various traits, the number of items per trait varied. There were three items for Social Adjustment, two for Family Relations, and six for Emotionality. One item of this latter group concerned health, since it was also included with Emotionality in the Minnesota test. This item was weighted separately for correlation with the Health Adjustment section of the Bell test.

The first draft of the rating scale was submitted to an advanced psychology class which had been studying rating scale construction, and to other trained advisors, in order to be sure that the five steps for each question did represent psychologically equally spaced steps of a continuum, that the phraseology was clear, and that each item did, as far as possible, actually measure the aspect of the personality trait intended. As a result of this analysis of the original draft, several revisions and improvements were made in the rating scale items.

4. A week after the administration of the Minnesota Personality Scale, the subjects were asked to fill out a mimeographed form naming five of their closest campus friends. It was explained that these five friends would be asked to rate them. Until this time, the students did not know that they were to be rated. The form also provided space for information concerning length of and intimacy of the friendships. Of the five names listed, four were selected as raters, the choice being made according to length and intimacy of friendship.

A printed letter signed by the head of the psychology department was sent to all individuals selected as raters. This letter explained the purpose of the experiment and solicited their cooperation in filling out the personality rating report at one of the several periods designated. On the whole, excellent cooperation was given by the student raters; of the approximately three hundred who received letters, fewer than twenty failed to respond. For eleven subjects only three ratings were obtained, and four subjects had only two ratings. For the remaining sixty-nine, there were four ratings each. Cooperation and interest were also evidenced in the comments made in the space provided on the last page of the report.

A large classroom was reserved for the rating. The investigators remained outside the room during the rating period to explain and emphasize to each rater as he arrived the written instructions on the report. Special care was taken to emphasize the confidential treatment of all data, the continuous nature of the rating line, and that rating should not be given on items of which the rater was unsure.

We feel that the ratings were comparatively accurate because in less than twenty percent of the cases was there a wide disagreement among the raters on any item.

Results

The first step taken in treatment of data was to plot graphically the unaveraged results of the four ratings. The frequency distribution of each of the four traits was positively skewed, which was to be expected of a distribution of scores obtained from a normal college population. The standard deviation for the traits of Social Adjustment and Emotionality showed a lower level of variability than for Health and Family Relations. This was anticipated because the student raters were less familiar with these last two aspects of personality. The ratings for each individual were then averaged, and new frequency distributions were constructed. These showed the same positive skew but gave a lower level of variability.

Graphs were constructed for each trait of the two tests, men and women separated since on both tests the scoring for men and women is different. These showed less resemblance to a normal curve than did the frequency distributions of the rating scale. Some of the standard deviations of the Minnesota Scale appeared abnormally large, as shown by the following table.

Table 1
Standard Deviations

	Minnesota Scale		Bell Inventory	
	Men	*Women*	*Men*	*Women*
Social Adjustment	22.85	23.4	4.56	6.43
Emotionality	18 45	18 8	7 14	7 51
Family Relations	12.8	28.1	3.36	5.61
Health			3.78	3.46

The technique of statistical, correlation used was the bi-serial correlation. Separate correlations were run for men and women for each trait on both tests. The dichotomous variable was rating scale results, and the continuous variable was test scores. The mean of the averaged rating scale scores for each subject was used as the point of division for determining the dichotomies. The following table gives the correlations obtained.

Table 2
Biserial Correlations

	Minnesota Scale		Bell Inventory	
	Men	*Women*	*Men*	*Women*
Social Adjustment	-.068 ± .25	.548 ± .13	.024 ± .31	-.470 ± .14
Emotionality	.366 ± .22	.067 ± .17	.233 ± .28	.008 ± .17
Family Relations	.295 ± .23	.522 ± .13	-.183 ± .30	-.378 ± .16
Health			.385 ± .27	-.141 ± .17

Conclusions

As a result of a correlation of scores on the Minnesota Scale and the Bell Adjustment Inventory with a specially constructed rating scale, we conclude that the correlations of the Minnesota Test with the rating scale results were noticeably higher than those of the Bell Inventory. Of the six correlations for the Minnesota Scale, men and women separately, for Social Adjustment, Emotionality, and family Relations, three were above .300 and a fourth was .295. Two of the higher correlations were above .500. In the case of the Bell Inventory, there were eight correlations,—health being independently measured in the Bell, while in the Minnesota, Health was included in Emotionality. Of these correlations, there were only two which were above -.300 (a negative correlation is expected with the scoring of the Bell) with a high of -.470. This would seem to indicate that more of these traits as measured by the Minnesota Personality Scale coincide with student ratings than when measured by the Bell Inventory. From this we might conclude that for general counseling purposes, the Minnesota Scale would be more helpful in giving a picture of the type of behavior to be expected from students.

In calling attention to the lower deviants in a group of students, the Minnesota Scale seems to be more effective than the Bell test. There were eleven students with rating scale scores lower than 1 sigma below the mean for Social Adjustment. Of these eleven stud-

ents, forty-five percent had Minnesota scores in the twenty-fifth per-
centile or lower, and only twenty-seven percent had Bell scores that
are considered "unsatisfactory," or "very unsatisfactory." Of the
five students scoring lower than one sigma below the mean on the
rating scale for Emotionality, sixty percent scored lower than the
twenty-fifth percentile on the Minnesota and forty percent scored
"unsatisfactory" on the Bell. It would seem then that the lower de-
viants of the groups, as shown by the rating scale, are more likely
to be indicated by the Minnesota Scale than by the Bell Inventory.

There was, however, an indication of a lack of consistency within
the two tests, for no one personality trait on either test gave high
correlations for both men and women. For instance, the trait Emo-
tionality gave a correlation for men of .366 while for women it was
.067. There was one pattern of similar variation,—that of Social Ad-
justment. The correlations on both tests were high for women and
low for men. Other than that, there seemed to be no consistency in
the difference between men and women. The fact that the group of
men was much smaller than the group of women undoubtedly in-
fluenced our results.

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