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A COMPARISON OF THE ADJUSTMENT SCORES
OBTAINED BY COLLEGE FRESHMEN WOMEN ON TWO FORMS
OF AN INCOMPLETE SENTENCES BLANK

Verne A. Walter

Submitted in partial fulfillment
of the requirements for the degree
of Master of Arts

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CHAPTER I

THE PROBLEM AND DEFINITION OF TERMS USED

In recent years there has been substantial progress made in adding to the store of techniques of measurement in the area of personality. The increasing volume of studies concerned with the development of these tools of analysis has suggested many problems, especially with respect to establishing the validity and reliability of these instruments. It is hoped that this study may shed some light on one of the many problems of personality assessment.

THE PROBLEM

Statement of the problem. This study was designed as a means of making certain comparisons of the adjustment scores obtained by college freshmen women on two forms of an Incomplete Sentences Blank. The specific objectives of this study were to determine: (1) the extent to which the Rotter Incomplete Sentences Blank and a second, varied form of the Rotter Incomplete Sentences Blank may give similar adjustment scores for the same individuals; (2) the extent to which these forms may be interchangeable; and (3) the test-retest reliability of the Rotter Incomplete Sentences Blank.

The incomplete sentences blank forms used in this research were these: (1) Rotter's Incomplete Sentences Blank in which first person pronouns were used in the sentence beginnings and in which the subject was instructed to complete the sentence phrases to express her real

feelings. (2) An average person form, a variation of Rotter's blank, in which third person pronouns were employed and in which the subject was instructed to complete the sentences to express the feelings of the average person her sex and age.

Significance of the problem. The sentence completion method of studying personality is a semistructured, projective technique in which the subject is asked to finish a sentence for which the first word or words are supplied.¹ As in other projective methods, it is assumed that the subject reflects his own wishes, desires, fears, and attitudes in the sentence completions he gives. Thus, it is possible to form certain hypotheses about emotions, attitudes, and adjustment mechanisms from the responses to these incomplete sentences. The possibilities inherent in this method of analysis are impressive. However, certain specific problems have come to the forefront in the attempt to standardize the sentence completion method. These problems have importance in considering the significance of this study.

One problem is a result of informal observations made at the Bowling Green State University Psychology Clinic. These observations seem to indicate that subjects have experienced varying degrees of defensiveness and freeness of expression when responding to sentence phrases employing either first person or third person pronoun items.

¹Julian B. Rotter, and Janet E. Rafferty, Manual, The Rotter Incomplete Sentences Blank (New York: The Psychological Corporation, 1950), p. 3.

For clinical purposes, then, it would seem desirable to have available incomplete sentences blanks which are constructed with either first person or third person pronoun items, that is, blanks which would be comparable and which could be administered interchangeably. The alternative blank which the writer suggests is a variation of Rotter's Incomplete Sentences Blank, an average person form in which third person pronouns are used and in which the subject is instructed to complete the sentences to express the feelings of the average person her sex and age. Such a blank would presumably tend to offer an opportunity for more freedom of expression to those individuals who feel defensive when completing sentences which employ first person pronouns in their structure. At present, no sentence completion blank using an average person reference is known to be in general use.

Another problem having significance in relation to the construction of this average person incomplete sentences blank is that of the effects of pronoun changes upon responses to incomplete sentences. In reviewing the limited research on this problem the reader will note that the investigations have been somewhat inconsistent in their findings. One investigator has reported that regardless of the gender of pronoun used, there seems to be little effect on the type of response given by a man or a woman.² Another writer in attempting to investigate the validity of the assumption that the subject reveals more about himself when he is talking about other people or about impersonal, unstructured objects,

²G. F. J. Lehner, and H. Silver, "Age Relationships on the Draw-A-Person Test," Journal of Personality, 17:207, December, 1948.

than when he is talking about himself, has reported findings which tend to support the use of techniques employing the first person pronoun items.³ Nevertheless, he has qualified his findings by stating that further research is needed to demonstrate more conclusively that first person pronoun items are superior to third person items for general clinical purposes. He has suggested that a more rigorous experimental design would employ an incomplete sentences blank of an impersonal sort, in which only third person pronoun items are used, since in his research, items were used which included both proper names and third person pronouns.

While it is not the purpose of this study to determine the superiority of any one type of pronoun item, a specific aspect of his suggestion has been incorporated in this study--a variation of Rotter's ISB⁴ which employs only third person pronoun items.

Since there would seem to be a need for an ISB which would tend to offer more freedom of response to those individuals who may feel defensive when completing sentences on a blank of the self-reference type, and since previous investigators have used incomplete sentence forms which were constructed of mixed pronoun items, there seems to be a need for a study designed to determine the extent to which self-reference and average person-reference ISB forms may be employed

³Joseph M. Sacks, "The Relative Effect Upon Projective Responses of Stimuli Referring to the Subject and of Stimuli Referring to Other Persons," Journal of Consulting Psychology, 13:12-20, February, 1949.

⁴Incomplete Sentences Blank--hereafter referred to in this paper as ISB.

interchangeably. It is this that the present study attempts to do.

Before the significance of this interchangeability can be established it is important to determine the test-retest reliability of the Rotter ISB. To date, no record of this consistency has been noted in the available literature.

It is not the purpose of this study to state that any other sentence completion blank is good or poor because of the degree of correlation it may show with the Rotter ISB. However, since many clinicians feel that Rotter's ISB has proved itself to be of value in a clinical setting, it is probable that the following conclusion may be drawn. To the extent that the Rotter ISB actually is of specific diagnostic value in personality measurement, any variation of this blank, the results of which show a coefficient of correlation with the Rotter ISB not significantly different from the Rotter ISB coefficient of reliability, probably is of similar diagnostic value and therefore may be used interchangeably with the Rotter ISB.

If the proposed Average Person ISB can be shown to be interchangeable with the Rotter ISB, this technique could find immediate use as a gross screening device for general clinical purposes.

DEFINITION OF TERMS USED

Semistructured projective technique is defined as any device used in personality measurement in which the subject's responses are relatively limited by the structure of the stimuli, that is, the stimuli are relatively structured so as to tap particular areas of adjustment.

e.g., family, social, sexual, etc.⁵ Nevertheless, the subject may respond to these stimuli in a relatively free or individual manner. It is assumed that the responses of the subjects will reflect certain aspects of their own personality, since their responses are not restricted to any designated alternatives.

Defensiveness is defined as a sequence of behavior in response to threat, the goal of which is the maintenance of the structure of the self.⁶

ORGANIZATION OF REMAINDER OF THE THESIS

A discussion of the historical background of the sentence completion method and a review of pertinent research follows in the next chapter. Chapter III presents the procedure and materials employed in this study. Chapter IV deals with an analysis of the data, while the conclusions are summarized in Chapter V.

⁵Max L. Hutt, "The Use of Projective Methods of Personality Measurement in Army Medical Installations," Journal of Clinical Psychology, 1:136, April, 1945.

⁶Carl R. Rogers, Client-Centered Therapy (Boston: Houghton Mifflin Company, 1951), p. 516.

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CHAPTER II

REVIEW OF THE LITERATURE

There have been few studies reported in the literature which have a direct relationship to the problem in this study. However, with reference to certain specific aspects, a few of these are somewhat related to the present investigation. These studies will be presented in more detail than the works which have less bearing on the immediate problem.

A BRIEF HISTORY OF THE SENTENCE COMPLETION METHOD

Historically, the sentence completion technique is related most closely to the word association tests as used by Jung, Kent and Rosanoff, and others.¹ Since the sentence completion method first appeared, these two techniques have been compared frequently, generally to the advantage of sentence completion devices. It has been found that these techniques, as compared to word association tests; reduce the number of associations evoked by a single word; suggest to a subject more contexts, qualities of attitude, various feeling tones, and specific areas of attention; allow greater freedom of response; and tend to tap a somewhat greater area of the subject's behavioral world.²

¹David Rapaport, and others, Diagnostic Psychological Testing (Chicago: The Year Book Publishers, Inc., 1946), II, p. 13.

²Joseph M. Sacks, and Sidney Levy, "The Sentence Completion Test," in Lawrence E. Abt, and Leopold Bellak, Projective Psychology (New York: Alfred A. Knopf, 1950), pp. 361-64.

Payne's work. First use of the technique as a projective method in personality study has been credited to Payne in 1928.³ Payne assembled a test to be used with college students with the intention of eliciting inhibited responses. His test was rather widely used in the vocational counseling setting.

Tendler's work. Another of the pioneer workers with the sentence completion method in the field of personality assessment was A. Tendler, who distinguished between diagnosis of thought reactions and of emotional responsiveness.⁴ He suggested a version of a sentence completion test called a Test of Emotional Insight. This test used sentence beginnings designed to: (a) directly arouse emotional response; (b) allow for free response; and (c) avoid discrimination or choice of response. He believed that a test in the field of emotional behavior should be structured so as to satisfy these criteria. The test items were intended to stimulate important emotional states, i.e., admiration, anger, happiness, love, hate, etc. From his study he concluded that regardless of any classificatory scheme, responses did tend to give the psychologist insight into matters that were of emotional concern to college students, and that in the clinic, use of the test with a conversational approach following test administration

³John M. Hadley, and Vera E. Kennedy, "A Comparison Between Performance on a Sentence Completion Test and Academic Success," Educational and Psychological Measurement, 9:649-50, Winter, 1949.

⁴A. D. Tendler, "A Preliminary Report on a Test for Emotional Insight," Journal of Applied Psychology, 14:122-36, April, 1930.

proved to be of considerable value. Such an approach followed naturally and offered the subject an opportunity to explain more fully what he meant by his responses.

Work of Hildreth and Rohde. Little interest was manifested in the sentence completion method for the decade following Tendler's work. It was not until 1940 that the work of Hildreth and Rohde appeared. They constructed a test from Payne's original sentence phrases.⁵ The criteria which Rohde adopted in revising, selecting, and constructing sentence items for her final form were these: (1) The range of the sentence beginning must be broad enough to evoke information concerning the total personality. (2) The response must be controlled as little as possible by the sentence phrase, so that the subject may have considerable freedom of response. (3) The total time required for the administration of the test must not exceed a period convenient for school schedules.⁶ The final form of the Rohde-Hildreth Completions Blank consisted of sixty-four items.

Rohde felt that her incomplete sentences blank revealed not only the subject's needs, inner states, traits, and press, but also his tastes, sentiments, ego structure, intellectual status, and emotional maturity.⁷ She stated that this blank met the criteria of all projective

⁵Hadley and Kennedy, op. cit., p. 650.

⁶Sacks and Levy, op. cit., p. 364.

⁷Amanda R. Rohde, "Explorations in Personality by the Sentence Completion Method," Journal of Applied Psychology, 30:169-81, April, 1946.

procedures in that the subject's attention was diverted from his own psychic processes and from himself as the respondent to the task at hand.

Work of Lorge and Thorndike. Irving Lorge and Edward L. Thorndike worked quite extensively on the problem of the value of responses on the sentence completion test as indications of personal traits.⁸ Their specific aim was to introduce a test which would elicit single-word responses, thus facilitating more objective scoring procedures. To a group of thirty adults they gave 240 sentence beginnings to be completed with a single word. The experiment was performed twice, with three months elapsing between sessions. Each author made up a list of traits, interests, and attitudes and scored the responses as indicative of these. They concluded: "We fear that the verbal replies in association and completion tests are largely unrelated to the real behavior of a person The person may be largely influenced by special symbolic and verbal habits."⁹ This conclusion seemed quite broad, since the technique they employed was limited to the extent that only single-word responses were elicited.

⁸Irving Lorge, and Edward L. Thorndike, "The Value of the Responses in a Completion Test as Indicators of Personal Traits," Journal of Applied Psychology, 25:191-99, April, 1941.

⁹Ibid., p. 199.

Shor's test. Joel Shor devised a Self-Idea Completion Test.¹⁰

In his test the sentence beginnings were designed to suggest contexts, feeling tones, qualities of attitudes, and specific objects or areas of attention. He emphasized the importance of adapting stimuli to the current situation and cultural background of the groups being tested. Shor used his test in approximately 1800 clinical personality studies in five military installations. He thought it to be a valuable aid in the interpretation of personality dynamics for diagnostic and prognostic purposes. He believed it would be presumptuous to attempt to formulate any scoring guide for differential diagnosis. However, he did recommend the possibility of investigating areas of rejection, evidences of resistance, and other methods of evasion, thereby noting the recurrent themes and atypical associations. He also felt that a formalized set of instructions for administration would tend to violate the basic clinical purpose of the test. He suggested that administration be adapted to the dynamics of each case.

STUDIES RELATED TO THIS RESEARCH

Stein's study. The work of Stein¹¹ has relation to the present study in that for the first time a sentence completion blank was used which employed two different types of items as sentence beginnings. The

¹⁰Joel Shor, "Report on a Verbal Projective Technique," Journal of Clinical Psychology, 2:279-82, July, 1946.

¹¹Morris I. Stein, "The Use of a Sentence Completion Test for the Diagnosis of Personality," Journal of Clinical Psychology, 3:47-56, January, 1947.

type of items used were these: (1) personal items which included the word "I"; and (2) the more projective items which included the proper name of some person or the third-personal pronoun.

The purpose of his study was to report on the development of a sentence completion test that he constructed. This test was used in the OSS Assessment Program as an aid in the selection of Office of Strategic Service personnel during the war. The test consisted of two parts of fifty incomplete sentences each. These items were selected to contribute pertinent information related to areas which were considered important for personality evaluation, i.e., family, past, drives, goals, reaction to others, and reaction of others to the subject.

Stein emphasized that the significance of a response to this test is usually determined by the clinician's knowledge of the dynamics of behavior and personality. In analyzing the material, he said, the clinician accepts the following basic assumptions:

1. When an individual is put under pressure to respond with the first idea that occurs to him, he usually offers significant material that he does not censor.
2. When faced with the problem of completing or structuring an unstructured situation, an individual's responses will be indicative of the true nature of his own reactions.
3. In talking about others, an individual is apt to reveal himself.¹²

The reason he included third-person items in his test apparently was based upon the third assumption stated above. Rotter felt that

¹²Stein, *op. cit.*, p. 56.

although this assumption might be correct for some sentence phrases, it might not be correct for all.¹³ He stated that the problem of determining which response refers to some important or central characteristic of the individual remains to be clinically inferred. In referring to this assumption, Stein suggested the following: "Since in several instances personal and projective items cover the same area, future research will be oriented toward evaluating these items to indicate which type of sentence [phrase] yields more accurate information . . ."¹⁴ It was in relation to this suggestion that Sacks completed his study in 1949.

Lehner's study. Lehner¹⁵ reported a study which offered findings somewhat related to this research. In his study he employed a sentence completion test on which men and women responded to sentence phrases which differed only with respect to the personal pronoun used. He found that regardless of the gender of pronoun used, the pronouns had little effect on the type of response given by a man or a woman. Further data concerning objectives and methods of this study were not available to the present investigator.

¹³Julian B. Rotter, "Word Association and Sentence Completion Methods," in Harold H. Anderson, and Gladys L. Anderson, An Introduction to Projective Techniques (New York: Prentice-Hall, Inc., 1951), p. 307.

¹⁴Stein, op. cit., p. 48.

¹⁵G. F. J. Lehner, and H. Silver, "Age Relationships on the Draw-A-Person Test," Journal of Personality, 17:207, December, 1948.

Sacks' study. In reference to the suggestion offered by Stein, Sacks reported a study concerned with the effects of pronoun changes upon responses to incomplete sentences.¹⁶ His study employed two different types of items as sentence beginnings; items in which the proper name of some person or the third personal pronoun was used, and personal items in which the first person was used.

The object of his study was to investigate the validity of the assumption that the subject reveals more about himself when he is talking about other people or about impersonal, unstructured objects, than when he is talking about himself.

In his discussion of the results, he noted that the principal finding of his study was that significant differences occurred between responses on one form of a sentence completion test worded in the first person and to another form consisting of the same items worded in the third person. To support this finding, he noted that there were a large proportion of close agreements between content interpretation and clinical findings in favor of the technique using personal items. Also, subjects, who were asked to indicate their preferences for either the personal or the impersonal items, chose the personal items as more truly expressing their feelings. In addition, he found that six of the seven psychologists, who participated most extensively in rating and interpreting the test responses, stated a preference for the form using

¹⁶ Joseph M. Sacks, "The Relative Effect Upon Projective Responses of Stimuli Referring to the Subject and of Stimuli Referring to Other Persons," Journal of Consulting Psychology, 13:12-20, February, 1949.

personal items as an instrument for clinical use.

Even though the above differences were apparent, he found that, on the whole, the two forms did not differ significantly in terms of eliciting responses expressing positive feelings, negative feelings, ambiguous feelings, indeterminate feelings, or failures to respond.

Sacks qualified his findings somewhat by stating that further research is needed to demonstrate more conclusively that first person items are superior to third person items for general clinical purposes.¹⁷ He suggested that a more rigorous experimental design would employ an incomplete sentences blank of an impersonal sort in which only third person pronoun items would be used. In his study, items were used which included both the proper name of some person and third person pronouns. He noted that the sentence phrases which included proper names tended to arouse associations with specific people, consequently, he felt it best to eliminate them.

While it was not the specific purpose of the present research to establish the superiority of any pronoun item, this study did follow Sacks' suggestion to the extent that the investigator designed a variation of Rotter's ISB which employed only third person pronoun items. It was hoped that such a variation from Rotter's standardized ISB would not be extensive enough to affect the comparability of these forms.

¹⁷Sacks noted that these differences were found in subjects who were neuropsychiatric patients. Therefore, he stated, the findings could be applied to the general population only with reservations.

Meltzoff's study. In general, Meltzoff's¹⁸ work has only a remote bearing on the present study. Nevertheless, certain aspects of it seem related.

The purpose of his investigation was to determine the effect of mental set and item structure upon response to a projective test. He based the design of this experiment upon the possibility that when an individual is administered a personality test, he may attempt to defend his self-esteem by distorting his responses.

Since Meltzoff used a sentence completion technique in his design, he discussed certain aspects of the structure of the partial sentences used in the Rotter ISB. He noted that Rotter's sentence beginnings contained a characteristic which he termed stimulus tone. Stimulus tone, in this sense, referred to the direction of the mood or feeling evoked by the stimulus, i.e., pleasant, hopeful, unpleasant, hopeless, etc. He thought Rotter's partial sentences to be either positive, negative, or neutral in tone. Examples of these were thought to be as follows: positive stimulus tone--"The happiest time . . . " negative--"What pains me . . . " and neutral--"Most girls . . . " Meltzoff stated, "The actual freedom allowed [in response to sentence phrases of this type] is subject to serious question, as the stimulus tone appears to establish a set which has a distinct and systematic effect upon response."¹⁹

¹⁸Julian Meltzoff, "The Effect of Mental Set and Item Structure Upon Response to a Projective Test," Journal of Abnormal and Social Psychology, 46:177-89, April, 1951.

¹⁹Ibid., p. 179.

He felt, that if this be the case, then one could hardly expect to obtain the "true nature of his own reactions and sentiments" referred to by previous writers in discussing the various assumptions upon which the sentence completion method was based.

Aside from the criticisms just discussed, Meltzoff also objected to the use of any sentence completion technique employing the pronouns "I" or "me." He stated that it was difficult to justify such a device as being projective in nature. He felt it would be necessary to word all items in the third person before such an ISB could be termed projective.

Briefly, the design of his experiment was as follows: (1) A projective test of the sentence completion type, with phrases worded in the third person and composed of three different types of stimuli, was administered under four different conditions to 120 college students. The three types of stimuli were judged by clinical psychologists to be positively toned, negatively toned, or neutral. (2) The test conditions were designed to provide two mental sets that favored response distortions. This was accomplished by requesting the subjects to act the role of well-adjusted and emotionally disturbed individuals. A third condition was set up in which self-esteem was threatened, and a fourth was one under which self-esteem threat was reduced through verbal assurances of anonymity. (3) The responses were judged by clinical psychologists to be either positive (suggestive of good adjustment in the area defined by the response), negative (suggestive of poor adjustment), or neutral (evasive).

Meltzoff's findings indicated that the tone of the responses to a projective test of the sentence completion type was a direct function of the mental set of the subjects as determined essentially by the test instructions. He found that his subject's were able to manipulate responses so as to create the impression of either good or poor adjustment. He also noted that when the subject's self-esteem was threatened by the test situation the subjects responded in practically the same manner as those who were instructed to act well-adjusted, with the exception that they gave more evasive responses.

Another finding indicated that the tone of the response to a projective test of the sentence completion type was a direct function of the tone of the stimuli. That is, positive stimuli tended to elicit responses that were suggestive of good adjustment; negative stimuli tended to elicit responses that were suggestive of poor adjustment, and allowed the least freedom of response; and lastly, neutral stimuli did not directly affect the tone of the responses and allowed more freedom of response.

Meltzoff concluded that, "Since almost any test situation of any importance represents a potential threat to self-esteem, distortions should be expected and allowances made for them in interpretation."²⁰ He stated that further effort should be made to decrease self-esteem threat in the test situation. One method of doing this, he suggested, would be to encourage the client to act the role of another person.

²⁰Meltzoff, op. cit., p. 187.

It seems that Meltzoff's study tended to support the need for a more projective type of ISB. The Average Person ISB employed in the present research was designed in an attempt to satisfy some of the conditions discussed by Meltzoff. Through the use of both third person pronoun items and instructions which were intended to encourage the client to act the role of another person, it was thought that the Average Person ISB might decrease the threat experienced by clients on the self-reference type of ISB.

HISTORY OF THE ROTTER ISB

Since one of the main objectives of the present research is to determine the test-retest reliability of the Rotter ISB, the following presentation is offered as a brief history of the development of this instrument.

Work of Rotter and Willerman. Rotter and Willerman utilized the sentence completion method in the AAF convalescent hospitals to assist in evaluating the psychological fitness of personnel for return to duty.²¹ Their test consisted of forty items which were loosely structured, such as: (1) I like . . . , (8) The best . . . , and (28) Sometimes They found that the more highly structured tests failed to be sufficiently discriminative to evaluate adjustment. The instructions to the subject were these: "Complete these sentences to express

²¹Julian B. Rotter, and Benjamin Willerman, "The Incomplete Sentences Test as a Method of Studying Personality," Journal of Consulting Psychology, 11:43-48, Jan.-Feb., 1947.

your real feelings. Try to do every one. Be sure to make a complete sentence." These instructions were different from those of previous tests. On the basis of their earlier experience with tests which instructed the subjects to respond as quickly as possible, they found that this type of set tended to produce associations rather than content statements regarding the individual's personal feelings and attitudes.

Since they were chiefly interested in constructing a gross screening test, they attempted to develop a method of scoring these blanks that could be used by relatively untrained scorers and at the same time provide high interscorer reliability. Consequently, they devised individual scoring standards for each of the forty items, using the scoring by example method. Responses were scored according to three categories--conflict or unhealthy responses, positive or healthy responses, and neutral responses. The conflict responses were scored with a numerical weight from plus 1 to plus 3; the neutral responses 0; and the positive responses from minus 1 to minus 3. They found the average intercorrelation for seven scorers of fifty records to be .89. With one scorer omitted because of consistently poorer agreement, it became .91. They concluded that ". . . the results . . . indicate that the test may be reliably scored by individuals without extensive training in psychology"²²

The validity of their test was determined by correlating the psychologists' initial evaluation of the severity of each patient's

²²Rotter and Willerman, op. cit., p. 47.

disturbance with the patient's total score on the test. The evaluations were based on case-history information, health and personality inventories, admission diagnoses, a test of mental dysfunctioning, and a psychological interview. A validity coefficient of .61 was obtained between ratings on the test and these criterion. They concluded this indicated that the test provided an effective means for estimating the severity of the patient's psychological condition.

Work of Rotter, Rafferty, and Schachtitz. Rotter, Rafferty, and Schachtitz adapted the Army test used by Rotter and Willerman for use with college students.²³ This form they named the Incomplete Sentences Blank (ISB).

In the development of the ISB, two objectives were described.²⁴ First, the technique was to be designed so it could be used objectively for screening and experimental purposes. Second, the technique was constructed so as to obtain information of rather specific diagnostic value for treatment purposes. The authors designed it so as to offer an estimate of the degree to which a student was in need of personal counseling.

Rotter recognized the limitations in designing a blank of this sort. The very complex nature of personality made it difficult to

²³Julian B. Rotter, Janet E. Rafferty, and Eva Schachtitz, "Validation of the Rotter Incomplete Sentences Blank for College Screening," Journal of Consulting Psychology, 13:348-56, October, 1949.

²⁴Rotter and Rafferty, Manual, The Rotter Incomplete Sentences Blank, pp. 3-6.

devise a means of measuring it. For this reason, it was not a goal to construct a measure which would describe the "total personality." Rather, the ISB was designed to save time for the clinician and to allow him to structure his first interviews advantageously before he had spent too much time with a client. When used for clinical purposes, the ISB was thought to be much like the Thematic Apperception Test. That is, it tended to elicit information of personality content rather than personality structure. It dealt with feelings, attitudes, specific actions to people and things, rather than exposing the "deep layers" of personality. The areas of adjustment which the ISB was designed to tap were these: family, social, sexual, health, and vocational-educational.

Validity of the Rotter ISB. Since the present investigation used only college freshmen women as subjects, the validation data obtained for the female sex are discussed.²⁵ In the validation study, the subjects were eighty-two females who were classified as either adjusted or maladjusted, i.e., as needing personal counseling or as not needing such counseling. Two groups of students were used. Group I included seventy-two female students in classes in effective study and mental hygiene who were classified by their instructors as adjusted or maladjusted. Group II included ten students so classified by advanced student clinicians. The biserial correlation coefficient between the classification of adjusted and maladjusted and ISB scores for females in Group I was .50.

²⁵Rotter, Rafferty, and Schachtitz, op. cit., pp. 354-55.

For both groups combined it was .64. No coefficient was noted for students in Group II because of the marked difference in scores on the ISB for individuals comprising the adjusted and maladjusted groups.

Reliability of the Rotter ISB. In the reliability study, the items on the ISB were divided into halves deemed as nearly equivalent as possible.²⁶ This procedure yielded a corrected split-half reliability coefficient of .84, when based on the records of 124 male college students, and .83 when based on seventy-two female students. However, since the test-retest reliability of the Rotter ISB has not been reported in the literature, this problem was included as one of the central objectives of the present study.

A summary note. In this review of the literature it was attempted to present those studies which were somewhat directly related to the present research. The studies of primary concern were those dealing with the effects of pronoun changes, stimulus tone, and mental set upon responses to incomplete sentences. Since these were the more important studies in relation to the investigator's immediate problem, they were stressed to a greater extent than the other studies mentioned.

²⁶Rotter, Rafferty, and Schachtitz, op. cit., pp. 354-55.

CHAPTER III

PROCEDURE

The major objectives of this study were to determine the extent to which two forms of an ISB may be interchangeable, and to establish the test-retest reliability of the Rotter ISB.

MATERIALS

To accomplish these objectives two sentence completion devices were used: (1) the Rotter ISB--a self-reference form; and (2) the Average Person ISB--a variation of the Rotter ISB, an average person-reference form.¹

Description of the Rotter ISB. The Rotter ISB is described as a semistructured, projective technique in which the subject is asked to finish a sentence for which the first word or words are supplied.² The blank is composed of forty stems which are characterized as being either impersonal or referring to the first person. The subject is instructed to complete these sentences as follows: "Complete these sentences to express your real feeling. Try to do every one. Be sure that you make a complete sentence." The completions are then scored in accordance with the set of scoring principles and examples presented in the Rotter ISB

¹Copies of these materials are presented in Appendix B.

²Rotter and Rafferty, Manual, The Rotter Incomplete Sentences Blank, p. 3.

Manual. This method involves assigning a numerical weight from 0 to 6 for each response and totaling the weights to obtain an adjustment score.

Description of the Average Person ISB. The Average Person ISB is a variation of the Rotter ISB which is designed as an attempt to decrease the degree of threat and thereby decrease the degree of defensiveness experienced by some clients when completing sentence phrases in a test situation. The blank is composed of the same forty stems as is the Rotter ISB with the exception that all first person pronouns are changed to the third person--she or her. The instructions for completing the sentences are as follows: "Complete these sentences to express the real feeling of the average person your sex and age. Try to do every one. Be sure that you make a complete sentence." The completions are then scored in the same manner as the Rotter ISB. Since the stem modifications for this form were very slight, there was reason to suppose that the scoring principles and examples presented in the Rotter ISB Manual should be applicable to this blank.

SUBJECTS

The subjects used in this study were freshmen women students at Bowling Green State University who volunteered to participate as subjects in the research. Since Rotter³ found that responses made by male and

³Rotter and Rafferty, op. cit., p. 54.

female subjects could not be scored by using the same scoring criteria, only female subjects were used in this experiment.

Proposed sample. The method of selecting the population used in this study was planned in light of the following factors. First, it seemed probable that some students would not consent to participate in the research. Second, it seemed probable that some students who would offer to participate in the research, would not complete their testing. For these reasons, it seemed impractical to demand a random sampling of the total college population of freshmen women students. Therefore, the proposed sample was to be composed of 120 freshmen women enrolled for the fall semester of 1951 at Bowling Green State University who would volunteer to participate as subjects in the study.

Method of obtaining sample. While the proposed plan for the selection of subjects did not incorporate plans for an exact random sampling of the total population of freshmen women students, the investigator attempted to obtain as close an approximation as possible.

The procedure was as follows. Names of all the female freshmen students enrolled for the fall semester of 1951 were listed and numbered. With the use of a table of random numbers two groups of students were chosen. One group, composed of 120 students, was chosen in the attempt to obtain a random sampling of the larger population. An additional group, composed of thirty students, was chosen to serve as a fill-in group, that is, a group from which replacements might be drawn.

This procedure was thought to aid in obtaining a more representative sampling of the total population of college freshmen women at Bowling Green.

After these groups were selected, a letter⁴ was sent to the students requesting them to report to the writer at the Psychology Clinic (Bowling Green State University). When the students reported at the clinic they were seen, individually, in an interview ten to twenty minutes in length. They were told that for purposes of research they had been chosen at random from the total population of Bowling Green freshmen women, and a brief description of the tasks which would be expected of them was presented.

They were informed that the main objective of the research was to determine just how they and others their sex and age felt about different things and what they and others did in the past about various things in different situations. In this manner, it was attempted to present the research in the guise of an attitude survey. They were told that they would be asked to fill out three blanks, each involving approximately one-half hour to an hour of their time. They were assured that in completing these blanks no special abilities or skills were required; that there were no right or wrong answers which they could offer; nor would the examiner make any judgments regarding their completions. In addition, they were informed that these blanks would

⁴A copy of this letter is presented in Appendix C.

probably be different from anything they had seen in the past, and again, that they would simply fill out the blanks by writing statements about feelings and attitudes. They were also told that the investigator could not possibly offer any sort of remuneration for their cooperation. However, they were offered an opportunity to return to the clinic at the completion of the whole project for an evaluation and interpretation of their records and a chance to ask questions which they might have had about the project. At the close of this interview, then, the students were asked to participate in the research. If they were willing to cooperate, an appointment for their first testing period was arranged.

If students failed to report within one week after the initial letter had been mailed to them, a second letter⁵ was sent which implied that it was quite important to the investigator and the Psychology Clinic that they give this request their consideration. If they still did not appear at the clinic, the investigator attempted to contact them personally, and thereby secure their cooperation.

Final sample used. The subjects used in this experiment were 120 freshmen women students at Bowling Green State University who volunteered to participate as subjects in the research. The subjects were students selected from the general college population who were enrolled as freshmen for the fall semester of 1951. The total group ranged in age from seventeen years, zero months, to twenty-seven years,

⁵A copy of this letter is presented in Appendix C.

zero months, with a median age of eighteen years, five months, and a mean age of eighteen years, seven months.

Since two groups of students, totaling 150 subjects, composed the sample selected, a statement of how the final sample of 120 subjects was obtained seems in order.

Of the initial group of 120 students, 102 of them completed their full testing terms, while eighteen did not. These eighteen students were replaced from the additional group of thirty students.

Table I indicates the reasons why twenty-four students of the total group of 150 selected did not participate in the project.

TABLE I

CONDITIONS WHICH DETERMINED THE NON-PARTICIPATION
OF STUDENTS SELECTED FOR THE RESEARCH

Condition	Number of students
Students failed to report at clinic	15
Students refused to participate	5
Students withdrew from school	2
Students reported, but not used	2
Total	24
Total group used in the research	126
Total group selected	150

From this table it is noted that twenty of the 150 students who were selected did not report at the clinic or had refused to participate

in the research. Two individuals had withdrawn from college before the project had begun, and two persons reported at the clinic but were not used because a sufficient number of subjects had already been obtained.

Table II gives an explanation of the reasons why the records of six subjects of the total group used were not used in the analysis of the data.

TABLE II
CONDITIONS LEADING TO THE ELIMINATION OF RECORDS
FROM THE ANALYSIS OF DATA

Condition	Number of records
Records withdrawn--subject withdrew from research because of illness	1
Records withdrawn--subject withdrew from college	1
Records withdrawn--because of error in assigning test administrations	2
Records discarded--to equalize subgroup totals	2
Total	6
Total group of final sample	120
Total group used in the research	126

From this table it is noted that one student did not complete her testing because of illness, and another student withdrew from school before she had completed her testing. The examiner also made an error in assigning blanks to two subjects, consequently, these records could not be used in the analysis of the data. Since the test presentation

sequences were assigned at random to each subject, any set of test data which was not complete or was discarded had to be replaced by assigning additional test presentation orders, at random, to additional subjects.⁶ After this procedure was completed, it was also found necessary to eliminate two sets of records, at random, in order to equalize the total number of complete sets of data in each test presentation sequence subgroup.

The actual representativeness of the final sample of female college freshmen to the total population of freshmen women at Bowling Green, using College enrollment as the criterion, is shown in Table III.

From Table III, it is noted that even though the final sample used in this experiment was not a random sample of the total population of freshmen women, the differences observed, so far as the criterion of College enrollment is concerned, were quite negligible. In so far as College enrollment may be an indication of random sampling, and since 102 subjects of the original selection of 120 students had completed their full testing terms, it was probable that the final sample of subjects used in this experiment was a close approximation to a random sample of the total population of freshmen women at Bowling Green.

DESIGN OF THE EXPERIMENT

The experiment was designed to permit three ISB forms (the two Rotter ISB's, and the Average Person ISB) to be assigned and administered

⁶A discussion of the rationale for using this procedure will be presented on p. 34.

TABLE III

EXTENT TO WHICH THE TOTAL POPULATION OF FRESHMEN WOMEN
 WAS REPRESENTED IN THE FINAL SAMPLE
 AS COMPARED TO THEIR REPRESENTATION IN COLLEGE GROUPS

College	Total population		Experimental group
	Total No. of students enrolled	Exp. f's of hypothetical random sample*	Obs. f's of final sample used
Education	280	65	64
Business Administration	85	20	19
Liberal Arts	153	35	37
Totals	518	120	120

* Expected frequencies; observed frequencies

in three sub-groups in three different orders of presentation without any systematic biases as to the presentation sequences of the ISB forms, or the assignment of test presentation sequences to the subjects.

Presentation orders of the ISB forms. To control the variable of test presentation sequence the ISB forms (two administrations of the Rotter ISB and one administration of the Average Person ISB) had to be presented to the subjects in three different orders. The three possible combinations were these: (1) In one sequence, the Rotter ISB could be administered first; the Average Person ISB second; and the retest of the Rotter ISB last. (2) In another sequence, the Rotter ISB could be administered first; the retest of the Rotter ISB second; and the Average Person ISB last. (3) In the third presentation order, the sequence could be this: first, the Average Person ISB; second, the initial administration of the Rotter ISB; and last, the retest of the Rotter ISB.

Counterbalancing and randomization of the test presentation sequences were assured by setting up three sub-groups which were composed of forty subjects each--one sub-group for each presentation sequence, and then by assigning a test presentation sequence, at random, to each subject as she reported for her initial testing period. By this procedure, one-third of the students were given order R_1AR_2 ,⁷ one-third order R_1R_2A , and one-third order AR_1R_2 .

⁷ R_1AR_2 refers to the sequence of test administration, that is, the initial Rotter ISB (R_1) was administered first; the Average Person ISB (A) second; and the retest of the Rotter ISB (R_2) last.

Equalization of the number of complete sets of data in each test presentation sequence sub-group. As the probability was suggested that some subjects might withdraw from the experiment before the actual termination of their testing terms,⁸ equalization of the numbers of complete sets of data in each test presentation sequence sub-group had to be arranged. This was accomplished by adding and subtracting sets of records, at random, to and from the sub-group totals until each sub-group was composed of forty complete sets of data, thereby permitting a total of 120 complete sets of data as obtained from the 120 female college freshmen used in this experiment.

Time interval between test administrations. The ISB forms had to be given, as nearly as possible, at equally spaced time intervals. This was accomplished by establishing a time interval of one week between test administrations. It is noted, that for this research, an interval of time longer than one week would not have been practical since the study was designed to be completed within one college semester.

Table IV shows the range of the number of days elapsing between test administrations per number of administrations, as well as the mean time interval maintained for the total group used in the research.

⁸This discussion refers to the presentation of data in Table II, p. 30.

TABLE IV

TIME INTERVALS BETWEEN TEST ADMINISTRATIONS

Number of days between test administrations	Number of test administrations
17	1
12	1
11	1
10	2
9	9
8	11
7	188
6	15
5	12
Range--5 to 17 days	
Mean time interval--7.1 days	

METHOD OF TEST ADMINISTRATION

The method of test administration and procedures followed throughout the experiment are presented in the following discussion.

Initial contact with the students. As each student reported at the clinic for her initial testing period she was given, individually, an introductory interview before beginning actual testing. This interview served chiefly to allay apprehension regarding the task ahead of the student. At this time an initial interview blank⁹ was filled out by the investigator. This blank contained space to obtain from the subject various data, e.g., addresses (both school and home), birthdate, marital

⁹A copy of this blank is presented in Appendix B.

status, family background, social interests, etc.

This procedure was thought to be of value in securing the cooperation and confidence of the subject.

Administration of the ISB's. At the conclusion of the introductory interview period each student was administered, individually, and in a private counseling room, the three ISB forms. These forms were administered in accordance with her assigned sub-group presentation order as was discussed previously. They were administered at approximate time intervals of one week. At each administration the investigator read aloud with the subject the directions on the ISB forms.

Final contact with the students. After completion of the final ISB form each subject was asked, individually, certain questions regarding her subjective feelings toward these ISB forms. The questions asked were these:

1. When completing these sentence beginnings, did you feel defensive on any of these forms? By this I mean, did you find yourself not wanting to write or not writing what you first thought?

If so, then the following questions were asked:

- a. On which of these forms did you feel the most defensive?
 - b. On which of these forms did you feel the least defensive?
2. When completing these sentence beginnings, did you feel that you were telling something about your self on any of these forms?

If so, then the following questions were asked:

- a. On which of these forms did you feel that you were telling the most about your self?
 - b. On which of these forms did you feel that you were telling the least about your self?
3. On the form in which you were instructed to complete the sentence beginnings to express the real feeling of the average person your sex and age, did the person or persons that you were referring to in your sentences, remind you of:
- a. yourself;
 - b. some other persons other than yourself;
 - c. some of yourself, plus some of some other persons other than yourself.

It was hoped that replies to these questions might reveal the subjects' subjective feelings toward the various test techniques.

At the conclusion of the last testing period, the subject was offered an opportunity to return to the clinic at the completion of the whole project for an evaluation and interpretation of her records. This procedure was followed through by sending each subject a letter¹⁰ notifying her that the project had been completed.

Evaluation of the subjects' cooperation. It is difficult to determine the degree of cooperation of individuals in such a study as this. However, the investigator's subjective evaluation was that the cooperation and interest displayed by the subjects were, on the whole, very good. In general, all individuals kept their appointments on schedule. There were some persons who failed to report at their designated times. Nevertheless, these failures seemed to have been due

¹⁰A copy of this letter is presented in Appendix C.

to conditions beyond the experimenter's or student's control, i.e., sickness of the student, or illness in the family, etc.

A number of the students voluntarily stated that they had enjoyed the project and indicated that they felt the interpretations and evaluations which were offered at the close of the project had been of value to them.

CHAPTER IV

PRESENTATION AND DISCUSSION OF DATA

In this chapter will be presented analyses of data collected from 120 college freshmen women on two forms of an ISB. A comparison of the adjustment scores obtained by the same individuals on two forms of an ISB; the extent to which these forms may be interchangeable; and the establishment of the test-retest reliability of the Rotter ISB will be the chief concern of these analyses.

Certain analyses which seemed of minor concern will also be presented in this chapter. An analysis of the subjects' subjective feelings toward the various ISB techniques will be discussed. The score-rescore consistency of the investigator will be established. Finally, a comparison of the mean total adjustment scores and variabilities computed from data in this study to those presented in Rotter's normative data will be discussed.

In this chapter, then, the analyses of major concern will be presented first, and those of minor concern will be presented later.

PRESENTATION OF PRIMARY DATA

Basically, the questions to be answered from this analysis of the data are these:

1. What is the degree of relationship between total adjustment scores obtained by the same individuals on two forms of an ISB? The ISB forms are the Rotter ISB and the Average Person ISB.

2. What is the degree of relationship between certain sub-total adjustment scores obtained by the same individuals on two forms of an ISB?

The specific stems from which these sub-total adjustment scores are computed are these: (a) pronoun stems--sentence phrases with first and third person pronouns indicated, that is, excluding the impersonal sentence beginnings; and (b) impersonal stems--sentence beginnings with no pronouns indicated.

3. What is the test-retest reliability of the total and sub-total adjustment scores on the Rotter ISB?
4. What is the degree of significance of the difference between the correlation coefficient obtained between the two ISB forms and the reliability coefficient of the Rotter ISB? In other words, what is the extent to which these ISB forms may be used interchangeably?

Relationship Between Adjustment Scores

Obtained by the Same Individuals

On Two Forms of an ISB

Method of analysis. In order to determine the degree of relationship between both the total and sub-total adjustment scores obtained by the same individuals on the two ISB forms, Pearson Product Moment correlation coefficients were derived from the basic raw data.¹

Presentation of results of analysis. Correlation coefficients between scores obtained by the same individuals, a group of 120 college freshmen women, on the two ISB forms used in the study are shown in Table V.

¹The basic raw data from which these and the subsequent correlations were derived are presented in Appendix A, Tables XX, XXI, and XXII.

TABLE V
CORRELATIONS BETWEEN THE AVERAGE PERSON ISB
AND THE ROTTER ISB

Items selected from Average Person ISB	Correlation with Rotter ISB
Impersonal stems	.47
Pronoun stems	.51
Total stems	.55

It is noted in Table V that the correlations (Pearson r 's) between adjustment scores as obtained by the same individuals on the Average Person ISB as compared to those obtained on the initial administration of the Rotter ISB are these: (1) The correlation value between total adjustment scores is .55. (2) The correlation between sub-total adjustment scores obtained from the impersonal stems is .47. (3) The correlation between sub-total adjustment scores obtained from the stems employing personal pronouns is .51.

Discussion. It is found from these data that there is only a moderate relationship existing between the adjustment scores obtained by the same individuals on these two ISB forms. It is noted that these values are not as high as would be desired to claim these forms to be interchangeable. However, the significance of the differences between these correlation values and the reliability coefficients of the Rotter ISB will be discussed in the forthcoming paragraphs.

Test-retest Reliability Coefficients
of the Rotter ISB

Method of analysis. In order to establish the test-retest reliability of the Rotter ISB, Pearson Product Moment correlation coefficients were derived from the basic raw data. In addition to this analysis, by use of Fisher's "z" transformation formulas as described by Edwards,² the confidence limits of the parameter at the one per cent level of significance were determined.

Presentation of results of analysis--test-retest reliability coefficients of the Rotter ISB. A comparison of adjustment scores obtained by the group of 120 college freshmen women used in the study on the test-retest of the Rotter ISB is shown in Table VI.

TABLE VI

CORRELATIONS BETWEEN TEST AND RETEST
ON THE ROTTER ISB - TOTAL GROUP

Items selected from retest of Rotter ISB	Correlation with initial Rotter ISB
Impersonal stems	.78
Pronoun stems	.77
Total stems	.82

²Allen L. Edwards, Experimental Design in Psychological Research (New York: Rhinehart & Company, Inc., 1950), pp. 125-31.

It is noted in Table VI that the reliability coefficients between adjustment scores as obtained by the same individuals on the initial and subsequent administrations of the Rotter ISB are these:

- (1) The reliability coefficient between total adjustment scores is .82.
- (2) The coefficient between sub-total adjustment scores obtained from the impersonal stems is .78.
- (3) The coefficient between sub-total adjustment scores obtained from the stems employing personal pronouns is .77.

Presentation of results of analysis--confidence limits of the population correlations. By use of Fisher's "z" transformation formulas the confidence limits of the parameter at the one per cent level of significance were determined. If the correlations between test and re-test on the Rotter ISB were repeated for a similar group of 120 college freshmen women, the resulting correlations could be expected to be lower or higher than the values shown in Table VII only once in a hundred times.

TABLE VII

CONFIDENCE LIMITS OF THE POPULATION CORRELATIONS
AT THE ONE PER CENT LEVEL OF SIGNIFICANCE
ON TEST-RETEST OF THE ROTTER ISB

Reliability coefficients of selected items from the Rotter ISB	Lower limit of r	Upper limit of r
Impersonal stems--.78	.671	.858
Pronoun stems-----.77	.667	.850
Total stems-----.82	.726	.884

Discussion. It is found from these data that there is a fairly high degree of consistency existing between the adjustment scores obtained by the same individuals on the test and retest of the Rotter ISB. It can readily be seen, from Table VII, that even the lower limits of these correlation values show a moderate relationship. None lie below .65. Therefore, there seems little doubt that the relationship between test and retest on the Rotter ISB is a marked one. It must be recognized, however, that these reliability coefficients may apply only when the instrument is readministered in accordance with the conditions designated in the procedure of this experiment. It must also be noted that some writers believe that the reliability of a test is not sufficiently high for individual prediction unless the self-correlation of the test is above .90.³ It is found, then, that both the test-retest reliability of .82, as established by this investigation, and the split-half reliability of .83, as presented by Rotter,⁴ are somewhat lower than that which would be desired of a test for usage in individual prediction.

With respect to this matter, however, the question might well be raised as to whether it is practical to demand or attain a standard of this sort for the ISB technique. Since the subject may respond to sentence phrases in a relatively free and individual manner, and since

³J. P. Guilford, Fundamental Statistics in Psychology and Education (New York: McGraw-Hill Book Company, Inc., 1942), pp. 219-22.

⁴Rotter and Rafferty, Manual, The Rotter Incomplete Sentences Blank, p. 7.

responses are not restricted to any designated alternatives, it seemed probable that the objective conditions which facilitate the attainment of a high reliability coefficient are not inherent in this type of instrument.

These data do suggest, however, that considerable caution is needed when use is made of the Rotter ISB for individual prediction on the basis of any exact cutting score, e.g., an adjustment score of approximately 135 as suggested by Rotter.⁵

Presentation of data with reference to time interval conditions between administrations of the Rotter ISB's. Because the experimental design of the research demanded test presentation sequence sub-groups,⁶ two time interval conditions were established for the test-retest of the Rotter ISB as a result of this procedure. The first condition was established as a result of the presentation sequence of ISB forms administered to those subjects in Sub-group I. In this sub-group forty students were administered ISB forms in sequence, R_1AR_2 .⁷ Because of this sequence of test administrations, a time interval of two weeks elapsed between test and retest of the Rotter ISB. The second condition was established as a result of the presentation sequence of ISB forms

⁵Rotter and Rafferty, op. cit., p. 10. See also the discussion which is presented on pp. 63-8 of this thesis.

⁶Refer to the discussion of test presentation sequences in Chapter III, pp. 33-4.

⁷ R_1AR_2 refers to test presentation sequence. Initial Rotter ISB (R_1), subsequent Rotter ISB (R_2), and Average Person ISB (A).

to those subjects in Sub-groups II and III. In Sub-groups II and III, forty students in each were administered ISB forms in sequences, R_1R_2A and AR_1R_2 , respectively. Because of these particular sequences of test administrations, then, a time interval of only one week elapsed between test and retest of the Rotter ISB.

Since these time interval conditions were a consequence of the experimental design of the study, it was necessary to present a comparison of adjustment scores obtained by these subjects in their respective sub-groups on the test-retest of the Rotter ISB. These comparisons are shown in Table VIII.

TABLE VIII
CORRELATIONS BETWEEN TEST AND RETEST
ON THE ROTTER ISB
SUB-GROUPS I, AND II-III

Items selected from retest of Rotter ISB	Correlation with initial Rotter ISB	
	Sub-group I 40	Sub-groups II-III, 80
Impersonal stems	.79	.76
Pronoun stems	.74	.78
Total stems	.83	.81

It is noted in Table VIII that the reliability coefficients between adjustment scores as obtained by the same individuals, at different time intervals, on the initial and subsequent administrations of the Rotter ISB do not appear to differ significantly from those presented in Table VI, page 42.

Discussion. It is found from these data that there is a similar degree of consistency existing between the adjustment scores obtained by the same individuals of these particular sub-groups on the test-retest of the Rotter ISB as was found for the total group of 120 college freshmen women. Therefore, no group differences are observed as a result of a one or two week time interval elapsing between test and retest of the Rotter ISB.

Interchangeability of ISB Forms

Method of analysis. The ISB forms concerned in this analysis are these: (1) Rotter's ISB--a self-reference form using both first person pronoun and impersonal sentence beginnings; and (2) the Average Person ISB--a variation of Rotter's ISB, an average person-reference form using both third person pronoun and impersonal sentence phrases.

To determine the extent to which these two ISB forms may be interchangeable, the significance of the differences between the correlation coefficients (.55, .47, and .51), obtained between the two ISB forms, and the reliability coefficients (.82, .78, and .77) of the Rotter ISB was determined. The following is a discussion of the statistical analysis employed.

Since a situation existed in the design of this study in which the same individuals were administered the ISB form employed, and since some correlation existed among these ISB forms, the statistical procedure described by McNemar seemed to be the most practical method

of treating this data.⁸ The procedure for determining the significance of the differences between high r 's for a situation which involves the same sample, $N_1 - N_2 - N$, was used in this analysis.

The correlation values were transformed into Fisher z 's and the standard errors of the differences between z 's were computed by the use of the following formulas:

$$z_1 - z_2 = \sqrt{\frac{2 - 2r_{zz}}{N - 3}} \quad (1)$$

As stated by McNemar, it was thought that r_{zz} , a factor in formula one (1), would be equal to r_{rr} as obtained by formula two (2).

$$r_{r_{12}r_{13}} = r_{23} - \frac{r_{12}r_{13} (1 - r_{23}^2 - r_{12}^2 - r_{13}^2 + 2r_{12}r_{13}r_{23})}{2(1 - r_{12}^2)(1 - r_{13}^2)} \quad (2)$$

McNemar believed that the use of these formulas should yield more meaningful results, since they did not involve the untenable assumption that correlation coefficients from successive samplings are distributed normally.

The obtained " z " differences between these various correlation values were then divided by the standard errors of the z 's and the critical ratio interpreted on the basis of the Table of " t " in McNemar. If the z 's were significantly different, one might conclude that the corresponding r 's were significantly different. If the r 's were found to be significantly different, for purposes of this study, it might then

⁸Quinn McNemar, Psychological Statistics (New York: John Wiley & Sons, Inc., 1949), pp. 124-25.

be concluded that these ISB forms could not be used interchangeably.

Presentation of results of analysis. Presented in Table IX are the correlation coefficient differences and the corresponding "z" differences, the standard errors of these "z" differences, the resulting critical ratios, and the level of significance for each.

Discussion. It can be seen from the data presented in Table IX that the observed differences from these correlation values between the adjustment scores obtained by the same individuals on the two ISB forms are all significantly different beyond the .1 per cent level of confidence. It is found, then, that these ISB forms (the Rotter ISB and the Average Person ISB) may not be used interchangeably.

Resume of the Primary Findings

The major findings of the experiment are briefly listed below:

1. There is found only a moderate relationship existing between the adjustment scores obtained by the same individuals on the two ISB forms employed in this study. It is found, also, that this relationship is not as high as would be demanded to claim these ISB forms to be interchangeable.

2. There is found a fairly high degree of consistency existing between the adjustment scores obtained by the same individuals on the test-retest of the Rotter ISB. Since the reliability coefficient (.82) found is somewhat lower than that which would be demanded of a test for usage in individual prediction, the data suggest that considerable

TABLE IX
 DIFFERENCES BETWEEN CORRELATION COEFFICIENTS OBTAINED
 ON AVERAGE PERSON ISB AND ROTTER ISB
 AND RELIABILITY COEFFICIENTS OF ROTTER ISB

Correlation coefficient between Average Person and Rotter ISB for items selected from these ISB forms	Obs. d's from reliability coefficient of Rotter ISB		Std. error of z difference	Critical ratio	Level of confidence
	r	z			
Impersonal stems---.47	.31	.535	.070	7.643	.001
Pronoun stems-----.51	.26	.457	.101	4.525	.001
Total stems-----.55	.27	.539	.082	6.573	.001

caution is needed when use is made of the Rotter ISB for individual prediction on the basis of a cutting score (135) as is presented in the Rotter ISB Manual.

3. The correlation coefficients obtained between the two ISB forms (the Rotter ISB and the Average Person ISB) and the reliability coefficients of the Rotter ISB are found to be significantly different. Therefore, it is found that these two ISB forms may not be used interchangeably.

PRESENTATION OF SECONDARY DATA

Basically, the questions to be answered from this analysis of the data are these:

1. What are the subjects' subjective feelings toward the ISB forms used in the experiment?
 - a. What are the subjects' feelings as to which ISB form offers the most freedom or ease of self-expression?
 - b. What are the subjects' feelings as to which ISB form offers more possibilities for expression of self?
2. What is the investigator's score-rescore consistency on the Rotter ISB?
3. What is the degree of difference between the mean total adjustment scores and variabilities computed from data of this experiment as compared to those presented in Rotter's normative data?

Students' Subjective Feelings as to Which ISB Form Offered the Most Freedom or Ease of Self-expression

Method of analysis. To determine the subjects' subjective feelings as to which ISB form offered the most freedom or ease of self-expression, the following question was asked of each subject, individually, at the conclusion of her testing term:

1. When completing these sentence beginnings, did you feel defensive on any of these forms? By this I mean, did you find yourself not wanting to write or not writing what you first thought?

The responses of the students to this question were merely tallied. No further analysis was intended.

Presentation of results of analysis. Table X shows the number and types of responses elicited from the total group of 120 subjects in answer to this question.

TABLE X

RESPONSES OF SUBJECTS REGARDING FEELINGS
OF DEFENSIVENESS ON ISB FORMS

Response type	Number of responses
No defensiveness	80
Some defensiveness	40
Total	120

Discussion. It is found from the data illustrated in Table X that, at least within the limitations of the definition established by

which an individual might be aware of or recognize a feeling of defensiveness, a third of the subjects used in the study felt some defensiveness, when completing sentence phrases. However, it must be recognized that the definition of defensiveness which was established by the question asked of the students and the method of questioning them were both quite subjective, therefore, no general conclusion is warranted from these data.

Students' Subjective Feelings as to the ISB Form
On Which They Felt the Most and Least Defensive

Method of analysis. Those forty individuals who stated they felt some defensiveness when completing sentence phrases on the ISB forms employed in the study, were asked two additional questions. The questions were designed to elicit a statement from the students as to the ISB form on which they felt the most and least defensive. The questions asked were these:

1. a. On which of these forms did you feel the most defensive?
1. b. On which of these forms did you feel the least defensive?

The responses of the subjects to these questions were merely tallied. No further statistical analysis was intended.

Presentation of results of analysis. Illustrated in Table XI are the number and type of responses elicited from the forty subjects in answer to these questions.

From Table XI it is noted that three-fourths (30) of the forty subjects who stated that they felt some defensiveness when completing

TABLE XI

RESPONSES OF SUBJECTS REGARDING FEELINGS
OF MOST AND LEAST DEFENSIVENESS

ISB form	Defensiveness	
	Most	Least
Rotter ISB	30	21
Average Person ISB	9	18
Same on all ISB's	1	1
Total	40	40

sentence beginnings, felt the most defensive when completing stems on the Rotter ISB's. Only nine students felt most defensive when completing sentences on the Average Person ISB, and one individual stated she felt about the same degree of defensiveness on all ISB forms used.

From Table XI it is also noted that twenty-one subjects of the forty who stated that they felt some defensiveness when completing sentence beginnings, felt the least defensive when completing sentences on the Rotter ISB's. Eighteen students felt least defensive when completing stems on the Average Person ISB, and one individual stated she felt about the same degree of defensiveness on all ISB forms used.

Presentation of data suggesting an ISB presentation sequence condition, rather than an ISB form condition, as influencing subjects' statements regarding feelings of defensiveness. Since it is noted on Table XI that relatively the same number of subjects stated that they

felt least defensive when completing sentences on the Rotter ISB's, as compared to the Average Person ISB, a finer analysis of these data seemed important.

It seemed probable that an ISB presentation sequence condition, rather than an ISB form condition, was influencing the subjects' statements regarding feelings of most and least defensiveness on the Rotter ISB's. Table XII indicates the number and type of responses elicited from the subjects with reference to test presentation sequence of the Rotter ISB's.

TABLE XII

RESPONSES OF SUBJECTS REGARDING FEELINGS
OF MOST AND LEAST DEFENSIVENESS
WITH REFERENCE TO TEST PRESENTATION SEQUENCE

Presentation sequence	Defensiveness	
	Most	Least
Initial Rotter ISB	21	2
Subsequent Rotter ISB	3	18
Rotter ISB's ₁ and 2	6	1
Total	30	21

From Table XII it is noted that twenty-one subjects of the thirty who stated that they felt the most defensive when completing sentences on the Rotter ISB's, felt the most defensive when the initial test of the ISB forms presented to them was the Rotter ISB. Only three persons felt most defensive when completing sentences on the subsequent

administration of the Rotter ISB. However, it is noted that six individuals felt most defensive when completing sentences on both presentations of the Rotter ISB, regardless of test presentation order.

From Table XII it is also noted that only two subjects of the twenty-one who stated that they felt least defensive when completing sentences on the Rotter ISB's, felt the least defensive when the initial test of the ISB forms presented to them was the Rotter ISB. However, eighteen individuals felt least defensive when completing sentences on the subsequent administration of the Rotter ISB. Only one person of this group felt least defensive when completing sentences on both presentations of the Rotter ISB, regardless of test presentation order.

Discussion. From these data it appears that an ISB presentation sequence condition, rather than an ISB form condition, has been the major factor which influenced the subjects' judgments regarding their feelings of defensiveness when completing sentence phrases. When the initial test of the sequence was the Rotter ISB, subjects felt most defensive when completing items on it, however, when the same ISB form was presented to them for the second time, they tended to feel less defensive when completing sentences. Nevertheless, it can be noted that even though a presentation sequence condition appeared to be the major factor influencing the subjects' judgments, a larger number of students, of this group of forty subjects, felt most defensive when completing sentences on the Rotter self-reference form, as compared to the number of subjects who felt most defensive when completing sentences on the Average Person ISB. It must be recognized, however, that this

is merely a trend and no definite conclusion could be stated regarding this finding.

Students' Subjective Feelings as to Which ISB Form Offered More Possibilities for Expression of Self

Method of analysis. In order to determine the subjects' feelings as to which ISB form offered more possibilities for expression of self, the following questions were asked of each subject, individually, at the conclusion of her testing term:

2. When completing these sentence beginnings, did you feel that you were telling something about your self on any of these forms?

- If so:
- a. On which of these forms did you feel that you were telling the most about your self?
 - b. On which of these forms did you feel that you were telling the least about your self?

The responses of the subjects to these questions were merely tallied. No further statistical analysis was intended.

Presentation of results of analysis. In response to question two (2), all 120 subjects used in the experiment felt they were telling something about themselves on the ISB forms employed. Table XIII shows the number and type of responses elicited from the total group of subjects in answer to the two sub-questions, a and b.

Discussion. The data shown in Table XIII indicate that, as far as the students' statements are concerned, the sentence completions on the Rotter ISB seem to offer more possibilities for expression of self, as compared to those responses on the Average Person ISB. This finding

TABLE XIII

RESPONSES OF SUBJECTS REGARDING FEELINGS
AS TO WHICH ISB FORM EXPRESSES SELF

ISB form	Expression about self	
	Most	Least
Rotter ISB	113	12
Average Person ISB	5	100
Other combinations	2	8
Total	120	120

supports somewhat the data presented in Sacks' study,⁹ in which the subjects, who were asked to indicate their preferences for either the personal or the third person pronoun items, chose the personal items as more truly expressing their feelings.

Students' Statements as to Point-of-Reference
They Were Using When Completing Sentences
On the Average Person ISB

Method of analysis. In order to determine what point-of-reference the subjects in this study would state they were using when completing sentences on the Average Person ISB, the following question was asked of each student, individually, at the conclusion of her

⁹A discussion of Sacks' study is presented in Chapter II, pp. 14-15.

testing term:

3. On the form in which you were instructed to complete sentence beginnings to express the real feelings of the average person your sex and age, did the person or persons to which you were referring in your sentences, remind you of:
 - a. yourself
 - b. some other persons other than yourself
 - c. some of yourself, plus some of some other persons other than yourself?

The responses of the subjects to this question were merely tallied.

Presentation of results of analysis. Illustrated in Table XIV are the number and type of responses elicited from the total group of subjects used in the experiment in answer to this question.

TABLE XIV

RESPONSES OF SUBJECTS REGARDING
POINT-OF-REFERENCE USED ON
AVERAGE PERSON ISB

Point-of-reference	Number of responses
Self	11
Others	10
Self and others	99
Total	120

Discussion. The data presented in Table XIV indicate that, in general, and as far as the subjects' statements are concerned, the sentence completions on the Average Person ISB are comprised of a mixture

of self-references, together with references to persons other than the subjects themselves.

Score-rescore Consistency of the Investigator
On the Rotter ISB

Since the Rotter ISB scoring procedure, which was employed by the investigator in this study, involves subjective judgments and the matching of sentence completions against criterion responses, the reliability of scoring the Rotter ISB's became an important factor in the experiment.

Method of Analysis. The procedure adopted by the experimenter to determine his score-rescore consistency was as follows. A sample of thirty of the 240 Rotter ISB's was chosen, at random, to be rescored by the same experimenter. In order to determine the relationship between the adjustment scores computed at the time of initial scoring and the adjustment scores computed at the time of subsequent scoring, the standard errors were derived for the mean differences.¹⁰ The obtained mean differences were then divided by the standard errors of the mean differences and the critical ratios interpreted on the basis of the Table of "t" in McNemar. In addition to the "t" test of significance of the differences between correlated means, the Pearson Product Moment correlation coefficients were also computed from the basic raw data.¹¹

¹⁰The basic raw data from which these analyses were derived are presented in Appendix A, Table XXIII.

¹¹McNemar, Psychological Statistics, pp. 225-26.

TABLE XV
 MEAN ADJUSTMENT SCORE DIFFERENCES OBTAINED
 BETWEEN SCORE AND RESCORE
 OF THE ROTTER ISB

Items selected from Rotter ISB	Obs. mean d's from initial scoring of Rotter ISB data	Std. error of mean difference	Critical ratio	Level of confidence
Impersonal stems	-.533	.556	.958	.30
Pronoun stems	-.266	.538	.494	.60
Total stems	-.900	.755	1.192	.13

Presentation of results of analysis--"t" test of significance of the differences between correlated means. Table XV indicated the observed mean differences, the standard errors of these differences, the resulting critical ratios, and the level of significance for each.

Discussion. It can be seen from the data presented in Table XV that the observed mean differences are not statistically significant even at the ten per cent level of confidence.

Presentation of results of analysis--score-rescore reliability coefficients. As further evidence of the relationship between mean adjustment scores obtained on the score and rescore of the Rotter ISB's, Table XVI illustrates the score-rescore reliability coefficients derived from the basic raw data.

TABLE XVI

CORRELATIONS BETWEEN SCORE AND RESCORE
OF THE ROTTER ISB

Items selected from Rotter ISB	Correlation with initial scoring of Rotter ISB
Impersonal stems	.93
Pronoun stems	.96
Total stems	.97

Discussion. The data illustrated in Table XVI indicate that there is a high degree of consistency on the part of the investigator on scoring the Rotter ISB's comprising this study.

A Comparison of the Mean Adjustment Scores and Variabilities
Computed From Data of the Present Study
To Those Presented in Rotter's Normative Data

A discussion of the normative data in the Rotter ISB Manual¹² indicates that eighty-five female college freshmen composed the female standardization group of his study. No further description of this sample is offered. However, it is stated that there was no reason to believe this sample was in any way atypical of the much larger total female freshmen class. Also in the Manual, validation data are presented which note that a cutting score of approximately 135 would provide an efficient separation of adjusted from maladjusted students, at least, for general screening purposes.

Since it was probable that the group of 120 college freshmen women employed in the present study was a close approximation to a random sample of the larger total female freshmen class at Bowling Green State University, it seemed important to compare the mean total adjustment scores and variabilities computed from the Rotter ISB data of the present experiment to those presented in Rotter's normative data. Such a comparison might suggest some cautions for further use of the cutting score and normative data presented by Rotter.

Method of analysis. In order to determine the degree of difference between total adjustment scores, and standard deviations, of the

¹²Rotter and Rafferty, Manual, The Rotter Incomplete Sentences Blank, pp. 7-11.

Rotter ISB data of the present experiment and those of Rotter's normative data, the standard errors were computed for each mean and standard deviation. The obtained differences between these values were then divided by the standard errors of both the means and standard deviations, and the critical ratios interpreted on the basis of the Table of "t" in McNemar.

Presentation of results of analysis. Presented in Table XVII are the mean total adjustment scores and standard deviations as derived from the basic raw data of this experiment and from the data presented in Rotter's Manual. Tables XVIII and XIX show the obtained mean total adjustment score and standard deviation differences, the standard errors of these differences, the resulting critical ratios, and the level of confidence for each.

TABLE XVII

A COMPARISON OF
MEAN ADJUSTMENT SCORES AND STANDARD DEVIATIONS
COMPUTED FROM THE ROTTER ISB DATA OF THE PRESENT STUDY
TO THOSE PRESENTED IN ROTTER'S STANDARDIZATION DATA

Study	Mean	Standard deviation
Present experiment		
Initial Rotter ISB	137.3	18.9
Subsequent Rotter ISB	135.2	18.8
Rotter's normative study	127.4	14.4

TABLE XVIII
 DIFFERENCE BETWEEN MEAN TOTAL ADJUSTMENT SCORES
 COMPUTED FROM THE ROTTER ISB DATA OF THE PRESENT STUDY
 AND THAT PRESENTED IN ROTTER'S STANDARDIZATION DATA

Mean score of Rotter ISB data of present study	Obs. d from mean score of Rotter's normative data	Std. error of difference between means	Critical ratio	Level of confidence
Initial Rotter ISB mean-----137.3	9.9	2.327	4.254	.001
Subsequent Rotter ISB mean---135.2	7.8	2.321	3.361	.001

TABLE XIX
 DIFFERENCE BETWEEN STANDARD DEVIATIONS
 COMPUTED FROM THE ROTTER ISB DATA OF THE PRESENT STUDY
 AND THAT PRESENTED IN ROTTER'S STANDARDIZATION DATA

Standard deviation of Rotter ISB data of present study	Obs. d from S.D. of Rotter's normative data	Std. error of S.D. difference	Critical ratio	Level of confidence
Initial Rotter ISB S.D.-----18.9	4.5	1.645	2.736	.01
Subsequent Rotter ISB S.D.---18.8	4.4	1.641	2.681	.01

From Table XVII it is obvious that the mean total adjustment scores and standard deviations of the Rotter ISB data of the present study are not significantly different from each other. However, it is found that all of these values are considerably higher than those presented in Rotter's normative data.

From Table XVIII it is noted that the observed differences between the mean total adjustment scores obtained by the total group of subjects used in this study and those obtained by the subjects in Rotter's standardization group are significantly different at beyond the .1 per cent level of confidence.

From Table XIX it is noted that the observed differences between the standard deviations of mean adjustment scores obtained by the total group of subjects used in this study and those obtained by the subjects in Rotter's standardization group are significantly different at beyond the one per cent level of confidence.

Discussion. It can be seen from these data that the mean total adjustment scores and standard deviations of the Rotter ISB data of the present study, as compared to Rotter's normative data, are different at a highly significant level, that is, being significantly different at beyond the one per cent level of confidence.

What factors may have contributed to these differences are unknown at present. However, the following possibilities were considered by the writer: (1) The possibility that the present writer had been inconsistent in his scoring procedure. (2) The possibility that a situational difference had been responsible for these findings, that is,

a situational difference both in time and place. The data of the present study had been collected between October and December, 1951, while Rotter's data had presumably been collected in the latter part of 1949 or early 1950. In addition to this time difference, a place difference had occurred. The data of the present study had been collected on students enrolled at Bowling Green State University, while Rotter's data had been collected on students enrolled at Ohio State University.

While it was impossible for the present writer to investigate the extent to which time or place conditions might have contributed to these observed group differences, he did establish his scoring consistency. However, since the score-rescore consistency of the experimenter was found to be quite high, he thought that this factor could have contributed to these differences, only, if he were scoring consistently higher on all of the ISB's, as compared to the scorers who computed Rotter's normative data. Again, the investigator thought it not practical to investigate further on this latter possibility.

These data do suggest, nevertheless, that considerable caution is needed when use is made of the cutting score (135) and the normative data presented in the Rotter ISB Manual.

Resume of the Secondary Findings

The findings of the experiment which seemed of minor concern are briefly listed below.

1. There is found, at least within the limitations of the definition established by which an individual might be aware of or

recognize a feeling of defensiveness, that a third of the subjects used in the study felt some defensiveness when completing sentence phrases. Of this group, it is found that the majority of students felt most defensive when completing sentences on the Rotter self-reference form, as compared to the Average Person ISB. However, it is also found that an ISB presentation sequence condition, rather than an ISB form condition, was the major factor influencing the subjects' statements regarding their feelings of defensiveness when completing sentences. Thus, it appears that no general conclusion may be stated regarding these findings.

2. There is found some evidence as far as the students' statements are concerned that sentence completions on the Rotter ISB, as compared to those on the Average Person ISB, offer more possibilities for expression of self.

3. There is found some evidence as far as the subjects' statements are concerned that the points-of-reference used by the students when completing stems on the Average Person ISB are comprised of a mixture. A mixture of self-references together with references to persons other than self are used.

4. The investigator found his score-rescore consistency on the Rotter ISB's to be relatively high.

5. The mean total adjustment scores and standard deviations of the Rotter ISB data of the present study are found to differ significantly from those presented in Rotter's normative data. This finding suggests that considerable caution is needed when use is made of the cutting score (135) and the normative data presented in the Rotter ISB Manual.

CHAPTER V

CONCLUSIONS AND SUGGESTIONS
FOR FURTHER RESEARCH

The analysis of data in Chapter IV of this study would seem to lead to several general conclusions, as well as to manifest a number of aspects of this problem which need further study.

CONCLUSIONS

The following is a summary of the conclusions which seem tenable on the basis of findings in this experiment.

1. The adjustment scores obtained by the same individuals on two forms of an ISB (the Rotter ISB--a self-reference form, and a second, varied form of the Rotter ISB, an Average Person-reference form) show only a moderate relationship. The coefficient of correlation for total adjustment scores is .55.

2. The two ISB forms (the Rotter ISB and the Average Person ISB) may not be administered interchangeably.

Discussion. On the basis of the two above conclusions, it would seem that the Rotter ISB and the Average Person ISB employed in this study are not related to any great extent. It would also seem reasonable to say that experimental findings of this study do not support the use of the Average Person ISB in place of the Rotter ISB for general screening purposes in a clinical setting.

It must be recognized that these findings say nothing regarding the validity of either instrument. Consequently, it is probable that differences other than those observed in this study may exist.

3. There is a fairly high degree of consistency existing between the adjustment scores obtained by the same individuals on the test and retest of the Rotter ISB. The coefficient of reliability for total adjustment scores is .82.

Discussion. Although the test-retest reliability coefficient of .82 on the Rotter ISB indicates a fairly high degree of consistency, this value is somewhat lower than that demanded by some psychologists for use of a test in individual prediction. While not many clinicians would attempt to determine the extent of an individual's maladjustment on the basis of a particular score on a test, the results here would seem to indicate that considerable caution is needed when use is made of this technique for individual prediction on the basis of a cutting score, such as, 135 as presented in the Rotter ISB Manual.

There seem to be tendencies for the subjects' subjective feelings toward the two ISB techniques employed in this study to support the two following conclusions, that is, as far as the subjects' statements are concerned.

4. It is impossible to conclude that the Average Person ISB offers the subjects greater freedom or ease of self-expression than the Rotter ISB.

Discussion. For a discussion of this conclusion two factors need to be considered. First, it must be recognized that for purposes of this study the definition of defensiveness has been set up as exemplifying a rather limited sequence of behavior. This definition assumes that those subjects who feel any threat when completing sentences in a test situation may be somewhat reluctant to write what they first think. In addition, it seems probable that an ISB which employs a direct self-reference may be somewhat more threatening than one which does not.

In light of these considerations, it is of interest to note that although a third of the 120 subjects used in this study state they felt some defensiveness when completing sentence phrases, an ISB presentation sequence condition, rather than an ISB form condition, seems to be the major factor influencing the subjects' statements regarding their feeling of defensiveness.

It must be emphasized that only a tendency toward the above condition is found. Since the design of this study involves ISB presentation sequences, and since the questions asked of each subject are quite subjective, only a rough analysis of the data has been made.

5. There seems to be a tendency for sentence completions on the Rotter ISB to offer more possibilities for expression of self than the sentence completions on the Average Person ISB. The points-of-reference the subjects employ when responding to sentence phrases on the Average Person ISB are comprised of a mixture of self-references together with references to persons other than self.

Discussion. On the basis of this conclusion and the statements of the subjects used in this experiment, it would seem that the sentence completions on the Rotter ISB tend to offer more consistent expressions of self than the sentence completions on the Average Person ISB. Such a finding would not seem to be wholly unexpected. Since the directions on the Rotter ISB instruct the subject to express her real feeling, it seems probable that an individual may find it somewhat irrational to state she felt she had told less about her self on it than on the Average Person ISB. Likewise, it seems probable that a person may find it difficult to state she felt she had told more about her self on the Average Person ISB than on the Rotter ISB, because the directions on the Average Person ISB imply an external frame of reference.

Once again, it is emphasized that only a tendency toward the above conclusion is found. Because of the conditions discussed above, only a rough analysis of the data has been made.

6. The investigator's scoring of the Rotter ISB data in this experiment is highly consistent. The coefficient of reliability for total adjustment scores is .97.

Discussion. Apparently, there is a relatively high degree of consistency existing between adjustment scores as computed by the same scorer on the initial and subsequent scorings of the Rotter ISB data in this experiment. This finding would seem to be rather clear. However, since the mean total adjustment scores and variabilities of the Rotter ISB data of this study are found to differ significantly from Rotter's

normative data, the possibility exists that the present investigator may have scored all Rotter ISB data consistently higher than the scorers who have scored Rotter's normative data.

7. The mean total adjustment scores and standard deviations computed from the Rotter ISB data of the present study differ significantly from those presented in Rotter's normative study.

Discussion. The factors which may have contributed to these differences are unknown at present, nevertheless, a few possibilities have been suggested. As stated previously, the possibility exists that the present investigator may have scored all ISB data consistently higher than the scorers who have scored Rotter's normative data. It is also possible that situational factors, such as time and place, may have accounted for some of the differences observed.

Since differences do occur, however, it would seem as though considerable caution is needed when use is made of the cutting score (135) and the normative data presented in the Rotter ISB Manual.

SUGGESTIONS FOR FURTHER RESEARCH

The results of this experiment would seem to point out the need for further studies either in terms of clarification of some of the results here reported or in terms of closely allied questions which would seem to be of interest. In this section, the list of problems suggested will be by no means exhaustive. There will be presented merely a few of what would seem to be the more important issues at the present time.

1. Because Rotter reported that responses made by male and female subjects could not be scored by using the same scoring criteria, and since the present study used only female subjects, a further study similar to this should be conducted using a male group. It would seem as though a need is present for knowing about male population differences which may exist between other populations and the Rotter male normative group.

2. The question as to a comparison of the validity coefficients of the Rotter ISB and Average Person ISB to some given criterion needs clarification. Even though it is found that these ISB forms may not be used interchangeably, it is possible that they may be used together, that is, providing they both correlate with a given criterion. If this validity can be established, then the use of these techniques as a unit may prove to be of more value than using them individually.

A practical approach to establish this validity would seem to be this: (1) select, at random, sets of data as obtained from subjects in this study; (2) select an abnormal or maladjusted group of subjects; and (3) administer both ISB forms to this abnormal group. In this manner, the extent to which the adjustment scores on these ISB forms discriminate the adjusted from the maladjusted could be determined.

Another approach would be to compare adjustment scores on these ISB forms with those as obtained by the same group of individuals on other personality assessment techniques. A comparison of these ISB forms to the Minnesota Personality Scale and the Bell Adjustment Inventory is suggested.

3. Further study of the Average Person ISB used in this study to determine the effect of a change of wording in the directions to the subjects would seem advisable.

The word change suggested is this: "Complete these sentences to express the real feeling of an average person your sex and age" instead of the wording employed in this study, "Complete these sentences to express the real feeling of the average person your sex and age"

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APPENDIX A

PRESENTATION OF BASIC RAW DATA

TABLE XX
ADJUSTMENT SCORES OBTAINED BY SUBJECTS
ON ISB FORMS COMPRISING SUB-GROUP PRESENTATION SEQUENCE I

Subject Number	ISB Form								
	Rotter ₁			Average Person			Rotter ₂		
	T*	I	P	T	I	P	T	I	P
1	124	38	86	123	43	79	140	46	94
2	119	43	76	120	49	71	119	42	77
3	167	59	106	128	41	87	164	64	100
4	131	51	80	166	68	98	153	65	88
5	161	63	98	166	70	96	163	67	96
6	132	57	75	153	66	87	143	56	87
7	136	63	72	137	56	81	135	61	74
8	168	70	98	140	51	89	148	59	89
9	130	48	82	123	47	76	127	49	78
10	152	63	90	142	60	82	133	66	67
11	154	69	85	124	42	82	132	54	78
12	169	66	103	187	82	106	173	67	106
13	127	55	72	133	55	78	134	59	75
14	146	63	83	159	69	90	148	57	91
15	162	73	89	150	60	90	162	67	95
16	139	52	87	153	60	93	137	48	89
17	133	58	75	144	58	86	155	62	93
18	124	50	74	135	55	80	126	50	76
19	130	50	80	138	55	83	138	51	87
20	125	47	78	127	47	80	131	53	78
21	116	47	69	131	50	81	116	51	65
22	120	43	77	128	57	70	116	36	80
23	145	66	79	134	47	89	134	54	81
24	123	46	77	142	48	94	132	52	80
25	156	59	97	132	47	85	136	55	81
26	147	73	74	156	67	89	134	59	75
27	144	59	85	143	57	86	146	62	84
28	130	50	80	130	53	77	127	48	79
29	150	60	90	147	53	94	120	46	74
30	164	69	95	161	58	103	154	64	90
31	186	83	103	155	65	90	189	86	103
32	169	65	104	155	63	92	165	60	105
33	138	58	80	122	41	81	131	42	89
34	132	47	85	121	40	81	129	49	80
35	200	89	111	153	60	93	188	81	107
36	160	69	90	151	55	96	151	68	83
37	112	49	64	136	61	75	120	51	69
38	133	51	82	114	43	71	132	54	78
39	138	54	84	129	45	84	125	49	77
40	135	50	85	139	52	87	126	39	87
Mean	143.2	58.1	85.0	140.7	54.9	85.8	140.8	56.2	84.6
Standard Deviation	19.5	10.9	10.8	15.3	9.3	8.2	18.0	10.2	10.4

*T refers to Total Stem Adjustment Scores; I refers to Impersonal Stem Adjustment Scores; P refers to Pronoun Stem Adjustment Scores.

TABLE XXI
ADJUSTMENT SCORES OBTAINED BY SUBJECTS
ON ISB FORMS COMPRISING SUB-GROUP PRESENTATION SEQUENCE II

Subject Number	ISB Form								
	Rotter ₁			Rotter ₂			Average Person		
	T*	I	P	T	I	P	T	I	P
1	150	57	93	141	55	86	150	58	92
2	148	59	89	149	64	85	152	56	96
3	136	60	77	138	60	78	138	53	84
4	127	52	75	132	47	85	146	56	90
5	112	45	67	109	43	66	114	45	69
6	113	43	70	120	40	80	146	59	87
7	122	47	75	126	50	76	109	32	77
8	122	48	75	130	50	81	156	64	92
9	110	39	71	122	42	80	120	45	75
10	137	57	80	117	47	70	138	47	91
11	172	66	106	155	62	93	122	44	78
12	125	51	74	116	42	75	132	59	74
13	145	63	82	130	56	74	144	51	93
14	141	46	95	141	53	88	137	61	76
15	155	64	91	149	58	91	134	45	89
16	140	55	85	149	60	89	154	60	94
17	133	48	83	129	49	80	121	46	75
18	163	66	97	149	55	94	135	52	82
19	180	79	101	196	80	116	165	63	102
20	103	49	54	104	46	58	141	57	84
21	133	52	81	115	48	67	147	64	83
22	150	55	96	136	51	85	130	51	79
23	157	61	96	148	60	88	165	66	98
24	140	51	89	144	59	85	132	45	87
25	130	51	79	133	57	76	147	59	88
26	109	40	69	137	59	78	147	59	88
27	142	56	86	130	54	76	143	56	87
28	174	74	100	168	69	99	152	62	90
29	144	58	86	137	59	78	152	61	91
30	125	41	84	119	46	73	121	46	75
31	160	74	86	177	80	97	135	54	81
32	141	61	80	95	38	57	128	51	77
33	139	54	85	144	59	85	146	57	89
34	106	39	67	108	41	67	131	50	81
35	123	48	75	132	53	79	129	52	77
36	121	48	73	119	52	67	120	46	74
37	124	52	72	119	44	75	128	42	86
38	151	60	91	143	56	87	132	53	80
39	136	52	84	119	45	74	149	62	87
40	135	48	87	116	42	74	108	39	69
Mean	136.9	54.2	82.7	133.5	53.3	80.3	137.4	53.2	84.2
Standard Deviation	18.4	9.4	10.8	19.5	9.6	11.1	13.9	7.7	7.9

*T refers to Total Stem Adjustment Scores; I refers to Impersonal Stem Adjustment Scores; P refers to Pronoun Stem Adjustment Scores.

TABLE XXII

ADJUSTMENT SCORES OBTAINED BY SUBJECTS
ON ISB FORMS COMPRISING SUB-GROUP PRESENTATION SEQUENCE III

Subject Number	ISB Form								
	Average Person			Rotter ₁			Rotter ₂		
	T*	I	P	T	I	P	T	I	P
1	135	54	81	132	56	76	131	57	74
2	147	53	94	148	60	88	145	59	86
3	143	56	87	131	52	79	128	49	79
4	165	68	98	168	70	99	156	68	88
5	127	51	76	132	55	77	142	57	85
6	172	72	100	145	58	88	134	55	79
7	164	68	96	149	59	90	159	62	97
8	147	46	101	139	48	91	154	58	96
9	126	49	77	128	45	83	129	48	81
10	141	52	89	141	56	85	146	57	89
11	113	40	73	92	32	62	105	45	60
12	109	38	71	125	44	81	113	41	72
13	139	58	81	133	59	74	139	56	85
14	145	59	86	130	58	72	129	54	72
15	138	56	83	135	54	81	130	54	77
16	109	38	71	124	40	84	120	42	78
17	137	54	83	140	53	87	151	67	84
18	150	68	82	165	73	92	150	66	84
19	126	48	78	114	51	63	117	50	67
20	130	55	75	129	50	79	114	42	72
21	129	53	76	101	51	50	93	42	51
22	148	59	89	141	47	94	137	46	91
23	103	40	63	94	40	54	99	40	59
24	114	44	70	105	45	60	122	55	67
25	136	56	80	129	58	71	122	51	71
26	118	46	72	111	42	69	100	35	65
27	153	55	98	125	43	82	138	44	94
28	137	54	83	124	50	75	131	52	81
29	135	45	90	133	55	78	133	52	81
30	131	54	77	129	51	78	125	50	75
31	139	49	90	133	49	84	113	46	67
32	159	64	94	153	68	86	159	65	94
33	151	60	91	160	70	90	165	70	95
34	113	41	72	120	43	77	124	47	77
35	141	58	83	149	59	90	140	53	87
36	136	47	89	133	51	82	147	58	89
37	147	62	85	137	56	81	126	50	76
38	144	54	90	130	51	79	127	46	81
39	146	58	88	150	60	90	154	63	91
40	131	53	79	121	49	73	109	44	66
Mean	136.9	53.4	83.5	132.0	52.8	79.4	131.4	52.4	79.1
Standard Deviation	15.7	8.3	9.1	16.8	8.6	10.6	17.6	8.4	10.9

*T refers to Total Stem Adjustment Scores; I refers to Impersonal Stem Adjustment Scores; P refers to Pronoun Stem Adjustment Scores.

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TABLE XXIII

ADJUSTMENT SCORES COMPUTED BY SAME SCORER
ON INITIAL AND SUBSEQUENT SCORINGS OF ISB'S
COMPRISING SAMPLE OF ROTTER ISB DATA

Subject Number	Rotter ISB data					
	Initial scoring			Subsequent scoring		
	T*	I	P	T	I	P
1	163	67	96	165	68	97
2	143	56	87	141	59	82
3	148	59	89	138	54	84
4	130	48	82	129	45	84
5	127	49	78	129	54	75
6	146	63	83	140	59	81
7	133	58	75	126	53	73
8	116	36	80	119	38	81
9	146	62	84	147	62	85
10	125	49	77	124	48	77
11	149	64	85	152	65	87
12	109	43	66	111	45	66
13	126	50	76	122	46	76
14	110	39	71	111	42	69
15	137	57	80	137	51	86
16	172	66	106	172	69	103
17	136	51	85	136	51	85
18	119	46	73	117	46	71
19	123	48	75	124	44	80
20	132	55	77	127	53	74
21	159	62	97	162	63	99
22	141	56	85	146	56	90
23	125	44	81	131	48	83
24	133	59	74	123	52	72
25	139	56	85	139	56	85
26	129	54	72	122	54	67
27	129	50	79	125	49	76
28	93	42	51	97	42	55
29	122	51	71	121	51	70
30	113	46	67	113	47	66
Mean	132.4	52.9	79.6	131.5	52.3	79.3
Standard Deviation	16.5	8.9	10.1	16.5	7.8	10.3

*T refers to Total Stem Adjustment Scores; I refers to Impersonal Stem Adjustment Scores; P refers to Pronoun Stem Adjustment Scores.

APPENDIX B

PRESENTATION OF COPIES OF TEST MATERIALS

NAME _____ CLASS _____ DATE _____

COMPLETE THESE SENTENCES TO EXPRESS YOUR REAL FEELING. TRY TO DO EVERY ONE.
 BE SURE THAT YOU MAKE A COMPLETE SENTENCE.

1. I like
2. The happiest time
3. I want to know
4. Back home
5. I regret
6. At bedtime
7. Boys
8. The best
9. What annoys me
10. People
11. A mother
12. I feel
13. My greatest fear
14. In High School
15. I can't
16. Sports
17. When I was a child
18. My nerves
19. Other people
20. I suffer
21. I failed
22. Reading
23. My mind
24. The future

F NAME _____ CLASS _____ DATE _____

COMPLETE THESE SENTENCES TO EXPRESS THE REAL FEELING OF THE AVERAGE PERSON YOUR SEX AND AGE. TRY TO DO EVERY ONE. BE SURE THAT YOU MAKE A COMPLETE SENTENCE.

1. She likes
2. The happiest time
3. She wants to know
4. Back home
5. She regrets
6. At bedtime
7. Boys
8. The best
9. What annoys her
10. People
11. A mother
12. She feels
13. Her greatest fear
14. In High School
15. She can't
16. Sports
17. When she was a child
18. Her nerves
19. Other people
20. She suffers
21. She failed
22. Reading
23. Her mind
24. The future

NAME _____ DATE _____ EXAMINER _____

PERSONAL-SOCIAL DATA SHEET

School Address Phone

Home Address Birthplace

Other Residences

Birthdate Sex Color Marital Status

Education Major Minor

Occupations

Religious Preference

Social Activities

Interests

Financial Status

Physical Status

PARENTS:

Age Mo Marital Status
..... Fa

Social Status Education - Mo
..... Fa

Financial Status

Home Adjustment

SIBLINGS:

Number - Br Age Education
.....
St
.....

General Personal-Social Adjustment:

APPENDIX C

PRESENTATION OF COPIES OF VARIOUS LETTERS SENT TO
THE STUDENTS SELECTED FOR THIS RESEARCH

BOWLING GREEN STATE UNIVERSITY

Bowling Green, Ohio

DEPARTMENT OF PSYCHOLOGY
Psychology Clinic

Date _____

Dear _____

Would you please report to Mr. Walter at the Psychology Clinic at your earliest convenience during this week?

The following is a list of times during which Mr. Walter will be present at his office: Monday and Wednesday 9-12, 1-3, and 4-5;
Tuesday 9-12, and 1-5.

This is not urgent but it is important that you give this request your prompt consideration. The Psychology Clinic is located directly East of the Women's Building and his office is just across the hall from Room 11 in the Psychology Clinic Building.

Yours truly,

Psychology Clinic

BOWLING GREEN STATE UNIVERSITY

Bowling Green, Ohio

DEPARTMENT OF PSYCHOLOGY
Psychology Clinic

Date _____

Dear _____

Last week you received a letter requesting you to report to Mr. Walter at the Psychology Clinic. To date, he has not heard from you.

Would you please try to see him sometime during this week? The following is a list of times during which Mr. Walter will be present at his office:

Monday and Wednesday 9-12, 1-3, and 4-5;

Tuesday 9-12, and 1-5.

It is important for him and the clinic that you give this request your prompt consideration. The Psychology Clinic is located directly East of the Women's Building and Mr. Walter's Office is just across the hall from Room 11 in the Psychology Clinic Building.

Yours truly,

Psychology Clinic

BOWLING GREEN STATE UNIVERSITY

Bowling Green, Ohio

DEPARTMENT OF PSYCHOLOGY
Psychology Clinic

Date _____

Dear _____

The purpose of this letter is to inform you that the research project in which you had participated at the Clinic has been completed.

At your convenience, and if you so desire, you may come to the Clinic for an evaluation and interpretation of your record and to ask any questions which you may have had about the project.

If you do wish to see Mr. Walter, please stop at his office for an appointment.

The following is a list of times during which Mr. Walter will be in his office:

Monday and Wednesday 9-12 and 1-3.
Tuesday and Thursday 1-5.

Yours truly,

Psychology Clinic

An Abstract of
A COMPARISON OF THE ADJUSTMENT SCORES
OBTAINED BY COLLEGE FRESHMEN WOMEN ON TWO FORMS
OF AN INCOMPLETE SENTENCES BLANK

Verne A. Walter

Submitted in partial fulfillment
of the requirements for the degree
of Master of Arts

BOWLING GREEN STATE UNIVERSITY

BOWLING GREEN, OHIO

May, 1952

WALTER, VERNE A., M.A., May, 1952. Psychology

A Comparison of the Adjustment Scores Obtained by College Freshmen Women on Two Forms of an Incomplete Sentences Blank. (92pp.) No.

Faculty Advisor: Frank C. Arnold.

Problem:

This study was designed as a means of making certain comparisons of the adjustment scores obtained by college freshmen women on two forms of an Incomplete Sentences Blank (ISB). The specific objectives were to determine: (1) the extent to which the Rotter Incomplete Sentences Blank and a second, varied form of the Rotter ISB may give similar adjustment scores for the same individuals; (2) the extent to which these forms may be interchangeable; and (3) the test-retest reliability of the Rotter ISB.

Procedure:

The sentence completion devices employed were these: (1) two Rotter ISB's--self-reference forms; and (2) one Average Person ISB--a variation of the Rotter ISB, an average person-reference form. The Rotter ISB was composed of forty stems which were characterized as being either impersonal or referring to the first person. The Average Person ISB was composed of the same forty stems as the Rotter ISB with the exception that all first person pronouns were changed to the third person--she or her. Sentence completions on these ISB forms were scored in accordance with the scoring principles and examples presented in the Rotter ISB Manual.

The subjects used were 120 freshmen women students who volunteered to participate in the research. The students were enrolled at Bowling Green State University for the fall semester of 1951.

The experiment was designed so as to permit the three ISB forms to be assigned and administered to the subjects in three different orders of presentation without systematic biases as to the possible test presentation sequences or the assignment of test presentation sequences to the subjects. The ISB forms were administered, individually, to each subject at approximate time intervals of one week between test administrations.

Findings:

The findings of this study were as follows. (1) The adjustment scores obtained by the same individuals on two forms of an ISB (the Rotter ISB and the Average Person ISB) showed only a moderate relationship. The coefficient of correlation for total adjustment scores was .55. (2) The two ISB forms may not be administered interchangeably. (3) There was a fairly high degree of consistency existing between the adjustment scores obtained by the same individuals on the test and retest of the Rotter ISB. The coefficient of reliability for total adjustment scores was .82. (4) The mean total adjustment scores and standard deviations computed from the Rotter ISB data of the present study were found to differ significantly from those presented in Rotter's normative study.