DEPENDABILITY OF RESPONSES ON PERSONALITY ADJUSTMENT INVENTORIES: EFFECT OF INSIGHT INTERACTING WITH SELF-SERVING MOTIVES

By

GARDNER BROWNING WALKER

Bachelor of Science

Southwestern Institute of Technology

Weatherford, Oklahoma

1936

Master of Science

Oklahoma Agricultural and Mechanical College

Stillwater, Oklahoma

1948

Submitted to the Faculty of the Graduate School of

the Oklahoma Agricultural and Mechanical College

in Partial Fulfillment of the Requirements

for the Degree of

DOCTOR OF EDUCATION

July, 1952

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Thesis Approved:

Gary A. Lackey
Thesis Adviser

L L Reed

Harry K. Bobbitt

N. Conger

A. B. McCulloch
Dean of the Graduate School

PREFACE

A felt need for investigation of whether on conventional personality adjustment inventories the subject's responses represent the facts of his confidential self-appraisal encouraged this writer to undertake such research. The initial study was begun in October of 1946, and employed anonymous, free-response "wish ballots" as instruments for obtaining the subjects' confidential statement of their dissatisfactions and problems. That research, however, proved incapable of testing the basic hypothesis, and was accordingly relegated to the status of pilot study, from which this present study evolved.

Besides the standard administering procedure, this present research employs two special experimental administering procedures: a fully anonymous procedure and a "best answer" procedure. Three typical group-type paper and pencil adjustment inventories were administered under each of the three procedures, to all subjects of the sampling population of 128 high school juniors. Mean differential scores of the anonymous and standard procedures were treated statistically for testing the basic hypothesis.

This present study is addressed to all psychologists, educators, and others who have occasion to be concerned with administering personality adjustment inventories, or with the evaluation and interpretation of the responses and scores obtained.

To the following faculty members and students of North High School, Stillwater, Oklahoma, the writer wishes to express his profound gratitude for their courtesy and cooperation in assisting with obtaining the data:

to Lawrence Crable, dean of boys, and the 1946 freshman class, for their cooperation in securing the data for the pilot study; to Dr. Joe E. Timkin, principal, for his willingness to suffer the disruptions of routine class schedules, and to Miss Ethel Markwell for administering the three adjustment inventories under the conventional procedures; and especially to the members of the 1948-49 junior class for serving as the sampling population.

Doctoral theses are not constituted of significant basic problems, thorough investigations and competent statistical treatment alone, but from these necessary elements compounded in a matrix of human personalities. No verbal acknowledgement can adequately portray the writer's appreciation for the assistance he has received from Professor Guy A. Lackey, Dr. S. L. Reed, Dr. Harry K. Brobst, and Dean N. Conger. Throughout the years during which this thesis has been in preparation, Professor Lackey, as Thesis Adviser, and the members of the committee have unfalteringly contributed that which was so crucially needed, especially that warmth of human understanding, encouragement and patient forbearance.

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CHAPTER I

INTRODUCTION

The growth and development of psychological testing and measurement instruments is still in the early stage of infantilism. The occurrence of multiple conditions in the same individual--conditions which represent a scientific event consisting of extremely complex dynamic processes inextricably interacting--always brings up the question of relationships and inter-relationships of these conditions and factors to one another and to the configuration-as-a-whole. In striving to assess the human organism with psychological instruments, the relative whole is not fully comprehended--just as anything complicated is not comprehended by the infantile minds of children, idiots, imbiciles, and the like. But frequently a brief and limited assessment of some particular segment or element of the human organism-as-a-whole serves as sufficient justification for multitudes of the most heterogeneous predictions about this unnatural whole. Statistics and other word-relations have frequently come to take predominance over actualities, in spite of the fact that most of us would readily agree that it is not sufficient that the relationship of two or more facts can be <u>interpreted to mean something</u>, but would insist that the <u>facts must also be something</u>.

More than in any other field of psychology, the study of personality is handicapped by a confusion of meanings, terminology, definitions, and interpretations. Accustomed as we are to the divergent claims, assertions, and theories concerning the reliability and validity (dependability) of other group-type instruments for mental measurement, the confusion regarding

reliability, validity, and interpretation of personality adjustment inventories is almost without parallel. Second only to academic aptitude (so-called I. Q. assessment), personality adjustment is the most frequently documented component of pupils and students throughout the common schools and colleges of the United States. Up to the present time it has proved possible to develop decidedly more adequate and dependable tests of such attributes as academic aptitude, finger dexterity, mechanical ability, and the like than it has to develop dependable tests in the complicated field of personality adjustment. Many personality adjustment tests would seem to be more imaginatively fertile than creative, and it has been said that these have made the literature on personality testing the richest source we possess of misinformation about testing and evaluating personality behavior disorders. Many observed "facts" which are presented as being incontrovertible would often seem to represent only coincidence, and evidence has not been sufficiently examined.

Fundamentally, the over-all question of over-all validity of paper and pencil group-type personality adjustment inventories—i.e., will these instruments actually do the clinical job they are supposed to do, in the sense of adequately differentiating between well-adjusted and maladjusted individuals?—resolves itself into two interconnected constituent spheres of questioning.

First of all is the question of adequacy and validity of the instrument itself: Is the instrument capable of actually testing that which it purports to test, personality adjustment? In order to do this, any personality adjustment inventory would necessarily have to satisfy two requirements: (a) That the aggregate of the several items be of such content and scope to encompass broadly and thoroughly the over-all fulcra of conflicts; or, in other words, it would have to "keep faith with the total personality by

seizing upon patterns of behavior large enough to include the global entity of the human personality;" and (b) that the instrument record and interpret the responses without ambiguity.[1]

Secondly, there is the sphere of questioning as concerns the dependability of the responses the subjects give when marking their answers to the items on the inventory. Assuming that the subject consents to take the test, then dependability of per se responses he makes would seem to be contingent upon two factors: (a) whether he knows the truth about himself as called for by the test item, and (b) whether he chooses to reveal what he confidentially believes to be the truth about himself in the matter. To investigate this second contingency is the essential purpose of this present research.

In such areas as subject matter and performance testing it has been found possible, if necessary precautions be taken, to reduce cheating to a negligible minimum approaching zero. In the area of assessing personality adjustment, however, no dependable method has been discovered for making sure that the subject does not utilize his insight to evade making "not-right" responses to some of the items on the inventory. And it follows, of course, that to whatever extent a subject utilizes his insight to "falsify" his responses, then to that extent there is a loss of score dependability. To investigate the alleged insight utilized on standard administering procedures is the purpose of this study.

Before formulating a statement of the basic problem, however, it would seem advisable to point out and explain the implied assumptions inherent in contingency (b) as stated in the second paragraph above.

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[1] Department of Superintendence, Tenth Yearbook, "Character Education," (Washington, D. C., 1932), p. 362.

The clause "whether he chooses to reveal" implies that, when faced with a choice of two or more responses, the subject has the ability to discern which response he should give to evade revealing the truth about himself; and, further, it is implied that he may choose to employ this ability.

This is tantamount to saying: (a) that the subject may have the ability to discern the "right" answers, and (b) that he may choose to employ this ability to evade giving the "not-right" responses--i.e., responses which he evaluates as being indicative of maladjustment in his personality. This "ability to discern the 'right' answers" is termed insight, and if it is employed by the subject to evade giving "not-right" responses, then his score is spurious and undependable by reason of this distortion.

Statement of the Problem

Fundamentally and essentially, this research seeks to investigate one basic question: When taking conventional personality adjustment inventories, under standard, orthodox administering procedures, do the respondents employ insight to evade giving "not-right" responses?

Present Research Evolved from Earlier Study

Actually, this present research represents an extensional application and expansion of the "findings and implications for further research" obtaining from an earlier study, begun in November 1946, that wound up in a cul-de-sac. Now, some six years later, it is relatively unpainful to refer to the earlier research as the "pilot study," since such was its destiny--although assuredly such a role was entirely unsuspected throughout the many months during which long and laborious hours were spent securing the data and searching the results.

But early in the planning and launching of this present study, inestimable values accruing from the pilot study became apparent. And the crucial, if not imperative, necessity for having conducted the pilot study has become more evident as this research has progressed toward completion. A few of the profitable outcomes will be highlighted here and evidence of others may be discovered in later sections of this work.

Both studies concerned with same basic assumption.--First of all, it should be mentioned that both the pilot study and this present research are predicated upon and proceed from the same fundamental underlying assumption: When taking conventional personality adjustment inventories under standard, orthodox administering procedures, the subjects are in some degree motivated by self-serving interests and tend to evade revealing those problems and dissatisfactions likely to draw painful criticism or social disapproval. The pilot study sought to test this hypothesis by way of brushing aside standardized personality questionnaires and employing instead a two-area self-devised free response anonymous "wish ballot." By "free response" is meant that the students were asked to state in their own words the things that were causing them the most unhappiness, trouble, and dissatisfaction; two areas were suggested, School Life and Home Life. It was assumed that such freedom of expression would avoid the limiting and "steering" effects of the structuralization present in conventional personality adjustment inventories. The subjects were instructed not to place their names or any other means of identification on the ballots, and they were promised absolute anonymity. In the end, the data proved incapable of testing the basic hypothesis, largely because the free responses could not be equated, either quantitatively or qualitatively, against the items on standardized personality questionnaires. By use of chi-square and the contingency coefficient,

quantitative treatment was accorded the data for relationships existing between (a) the two areas, School Life and Home Life, (b) the two sexes, and (c) the number of dissatisfactions stated and the educational level of the subject.

By way of abandoning the original hypothesis and formulating a new one--one that could be tested by the data collected--a finished piece of research, of sorts, could have been turned out. But this researcher chose instead to abandon the materials of the pilot study and retain the original hypothesis. This necessitated starting all over, undertaking entirely new research that might be more adapted to adequately testing the original hypothesis.

Use of typical personality inventory in experimental test-taking situation imperative.--From the cul-de-sac outcome of the pilot study came the realization that for testing the basic hypothesis a typical conventional personality adjustment inventory, or inventories, would have to be employed in both the control test-taking situation and in the experimental test-taking situation. In other words, to adequately investigate the problem and test the basic hypothesis, it would be necessary to give the same personality adjustment inventory to the same population of subjects, (a) under the standard administering procedure as the control test-taking situation, and (b) under another and different administering procedure (anonymous procedure, probably) as the experimental test-taking situation directed toward obtaining the secret, confidential self-concept responses of the subjects. It was reasoned that the mean scores of the two administering procedures would admit of statistical treatment appropriate for testing the basic hypothesis.

Sampling population in the main identical for both studies.--The free response Anonymous Wish Ballots were administered to the freshman class of North High School, Stillwater, Oklahoma, in November of 1946; the

personality adjustment inventories used in this present research were administered to the junior class of North High School, Stillwater, Oklahoma, during the second semester of the 1948-49 school year. The majority of the junior class, 1948-49, was composed of the same students who took the Wish Ballots approximately two years earlier, when they were freshmen. At that earlier date the subjects were promised full and absolute anonymity, and the content of the statements they wrote on the Wish Ballots gave ample and gratifying proof that they believed and acted upon that promise of "shielding them from discovery." When this present undertaking was introduced to the assembled junior class, the subjects were reminded that the earlier promise of absolute anonymity had not been violated; also, certain modifications and changes in the school set-up were pointed out as having resulted from some of their confidential statements of dissatisfactions voiced on the Wish Ballots some two years earlier. It is believed that this previous contact--and contract!--with the sampling population was of material assistance in accomplishing good rapport with the subjects, and particularly was it valuable in securing their cooperation on the experimental test-taking situation (which was labeled Anonymous Z-Procedure).

Basic Hypothesis of this Research

In expanded form, the basic hypothesis may be stated as follows: When taking typical group-type personality adjustment inventories under standard, orthodox administering procedures, (a) the subjects possess the ability to discern the "right" answers to some of the items, and (b) this insight may be utilized to evade giving "not-right" responses, even though in his confidential self-concept the subject believes the "not-right" response to be true about himself. This statement will be replaced by a shorter and more concise re-statement, after briefly defining and clarifying the terms.

"Standard, orthodox administering procedures" refers to the regular administering instructions prescribed by the maker of the test. This includes the identification material and the directions that appear on the test paper itself; for purposes of this research, all such instructions require the subject to identify himself by placing his name or some other identification on the test paper.

By the term "right" answer is meant a response which according to the test-maker's instructions is considered not indicative of problems or maladjustment within the personality. Conversely, "not-right" responses refers to those responses which are considered to be indicative of problems or maladjustment within the personality.

The term insight is used to denote the ability to discern the "right" answer to an item on a personality adjustment inventory. The subject's "self-concept" refers to the subject's secret and confidential appraisal of himself. Since possessing insight would of necessity be prerequisite to utilizing insight, item (a) of the expanded statement of the hypothesis may be deleted.

Final statement of basic hypothesis.--Stated in more concise and comprehensible form, the basic hypothesis becomes: When taking typical group-type personality adjustment inventories under standard, orthodox administering procedures, the subjects employ insight to evade giving "not-right" responses.

Overview of Materials and Procedure

Typical group-type inventories selected.--Three personality adjustment inventories were administered: (1) Bell Adjustment Inventory, Student Form; (2) California Test of Personality, Secondary Form A; and (3) the Mooney Problem Check List, High School Form. Selection of these was based on two criteria: (a) being widely used in the secondary schools of the United

States, and (b) being heterogeneous as to scope and content, categorizations, and methods of quering the subject.

Sampling population.—The 128 members of the junior class of North High School, Stillwater, Oklahoma, comprised the sampling population of this research. The sampling population was divided into three groups for purposes of rotating the different tests and the different administering procedures. Each of the three inventories was administered under each of the three different administering procedures, and a complete battery of nine test performances was obtained for 110 subjects, 57 girls and 53 boys.

Three administering procedures employed.—The three test-taking situations used were as follows:

1. The special, anonymous procedure—labeled "Anonymous Z-Procedure"—under which the subjects were assured full and absolute anonymity and were instructed and encouraged to "make your answers reveal the actual you, the 'as is' you as you confidentially believe yourself to be." It was assumed that under this administering procedure the subject's confidential self-concept of how the test item applied to himself would function to integrate his goal-directed behavior. It was expected that placing him behind this screen of anonymity would render negligible, or at least reduce materially, his motivation toward securing a favorable score or creating certain impressions. In other words, it was hoped that under the Anonymous Z-Procedure the subject's responses would reflect his confidential appraisal of himself with a minimum amount of his attention being directed toward ascertaining whether he was giving the "right" or "not-right" responses.

2. The special, "best answer" procedure—labeled Best Answer X-Procedure—under which the subjects were instructed to disregard how the items applied to themselves and, instead, give the responses they believed

most indicative of ideal adjustment; in other words, try to make the highest score possible. Under this procedure it was assumed that the subject's ideal-concept of adjustment would integrate his goal-directed behavior, and, consequently, his score would define his ceiling of insight.

3. The standard procedure--labeled Standard Y-Procedure--under which the subjects were given the instructions prescribed by the makers of the test being administered. It was assumed that the subjects' performance under this procedure would be typical of them when taking personality adjustment inventories under standard, orthodox administering procedures. In other words, it was expected that under this procedure the subject's responses would to some extent be determined by what his social-concept dictates as being a socially permissable-acceptable level of adjustment.

Overview of Treatment of Data

Early in this thesis it should be established that adequately testing the basic hypothesis depends on the efficacy of the Anonymous Z-Procedure in defining the subject's basal level of adjustment. The Anonymous Z-Procedure was devised, of course, to obviate the subject's motivation of seeking to evade making "not-right" responses to items on the inventories. To whatever extent this is accomplished, then any positive differential that exists between the mean "not-right" score of the Anonymous Z-Procedure and the mean "not-right" score of the Standard Y-Procedure is produced by the subjects' utilizing insight on the Standard Y-Procedure to evade giving "not-right" responses.

Treatment was first accorded the distributions obtaining from each of the three administering procedures when the "not-right" scores of all three

inventories were pooled together. For each of the three paired combinations of the administering procedures, and for "available insight" and "used insight," the following were computed: (1) Critical ratios of the mean score differentials, and (2) the zero order intercorrelations. These computations were made for (a) the total population of 110 boys and girls, (b) the partial population of 53 boys, and (c) the partial population of 57 girls. Also, critical ratios were obtained on the mean score differentials existing between the two sexes, each administering procedure. Partial correlations were computed for all these combinations, but they were abandoned because they seemed to offer nothing of any consequence.

Secondly, treatment was accorded the distributions of "not-right" scores made on each personality adjustment inventory separately, under each of the three administering procedures. Critical ratios of mean score differentials were computed for each of the three paired combinations of administering procedures, for each of the inventories. These computations were made for the total population and for each sex separately. Also computed were the critical ratios of the mean score differentials between the two sexes (a) under each procedure, and (b) for each inventory separately.

CHAPTER II

REVIEW OF THE LITERATURE

With the incidence of puberty and adolescence, and throughout that period of uncoordinated and inarticulated growth and experience, there comes about in the individual a definite upswing of interest in his personality adjustment. With the time rapidly approaching when he must find a mate, a career or a job, and establish a working relationship between himself and life in general, this is to be expected. In response to this interest and demand on the part of the students, educators have responded by widespread employment of group-type paper and pencil personality adjustment inventories. Notwithstanding the tongue-in-cheek, suspect attitudes that have developed on the part of both testees and testers, demands and compliant usage have continued to grow and spread unchecked.

Actually, the initial and continuing historical trend of personality assessment has been quite similar to that of other psychological instruments concocted for testing and measuring other psychological aspects of the human individual. Some person or group of persons emerges with a formulation of one sort or another that portends to assess validly this-or-that human attribute. Then, being somewhat blinded by the assumed and inferred significance of the "discovery," self-reflexive enthusiasm mounts an ever-expanding spiral, marching to the cadence of loud drums and cries of "Eureka! This is it--I've been hit! etc." With the passing of time, however, the more

alert-minded come to realize that here again is an instrument, that, even assuming optimal dependability, has but translated into linguistic "map" symbols some one or more of the valid characteristics of the "territory" that is the human organism-as-a-whole.

Those in the forward ranks of the search for the answer to the question, "What is the organism human?" are coming more and more to realize that the human organism represents a scientific event whose process consists of a mad dance of electrons, different every instant and never repeating itself, embracing complex dynamic processes of very fine structure, acted upon by and reacting upon the rest of the universe, and inextricably connected with and dependent upon everything else. Or, in the exact words of Alfred Korzybski:[1]

> If we enquire how many characteristics we should ascribe to an event (human organism), the only possible answer is that we should ascribe to it <u>infinite</u> numbers of characteristics since it represents a process which never stops in one form or another; neither, to the best of our knowledge, does it repeat itself.

Every science has prejudices concerning its unexplored territories. But it is in this borderland between the known and the unknown that new scientific progress takes place, usually beginning with a critical examination of those unproven assumptions by which the mind protects itself against the discomfort of admitting ignorance and against the uncertainties of the unknown. To administer personality adjustment inventories under conventional procedures and complacently go about recording the scores and ratings obtained is one thing, whereas seeking to discover the subject's secret, confidential appraisal of himself in order to apply psychodynamic principles to help him achieve a more harmonious adjustment is something else entirely.

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[1] Alfred Korzybski, <u>Science and Sanity</u>, (Lakeville, Connecticut, 1950), p. 387.

Survey of Related Studies: General

In a study as early as 1915, L. C. Cogan, A. M. Conklin, and H. L. Hollingworth[2] reached the conclusion that "in self-rating there is a tendency to overestimate those qualities considered desirable and to underestimate those considered undesirable." The same conclusion is drawn and emphasized by Gordon W. Allport[3] twenty-two years later.

And even as far back as 1908, Ernest Jones was saying:[4]

> Every one feels that as a rational creature he must be able to give connected, logical and continuous account of himself, his conduct and opinions, and all his mental processes are unconsciously manipulated and revised to that end. No one will admit that he ever deliberately performs an irrational act, and any act that might appear so is immediately justified by distorting the mental processes concerned and providing a false explanation that has a plausible ring of rationality. These justifications bear a special relation to the prevailing opinion of the circle of people who are most significant to the individual concerned (fear of censure, disapprobation, social disapproval, etc.) and two different groups of false explanations can be distinguished according as they are formed essentially for the individual himself or for him in special reference to the opinions of his circle, or roughly speaking, according as they are formed mainly for private or mainly for public consumption. (Itallics added.)

In this present research, a special administering procedure, the Anonymous Z-Procedure, was devised for the explicit purpose of rendering negligible the subjects' motivation for offering "false explanations for public consumption." And it may be that in some instances the Anonymous Z-Procedure materially reduces the subject's motivation for offering false explanations to himself.

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[2] L. C. Cogan and A. M. Conklin, School and Society, 2 (Spring, 1915), p. 171-179.

[3] Gordon W. Allport, Personality: A Psychological Interpretation, (New York, 1937), p. 444.

[4] Ernest Jones, Journal of Abnormal Psychology, (August-September, 1908).

Concerning the trend of research in personality, G. T. Buswell has this to say:[5]

> Researches in personality have followed a different pattern from studies in mental measurement, learning, and curriculum. The clean-cut scientific studies in the field of personality are fewer, objectivity of data is less emphasized, and reliability of findings is overlooked.

Continuing along the same lines, Albert Ellis says:[6]

> While the reliabilities of personality questionnaires have been notoriously high, their validities have remained more questionable. Indeed, some of the most widely known and used paper and pencil personality tests have been cavalierly marketed without any serious attempt on the part of their authors to validate them objectively. Many of the studies reporting positive validations are suspect on several counts: (a) they were done by the authors of the test in question, who frequently went to every extreme, particularly in their interpretations of statistical significance, to obtain favorable results; (b) the groups of subjects employed for validating purposes were often unusually test-sophisticated or biased ones, and could be expected to answer more honestly than normal subjects . . . . The majority are not objective or clinical validations at all, but are essentially little more than statistical checks and balances on the particular method of test construction that has been employed. Naturally, these internal consistency "validations" rarely fail.

In this same study, which sought to summarize the findings of those studies that have reported clinical validations, Ellis draws this final conclusion:[7]

> It is concluded that group-administered paper and pencil personality questionnaires are of dubious value in distinguishing between groups of well-adjusted and maladjusted individuals, and that they are of much less value in the diagnosis of individual adjustment or personality traits.

Many psychologists have stated unequivocally that paper and pencil personality adjustment inventories have, at present, a low, or at least

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[5] G. T. Buswell, "Structure of Educational Research," Phi Delta Kappan, 24 (December, 1941), p. 167.

[6] Albert Ellis, "The Validity of Personality Questionnaires," Psychological Bulletin, 43 (September, 1946), p. 385.

[7] Ibid., p. 426.

disappointing, degree of validity. For example: Gilliland,[8] Maller,[9] Roback,[10] Rosenweig,[11] Thorpe,[12] Traxler,[13] Vernon,[14] and Wiley and Trimble.[15] Confirming these impressions of the dubious worth of group-type personality tests, a recent study by Kornhauser[16] showed that the majority of leading psychologists hold these personality testing instruments in low repute. Kornhauser asked 67 well-known psychologists this question: "In the field of personality testing, how satisfactory or helpful for present practical use do you consider personality inventories and questionnaires (such as the Bernreuter, Bell, Humm-Wadsworth, etc.)?" Only 1.5 per cent

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[8] A. R. Gilliland, "Problems of Personality," Journal of Abnormal Social Psychology, 23 (December, 1928), pp. 369-378.

[9] J. B. Maller, "Character and Personality Tests," Psychological Bulletin, 31 (July, 1934), pp. 501-520.

[10] A. E. Roback, "Personality Tests--Whither?" Character and Personality, 1 (January, 1933), pp. 214-224.

[11] S. Rosenweig, "A Basis for the Improvement of Personality Tests with Special Reference to the Masculinity-Femininity Battery," Journal of Abnormal Social Psychology, 26 (February, 1932), pp. 415-421.

[12] Louis P. Thorpe, Psychological Foundations of Personality (New York, 1938).

[13] A. E. Traxler, "The Use of Tests and Rating Devices in the Appraisal of Personality," Educational Research Bulletin No. 23, Revised Edition (1942).

[14] P. E. Vernon, "The Attitude of the Subject in Personality Testing," Journal of Applied Psychology, 18 (June, 1934), pp. 165-167.

[15] L. N. Wiley and O. C. Trimble, "The Ordinary Objective Test as a Possible Criterion of Certain Personality Traits," School and Society, 43 (July, 1936), pp. 446-448.

[16] A. Kornhauser, "Replies of Psychologists to a Short Questionnaire on Mental Test Developments, Personality Inventories, and the Rorschach Test," Educational and Psychological Measurements, 5 (Spring, 1945), pp. 3-15.

considered them highly satisfactory; 13.5 per cent said moderately satisfactory; 36 per cent rated them doubtfully satisfactory; 33 per cent said rather unsatisfactory; and 16 per cent rated them highly unsatisfactory.

Although the foregoing materials represent only a small sampling of the case against the validity of personality adjustment inventories, perhaps such is sufficient to establish the point that the dependability of these instruments is certainly suspect of being spurious.

For purposes of reviewing and summarizing the materials thus far surveyed, there seems to be no better source than to again quote Albert Ellis:[17]

> Ever since Woodworth brought forth his Personal Data Sheet in 1917, psychologists have never hesitated to point out defects in personality schedules and to question their validity. Among the points that have been raised against paper and pencil personality tests have been these:
>
> 1. There is a general over-estimation, or self-help effect when normal persons take personality questionnaires.
> 2. Some personality questionnaires are "validated" against other questionnaires from which, in turn, their items were largely taken, thus rendering their "validations" spurious.
> 3. Even when the respondent does his best to answer questions truthfully, he may lack insight into his true behavior or may unconsciously be quite a different person than the picture he draws of himself on the test.
> 4. While low scores on personality schedules may mean something, high scores may mean nothing at all, and may, in fact, indicate serious maladjustment.

There is, of course, as always in controversial matters, another side to the question. Again quoting Ellis, the case for the defence of the validity of these instruments is summarized as follows:[18]

> In spite of the many assaults that have been made against it, the paper and pencil personality test has got along splendidly as far as usage is concerned. Some of the reasons for widespread usage may be found in the following points which are often made in its favor:

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[17] Ellis, op. cit., pp. 388-389.

[18] Ellis, loc. cit.

1. Personality questionnaires are standardized instruments that can be handled in an objective, statistical fashion.
2. They are usually very easy to administer and score.
3. They almost always have some degree of validity, since even when the respondents state that they do things that they really don't perform (or vice versa), the fact that they state that they act in such a manner is an important one for the understanding of their personalities.
4. Statistical analysis shows that the traits posited by questionnaires have a real existence and are not the result of chance factors.
5. Personality testing is still very young, and as it becomes more refined may yet throw much light on our understanding of human nature.
6. It does not matter if respondents answer untruthfully on personality questionnaires, since allowances are made for this on the standardization or scoring of the tests.
7. The questionnaire may be employed as a formalized interview, and may thereby give valuable personality information.

It is to be noted that all the materials surveyed up to this point have been concerned essentially with the over-all validity of the instruments themselves. Such materials are related to this present study, but only in a general sort of way: It is to be remembered that this present research is fundamentally concerned with investigating the question as to whether, under standard administering procedures, the subjects utilize insight to evade giving "not-right" responses. In other words, this research seeks to investigate the dependability of the subjects' responses (response validity) rather than the validity of the testing instruments themselves. Also excluded from investigation by this research is the question as to whether the subject knows the truth about himself as it applies to the test item to which he is responding.

In the numbered statements summarizing the main objections and the principal merits of personality questionnaires, however, there are some statements that by their implicit and/or implied premises would seem to point up the need for this present research. For example: (a) "There is a general over-estimation, or self-halo, effect when normal persons take

personality questionnaires." This statement refers to taking the questionnaires under conventional administering procedures, no doubt, and certainly such a premise preceded the basic assumptions of this present research. (b) " . . . even when the respondents state that they do things that they really don't perform (or vice versa), the fact that they state that they act in such a manner is an important one for the understanding of their personalities." In this statement is the direct admission that the responses the subjects make may not square with their actual behavior. As an aside, it is perhaps well to point out that the latter part of this statement—"the fact that they state that they act in such a manner is an important one for the understanding of their personalities"--presumes that clinical or objective validation exists to determine whether the "stating" is in agreement with their actual behavior. Such a presumption would seem to be begging the question, since there is no way of ascertaining whether the respondent is introjecting the behavior in compliance with the dictates of his "ideal-concept." (c) "It does not matter if the respondents answer untruthfully . . . since allowances are made for this in the standardization or scoring of the tests." This statement also admits that the subjects may answer untruthfully, but seeks to dismiss this as being of no consequence by way of voicing a claim that simply does not apply to any personality adjustment inventories known to this researcher other than the Minnesota Multiphasic Personality Inventory (MMPI). The MMPI, together with recent research findings and modifications, will be discussed later in this chapter.

Assuming that the foregoing materials suffice to delineate the general pros and cons of the validity and usefulness of personality adjustment inventories administered under conventional procedures, it seems appropriate to turn now to the materials more specifically related to this present research.

Survey of Related Materials: Specific

During the last decade the need for development of scales to indicate test-taking attitudes and their effect upon scores obtained on paper and pencil personality adjustment inventories has become rather widely recognized. A survey of research to date indicates that practically all of these have been carried on with the Minnesota Multiphasic Personality Inventory (MMPI).[19, 20, 21, 22, 23] This is to say that the MMPI has been carried farthest in the direction of seeking to prune out the effects of the respondents' having utilized insight into the "right" answers to create certain impressions or secure a favorable score. To date a total of six so-called "validity" scales have been constructed, each of which, when applied to the completed set of responses, seeks to refine out and/or compensate for the effects of certain test-taking attitudes believed to

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[19] J. C. McKinley, S. R. Hathaway, and P. E. Meehl, "The Minnesota Multiphasic Personality Inventory: VI, the K Scale," Journal of Consulting Psychology, 12 (January-February, 1946), pp. 20-31.

[20] P. E. Meehl and S. R. Hathaway, "The K Factor as a Suppressor Variable in the Minnesota Multiphasic Personality Inventory," Journal of Applied Psychology, 30 (November-December, 1946), pp. 425-564.

[21] M. E. Smoke and N. J. Ziesner, "Relationship between Subtle-Obvious Keys and the K Scale of the Minnesota Multiphasic Personality Inventory," Advisement Bulletin of the Minneapolis Veterans Administration, 1946.

[22] Daniel Wiener, "Subtle and Obvious Keys for the Minnesota Multiphasic Personality Inventory," Journal of Consulting Psychology, 12 (May-June, 1946), pp. 164-170

[23] Lawrence P. Blumn, "A Comparative Study of Students Preparing for Five Selected Professions Including Teaching," Journal of Experimental Education, 16 (September, 1947), pp. 31-76.

have negative effects upon the dependability of the score (response validity). In brief, the purpose behind devising these six "validity" scales was to render out the misrepresentations after such misrepresentations have been interwoven into the over-all performance on the test. In the opinion of this researcher, such a method of seeking to "distil out" can be considered valid and acceptable only if one disregards the tenets of the gestalt total configuration; and this writer is unable to accept such a reversal of his psychological orientation in exchange for the mere convenience of having a "valid" method of taking out the misrepresentations after they have entered into the matrix of the over-all test situation. Roughly speaking, it seems that no such compensating or validating scale could be satisfactorily valid or reliable so long as no account is taken of the possible effects upon the individual's other responses that may be wrought by his misrepresentation on one or more of the test items. In other words, it is maintained that when the individual misrepresents his personality adjustment to any one or more items on the test, then his responses to other items may be influenced by this misrepresentation.

Nevertheless, the MMPI holds the highest ratio of positive validations of any personality adjustment inventory "validated" to date, and by many reputable authorities it is considered to be the most reliable. Perhaps this is due, in part at least, to the partial effectiveness of the six "validity" scales, all of which owe their genesis to the realization that the respondents may have insight into some of the items on the personality inventory and may utilize this insight to evade giving "not-right" responses. This is, of course, the same hypothecation that this present research seeks to investigate.

From a study of 426 college students in 1947, J. A. Morris Kinber has this to say:[24]

> Items on the self-inventory type of personality test have been recognized to be different from those on other types of tests in one important particular. With the individual motivated to secure a favorable score or make a certain impression, he probably has greater ability to discern the answer which would contribute toward attaining his end than he has on a test of achievement, intelligence, or aptitude. This ability is closely connected with his insight into the items which appear on the inventory. His intention may not be accomplished unless he has this needed insight.
>
> Superficial consideration of the fact that scores on personality tests may be influenced by the desire to secure favorable scores or to create certain impressions may lead to the rejection of such tests as instruments of scientific value. Further thought, however, has led some psychologists to propose inquiries into the possibility of controlling this influenceability or at least of measuring it. Some have even suggested that this influenceability may be an asset, and that a study of the subject's score as influenced by his desire to make certain impressions or his score resulting from some "unorthodox" procedure, may render possible a diagnosis of the personality of the subject.

Stated in question form, the problem the Kinber study sought to investigate was: "To what extent do individuals have insight into the 'right' responses to items on a typical personality adjustment inventory?" The California Test of Personality, Secondary Form A, was used as the "typical personality adjustment inventory," and was administered under two procedures: (1) A special administering procedure in which the students were instructed to answer the questions "the way you think a happy and well-adjusted student at the University of Southern California would answer them," and (2) the standard administering procedure as prescribed by the authors of the test. In passing, it should be mentioned that this first or special administering procedure employed by Kinber is, for all practical purposes, the same as the Best Answer X-Procedure employed in this present

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[24] J. A. Morris Kinber, "The Insight of College Students into the Items on a Personality Test," Educational and Psychological Measurement, 8 (Autumn, 1947), pp. 411-420.

research. Kimber summarizes his findings as follows:[25]

> Among the findings which indicate that students have a high degree of insight into items on the test were (1) the high scores (of adjustment) on the first procedure (the special, "best answer" procedure), and (2) the amount of difference between the total mean scores on the first and second administering procedures, the higher score appearing on the first procedure for both men and women. (Critical ratios of the difference between the means were 4.6 and 10.8 for the men and women respectively.)

Further reference to the Kimber study will be made in Chapter III, by way of comparing the performance of his sampling population of college men and women with the performance of the high school boys and girls who served as the sampling population of this present research. It should be pointed out, however, that although the Kimber study is of all studies surveyed the one most closely related to this present research, still the resemblance is only partial and quite superficial. The Kimber study did seek to ascertain the extent to which respondents have insight into the "right" answers to items on a typical personality adjustment inventory, but his investigation limited its search to the insight available over and above whatever amount of insight might have been utilized in attaining the standard procedure score. This writer raises no question as to the validity of Kimber's conclusions, but it should be emphasized that his study did not undertake to discover whether the respondents utilized insight to evade giving "not-right" responses on the standard administering procedure. The essential resemblance of the two studies is that both employ a special administering procedure (labeled Best Answer X-Procedure in this present research) aimed at defining the respondents' upper limit or ceiling of insight, and the Kimber study used the California Test of Personality, Secondary Form A, which is one of the three inventories employed in this present research.

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[25] Ibid., pp. 419-420.

A third and final study winds up all the specifically related research that could be found. This is the study by Douglas Spencer, published in 1938.[26] In the process of compiling An Adolescent Personality Schedule, which was patterned after the Thurstone Personality Schedule, Spencer employed an "anonymous" administering procedure which sought to obtain more truthful answers from the respondents. Subjects were given to understand that the test was part of the regular school program, and it was administered by the regular home room teachers. No names were placed on the papers, but only the age, birth date, sex, and grade—all of which, albeit, might have the effect upon the subjects of immediately arousing the suspicion that this material would be used for identifying the testee and therefore the promise of anonymity was insincere and should be disregarded.[27] It was emphasized to the testees, however, that there was no possible means by which they could be identified with their responses--and this even with the home room teachers administering the tests! Spencer explains his purpose in using an anonymous procedure: "We hoped the children might make their answers more spontaneously and more honestly if they were sure the replies were to remain genuinely anonymous for all time."

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[26] Douglas Spencer, The Fulcra of Conflict (New York: World Book Co., 1938).

[27] (Author's explanatory statement) On the anonymous procedure used in this present research, this same information was asked for on the special instructions that were mimeographed and cemented over the test-maker's instructions. Fortunately, however, in the very first meeting, when the project was introduced and explained to the sampling population, one of the subjects pointed out the fact that such information could be used for identifying the testees, simply by comparing with the permanent records in the principal's office. Accordingly, from that point on the subjects were instructed to disregard filling in the information on the face of the test and to place only their secret number in the space provided. Also, it should be pointed out that the Anonymous Z-Procedure of this research was administered by this researcher, practically a stranger to the sampling population, and the subjects were promised that their papers would not be handled nor seen by any other person.

Spencer's findings are as follows: (1) No sex difference, and (2) the results were consistent with those on the Thurstone Personality Schedule--application of the Spearman prophecy formula gave a reliability coefficient of .84.

It should be noted that here again no actual and concerted effort was made to measure the amount of insight respondents utilize to deny or cover-up their confidential beliefs about themselves. Spencer's study is mentioned here principally because it did recognize that respondents may utilize insight to evade giving "not-right" responses and he sought to overcome the effects of this by way of employing an anonymous administering procedure to obtain more spontaneous and honest responses.

Summarization of the specifically related materials may be made as follows:

1. The three studies surveyed--considering all the studies focusing on the MMPI as one study, since all were made upon the one personality inventory--are in agreement on one thing: When taking personality questionnaires under standard administering procedures, respondents have insight into some of the items and they may distort their scores--and hence the dependability of their ratings--by way of utilizing this insight to evade giving "not-right" responses.

2. The studies on the MMPI sought to construct "validating" scales (or carry further the validation of scales already devised) for checkmating or "correcting out" the score distortions after the subjects had already utilized insight to evade giving "not-right" responses.

3. The Kimber study, employing the California Test of Personality as a typical paper and pencil personality questionnaire, sought to determine the "unused insight" over and above whatever amount of insight might have been utilized in attaining the standard procedure score.

At the expense of risking--if not inviting!--the charge of being unnecessarily repetitious, it would seem advisable to point up the unique tenets of this present research by way of stating its objectives in terms of what the related studies have neither done nor sought to do. None of the studies surveyed has sought to devise any system of test-administering procedures by which any of the following questions could be adequately investigated:

1. When taking typical group-type personality adjustment inventories under standard administering procedures, do respondents utilize insight to evade giving "not-right" responses, and, if so, is the amount of distortion statistically significant?

2. What relationship exists between the amount of insight the respondent allegedly utilizes on the standard procedure--i.e., the amount of distortion--and his basal level of maladjustment as might be revealed under some "unorthodox" administering procedure aimed at obtaining his confidential appraisal of himself?

3. What relationship exists between the amount of insight the respondent possesses and the amount he utilizes on the standard procedure?

4. Is there a sex difference on any of the above relationships?

This present research investigates and accords statistical treatment to all the above questions.

The three studies mentioned in the foregoing pages are all that have been discovered during some four years of searching--and even these are only somewhat related and near-relevant. The search has been broad, but the findings have been slim; for example, the following reply was received from the Library Research Service of the Encyclopedia Britannica, under date of May 31, 1949:

My Dear Mr. Walker:

A member of my staff has been investigating your request of May 12, but, I am sorry to say, with scant success. A careful investigation of available library sources failed to reveal any information on your particular aspect of personality adjustment inventories.

The enclosed report is being sent merely to indicate a few of the many library sources we have consulted in an effort to find the information you desired.

Yours sincerely,

V. A. Stenberg
Director of Research

On this partial list submitted, there was no source mentioned that had not been surveyed already by this researcher.

As has been mentioned earlier, in none of the research surveyed has there come to light as having been made any effort to devise a system of test administering procedures and sequences for obtaining the individual's confidential responses for comparison with his responses made on the same personality questionnaire administered under conventional procedures. Without such a "bedrock" assessment score, how could it be hoped to discern (a) how much insight the respondents possess, or (b) how much they ordinarily utilize in the conventional test-taking situation?

Some Preliminary Evaluations

In the Preface of this thesis the basic problem, in question form, was stated as follows: When taking conventional personality adjustment inventories under standard, orthodox administering procedures, do the respondents utilize insight to evade giving "not-right responses? In other words, do the responses represent the full and unreserved facts of the subjects' confidential appraisal of themselves?

No more than a cursory examination of the related materials surveyed is required to reveal that practically every study evinces implicit and/or

implied premises that answer this question in the affirmative. Empirical experience and evidence, as well as creditable research and expert opinion, indicate that in the social situation prevailing in the conventional test-taking situation the subjects are to some extent reacting to their "fear of discovery" and in trying to cover up they are likely to employ insight to evade giving "not-right" responses to some of the items. But how much, and of what significance? Although the responses given on the standard administering procedure may be suspect of distortion, still that proves nothing.

Hence, no claim of uniqueness is made for the basic problem and hypothesis of this research; both represent but reiterations of antedated premises that have been repeated many times over. But for the method of investigating the problem and testing the basic hypothesis--specifically the system and sequence of test-administering procedures employed--however, claim is laid not only for uniqueness but also for whatever distinction may be due such an innovation. It is believed that the singular qualities of this method of investigation will become convincingly evident as one follows through the course of this study.

In the initial stage of planning this present research, it was realized that for adequately testing the basic hypothesis some special test-administering procedure must be devised for eliminating, or at least materially lessening, the respondent's motivation allegedly directed toward creating certain impressions or securing a favorable score. This is tantamount to saying that a test-taking situation was needed in which the subject would be minimally concerned with ascertaining whether he was giving the "right" or "not-right" responses, and would be, instead, more concerned with giving the responses that would reflect his confidential appraisal of himself.

Such a special administering procedure was devised, as was mentioned in the Preface, and detailed description and explanation of it will be given in the next chapter. It is well to emphasize here, however, that adequately testing the basic hypothesis--and hence the worth of this research--depends fundamentally upon the efficacy of this special administering procedure as used in the method and procedure of carrying on this research. The other special administering procedure (labeled Best Answer X-Procedure), aimed at defining the respondent's upper limit or ceiling of insight, is only of auxiliary significance in this research, and it is used for purposes of rounding out the investigation of the question of insight and to obtain data for testing secondary postulations. As is to be expected in any research of significance, additional correlates, findings, and implications of some importance derived from treating the data in the process of testing the basic hypothesis. Three of the more important ones will be mentioned here and others will be met with in the research proper, in the sequence of their discovery and identification.

If the basic hypothesis be substantiated, the following extensions and implications are of major importance and should be given serious consideration. The first of these will be accorded statistical treatment in this study, and the other two probably should have further investigation over and beyond the scope of this research.

1. An important correlate is the question of what relationship exists between the basal level of adjustment, as disclosed on the Anonymous Z-Procedure, and the amount of "used insight" or distortion.

2. Any such activity--i.e., the testee's taking personality adjustment inventories under standard procedures--predicating evasion, defensiveness, denial of self-realized facts, and inhibition of realistically acknowledging

and accepting the self on a reality basis, sets a pattern and encourages practices of maladjustment per se, and therefore may contribute to nurturing the growth of mental ill-health. Further, on the basis of "common sense" psychology and some amounts of dependable clinical data, it would seem safe to assume that the "screen" or evaluative filter of the subject's culturally determined social conscience (social-concept) would most effectively and consistently differentiate and inhibit expression of those "not-right" responses the subject determines to be most seriously in conflict with his concept of what constitutes a socially permissable-acceptable level of adjustment. In other words, if the subject utilizes insight to evade giving "not-right" responses, then probably the items applying to his most serious conflicts are the ones first to be denied and held in closest secrecy.

3. Since the self-same invalidating dynamisms were functioning in the respondents composing the standardizing population of the personality questionnaires, then it follows that the established norms of such instruments are suspect of being spurious.

Psychological Orientation of this Research

More than in any other field of psychology the study of personality is handicapped by a confusion of meanings, terminology, and definitions. All psychology at this time suffers from the fact that the man in the street considers himself an authority on the subject. Having lived as a human and with humans all his life, is he not adequately informed as to what constitutes human nature and "horse sense" psychology? This attitude is particularly in evidence when the layman considers the term "personality."

Not only are there wide divergences between popular views and scientific views, but still more unfortunate, there exist broad controversies and

disagreements among psychologists themselves. There are many "systems" of psychology, but all "systems" and varieties aim, each in its own way, at a better understanding of the mind of men.

Dynamic-Psychoanalytic (Psychodynamic) orientation.--In the main, it is the manifold psycho-logical individuality of the organism-as-a-whole in an environment-as-a-whole that engages the attention of psychologists of the dynamic-psychoanalytic orientation. And such is the orientation of this researcher. Dynamic psychology studies the whole individual and how he adjusts to situations--both outer and inner--that he confronts; the ways in which he seeks to satisfy his inner drives from the physical and social world in which he lives. Understanding leads to control, and dynamic psychology, by studying the factors which govern adjustment, provides the principles which must be used in the control and direction of adjustment. If one wants to help an individual to overcome adjustment difficulties or to achieve hidden potentialities of his personality, then an understanding of the dynamic factors of the subject's personality is highly important, a knowledge of dynamic principles is essential. Implied in these statements, to be sure, is the need for rolling back the screen of defensiveness, assuaging the feelings of "fear of discovery," and securing a comprehensive view of the individual's confidential appraisal of himself. Certainly it would seem to be impossible to successfully apply psychodynamic principles to bring the patient into a more satisfactory adjustment with his environment and to assist the harmonious development of his capacities unless the unsatisfactory and non-harmonious factors can be discovered and identified.

According to Alexander and French:[28]

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[28] Franz Alexander and Thomas M. French, Psychoanalytic Therapy, (New York, 1942), pp. viii; 8.

> Every maladjustment, neurosis, or psychosis comes about as a result of failure of the individual to deal successfully with a given situation, a failure to find socially acceptable gratification for his subjective needs under the given circumstances . . . .
>
> Conflicting standards--being in some degree mutually exclusive or in diametric opposition--contribute more than anything else to that emotional insecurity which is the most common basis for maladjustment and neurotic disturbance . . . It is a fundamental conflict of our present cultural era.

Basic nuclear conflict common to all humans.--Within every human organism there exists one basic, fundamental nuclear conflict: the conflict between (1) self-assertive rivalry or hostile competitive tendencies and (2) help-seeking dependence or passive dependent wishes. This conflict arises from the clash between (a) the individual's anti-social (id, ego, self-seeking) drives and impulses, and (b) the demands prescribed upon him by the social culture and implanted in his conscience (superego)--the uppermost psycho-dynamic force (superordinated psychodynamic agent) integrating his behavior when he responds as an individual cooperating in a social situation. This last statement technically describes the individual testee and his test-taking attitude when he is responding to items on a personality adjustment inventory administered under standard, orthodox administering procedures.

Standard administering procedures deploy the respondents in a culturally-conditioned social situation.--Under conventional methods of taking personality questionnaires, the respondent, by reason of being identified with his responses, cannot escape the effects of the cultural conditioning that has become interiorized within himself and which tends to be the uppermost dynamic force in social situations. By reason of his responses being personalized through being identified with his person, it seems only reasonable to assume that his thoughts, feelings, and behavior in general are determined by his culture-conditioned conscience or superego.

Accordingly, so long as the testee is identified with his responses and score-rating, the responses he makes will to some extent--no doubt in some degree determined by his ability to discern the "right" answers--be those permitted and sanctioned as being desirable and acceptable to his culturally determined social conscience (social-concept).

By reason of his being identified with his responses--when taking any sort of paper and pencil test in a group situation--the respondent is deployed in a social situation. In such a social situation, the uppermost psychodynamic agent determining behavior is the culture-conditioned conscience or superego. In other words, the subject is motivated toward achieving what he considers to be a socially permissable-acceptable level of "not-maladjustment." Again, the testee's social concept of what constitutes being well-adjusted functions to integrate his goal-directed behavior in such a test-taking situation. Any responses he makes will have to pass through the screen or evaluating filter of his culturally determined social conscience. Accordingly, it is posited that under these conditions the subject will to some extent utilize whatever insight he has to evade giving "not-right" responses to some of the items on the test.

Although the instructions printed on the personality questionnaire may specifically assure the testee that there are no "right" or "wrong" answers, this is of small benefit; the testee is wise to the fact that the responses he makes will be graded by some sort of key and subsequently his responses and his score will be compared with the performance of others in the group and with certain standardized norms.

It should be pointed out also that on the basis of dependable clinical data, as well as "common sense" psychology, it seems safe to assume that

the screen or evaluating filter of the subject's culturally determined social conscience most efficiently and consistently differentiates between those thoughts, feelings, and behaviors most diametrically opposed or mutually exclusive within the nuclear conflict. This inference leads to the postulation that the individual's most anti-social thoughts, feelings, and behaviors are at the same time the elements most likely to be denied or suppressed in the social situation as embodied in the standard administering procedure.

Dissociation from social situation imperative.--Dissociation of the conscious mind, as in hypnotism, mental illnesses, and the like, seems to offer proof that such dissociation does render less powerful the control of the superego as well as the blocking power of the resistance and "censor-censure." This would seem to come about because the individual becomes less concerned about his individualistic or anti-social impulses being discovered. One could cite many examples of this, a few of which are: mob and riot reactions, the well-known "unusual" behavior of persons far from familiar habitat or in a strange land, in attendance at distant conventions, on vacation cruises, and so on. All these and many others serve to demonstrate the effect that losing identity has upon the behavior of the human organism.

It should be remembered that an intensional posit of the basic hypothesis is that wholly honest and candid responses are largely prohibited by administering personality adjustment inventories under standard, orthodox procedures. As an aside, it might be mentioned that the alleged validity of such tests may in large measure be only that consistency of responses predicated upon the set of values and standards prescribed by the identical and congruent factors common to the social culture, and by which all testees have been indoctrinated.

Losing identity crucially necessary.—The foregoing assumptions and deductions lead to the conviction that some administering procedure had to be devised that would enable the subject to lose his identity in the personality test situation. That is, of course, if it was expected to obtain from him his responses in terms of his confidential self appraisal (self-concept). To serve this purpose, the Anonymous Z-Procedure was devised. It was expected that under this procedure the subjects' responses would embody a greater number of "not-right" answers, and any reduction of this quantity on the standard administering procedure would represent the amount of insight used and consequently the amount of "cheating" or distortion.

CHAPTER III

METHODS, MATERIALS, PROCEDURE

As was stated earlier in this thesis, the fundamental concern of this research is that of investigating the basic problem, "When taking conventional personality adjustment inventories under standard, orthodox administering procedures, do the respondents employ insight to evade giving 'not-right' responses?" It follows, of course, that if such distortion is found to exist, then its statistical significance must be determined.

In the preliminary planning of this research it was decided that for adequately investigating the problem and testing the basic hypothesis, it would be necessary to give the same personality adjustment inventory to the same sampling population (a) under the standard administering procedure as the control test-taking situation, and (b) under another and different administering procedure (anonymous, probably) as the experimental test-taking situation directed toward obtaining the subjects' responses in terms of their confidential self-appraisal (self-concept). In line with the basic assumptions underlying this research, it was expected that the subjects would give more "not-right" responses in the experimental test-taking situation, and if this proved to be so, then the differential between the mean score of this procedure and the mean score of the standard procedure would lend itself to statistical treatment for testing the basic hypothesis.

Three Test-Administering Procedures Used

As was mentioned earlier, many ramifications and extensions flowered early in this research. Shortly after formulating the special administering procedure directed toward obtaining the subjects' confidential self-appraisal (the Anonymous Z-Procedure), it became evident that this research should also undertake to discover the total amount of insight the subjects possessed or had available. Accordingly, a second experimental test-administering procedure was decided upon; this procedure was aimed at defining the upper limits or ceiling of the subjects' insight. It was reasoned that the mean differential between this second experimental procedure and the Anonymous Z-Procedure would be the total amount of insight the subjects possessed or had available.

The three test-administering procedures used are as follows:

Anonymous Z-Procedure.--Under this special procedure the subjects were guaranteed full and absolute anonymity and were instructed and encouraged to make their answers reveal their confidential self-concept of their personality adjustment. It was realized, however, that a mere verbal promise is probably not sufficient assurance for a sampling population quite test-sophisticated; this sampling population was composed of the junior class of the only high school in a town where the state A. and M. College is located, and they had frequently served as respondents on various research projects conducted by students in the college. Frequently the testee has been given such verbal assurances as, "There's no 'right' or 'wrong' answers--just make the responses that you believe to be true, etc.," only to discover later, and to his discomfort and chagrin, that his over-all score and perhaps several of his particular responses have made him the object of negative conjecture and criticism. This researcher sought to

take proper precautions; simply, from the very beginning the subjects were told exactly how their anonymity would be safeguarded. First of all, each subject drew a secret number that remained known only to himself; this was all that he placed on the face sheet of the test papers.[1] As it was explained to the subjects, when they completed taking all the inventories under the three different administering procedures, then they would be given their six test papers on which their names appeared (Standard Y-Procedure and Best Answer X-Procedure), and in privacy they could block out their names with masking tape and place their secret numbers on these test papers as well. In other words, the subjects themselves rendered all their test papers anonymous, once they had completed them. Also, the subjects were assured that if at any time they wished to abandon taking the tests, they were free to do so without prejudice; and even on the day they collected all their test papers to make them anonymous entirely, they still could withdraw their materials from the research if they were not satisfied that their anonymity had been protected.

Best Answer X-Procedure.--Under this administering procedure the subjects were instructed to disregard how the items might apply to themselves and, instead, give the responses they believed indicative of ideal adjustment; in other words, they were told to try to make the highest score possible. It was assumed that in this test-taking situation the subject's ideal-concept of adjustment would integrate his goal-directed behavior and, consequently, his score would define his ceiling of insight.

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[1] Special instructions were mimeographed and cemented over the test-maker's instructions. These special instructions did originally call for additional information, besides the secret number, but this was abandoned before any inventories were taken under the Anonymous Z-Procedure, thanks to the question raised by one of the subjects.

Standard Y-Procedure.--This was the administering procedure prescribed by the authors of the test. Under this procedure it was assumed that the subjects' performance would be typical of that when taking personality tests under run-of-the-mill school conditions. (This procedure was administered by the faculty member regularly designated for giving such tests, and the two special procedures were administered by this researcher.)

With these three test-administering procedures, it was reasoned, this research would be able to discover and define the subjects' three different concept-levels of adjustment, as well as certain "absolute" qualities deriving from the score differentials that might exist between pairings of the different administering procedures.

1. On the Anonymous Z-Procedure, the responses being dictated by the subject's Self-Concept of Adjustment, it was expected that the testee would define his base level of adjustment;

2. On the Best Answer X-Procedure, the responses being dictated by the subject's Ideal-Concept of personality adjustment, it was expected that he would make the highest score possible, thereby defining his ceiling of insight into the "right" answers to the items on the test; and

3. On the Standard Y-Procedure, the subject's responses being dictated by his Social-Concept of desirable adjustment, it was presumed that the subject would define an intermediate level of adjustment.

All scores reported in terms of "not-right" responses; represent quantitative index of maladjustment.--Before describing the "absolute" quantities mentioned above, it is best to point out that in this research all numerical scores and the numerical quantities deriving from them are expressed in terms of "not-right" responses. As reported in this research, scores on any procedure represent a quantitative index of maladjustment. This applies also to the differential absolutes described below.

(a) The score differential between the Anonymous Z-Procedure and the Best Answer X-Procedure: if this differential is positive and in favor of the Z-Procedure, then it represents the total amount of "available insight."

(b) The score differential between the Anonymous Z-Procedure and the Standard Y-Procedure: if such a differential is found to exist, and is in favor of the Z-Procedure, then it represents the amount of "used insight," and is the same as the amount of distortion.

(c) Any score differential that exists between the Best Answer X-Procedure and the Standard Y-Procedure, if in favor of the latter, represents the amount of insight the subject declined to use--or, in other words, the number of "not-right" responses he chose to willingly disclose on the Standard Y-Procedure.

Statistical treatment was given the relationships existing between the performances for each paired combination of administering procedures, and also certain pertinent relationships existing between pairings of the absolute differential quantities and between these and the administering procedures. It should be pointed out, however, that if this investigation discovers a statistically significant mean differential of "not-right" scores on the Anonymous Z-Procedure as compared with the Standard Y-Procedure, then the basic hypothesis will have been substantiated. That is to say, if it is discovered that the subjects reveal significantly more maladjustment in the Self-Concept of the Anonymous procedure than they do in the Social-Concept of the Standard procedure, extensional implications and postulations will be tested and interpreted because of their close affiliation with the basic hypothesis; but such treatment is of secondary importance and has possibilities to offer only if the basic hypothesis be substantiated.

Amplification of the Three Administering Procedures

Explicit and detailed amplification of the preceding overview of the three different test-administering procedures, together with the differential absolutes deriving from them, is probably required for comprehensive understanding.

Before any tests were administered, the sampling population of 128 high school juniors (North High School, Stillwater, Oklahoma) was assembled and the project introduced and explained fully. At that time, each student drew at random a sealed envelope containing two gummed labels bearing a duplicated number; this number was known only to the subject who drew it, and it was the only identification he placed on any personality test he took under the Anonymous Z-Procedure. It will be remembered that these same subjects had taken a free response, anonymous "wish ballot" under the direction of this researcher some two years before, when they were freshmen; this was in conjunction with gathering the data for the pilot study mentioned previously. At that earlier time, full and absolute anonymity was promised the subjects, and the statements they wrote on the "wish ballots" gave ample and gratifying proof that they had believed and acted upon that promise of anonymity.

The following is a copy of the special instructions devised for the Anonymous Z-Procedure; this copy was cemented over the test-maker's printed instructions:

Do NOT put your name on this paper. YOUR SECRET NUMBER_____

___years and ___months is my AGE. I was BORN_____ ____, 19___
Month Day

BOY GIRL (Encircle one to indicate your SEX.)

_____is the sort of WORK or PROFESSION I
(Storekeeper, Farmer, Teacher, etc.)
plan to follow.

D I R E C T I O N S

SPECIAL "AS YOU ARE" INSTRUCTIONS: In taking this personality-adjustment inventory this time, you are asked to push completely out of your mind any thoughts about what you would like to be, any thoughts about what other persons might expect you to be--or any thoughts whatever about what you yourself or other persons might approve of (or disapprove of) your being.

You are to choose the answer that will reflect you--the "as is" Y-O-U! The real you as you know your actual feelings, problems, and dissatisfactions to be. The information you give need not agree with or be like anything you or anybody else ever expressed before. You cannot be identified with what you reveal, so forget about hiding or covering up anything whatever.

Indicate your answer to each question or statement by drawing a circle around the appropriate word--as it applies to you as you know yourself to be.

As has been stated earlier, on this administering procedure it was expected that the subject would establish his basement or cellar floor level of adjustment. Here the individual, behind the screen of anonymity, should be able to reveal his confidential appraisal of his personality adjustment without any fear of losing status within the social group. Also, he should be able to face up to himself on a more realistic basis, and if so, then

some amount of therapeutic gains might be expected: by way of moving in the direction of a more realistic evaluation of his personality adjustment and by way of gaining insight into his intimately personal relationships with the reality situation.

The Anonymous Z-Procedure functions as an experimental test-taking situation, projection being the independent factor, the dependent factor being the differential of "not-right" responses between this procedure and the Standard Y-Procedure. For example: If the average subject rendered scores of 128 and 96 "not-right" responses on the Z-Procedure and the Y-Procedure respectively, then the differential of 32 (128 minus 96) is the dependent factor--and also it is the amount of "used insight" or distortion evident in the score made on the Standard Y-Procedure. It is this "used insight" or distortion that is the fundamental concern of this research.

Best Answer X-Procedure.--This procedure is discussed next because the Ideal-Concept of adjustment, which dictates the responses made on this procedure, can be expected to define the subject's upper limit or ceiling of insight. On this procedure the subjects were instructed and encouraged to disregard the facts about themselves and give the answers that would render the highest rating of personality adjustment. It is assumed that the subjects did not know the "right" answers to those items on which they gave "not-right" responses.

The Best Answer X-Procedure functions as an experimental test-taking situation in which introjection is the independent factor and the dependent factor is the differential spread between the score on this procedure and the score on the Anonymous Z-Procedure. This differential is determined by two boundaries: (1) the lower boundary (of adjustment) as defined by the number of "not-right" responses given on the Z-Procedure, and (2) the upper boundary, the subject's ceiling of insight, as defined by the number

of "not-right" responses on the X-Procedure. Any score on this Best Answer X-Procedure is the numerical quantity of "not-right" responses--i.e., the number of items to which the subject was not able to give the "right" answer--and represents the amount of maladjustment present in the subject's Ideal-Concept of personality adjustment. Similarly, any score on the Anonymous Z-Procedure is the numerical quantity of "not-right" responses and represents the amount of maladjustment present in the subject's Self-Concept of adjustment. The differential between these two, if in favor of the Anonymous Z-Procedure, represents the absolute quantity of "available insight." For example: If the average subject rendered scores of 48 and 128 on the X-Procedure and the Z-Procedure respectively, the differential of 80 "not-right" responses (128 minus 48) represents the amount of "available insight."

For the Best Answer X-Procedure the following special instructions were mimeographed and cemented over the test-maker's instructions:

NAME: _____ BOY GIRL
Last First Middle (Encircle one)

D I R E C T I O N S

Today I am giving you a personality-adjustment inventory with special, "as-if-you-were" instructions. The purpose in doing this is to discover how you believe the answers would be chosen to give a person the highest possible score-rating on personality adjustment.

Do not choose the answer that applies to you yourself as you are now or have been. Instead, choose the answer that you believe would be true for a person having the most desirable, ideal sort of personality-adjustment.

Remember: (Suggestion) Read each question carefully. Then ask yourself, "To make the highest score possible, what would the answer be?"

Then encircle the answer that is in accordance with your decision. In brief, forget about yourself and try to make the highest score possible!

Standard Y-Procedure.—This administering procedure consisted simply of following the test-maker's printed instructions and directions. As a precautionary measure aimed at insuring the typicality of the test-taking situation, all adjustment inventories under this procedure were administered by the school faculty member regularly designated for giving such tests. This procedure functions as the control situation in which the subjects demonstrate and define the amount of insight they ordinarily employ in run-of-the-mill personality adjustment test situations. Under this administering procedure the testee is responding to the dictates of his Social-Concept of permissable-acceptable adjustment, the subject's ability and willingness to employ insight determining the amount he will distort his score. To whatever extent the interaction of insight and self-serving motives may be present, the effect of that torque would be reflected here by way of reducing the quantity-score of "not-right" responses as disclosed on the Anonymous Z-Procedure.

Briefly, it was assumed that the subjects would respond in terms of three concept-levels of personality adjustment, stacked vertically: (1) At the bottom is his Self-Concept level, the way he confidentially appraises his personality adjustment: (2) at the top is his Ideal-Concept of adjustment, the level on which his aspirations are aimed—or on which he thinks they should be aimed; and (3) the in-between, intermediate level of adjustment that he displays or supposes he displays to other persons around him, his Social-Concept.

Materials

Selection of typical personality adjustment inventories for use in this research was based on two essential criteria: (a) That the tests be among those widely used in the secondary schools of the United States, and (b) that the three different tests be heterogeneous as to scope and content, categoricalizations, and method of quering the subject. The tests decided upon are named and briefly described in the following paragraphs.

(1) Bell Adjustment Inventory, Student Form.[2]—This inventory seeks to uncover the difficulties and maladjustments in the four areas of Health, Home, Social, and Emotional. Of the 140 items, 35 are in each area. On this inventory the student makes his response by way of encircling either "Yes," "No," or "?," although the instructions caution against using the "?" response unless the subject is absolutely unable to answer otherwise.

(2) California Test of Personality, Secondary Form A.[3]—This inventory is composed of 180 items to be answered by encircling either "Yes" or "No." The test-makers ascribe to this questionnaire the task of assessing the individual's "Self-Adjustment" and "Social-Adjustment," and to the balance between these two major areas is ascribed what is called "Life Adjustment—A balance between Social and Self-Adjustment." Each of the major divisions, Self-Adjustment and Social-Adjustment, is further broken down into six sub-sections composed of 15 items each. "Right" responses in Self-Adjustment are assumed to be indicative of feelings of personal security, and "right" responses in Social-Adjustment are assumed to be indicative of feelings of social security.

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[2] Hugh M. Bell, The Adjustment Inventory, Student Form, (Stanford University, 1934).

[3] Ernest W. Teigs et al., California Test of Personality, Secondary Form A, (Los Angeles, 1942).

(3) Mooney Problem Check List, High School Form.[4]--This check list consists of 330 phrases intended to make it easy for students to express their troublesome problems. The arrangement is similar to that of interest inventories except that the items on the Mooney represent problems rather than interests. The student first goes through the list and underlines the phrases and statements that describe problems that apply to himself personally; secondly, he returns to the beginning and comes through again, this time focusing his attention upon the items he has underlined and encircling the number of those that are of the most serious concern to him.

There are thirty items in each of the eleven areas of (1) Health and Physical Development; (2) Finances, Living Conditions, and Employment; (3) Social and Recreational Activities; (4) Courtship, Sex and Marriage; (5) Social-Psychological Relations: (6) Personal-Psychological Relations; (7) Morals and Religion; (8) Home and Family; (9) The future: Vocational and Educational; (10) Adjustment to School Work; and (11) Curriculum and Teaching Procedures.

In compiling the data of this research, an underlined item on the Mooney was counted as one problem or "not-right" response and an item both underlined and encircled was counted as two "not-right" responses.

Sampling population.--The 128 members of the junior class of North High School, Stillwater, Oklahoma, composed the sampling population of this research. The population was broken down into three groups for purposes of rotating the different personality questionnaires and the different administering procedures. "Two-way" rotation was carried out in this manner: On any given test day (spaced five to seven days apart) the three groups

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[4] Ross L. Mooney, Problem Check List, High School Form, (Columbus, Ohio, 1941).

each took a different personality adjustment inventory and under a different administering procedure. For example: First Round: Group 1 was given the Bell, Anonymous Z-Procedure; Group 2 was given the California, Standard Y-Procedure; and Group 3 was given the Mooney, Best Answer X-Procedure. Second Round: Group 1 was given the California, Standard Y-Procedure; Group 2 was given the Mooney, Best Answer X-Procedure; and Group 3 was given the Bell, Anonymous Z-Procedure. Third Round: Group 1 was given the Mooney, Best Answer X-Procedure; Group 2 was given the Bell, Anonymous Z-Procedure; and Group 3 was given the California, Standard Y-Procedure. This double rotation was carried on throughout the nine rounds. By employing such rotation and sequence spacing it was hoped that any possible learning effects and exchange of ideas amongst the students would be either cancelled out or reduced to a negligible minimum.

Summarization of this Chapter

1. A system of three different test-administering procedures was employed for defining three concept-levels of personality adjustment: (a) the Anonymous Z-Procedure, which sought to obtain the subject's confidential appraisal of himself and thereby define his Self-Concept level of personality adjustment; (b) the Best Answer X-Procedure, which sought to obtain the subject's maximum number of "right" responses as dictated by his Ideal-Concept level of adjustment; and (c) the Standard Y-Procedure, following the test-maker's instructions, under which it was presumed the subject would render a performance typical of the conventional personality test taking situation and define his Social-Concept level of permissable-acceptable personality adjustment.

2. Three typical personality adjustment inventories were selected: the Bell, the California, and the Mooney. Each inventory was administered under each of the three procedures, making a battery of nine tests for each subject. All scores and score-quantities were reported in terms of "not-right" responses, and represent a quantitative index of maladjustment.

3. The sampling population consisted of the 128 members of the junior class of North High School, Stillwater, Oklahoma. One hundred ten subjects (53 boys and 57 girls) came through with completed files of nine tests.

CHAPTER IV

RESULTS

Statistical Analysis and Treatment of Data

As was mentioned earlier, 128 juniors (North High School, Stillwater, Oklahoma) constituted the sampling population of this study. For a complete file or battery of tests, each student had to have completed nine different test booklets: each of the three adjustment inventories (Bell Adjustment Inventory, California Test of Personality, and Mooney Problem Check List, high school form.) under each of the three different administering procedures. The final number of students coming through with completed files, however, turned out to be 110, composed of 57 girls and 53 boys. Some 1,125 test booklets were fully scored, but only the 990 booklets belonging to the 110 students with completed files were used in this research.

Approximately one-fifth of the tests was IBM graded by the A. and M. College Testing Bureau; the balance was graded either by the writer or under his close supervision.

The Mooney Problem Check List, it should be remembered, consists of phrases similar to those on interest inventories except that the items are problems rather than interests. A quantity score on such a check list represents simply the number of "problems," which are tantamount to "not-right" responses. Accordingly, the scores on the Bell and California inventories were converted into "not-right" responses for quantitative treatment of all three inventories under each administering procedure.

In brief, it should be remembered that throughout this research all scores reported represent the number of "not-right" responses—the amount of maladjustment—revealed by the subjects' performance in any given test situation encompassed in this study.

In line with utilizing the data for testing the basic hypothesis and the more important extensions and implications, several groupings and cross-cutting arrangements were set up. The two sections composing Part I of this chapter accord treatment to the data obtained when the scores on all three personality adjustment inventories were pooled together; the two sections of Part II treat the data obtained on each personality adjustment inventory separately. In both Part I and Part II the first section seeks to discriminate between performances on pairings of the different administering procedures; the second section of both Part I and Part II accords treatment to sex differences.

PART I: AGGREGATE "NOT-RIGHT" RESPONSES OF ALL THREE TEST-ADMINISTERING INVENTORIES ON EACH PROCEDURE

Section A: Total Population of Boys and Girls Together

For a beginning approach to a description and interpretation of the results, a complete summarization of the data was set up in Table I. All quantities and relationships in this table are expressed in simple arithmetical terms. Further and more complex relationships and interpretations will be found in the content and statistical tables comprising later sections of this chapter.

ARITHMETICAL SUMMARIZATION, ALL DATA

	MEAN Maladjustment or "Not-Right" scores			M E A N Insight or Spread						
	"BEST ANSWER" X-Procedure (Ideal-Concept)	STD., ORTHODOX Y-Procedure (Social-Concept)	ANONYMOUS Z-Procedure (Self-Concept)	AVAILABLE INS'T (Z - X = A)	% A is of Perfect Score (A + Z)	HIDD INSIGHT (Z - Y = U)	% U is of A (U + A)	DECLINED INS'T (A - U = D)	% D is of A (D + A)	% DISTORTION (U + Z = Dist.)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
ALL INVENTORIES										
(1) Boys & Girls (N = 110)	48	96	128	80	63%	32	40%	48	60%	25.0%
(2) Boys only (N = 53)	60	98	131	71	54%	33	46%	38	54%	25.2%
(3) Girls only (N = 57)	38	95	126	87	70%	31	35%	56	75%	24.6%
BELL ADJ. INVENTORY										
(4) Boys & Girls (N = 110)	09	34	38	29	76%	04	14%	25	86%	10%
(5) Boys only (N = 53)	12	32	34	22	65%	02	09%	20	91%	06%
(6) Girls only (N = 57)	07	35	40	33	83%	05	15%	28	85%	13%
CALIFORNIA T. of P.										
(7) Boys & Girls (N = 110)	15	33	40	25	63%	07	28%	18	72%	18%
(8) Boys only (N = 53)	20	36	43	23	53%	07	26%	16	74%	16%
(9) Girls only (N = 57)	10	31	39	29	74%	08	28%	21	72%	21%
MOONEY CHECK LIST										
(10) Boys & Girls (N = 110)	25	30	50	25	50%	20	80%	05	20%	40%
(11) Boys only (N = 53)	28	31	54	26	48%	23	88%	03	12%	43%
(12) Girls only (N = 57)	22	29	46	24	52%	17	71%	07	29%	37%

Analysis and Interpretation of Table I

Columns 1, 2, 3 of Table I, being the mean "not-right" responses--mean maladjustment--disclosed on X-, Y-, Z-procedures respectively, would seem to be self-explanatory and therefore require no further comment. Columns 4 through 10, however, need both explanation and clarification as well as analysis and interpretation. And for purposes of more explicitly explaining these columns, it seems expedient to take like #1 and carry the explanation, analysis, and interpretation all the way across the table.

Mean "available insight" ("A") and mean "used insight" ("U"): Columns 4 and 6.--These two differentials were found by following the tenets of the previously stated definitions of these quantities. It should be remembered that (1) the number of "not-right" responses of the Anonymous Z-Procedure represents the amount of maladjustment revealed in the Self-Concept and consequently is considered to be the basal maladjustment; (2) the number of "not-right" responses of the Standard Y-Procedure represents the amount of maladjustment disclosed in the Social-Concept; and (3) the number of "not-right" responses of the Best-Answer X-Procedure represents the amount of maladjustment evident in the Ideal-Concept, and is the subject's upper limit or ceiling of insight--the quantity-score being in terms of the number of items to which the subject did not have the ability to discern the "right" answers.

Accordingly, then, column 4, "available insight," being the differential absolute spread between (a) ceiling of insight evident in the Ideal-Concept and (b) the basal maladjustment revealed in the Self-Concept, is found simply by subtracting the X-Procedure mean score from the Z-Procedure mean score. Similarly, column 6, "used insight," being the differential absolute spread between maladjustment disclosed in the Social-Concept and the basal maladjustment revealed in the Self-Concept, is found by subtracting the Y-Procedure mean score from the Z-Procedure mean score.

Columns 5, 7, and 10.—From Table I, line 1, column 4, it is to be noted that the average subject of the sampling population demonstrated that he had the ability to discern the right answers to 80 more items than was reflected by his responses on the Anonymous Z-Procedure. And since this average subject would have needed the ability to discern the right answers to 128 items in order to render a perfect score, by dividing 80 by 128 it is discovered that some 63 per cent of the maladjustment disclosed in the Anonymous Z-Procedure could have been denied if the subject had elected to use all his "available insight" on the Standard Y-Procedure computations in column 5 were obtained in this manner.

Column 7, per cent of "available insight" used, was obtained as follows: It is observed that on the Standard Y-Procedure the average subject did use his insight to evade giving the "not-right" answers to 32 items. Since this is 32/80ths of his "available insight," conversion to per cent gives the figure of 40 per cent.

Column 10, per cent the basal maladjustment was distorted by insight used, was found by dividing the 32 items of used insight by the 128 items of maladjustment revealed on the Anonymous Z-Procedure. This figure is 25.0 per cent.

Columns 8 and 9.—Column 8 gives the amount of insight the average subject declined to use for purposes of decreasing the amount of maladjustment reflected on his Standard Y-Procedure score. In other words, on the Standard Y-Procedure the average subject of the total population, all inventories pooled together, willingly chose to admit 48 more items of maladjustment than he might have if he had chosen to use all his insight into the "right" answers. Column 9 expresses this "declined insight" in terms of per cent of "available insight."

Other groupings similarly follow above interpretations.--By taking any of the other lines numbering 2 through 12, the above explanations and interpretations hold, except, of course, for differences in magnitude of the different numerical quantities.

Per cent of distortion most pertinent to basic hypothesis.--As has been pointed out earlier, in testing the basic hypothesis of this research the amount of "used insight"--spread from the maladjustment disclosed on the Anonymous Z-Procedure, in the direction of decreasing the amount of maladjustment admitted on the Standard Y-Procedure--is of fundamental concern. Column 10 expresses this in terms of the per cent the "used insight" distorted the Anonymous Z-Procedure score. A glance at the table reveals that when all inventories were pooled together this per cent of distortion was 25 per cent (in round numbers) for each of the three population groupings. Dropping down to the three groupings under the Mooney Check List, it is noted that the percentages are much higher (being 40 per cent, 43 per cent, and 37 per cent) than on the other two inventories. This indicates, of course, that on the Mooney Check List distortion is greater than on either of the other two inventories. Similarly, by comparing the distortion by sexes, on each inventory separately, it is found that on the Bell and California the girls distorted their Z-Procedure score more than did the boys. Statistical treatment and significance of these and other preliminary observations will be found in later sections of this chapter.

Statistical Treatment

To obtain an overview of the composite performances, statistical treatment was first accorded the aggregate "not-right" responses of the total sampling population on the three adjustment inventories, for each of the three test-administering procedures. Following this, the sub-population

groupings of boys only and girls only were treated as integran populations and also were compared for sex differences. This same sequence of treatment was carried out for the "not-right" responses on each of the three adjustment inventories separately.

In Table II, columns 1, 2, and 3 give the standard deviations of the different test-administering procedures, all population groupings, and for the inventories pooled and for each inventory separately. Column 4 gives the critical ratios of the differences between the standard deviations of the Y-Procedure and the Z-Procedure, and column 5 shows the levels of confidence of these critical ratios.

Table III deals with the aggregate "not-right" responses of all three adjustment inventories, all population groupings, and gives (a) the critical ratios of the mean score differentials and (b) the zero-order intercorrelations found to exist between various pairings of the test-administering procedures.

Table IV deals with the "not-right" responses of each adjustment inventory separately, all three population groupings, and gives the critical ratios of the mean score differentials of each paired combination of administering procedures.

Table V shows the critical ratios of the sex differences on each administering procedure, for each adjustment inventory separately.

Critical Ratios or t-Tests

Evaluation and interpretation of the difference between any two means or any two standard deviations, as well as the significance of the zero-order intercorrelation coefficients, may well begin with testing the null hypothesis. In the case of the difference between two means, the null hypothesis is

TABLE II

STANDARD DEVIATIONS, ALL THREE POPULATION GROUPINGS

	"BEST ANSWER" X-Procedure (Ideal-Concept)	STANDARD Y-Procedure (Social-Concept)	ANONYMOUS Z-Procedure (Self-Concept)	Critical Ratio of SE of Difference between Z-Procedure SD and Y-Procedure SD.	Level of Confidence of Critical Ratio
	(1)	(2)	(3)	(4)	(5)
ALL INVENTORIES					
Boys and Girls	38.0	52.0	76.0	3.86	Above .01
Boys only	45.0	61.0	85.0	2.30	Above .03
Girls only	27.0	42.0	66.0	3.63	Above .01
BELL ADJ. INVENTORY					
Boys and Girls	12.5	16.2	21.2	1.69	Above .10
Boys only	12.1	18.9	21.0	xxxx	xxxxxxxxx
Girls only	12.3	17.3	20.9	xxxx	xxxxxxxxx
CALIFORNIA T. of P.					
Boys and Girls	18.3	20.9	22.4	0.82	No signif.
Boys only	23.1	23.6	25.4	xxxx	xxxxxxxxx
Girls only	10.0	17.6	19.0	xxxx	xxxxxxxxx
MOONEY CHECK LIST					
Boys and Girls	18.6	23.8	47.1	6.51	Above .01
Boys only	23.0	26.6	55.1	xxxx	xxxxxxxxx
Girls only	12.4	20.8	41.3	xxxx	xxxxxxxxx

stated: "Except for errors of sampling or other chance factors, no actual difference exists between the means of (1) X-Procedure scores and Y-Procedure scores, (2) X-Procedure scores and Z-Procedure scores, (3) Y-Procedure scores and Z-Procedure scores, or (4) 'available insight' ("A") and 'used insight' ("U")."

The following critical ratios of the difference between means were found to exist: (Table III)

Between X-Procedure scores and Y-Procedure scores,	5.61
Between X-Procedure scores and Z-Procedure scores,	7.11
Between Y-Procedure scores and Z-Procedure scores,	2.60
Between "available insight" and "used insight,"	5.76

For a sampling population (N) of 110, a critical ratio of 2.56 or larger is significant above the .01 level of confidence. Since in each of the four pairings above the mean difference has a critical ratio greater than the 2.56 required for .01 level of confidence, the null hypothesis is clearly rejected and it is concluded with a high degree of confidence that an actual and significant mean difference does exist in each of the four pairings set forth above.

Basic hypothesis substantiated.--As has been stated earlier, substantiation or retention of the basic hypothesis is contingent upon proof that "High school students have insight into the 'right' responses to items on typical personality adjustment inventories and under orthodox, standard administering procedures this insight is utilized for benefit of self-serving motives to an extent significantly distorting the scores and ratings obtained." This is tantamount to saying that positive proof must be had that in the Self-Concept of the Anonymous Z-Procedure the sampling population discloses maladjustment significantly greater than the maladjustment admitted in the Social-Concept of the Standard Y-Procedure.

TABLE III

CRITICAL RATIOS AND INTERCORRELATIONS

All Inventories Together: Total Population (B & G), Boys, Girls

	"BEST ANSWER" X-Procedure (Ideal-Concept)			STANDARD Y-Procedure (Social-Concept)			AVAILABLE INSIGHT (Z-Pro - X-Pro) "A"			USED INSIGHT (Z-Pro - Y-Pro) "I"		
	B & G	Boys	Girls	B & G	Boys	Girls	B & G	Boys	Girls	B & G	Boys	Girls
CR's Between Means of:												
Y-Procedure . . and	5.61	3.56	8.54	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Z-Procedure . . and	7.11	5.40	9.26	2.60	2.28**3.14		4.99	3.81	3.25	10.81	6.71	9.03
"Used Insight" and	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	5.76	2.85	5.82	xxxx	xxxx	xxxx
Zero r's Between Scores:												
Y-Procedure . . and	.50	.57	.38	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Z-Procedure . . and	.45	.47	.70	.70	.66	.76	.87	.85	.92	.72	.70	.58
"Used Insight" and	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	.73	.75	.73	xxxx	xxxx	xxxx

**The Critical Ratio of 2.28, of the boys' Anonymous Z-Procedure mean score over their Standard Y-Procedure mean score, is below the .02 level of confidence but is above the .03 level of confidence. All other critical ratios, and all zero r's, are above the .01 level of confidence.

For purposes of clarification the null hypothesis can be repeated with specific application to the mean difference existing between Z-Procedure scores and Y-Procedure scores: "Except for errors of sampling and other chance factors, no actual mean difference exists between the Z-Procedure scores and the Y-Procedure scores."

By Table I, line 1, the mean of the Standard Y-Procedure scores is found to be 96.0 "not-right" responses as compared with the Anonymous Z-Procedure scores mean of 128.0 "not-right" responses. This yields a mean difference of 32 in favor of the Anonymous Z-Procedure. By statistical formula the critical ratio of this mean difference is found to be 2.60 (Table III), which is slightly greater than the 2.56 required for .01 level of confidence.

This critical ratio of 2.60 tells us that if between the Standard Y-Procedure scores and the Anonymous Z-Procedure scores the actual or true mean difference were zero, the odds against our obtaining a mean difference so large as 32 are slightly greater than 99 to 1. Accordingly, the null hypothesis is clearly rejected and the basic hypothesis is substantiated.

In other words, it has been proved that the 110 high school juniors do have insight into the "right" responses to items on typical personality adjustment inventories and under standard administering procedures they utilize this insight for benefit of self-serving motives to an extent significantly distorting the scores and ratings obtained. This applies, however, only when the "not-right" responses on all three inventories were pooled together.

Anonymous Z-Procedure and Standard Y-Procedure markedly measure same quality.--The above conclusion embraces one implied postulation that requires further testing: that the Anonymous Z-Procedure tests the same

thing or things as does the Standard Y-Procedure. The answer to this may be found by analyzing and interpreting the correlation that exists between these two procedures. By Table III r_{zy} is found to be .70 which is significant above the .01 level of confidence and giving assurance that some degree of positive relationship does actually exist.

The numerical coefficient of .70 falls at the upper limits of the range designating "substantial or marked degree of relationship," and accordingly it is concluded that the two procedures are measuring the same thing to a substantial or marked degree—i.e., measuring personality adjustment or some segment of personality adjustment.

Further, remembering that the mean of the Anonymous Z-Procedure is 32 items of maladjustment more than that of the Standard Y-Procedure, and that this mean difference is significant beyond the .01 level of confidence, it is concluded that under the Anonymous Z-Procedure the measurement is significantly more thorough and complete. That is, the Self-Concept of the Anonymous Z-Procedure more accurately and realistically reflects the individual's maladjustment.

Subjects tend to maintain relative rank within distribution of each procedure.—From the above-mentioned correlation there is evident yet another relationship between the Self-Concept of the Anonymous Z-Procedure and the Social-Concept of the Standard Y-Procedure; namely, that the greater the amount of maladjustment disclosed in the Self-Concept, likewise the correspondingly greater amount of maladjustment admitted in the Social-Concept ($r_{zy} = .70$). Here, as in the relationships between Self- and Ideal-Concept ($r_{zx} = .45$) and Social- and Ideal-Concept ($r_{yz} = .50$), the individual tends to maintain his rank or standing with respect to the group. For example, a person attaining a percentile rank of 60 under the Anonymous

Z-Procedure distribution would tend to attain a percentile rank of 60 under the Standard Y-Procedure distribution. And since the individual tends to maintain his relative rank or standing within the distribution of each of these procedures, one might jump to the conclusion that the Anonymous Z-Procedure accomplishes no assessment materially different from that of the Standard Y-Procedure. But further thought reveals the fallacy of this contention.

Anonymous Z-Procedure measures maladjustment more accurately as to quantity and specific quality.—Although the individual does maintain his relative standing, yet it must not be overlooked that the Anonymous Z-Procedure mean score is 32 more "not-right" responses than the Standard Y-Procedure mean score.

If it may be assumed that the Anonymous Z-Procedure score represents the basal level of adjustment, and that the Standard Y-Procedure score represents the basal level of adjustment plus "used insight," then the following illustration might well apply:

Suppose we have two identical, accurate timepieces, "Z" and "Y." Clock "Z" is synchronized with observatory time, and clock "Y" is some two hours ahead. At any given instant each of the minute hands will bear to its dial a positional relationship identical with that the other bears to its dial; this represents the tendency of the subjects to maintain their relative standings with respect to the distribution of the Z-Procedure scores and the distribution of the Y-Procedure scores.

It is immediately evident that although both clocks are measuring time elapsed, only clock "Z" gives the actual time of day. Similarly, it would seem to hold that only the Anonymous Z-Procedure gives the actual Self-Concept of adjustment as the individual confidentially believes it to be.

It seems evident that the assessment by standard orthodox administering procedure identifies neither (1) the actual level of adjustment nor (2) the specific and particular problems in the individual's adjustment. Further, as was discussed earlier, it seems only reasonable to believe that the individual would cover up and deny first those undesirable qualities that he supposes would draw the most criticism and disapproval from his peers and superiors. If this be so, then administering adjustment inventories under standard, orthodox procedures is furnishing the educand with experience and practice in covering up and denying the very self-same problems and maladjustments most urgently in need of realistic appraisal and corrective treatment.

Coefficients of Correlation (Table III)

Having ascertained that the mean differences of the four pairings are actual and significant beyond the .01 level of confidence, and that the correlation between Anonymous Z-Procedure scores and Standard Y-Procedure scores indicates that these two procedures are to a substantial or marked degree measuring the same thing, it is now appropriate to explore further the coefficients of correlation that exist between the other three pairings. Before plunging into this task, however, it would seem advisable to briefly touch upon the meaning and interpretation of coefficients of correlation.

It should be pointed out that as concerns coefficients of correlation, such a level of confidence as does exist (.01, .02, .05, etc.) expresses the degree of warranty against chance occurrence of the numerical coefficient. In other words, with an r of .244 being required for .01 level of confidence, an r of .244 or larger simply means that only one time in 100 trials would an r this large be derived from sampling errors if the population r were actually zero. For evaluation of the coefficient--with respect to the

degree of relationship expressed by the obtained r--it is necessary to look to the numerical value of the coefficient. And for purposes of interpreting r in terms of verbal description, the following broad and somewhat tentative schedule of classification is employed:[1]

r from .00 to ≠.20 denotes indifferent or negligible relationship;

r from ≠.20 to ≠.40 denotes low correlation; present but slight;

r from ≠.40 to ≠.70 denotes substantial or marked relationship;

r from ≠.70 to ≠1.00 denotes high to very high relationship

Zero-order intercorrelations.--The following coefficients of correlation were found to exist between the indicated pairings, boys and girls together, all three inventories together (Table III):

Between X-Procedure scores and Y-Procedure scores,	.50
Between X-Procedure scores and Z-Procedure scores,	.45
Between Y-Procedure scores and Z-Procedure scores,	.70
Between Z-Procedure scores and "used insight,"	.72
Between Z-Procedure scores and "available insight,"	.67
Between "available insight" and "used insight,"	.73

Since all these coefficients are far larger than the .244 minimum required for .01 level of confidence, the null hypothesis is forthwith rejected and it is concluded that in each instance some degree of relationship does actually exist. This clears the way for evaluation of each of the numerical coefficients in terms of degree of relationship indicated, and for interpretation as concerns the basic tenets of this research.

Correlation between X-Procedure scores and Y-Procedure scores.--Considering the numerical coefficient as the indicator of the degree of correspondence or relationship, it is seen that the r_{xy} of .50 falls in the bracket designating substantial or marked relationship. Quite simply, this is interpreted to mean that a substantial or marked degree of positive

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[1] H. E. Garrett, Statistics in Psychology and Education (New York, 1947), p. 333.

correspondence exists between the amount of maladjustment present in the Ideal-Concept of the X-Procedure and the amount of maladjustment disclosed in the Social-Concept of the Y-Procedure, and conversely. In other words, it is discovered that persons making the highest scores on adjustment inventories administered under standard, orthodox procedures tend to be the same persons possessing the most nearly perfect Ideal-Concept, and conversely. And it should be pointed out that this is not to say that persons making highest scores under standard, orthodox administering procedures are the ones having the most ability to discern the right answers. Ability to discern the "right" answers is the same as "available insight" and must be measured from the basal maladjustment score of the Anonymous Z-Procedure.

Correlation between X-Procedure scores and Z-Procedure scores.--Again the numerical coefficient ($r_{XZ} = .45$) in this pairing is taken as the indicator of the degree of correspondence or relationship existing between the scores rendered under the two different procedures. The r_{XZ} of .45 falls within the range designating substantial or marked relationship. Here again this is interpreted to mean that a substantial or marked degree of positive correspondence exists between the quantity of maladjustment the individual holds in his Ideal-Concept of the X-Procedure on the one hand and the amount of maladjustment he discloses in his Self-Concept of the Z-Procedure on the other. Simply, the more "not-right" responses in the Ideal-Concept, a markedly corresponding number of "not-right" responses in the Self-Concept, and conversely.

The indications are, then, that the lower the person's Self-Concept of adjustment, likewise the less nearly perfect is his Ideal-Concept of adjustment, and conversely. This raises the question--which can only be asked at this time--whether the highly significant correspondence between Anonymous

Z-Procedure "not-right" responses and Best-Answer X-Procedure "not-right" responses is essentially due to lack of knowledge of what constitutes "right" adjustive behavior.

The above findings and interpretations are in close agreement with results and conclusions of recent clinical studies.[2, 3]

Further Correlations and Critical Ratios: "Used Insight," "Available Insight," Z-Procedure Scores

The tag "used insight" or "U" is given to the spread between the Z-Procedure score and the Y-Procedure score. For example, the average subject, who disclosed 128 items of maladjustment on the Z-Procedure and 96 items of maladjustment on the Y-Procedure, is considered to have used his insight into the "right" answers of 32 items of the inventories. This differential quantity ("U"), was calculated for each of the 110 subjects and the distribution was treated statistically. And likewise for the "available insight" ("A"), which was found by subtracting the X-Procedure score from the Z-Procedure score. Critical ratios and coefficients of correlations were calculated between "U" and "A" and between each of these and the Z-Procedure score (boys and girls together, all inventories together), and are as follows:

	CR	r
Between "available insight" and Z-Procedure score	4.99	.87
Between "used insight" and Z-Procedure score	10.81	.72
Between "used insight" and "available insight"	5.76	.73

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[2] Carl R. Rogers, B. L. Kell, and Helen McNeil, "The Role of Self-Understanding in the Prediction of Behavior," Journal of Consulting Psychology, 12 (May-June, 1948), pp. 174-186.

[3] Victor C. Rainey, "Self-Reference in Counseling Interviews," Journal of Consulting Psychology, 12 (May-June, 1948), pp. 153-163.

"Available insight" and Z-Procedure score.--If all subjects had possessed perfect insight--i.e., ability to discern the "right" answers to all items on the three inventories—then there would have been no difference between the numerical quantity of "available insight" and the Z-Procedure mean score. By Table I, however, it is evident that this is not the case; on the Best Answer Y-Procedure the mean score was 48. This figure (48) represents the population's mean distance below perfect insight, and is the ceiling of insight in terms of "not-right" responses. The critical ratio of the positive mean differential between the Anonymous Z-Procedure and the quantity of "available insight" (CR_{az} of 4.99) simply predicates the conclusion that there is a significant difference between the quantity of "not-right" responses in the Z-Procedure and the amount of "available insight." The correlation coefficient of .87 signifies a very high relationship between the individual's expanse of "available insight" and the amount of maladjustment he disclosed on the Anonymous Z-Procedure. This is interpreted to mean that subjects revealing relatively more maladjustment on the Z-Procedure were at the same time the subjects having the greater expanse of "available insight." This is not to say that such subjects had a higher ceiling of insight; it must be remembered that by definition "available insight" is the positive differential of "not-right" responses of the Anonymous Z-Procedure as compared with the "not-right" responses of the Best Answer X-Procedure. With this in mind it becomes evident that any given X-Procedure score is the minuend which is subtracted from the Z-Procedure score to obtain the difference that is the "available insight." Accordingly, for any given X-Procedure score, the quantity of "available insight" is directly proportional to the differential magnitude of the Z-Procedure score. Hence, it is seen that the more maladjustment disclosed

in the Z-Procedure would automatically produce more "available insight"—i.e., for any given X-Procedure score. The previously discussed correlation of .45 between the X-Procedure and the Z-Procedure was interpreted to mean that there is a substantial correspondence between the number of "not-right" responses a subject gives on the X-Procedure (lower ceiling of insight) and the number of "not-right" responses he gives on the Z-Procedure.

Perhaps the following illustrations will add some clarification to the above discussion:

	X-Pro	Y-Pro	Z-Pro	"A"	"J"
Subject Jane Doe	48	96	128	80	32
Subject Richard Roe	48	115	168	120	53
Subject John Smith	60	170	200	140	30

Subjects Jane Doe and Richard Roe both had the same ceiling of insight (both made a "given" X-Procedure score of 48), but Richard Roe shows half again as much "available insight" by reason of his Z-Procedure score's being so much greater than Jane Doe's. Although John Smith shows significantly more "available insight" than either of the other subjects, yet his X-Procedure score (ceiling of insight) is significantly lower than either Jane Doe's or Richard Roe's.

"Used insight" and Z-Procedure score.—If all the subjects had possessed the ability to discern the "right" responses to all items on the adjustment inventories, and had utilized this insight fully on the Standard Y-Procedure (to render a perfect "not-right" response score of zero), then there would have been no difference between "used insight" and the Anonymous Z-Procedure score. As has been pointed out earlier, this was not so. By consulting Table I it is discovered that the average subject revealed 128 items of maladjustment on the Z-Procedure, whereas he lacked 48 items of having perfect insight, and on the Y-Procedure he utilized insight on only 32 of

the items of the 80 items to which he possessed the ability to discern the "right" answers. The positive differential of the Anonymous Z-Procedure score of "not-right" responses over the quantity of "used insight" (128 minus 32 equals 96) yields a critical ratio of 10.81, significant far above the .01 level of confidence; this may be considered as an index figure of significance of the population's lack of ability and/or desire to employ in the Standard Y-Procedure enough insight to render a perfect score.

The correlation coefficient of .73, between Z-Procedure score and "used insight," is interpreted to mean that the greater amount of maladjustment disclosed in the Anonymous Z-Procedure, likewise the greater amount of insight was used to distort the Standard Y-Procedure score. This does not mean that subjects disclosing the most maladjustment in the Z-Procedure were the ones claiming the higher level of adjustment on the Standard Y-Procedure; by referring to previously stated correlations and interpretations it is seen that just the opposite of this is true: the high correlation existing between Z-Procedure scores and Y-Procedure scores predicates the conclusion that there is a high correspondence between the amount of maladjustment disclosed on the two procedures; and therefore, the lower the adjustment revealed in the Self-Concept likewise the lower adjustment claimed in the Social-Concept. That these statements are appropriate to the data can perhaps be best made clear by referring again to the illustration on page 68. In the example given it is to be noted that although Subject Richard Roe employed "used insight" on 53 items as compared with Subject John Smith's 30, still Richard Roe claimed a significantly higher adjustment on the Y-Procedure (115 "not-right" responses) than did John Smith (170 "not-right" responses); and at the same time there exists a correspondence between the amount of maladjustment each subject discloses on the Z-Procedure and the Y-Procedure. By comparing the scores of Subject Jane Doe and Subject

Richard Roe, it is seen that although Richard Roe employed significantly more insight (53 as compared with 32 for Jane Doe), still on his Standard Y-Procedure performance he claimed a lower level of adjustment (115 "not-right" responses as compared with Jane Doe's 96).

In other words: Although the spread between the Z-Procedure and the Y-Procedure scores was greater for those subjects revealing relatively more maladjustment in the Self-Concept of the Z-Procedure, still this greater utilization of insight only approached--but did not reach--the relatively higher adjustment ratings claimed on the Standard Y-Procedure by those subjects revealing relatively less maladjustment in the Z-Procedure. This would seem to indicate a movement toward some hypothetical average of what the subject considers--consciously or unconsciously or both--to be a passable and permissible level of adjustment.

In dealing with the two differential quantities "available insight" (Z-Procedure score minus X-Procedure score) and "used insight" (Z-Procedure score minus Y-Procedure score), it must be remembered that each of these represents a spread in the direction of decreasing the maladjustment disclosed by the Z-Procedure score. Consequently, for any given score on the X-Procedure the magnitude of "available insight" is determined by and is directly proportional to the amount of maladjustment expressed by the Z-Procedure score; similarly, for any given score on the Y-Procedure the magnitude of "used insight" is determined by and is directly proportional to the amount of maladjustment expressed by the Z-Procedure score.

"Used insight" and "available insight."--If all subjects had fully exploited the amount of insight available, there would have been no mean difference between "U" and "A." Table I reveals that such was not the case; actually, there exists between "available insight" (80) and "used insight"

(32) a mean difference of 48 items. (It is perhaps of interest to point out that the average subject declined to use insight on exactly as many items (48) as he lacked having insight into.) This mean difference yields a critical ratio of 5.76, and is an index figure indicating the subjects' unwillingness to exploit their insight fully.

Explanation and interpretation of the .73 correlation between "A" and "U" can be induced from the discussion in the preceding sub-sections.

Summary and Conclusions: Section A

Basic Hypothesis Substantiated

The Anonymous Z-Procedure mean score is 32 items of maladjustment ("not-right" responses) over and above the Standard Y-Procedure mean maladjustment score; this mean difference yields a critical ratio of 2.60, significant above the .01 level of confidence, substantiating the basic hypothesis, "High school students have insight into the 'right' responses to items on typical personality adjustment inventories and under standard administering procedures this insight is utilized to an extent significantly distorting the scores and ratings obtained."

The average subject used only 40 per cent of his "available insight." This represents only 25.0 per cent distortion of his basal maladjustment, notwithstanding the fact that by fully exploiting all insight available the average subject could have distorted his basal maladjustment some 63 per cent.

Individuals tend to maintain relative rank within distributions of all three procedures.—Significant coefficients of correlation between all pairings of the scores made on the three different administering procedures show that subjects tend to disclose relatively corresponding amounts of

maladjustment within the distribution of each procedure scores, maintaining their approximate rank or rating with respect to the group. This leads to the conclusion that a subject's score on any one of the three administering procedures would reflect his approximate rank or rating within the group--but it must be remembered that only the Anonymous Z-Procedure, (with mean differences of 32 and 80 more items of maladjustment than the Y-Procedure and the X-Procedure respectively) uncovers the basal level of maladjustment (quantitative assessment) and identifies the specific problems in the individual's maladjustment (qualitative assessment).

Standard, orthodox administering procedures foster mental ill health.--Since (1) the above stands irrefutably substantiated, and (2) clinical records, other research, and commonplace introspection show that an individual tends to cover deepest (through supression, denial, repression) his most significant problems and conflicts--especially those which would draw the most disapproval and criticism from his peers and superiors--the following conclusion seems to be justified: Administering personality adjustment inventories under standard, orthodox procedures is furnishing the educand with experience and practice--if, indeed, it is not coercing him!--in covering up and denying the very self-same problems and maladjustments most critically in need of realistic appraisal and corrective treatment.

Quantity of insight used is relatively proportional to basal maladjustment quantity.--With respect to the Standard Y-Procedure scores there is evident a sort of "movement toward some hypothetical mean of acceptable and permissable level of adjustment." This is borne out by the high to very high coefficients of correlation that exist between "available insight" and "used insight," and between each of these and the Anonymous

Z-Procedure scores. In brief, subjects revealing greatest maladjustment on the Z-Procedure (Self-Concept) were the same subjects who (1) possessed a relatively greater expanse of available insight, projecting from their basal maladjustment level of the Z-Procedure—which does not mean that their ceiling of insight was relatively higher; and (2) who utilized relatively greater amounts of insight.

This "leveling off tendency" is further borne out by comparing the standard deviations of the three administering procedures; these are 38, 52, and 76 for the X-Procedure, the Y-Procedure, and Z-Procedure respectively.

Section B: Sex Differences

This second section of Part I of this chapter will be devoted to testing the basic hypothesis and its immediate extensions with respect to (1) the boys separately, (2) the girls separately, and (3) to statistical analysis of whatever differences that may exist between the two sexes.

Boys' performance exhibits much wider variability.—By comparing the standard deviations of the two sexes (Table II), it becomes immediately evident that the extent of variability of the boys' performance ranged from 30 per cent to 67 per cent greater than that of the girls. And this is further reflected in the decidedly higher critical ratios (Table III) obtaining from the girls' performances. But it should be pointed out that although the critical ratios for the boys are consistently lower than those for either the girls or the total population, yet in only one instance does the boys' critical ratio fall below .01 level of confidence: This is between the means of the Y-Procedure and the Z-Procedure, in which the critical ratio is 2.28, slightly below .02 but above .03 level of confidence. This relatively low critical ratio is produced by the enormous extent of

variability obtaining from the distributions of the boys' scores on the Standard Y-Procedure and the Anonymous Z-Procedure. This, in turn, is attributed to the boys malingering and conniving: 19 of the 53 boys claimed less maladjustment (gave fewer "not-right" responses) on the Anonymous Z-Procedure than on the Standard Y-Procedure--and four of them even gave more "not-right" responses on the Best Answer X-Procedure than they did on the Anonymous Z-Procedure! And, as might be expected, on all three procedures the range of scores is much greater for the boys than for the girls.

As concerns the basic hypothesis, then, all tests pooled together, the girls' performance substantiates the basic hypothesis above the .01 level of confidence, and the boys' performance substantiates the basic hypothesis above the .03 level of confidence.

Previous conclusions not materially affected by divergences of r's for boys and girls separately.--The exact r's for the total population and for the boys and girls separately may be found in Table III. In all essential respects the coefficients of correlations for the separate grouping of the boys and girls are in agreement with those for the total population. Hence, the conclusions drawn from analysis of the total population data also apply to the boys and girls separately. There are two divergences, however, between the boys' r and the girls' r which should be mentioned and discussed at this point.

1. Between the Y-Procedure and the X-Procedure, boys show an r of .57 as compared with the girls' r of .38, indicating for the boys a relatively closer correspondence of the amount of maladjustment ("not-right" scores or responses) disclosed on the two procedures. The boys' lower ceiling of insight contributes to this fact; also, this is in line with--and lends further substantiation to--the previous finding that the girls used for less of their available insight (the unused portion tagged "declined insight"

in Table I) than did the boys. The unused insight, of course, is the spread between the Standard Y-Procedure and the Best Answer X-Procedure.

2. Between scores on the X-Procedure and the Z-Procedure, the girls show an r of .70 as compared with the boys' r of .47, indicating for the girls a relatively closer correspondence of the amounts of maladjustment disclosed under the two procedures. Careful study of the individual test papers of the boys and girls leads to the conclusion that on the whole the girls were more consistent in following the explicit instructions for the three different administering procedures; and in other but less easily described respects the girls seemed to be relatively more "honest" in revealing their maladjustment on both the Standard Y-Procedure and the Anonymous Z-Procedure. The fact that the girls used proportionately less of their available insight also lends some support to this statement. Also, of the 53 boys, four showed more maladjustment on the Best Answer X-Procedure than on the Anonymous Z-Procedure, indicating negative connivance and certainly resulting in doubly decreasing the critical ratios and r's of the paired combinations of the administering procedures.

Boys and Girls Compared

Critical ratios of the mean differences between the boys' and the girls' scores on each of the three administering procedures, and "available insight" and "used insight" were found to be as follows (the numerical CR is placed on the line with the sex having the positive mean differential):

	X-Procedure		Y-Procedure		Z-Procedure		Avail. Ins.		Used Ins.	
	Mean	CR	Mean	CR	Mean	CR	Mean	CR	Mean	CR
Boys	60	7.14	98	.21***	131	.34***	71	xxxx	33	.19***
Girls	38	xxxx	95	xxxx	126	xxxx	87	1.16***	31	xxxx

(1) Only on the Best Answer X-Procedure does there exist a mean sex differential of high level confidence: the critical ratio of 7.14, significant far above the .01 level of confidence, was found to exist between the boys' mean score of 60 "not-right" responses and the girls" mean score of 38 "not-right" responses, on the X-Procedure. This gives statistical proof to what has been voiced already; namely, that in their Ideal-Concept of adjustment the boys hold a significantly greater amount of maladjustment or "not-right" answers. In other words, the girls' ceiling of insight is far above the boys' and the difference is statistically significant above the .01 level of confidence.

(2) On the statistical treatment of the "available insight" for sex differences, the CR was found to be 1.16 in favor of the girls; this CR is significant below the .30 level of confidence but is above the .25 level. Considering the actual numerical quantities of the mean "available insight,"—boys 71, girls 87—it would seem that the differential of 16 in favor of the girls would be of higher significance than the .25 level of confidence shows it to be. That such is not so statistically obtains from the fact that the standard deviations for each group was enormously large; this, in turn, produced an unusually large standard error, the quantity that is divided into the obtained differential of the two means, thereby materially reducing the quotient that is the critical ratio.

A comparison of the boys' per cent of distortion with that of the girls (Table I, lines 2 and 3, column 10) reveals that the two are almost exactly the same. This is to say that with respect to the per cent the basal maladjustment score (Anonymous Z-Procedure score: was distorted by exploitation of insight to attain the Standard Y-Procedure score, no difference exists between the two sexes.

PART II: EACH ADJUSTMENT INVENTORY SEPARATELY

When all inventories were pooled together the total population showed an average distortion of 25 per cent and this was found to be of a statistical significance (CR_{yz} of 2.60) that substantiated the basic hypothesis above the .01 level of confidence. When the two sexes were treated separately, the girls' CR_{yz} was found to be 3.14, still farther above the .01 level of confidence, and the boys' CR_{yz} was found to be 2.28, substantiating the basic hypothesis above the .03 level of confidence.

Cursory inspection of Table I reveals wide divergencies between the mean scores made on the three different personality adjustment inventories, and especially with respect to the amount of distortion and per cent of distortion (columns 6 and 10 of Table I). From these per cent figures—Bell, 10 per cent; California, 18 per cent; Mooney, 40 per cent—it would seem that a major part of the 25 per cent distortion (when all inventories were pooled together) was contributed by the Mooney. Hence, the lesser percentages of distortion on the Bell and California are suspect of lacking statistical significance.

Accordingly, this second part of this chapter will be devoted to testing the basic hypothesis with respect to each personality adjustment inventory separately, total population, boys separately, and girls separately. Table IV gives the critical ratios for the mean score differentials existing between each of the three paired combinations of administering procedures, for each of the three population groupings. Table V gives the critical ratios existing between the girls' performance and the boys' performance under each administering procedure and for each inventory separately.

TABLE IV

CRITICAL RATIOS: EACH INVENTORY, TOTAL POPULATION, BOYS ONLY, GIRLS ONLY

	B & G	Boys	Girls
Bell Adjustment Inventory			
(1) X-Procedure and Y-Procedure	11.96	6.48	10.0
(2) Y-Procedure and Z-Procedure	1.5***	.71***	1.41***
(3) X-Procedure and Z-Procedure	12.39	6.83	10.33
California Test of Personality			
(4) X-Procedure and Y-Procedure	6.82	4.15	7.90
(5) Y-Procedure and Z-Procedure	2.40*	1.53***	2.37*
(6) X-Procedure and Z-Procedure	9.06	4.85	10.33
Mooney Problem Check List			
(7) X-Procedure and Y-Procedure	1.74***	.60***	1.95***
(8) Y-Procedure and Z-Procedure	3.98	2.71	2.87
(9) X-Procedure and Z-Procedure	5.19	3.13	3.82

Key to level of confidence markings:

No asterisk . . . . . above .01 level of confidence
One asterisk. . . . . above .02 level of confidence
Two asterisks . . . . . above .05 level of confidence
Three asterisks . . . . below .05 and of no significance

Total Population, Each Adjustment Inventory Separately

Here again, of course, the prime and fundamental concern is to determine the statistical significance of the spread between the Standard Y-Procedure mean score and the Anonymous Z-Procedure mean score. This net differential [illegible] the direction of decreasing the quantity of "not-right" responses dis- [illegible] on the Anonymous Z-Procedure, is the amount of "used insight" or

This section, however, will extend treatment to include all three pairings of the three administering procedures, since such extensional treatment has been accepted as a responsibility of this study.

Critical ratios between Y-Procedure and Z-Procedure.--The critical ratios obtained for the mean score differential between the Y-Procedure and the Z-Procedure are to be found in Table IV, lines 2, 5, and 8, for the Bell, California, and Mooney respectively. The following conclusions become self-evident:

1. On the Bell Adjustment Inventory the critical ratio of 1.50 is below the .05 level of confidence for the total population, and for the boys and girls separately the critical ratios of .714 and 1.41 respectively are also below the .05 level of confidence. Therefore, as concerns the Bell Adjustment Inventory the amount of distortion is of no statistical significance and hence the basic hypothesis is rejected.

2. On the California Test of Personality, both the total population and the girls separately retain and confirm the basic hypothesis above the .02 level of confidence; the boys' critical ratio of 1.53 is below the .05 level of confidence, and therefore is of no statistical significance and rejects the basic hypothesis. In connection with this low critical ratio of the boys' mean score differential of the Y-Procedure and the Z-Procedure, it is interesting to refer to Table I and note the percentages of distortion, column 10, and also the items of "used insight," column 6. It is to be noted that although the boys' "used insight" is 7 as against the girls' 8, which is a very small difference, still the percentages of distortion are 16 per cent and 21 per cent and the boys' critical ratio is only 1.53 as compared with the girls' 2.37. This is mentioned as an example pointing up the fact that arithmetical differences can be very misleading unless it is realized that they only indicate the direction in which statistical significance may lie.

Vague questions concerning the "good faith" performances of the boys have arisen from time to time throughout this research. For one thing, four

of the boys gave more "not-right" responses on the Best Answer X-Procedure (all inventories pooled together) than on the Anonymous Z-Procedure; this is interpreted to indicate deliberate and negative connivance. Also, and even more pertinent to this particular sub-section, the boys averaged six reversals--i.e., gave more "not-right" responses on the Standard Y-Procedure than on the Anonymous Z-Procedure--for each of the three adjustment inventories. Such reversals, of course, have the effect of doubly decreasing the mean score differentials between the two administering procedures. It is the considered opinion of this researcher that as a whole the boys' performance contains more malingering and collusion than does the girls' performance, and the indications are that this would render the boys' performance undependable in the direction of reflecting less distortion--tending to weaken or disprove the substantiation of the basic hypothesis--than would be evident in a larger and more conscientious sampling population.

3. On the Mooney Problem Check List the critical ratio of the difference between the means (of the Standard Y-Procedure and the Anonymous Z-Procedure) is above the .01 level of confidence for all three population groupings. Therefore, as concerns the Mooney Problem Check List, the basic hypothesis is substantiated above the .01 level of confidence, by the total population and by each sex separately. At first glance this would seem to imply that the Mooney, because of the greater amount of distortion present in the Standard Y-Procedure, is the least dependable of the three inventories. But further analysis and consideration would seem to render such an hypothecation doubtful if not untenable. The Mooney Problem Check List differs from the other two inventories in two essential respects: (1) It contains a significantly greater number of items than either the Bell or the California (330 items, any or all of which may come in for double weighting, thereby making a possible total of 660 problem items or "not-right" responses), and

(2) the starkly personal nature of the simple, brief phrases that are the problem items. It is entirely possible that as to content and scope neither the Bell nor the California is all-embracing enough to include enough personality and behavior conflict-situations to permit the subjects to define their basal level of adjustment (on the Anonymous Z-Procedure) so thoroughly as is permitted by the greater breadth and depth of the Mooney.

And it must be remembered that for any given Y-Procedure score of "not-right" responses the amount of distortion is the positive differential of "not-right" responses disclosed in the Anonymous Z-Procedure; the greater the quantity of "not-right" responses in the Z-Procedure, the greater the quantity of distortion.

If the Mooney does, under the Z-Procedure, probe deeper into the respondent's confidential self-concept, it can be expected that he would give a greater number of "not-right" responses and hence his Standard Y-Procedure score would reflect greater distortion.

In any event, the results (Tables I, III, and IV) unquestionably show that the Mooney Problem Check List does a significantly better job assessing the subject's personality adjustment when administered under the Anonymous Z-Procedure. And this statement holds not only in the sense of comparing the Mooney Z-Procedure with the Mooney Standard Y-Procedure, but also when comparing the Bell Z-Procedure and the California Z-Procedure with the Mooney Z-Procedure. A brief glance at Table I shows that under the Standard Y-Procedure the mean number of "not-right" responses for each of the three inventories ranges from 29 to 36, and that there is no significant difference between the mean number disclosed on the Mooney as compared with the other two inventories--but when one compares the scores in the Self-Concept of the Anonymous Z-Procedure, it becomes apparent that the Mooney did a more thorough job revealing the subjects' confidential appraisal of themselves.

Comparison of Boys and Girls, Each Procedure

By way of review, attention is called to the findings obtaining from statistical treatment of the mean score differentials existing between the boys' and girls' performances when all inventories were pooled together (p. 75). At that time it was found that under only one administering procedure, the Best Answer X-Procedure, was there a mean difference of any statistical dignificance: A critical ratio of 7.14, significant far above the .01 level of confidence, was found to exist between the boys' mean score of 60 "not-right" responses on the X-Procedure and the girls' mean score of 38. This led to the conclusion that in their Ideal-Concept of what constitutes being well-adjusted, the boys hold a significantly greater amount of "not-right" responses or maladjustment than do the girls.

When this is broken down by way of treating the mean scores obtained under each administoring procedure on <u>each inventory separately</u>, the following critical ratios were found to exist (the numerical CR is placed in the column of the sex having the positive mean differential):

TABLE V

CRITICAL RATIOS OF SEX DIFFERENCES

	X-Procedure		Y-Procedure		Z-Procedure	
	Boys	Girls	Boys	Girls	Boys	Girls
BELL	2.14**	xxxxx	xxxxx	.87***	xxxxx	1.49***
CALIFORNIA	2.90	xxxxx	1.25***	xxxxx	.93***	xxxxx
MOONEY	1.69***	xxxxx	.44***	xxxxx	.86***	xxxxx

In the table above there are two critical ratios of statistical significance, both pertaining to the boys' positive mean score differential

on the X-Procedure. The CR of 2.14 on the Bell is below the .02 level of confidence, but above the .05 level, and the CR of 2.90 on the California is significant above the .01 level of confidence. It is concluded, then, that on these two inventories the boys reveal, in their Ideal-Concept of what constitutes being well-adjusted, a significantly greater amount of maladjustment than do the girls. This was somewhat indicated by the mean "not-right" scores (Table I), which for the boys and girls respectively were 12 and 07 on the Bell and 20 and 10 on the California.

It is interesting to note that in the only two instances where the girls show more "not-right" responses, albeit neither is of any statistical significance, both are on the Bell.

As concerns the girls' performance on the Best Answer X-Procedure, when all three inventories were pooled or specifically the Bell and California, their ceiling of insight into the "right" answers is significantly higher than that of the boys.

Comparison with Previous Study

No further treatment of the data will be made. It would seem appropriate, however, to give a brief comparison, in so far as is possible, of the findings of a previous study[4] that was referred to in Chapter I of this present work.

As was mentioned earlier, the Kimber study was somewhat relevant to this present research, and in the respects of its similarity the findings can be compared with those obtaining from this study. In the Kimber study only one personality adjustment inventory was used, the same California Test of Personality, Secondary Form A, the same being one of the three used in

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[4] J. A. Morris Kimber, "The Insight of College Students into the Items on a Personality Test," Educational and Psychological Measurement, 8 (Autumn, 1947), pp. 411-420.

this present research; and the Kimber study employed only one special administering procedure, one for all practical purposes identical with the Best Answer X-Procedure of this present study, and the standard administering procedure.

Treating the sexes separately, Kimber found a critical ratio of 4.6 for the males as compared with a critical ratio of 4.15 for the high school boys in this present study; Kimber found a critical ratio of 10.8 for the college women as compared with a critical ratio of 7.90 for the high school girls in this present study.

All the other comparisons that can be drawn are best represented by the following:

	Mean "Not-Right" Scores		Insight	Maximum Per Cent
	Best-Answer X-Pro	Standard Y-Pro	Declined Not Used	Maladjustment in Standard Pro could have been reduced
PREVIOUS STUDY				
College Men	21	26	05	20%
College Women	18	26	08	31%
PRESENT STUDY				
Secondary Boys	20	36	16	44%
Secondary Girls	10	31	21	68%

The above comparisons render some interesting revelations. First, the high school girls of this present study have a ceiling of insight strikingly higher than either the college women or the college men used in the Kimber study. This is disclosed by the fact that on the average there were only 10 items to which the high school girls did not know the "right" answers, as compared with 18 items for the college women and 21 for the college men. The high school girls' ceiling of insight is farther above either college group's ceiling of insight than either group's ceiling is above the level of adjustment claimed under the standard procedure.

Secondly, it is to be noted that both high school groups declined to use far more insight than did the college groups, relative to their standard procedure score and to the amount of insight they possessed over and above their standard score. An index of this is to be found in the column headed "Maximum Per Cent Maladjustment could have been Reduced."

Briefly, from the comparison of the two studies it becomes evident that the high school subjects of this present research admitted significantly more maladjustment under the standard procedure than did the college students of the Kimber study, while at the same time they possessed significantly higher ceilings of insight into the "right" answers to items on the test.

CHAPTER V

SUMMARY

Findings and Conclusions

This study represents an attempt to investigate the question of intrinsic validity of subjects' responses on personality questionnaires administered under standard procedures, by way of pioneering a special system of test-administering procedures. The basic hypothesis is: When taking conventional personality adjustment inventories under standard administering procedures, the respondents employ insight to evade giving "not-right" responses. It was the task of this research to test this basic hypothesis to determine whether the amount of insight allegedly utilized significantly distorts the scores and ratings obtained.

Throughout this study, and especially as concerns this chapter, it is important to keep in mind that for testing the basic hypothesis it is the statistical significance of the critical ratio of the positive mean score differential of the "not-right" responses on the Anonymous Z-Procedure as compared with the mean score on the Standard I-Procedure that determines whether the basic hypothesis is substantiated or rejected. It is also of crucial importance to remember that all scores and score-quantities in this research are reported in terms of "not-right" responses.

Performance Situations Substantiating the Hypothesis

All adjustment inventories pooled together.—When the "not-right responses on all three inventories were pooled together, for each of the

three test-administering procedures, the following groups were found to substantiate the basic hypothesis as indicated:

1. The total population, substantiated the basic hypothesis slightly above the .01 level of confidence with a critical ratio of 2.60 (of the mean score differential between the Anonymous Z-Procedure and the Standard Y-Procedure).

2. The sub-population of 53 boys, with a critical ratio of 2.28, substantiated the basic hypothesis above the .03 level of confidence.

3. The sub-population of 57 girls, with a critical ratio of 3.14, substantiated the basic hypothesis markedly above the .01 level of confidence.

With respect to sex differences, all inventories pooled together, a critical ratio of 7.14 was found to exist for the boys' positive mean score differential of "not-right" responses on the Best Answer X-Procedure. This is significant far above the .01 level of confidence and leads to the conclusion that in this test-taking situation it is demonstrated that the boys hold significantly more maladjustment in their Ideal-Concept (CR of 7.14) and that the girls' ceiling of insight is significantly higher than that of the boys.

Each adjustment inventory separately.--When the "not-right" responses for each inventory were treated separately, the following groups were found to substantiate the basic hypothesis as indicated:

1. On the Bell Adjustment Inventory, all critical ratios of mean score differentials (between the Anonymous Z-Procedure and the Standard Y-Procedure "not-right" responses), for each of the three population groupings, were below the .05 level of confidence. Accordingly, it is concluded that in so far as the Bell is concerned, the basic hypothesis is rejected by all three population groupings.

2. On the California Test of Personality, both (a) the total population, with a critical ratio of 2.40, and (b) the 57 girl subjects, with a critical ratio of 2.37, substantiated the basic hypothesis above the .02 level of confidence. The performance of the 53 boy subjects falls below the .05 level of confidence and is considered to represent a rejection of the basic hypothesis. Therefore, as concerns the California, it is concluded with a high degree of confidence that the performance of (a) the total population and (b) of the sub-population of girls demonstrates the utilization of an amount of insight significantly distorting the scores and ratings obtained on the Standard Y-Procedure.

3. On the Mooney Problem Check List, all three population groupings substantiated the basic hypothesis above the .01 level of confidence. Hence, as concerns the Mooney, it is concluded with a markedly high degree of confidence that the amount of insight utilized on the Standard Y-Procedure does significantly distort the scores and ratings obtained by the performances of (a) the total population, (b) the sub-population of boy subjects, and (c) the sub-population of girl subjects. It is not a conclusion of this study that the Mooney is the least dependable of the three questionnaires used in this research. A study of Table I reveals that the greater amount of "used insight" (which is the identical same as distortion) on the Mooney is produced not by decreasing the relative number of "not-right" responses given on the Standard Y-Procedure, but by increasing the number of "not-right" responses, hence the maladjustment, revealed on the Anonymous Z-Procedure. This is to say that for any given Standard Y-Procedure score of "not-right" responses, the amount of "used insight" is directly proportional to the magnitude of the Anonymous Z-Procedure score of "not-right" responses. The Mooney Problem Check List, as is shown by Table I, did a more thorough assessment of the subjects' confidential self-appraisal of themselves than

did either the Bell or the California; this, it is posited, may be due to the fact that the Mooney's aggregate of the several items being of such content and scope to encompass more broadly and thoroughly the over-all fulcra of conflicts.

As concerns sex differences under each test-administering procedure, for each inventory separately, two mean score differentials of statistical significance were discovered; both of these pertain to the boys' positive mean differential on the Best Answer X-Procedure. Under this procedure the boys' mean score differential of "not-right" responses yields a critical ratio of 2.14 on the Bell, significant above the .03 level of confidence; and on the California a critical ratio of 2.90, significant above the .01 level of confidence. These levels of confidence predicate the conclusion that on these two inventories the boys demonstrate that they hold significantly more maladjustment in their Ideal-Concept, and consequently the girls' ceiling of insight is significantly higher than that of the boys.

Comprehensive Re-Statement of Conclusions

By reasons of the multiplicity of performances employed for testing the basic hypothesis, a brief statement of the subsequent conclusions is rendered practically impossible. Perhaps the following effort will serve to obviate some amounts of confusion.

All inventories pooled together.--When the aggregate scores for each administering procedure were taken, the basic hypothesis was substantiated as follows:

1. Total population, above the .01 level of confidence.
2. Sub-population of 53 boys, above the .03 level of confidence.
3. Sub-population of 57 girls, above the .01 level of confidence.

When performances on each administering procedure were compared and treated for sex differences, it was found (a) that although the girls' ceiling of insight is significantly higher and they have significantly more "available insight," (b) yet the girls utilize no more insight than do the boys and they claim no higher adjustment in the conventional test-taking situation.

Each adjustment inventory separately.--When the scores for each inventory on each administering procedure were treated, the basic hypothesis was substantiated as follows:

1. On the Bell Adjustment Inventory all three population groupings rejected the basic hypothesis.

2. On the California Test of Personality, both (a) the total population and (b) the sub-population of girl subjects substantiated the basic hypothesis above the .02 level of confidence. The boys utilized 82 per cent as much insight as did the girls, but "reversal" scores by the boys (giving more "not-right" responses on the Standard Y-Procedure than on the Anonymous Z-Procedure), on this test as well as on the other two inventories, had the effect of reducing or obliterating the significance of the mean differential.

3. On the Mooney Problem Check List, all three population groupings substantiated the basic hypothesis far above the .01 level of confidence. It is a conclusion of this study that the greater amount of "used insight"--positive differential of "not-right" responses on the Anonymous Z-Procedure over the Standard Y-Procedure--on the Mooney is produced by the Mooney's more thorough assessment of the subjects' self-appraisal.

As concerns sex differences on each inventory, under each administering procedure, on both the Bell and the California it was found that (a) although the girls' ceiling of insight is significantly higher than that of the boys,

and they have significantly more "available insight," yet they claim decidedly lower levels of adjustment in the conventional test-taking situation.

It is a conclusion of this study that the girls' performance in the conventional test-taking situation--i.e., under the Standard Y-Procedure--is decidedly more dependable on the Bell and the California adjustment inventories than is the performance of the boys.

Findings and Conclusions Related to the Hypothesis

Three correlates are of importance sufficient to warrant their being incorporated into this research. Each will be discussed following its statement in question form.

1. What relationship exists between the amount of "used insight" and the quantity of "not-right" responses (maladjustment) disclosed on the Anonymous Z-Procedure?

By definition, "used insight" (distortion) is the positive mean differential of "not-right" responses on the Anonymous Z-Procedure as compared with the Standard Y-Procedure. With this definition clearly understood, it becomes immediately evident that for any given score of "not-right" responses on the Standard Y-Procedure, any positive differential on the Anonymous Z-Procedure is identically the same as the "used insight." Hence, the amount of "used insight," or distortion, is directly proportional to the magnitude of the Anonymous Z-Procedure score--and this is the relationship that exists.

A correlation coefficient of .72 was found to exist between the "not-right" responses on the Anonymous Z-Procedure and the amount of "used insight." This is interpreted to mean that (a) the more maladjustment the subject disclosed in his Self-Concept (self-appraisal), (b) the more "used

insight" was employed in his performance in the conventional test-taking situation, probably for purposes of elevating his Standard Y-Procedure "right" answer score upward to approximate some hypothetical level of what he determines to be socially permissable-acceptable adjustment. This has been referred to as being a sort of "leveling off" tendency, in that such a performance militates in the direction of producing Standard Y-Procedure scores that cluster rather closely around this hypothetical level of socially permissable-acceptable adjustment.

2. What relationship exists between the amount of insight the individual possesses ("available insight") and the amount he utilizes ("used insight") on the Standard Y-Procedure?

By referring to Table III it is noted that the critical ratio of the positive mean differential of "available insight" as compared with "used insight" is above the .01 level of confidence for each of the three population groupings. This irrevocably establishes the fact that the subjects had significantly more insight available than they used to evade giving "not-right" responses on the Standard Y-Procedure.

For the three population groupings the coefficients of correlation are practically the same—.73, .75, and .73. Therefore, one interpretation holds for all three. An r of .70 or larger denotes high to very high degree of correspondence between (a) the amount of insight the individual possesses and (b) the amount of insight he utilizes in the conventional test-taking situation. But neither these coefficients of correlation nor the attendant conditional conclusion can be taken at face value; this statement is so because of the complexly interrelated contingencies existent in the sources from which these secondary, differential quantities of "available insight"

and "used insight" were derived. Perhaps the following discussion is necessary for a comprehensive understanding.

First of all, it should be remembered that when dealing with a correlation such as this, it is the individual subject's performances under two or more situations that are being correlated. And both "available insight" and "used insight" are secondary or differential quantities, obtaining respectively from subtracting the "not-right" responses of the Best Answer X-Procedure and the "not-right" responses of the Standard Y-Procedure from the "not-right" responses of the Anonymous Z-Procedure. When this is understood--i.e., that the quantity of "not-right" responses on the Anonymous Z-Procedure functions as the common minuend from which both differentials are obtained--then it becomes immediately evident that it is the correlation between the Best Answer X-Procedure and the Standard Y-Procedure that actually expresses the true relationship existing between "available insight" and "used insight." The coefficients of correlation found to exist between the "not-right" responses on these two administering procedures are stated and interpreted as follows:

(1) For both the total population (r_{xy} of .50) and the sub-population of boys (r_{xy} of .57) the coefficients of correlation fall within the bracket denoting substantial or marked relationship. This is interpreted to mean that for these two groups there is a substantial correspondence between (a) the amount of "available insight" and (b) the amount of insight used to evade giving "not-right" responses on the Standard Y-Procedure; and, also, it is concluded that there is a substantial correspondence between the amount of maladjustment held in the Ideal-Concept and the amount of maladjustment revealed in the Social-Concept (as disclosed by the Standard Y-Procedure score).

(2) For the sub-population of girls the coefficient of correlation (r_{xy} of .38) is of numerical value denoting low degree of relationship. This is interpreted to mean that some slight degree of correspondence is present between (a) the amount of available insight and (b) the amount of insight utilized to evade giving "not-right" responses in the conventional test-taking situation of the Standard Y-Procedure; also, it is concluded that there is only a slight correspondence between the amount of maladjustment held in the Ideal-Concept and the amount revealed in the Social-Concept.

That the girls' score on the Standard Y-Procedure was less dependent upon the amount of "available insight" than was that of the boys was indicated by the data in Table I. Although on the Standard Y-Procedure the girls' mean score was 95 as compared with the boys' mean score of 98 (negligible difference), on the Best-Answer X-Procedure the girls' mean score was 38 as compared with the boys' mean score of 60.

Concerning the performances of the sub-population of girls, the following summarizing conclusions are made in contradistinction to the performances of the boys: Although the girls (a) possessed significantly more insight (87 as compared with 71), and (b) had a significantly higher ceiling of insight (38 "not right" responses in the Best Answer X-Procedure as compared with the boys' 60), proportionately they did not use as much insight as did the boys (girls declined 56 items as compared with the boys' 38).

3. What relationship exists between the amount of maladjustment held in the Self-Concept, as disclosed by the "not-right" responses on the Anonymous Z-Procedure, and the amount of maladjustment held in the Ideal-Concept as revealed by the "not-right" responses on the Best Answer X-Procedure?

In terms of the coefficients of correlation the relationship existing for each population grouping is stated and interpreted as follows:

(1) The total population's r_{xz} of .45 indicates a substantial or marked degree of relationship. This is interpreted to mean that there is a substantial degree of correspondence between (a) the amount of maladjustment the individual subject holds in his Ideal-Concept and (b) the amount of maladjustment he discloses in his Self-Concept (self-appraisal).

(2) The boys' r_{xz} of .47 denotes a substantial or marked relationship. This is interpreted to mean that there is a substantial degree of correspondence between (a) the amount of maladjustment the individual boy holds in his Ideal-Concept and (b) the amount of maladjustment he discloses in his Self-Concept.

(3) The girls' r_{xz} of .70 indicates a high relationship. This is interpreted to mean that there is a high degree of correspondence between (a) the amount of maladjustment the individual girl holds in her Ideal-Concept and (b) the amount of maladjustment she discloses in her Ideal-Concept. Here again is more evidence that the girls were more "honest" in both their self-appraisal and in the conventional test-taking situation.

In general, it is concluded that the more maladjustment the subject held in his Ideal-Concept, the more he is likely to disclose in his self-appraisal. This conclusion raises the question--which can only be asked at this time--as to whether some significant part of the maladjustment the subject holds in his self-appraisal (confidential Self-Concept) is due to lack of knowledge of what constitutes "right" adjustive behavior.

Comparison with Previous Studies

The Kimber study[1], which has been referred to in previous chapters of this thesis, is the only previous study that can be compared with this present one. The Kimber study employed only three elements common to this present study: (1) the California Test of Personality, which was the only questionnaire used in the previous study and is one of the three used in this study; (2) a special, "answer the questions the way you think a happy and well-adjusted student at U. S. C. would answer them" procedure, similar to the Best Answer X-Procedure of this study; and (3) the standard procedure as prescribed by the authors of the test, which is the same as the Standard Y-Procedure used in this present study. Kimber's sampling population consisted of 389 college students; the sampling population of this present study consisted of 110 high school juniors.

The two studies can be compared only as concerns scores obtained for the California Test of Personality on two administering procedures, the Best Answer X-Procedure and the Standard Y-Procedure.

With respect to the positive mean differential of "not-right" scores obtained on the Standard Y-Procedure, Kimber found a critical ratio of 4.6 for the college men, as compared with a critical ratio of 4.15 for the high school boys of this study; and for the college women Kimber found a critical ratio of 10.8 as compared with a critical ratio of 7.90 for the high school girls of this study. These critical ratios would indicate that the males in both studies possessed approximately the same "unused" insight which they declined to utilize in the conventional test-taking situation: But

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[1] J. A. Morris Kimber, "The Insight of College Students into the Items on a Personality Test," Educational and Psychological Measurement, 8 (Autumn, 1947), pp. 411-420.

such is not so; the high school boys declined insight on 16 items as compared with 05 for the college men. The college women's higher critical ratio would indicate that they possessed significantly more "unused" insight (over and above whatever amounts might have been incorporated into the score rendered under the conventional test-taking situation) than did the high school girls: But this is not so; the high school girls declined insight on 21 items as compared with 08 for the college women.

Certainly, the findings of the two studies are in agreement in two respects: (a) that the subjects have insight into the "right" answers, and (b) that the females have significantly higher ceilings of insight than do the males, but render approximately the same mean score in the conventional test-taking situation.

Further comparison of the data from the two studies reveals the following:

	Mean "Not-Right" Scores		Insight	Maximum Per Cent
	Best-Answer X-Pro	Standard Y-Pro	Declined Not Used	Maladjustment in Standard Pro could have been reduced
PREVIOUS STUDY				
College Men	21	26	05	20%
College Women	18	26	08	31%
PRESENT STUDY				
Secondary Boys	20	36	16	44%
Secondary Girls	10	31	21	68%

(a) Under the Best Answer procedure, both the high school boys and the high school girls gave fewer "not-right" responses than did either of the two college groups; (b) the high school girls' ceiling of insight is farther above either college group's ceiling of insight than either group's ceiling is above the score of the standard procedure; (c) each sex of the high school population admitted significantly more maladjustment in the

conventional test-taking situation than did either sex of the college population—and this in spite of (a) and (b) on the preceding page.

That these things should be so, as concerns the comparison of the performances of the high school population and the college population, raises questions that can be answered only by further research.

Looking, First Backward, then Forward

This study was begun with the working hypothesis that responses subjects give on conventional personality adjustment inventories are undependable because of insight being subjected to the torque of self-serving motives. The task was set of devising a method for obtaining the subjects' responses in terms of their confidential self-appraisal of themselves, in order that this performance might be compared with their performance in the conventional test-taking situation. It is believed that the system of administering procedures developed and employed in this study represents the first concerted effort to investigate the hypothesis in this way and by these means.

Critique

Undoubtedly this study leaves much to be desired; such is often the lot of a pioneering venture. But for those coming after, perhaps the inadequacies of this research will serve as a challenge and point the way toward eventual success in the search for obtaining dependable self-appraisal responses on group-type paper and pencil personality adjustment inventories.

In terms of "if it were to be done over again," the following changes and modifications would be incorporated.

1. The anonymous Z-Procedure employed in this research needs improving. It is believed, now, that the subjects' conviction of the good faith of the promise of full and absolute anonymity would have been materially strengthened, and consequently their responses relatively more revealing of their confidential self-appraisal, by making the following modifications: (a) On the sheet of special instructions, to be pasted over the test's printed instructions, delete all information-seeking material other than the space for the secret number; (b) place a "two key to open" vault or file cabinet in the room, one key to be retained by a representative of the sampling population, and open the vault only to deposit the anonymous papers as completed, none of the papers to be handled by anyone until all rounds of testing have been completed for the whole research; in the beginning, assure the subjects that any one may at any time withdraw from the project and may obtain and destroy his anonymous papers without prejudice—even after all inventories have been taken, and especially if the subject is displeased with the way his anonymous papers will be handled in the final phase (after all testing has been completed).

2. Probably, for more dependability of findings, it would be advisable to perform an item analysis of each subject's responses, and this should be done in such a way that (a) those items having "not-right" responses on the Best Answer X-Procedure would be automatically counted "not-right" on the Standard Y-Procedure and on the Anonymous Z-Procedure, and (b) those items having "right" answers on the Anonymous Z-Procedure would be automatically counted right on the Standard Y-Procedure and on the Best Answer X-Procedure.

3. More dependable results would probably be obtained from a larger and less test-sophisticated sampling population.

Implications for Further Study

Among the more important questions that have arisen from this present study, but adequate investigation of which is beyond the scope of this research, are the following:

1. Is the amount of maladjustment held in the Ideal-Concept wholly due to lack of knowing what constitutes well-adjusted behavior, or is it in part due to the subject's defensiveness—i.e., his unwillingness to "let himself down" by way of going on record against some of the things he knows to be true about himself?

2. What relationship exists between the amount of maladjustment held in the Ideal-Concept and actual personality adjustment?

3. Are there worthwhile therapeutic effects obtaining from responding to the items on a personality questionnaire in terms of one's confidential self-appraisal of himself?

4. Does a subject's taking personality adjustment inventories under standard, orthodox administering procedures contribute to progressing him in the direction of maladjustment and mental ill-health?

5. Why would high school boys and girls hold less maladjustment in their Ideal-Concept than do college men and women (as revealed in the analysis of the comparison of the Kimber study with this present one)? Could this be because the items and the "right" responses to them are, like the high school boys and girls, in closer proximity to the idealistic indoctrinations of childhood?

Other implications for further investigation will no doubt become manifest to the alert mind of the thoughtful and concerned reader of this study.

Final Reflections

If the findings of this research accomplish nothing more than a penetration of the aura of smug complacency in which that great multitude of educators and psychometrists whirl along "assessing" personality by the simple application of this-or-that questionnaire, the undertaking will not have been in vain.

No piece of research is an end unto itself. Nor does it settle anything, except, perhaps, for the brief time being—and even this is but the opening of another door that points the way for subsequent research to move on toward less incomplete understandings.

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VITA

GARDNER BROWNING WALKER
candidate for the degree of
Doctor of Education

Thesis: DEPENDABILITY OF RESPONSES ON PERSONALITY ADJUSTMENT INVENTORIES: EFFECT OF INSIGHT INTERACTING WITH SELF-SERVING MOTIVES

Major: Psychology
Minor: Education

Biographical and Other Items:

Born: May 8, 1915, at Thackerville, Oklahoma

Undergraduate Study: Southwestern Institute of Technology, 1931-39.

Graduate Study: O.A.M.C., 1946-52

Experiences: Beginning in 1932, thirteen years experience as an educator, ranging from third grade departmental through high school and including one year as instructor of psychology in department where graduate major was done; four years as principal and counselor, high school; three years elementary principal. Chief Clinical Psychologist (Psychotherapist), Oklahoma City School System, 1949-52. College dance orchestra, 1932-37; Advertising Manager, 1932-33.

Fellowships: Fellowship Teacher, College Training School, Southwestern Institute of Technology, 1932-34; Graduate Fellowship (Instructor), O.A.M.C., Department of Psychology, 1948-49.

Scholarships: O.A.M.C., Education Workshop, 1946; Institute of General Semantics, Summer Seminar and Workshop, 1951.

Honorary: President of Student Body, Southwestern Institute of Technology, 1934; President of Superintendents' and Principals' Club, Roger Mills county, Oklahoma, 1937-39.

Professional Organizations: Phi Delta Kappa, Kappa Delta Pi, Institute of General Semantics, International Society for General Semantics, Psi Chi, Oklahoma State Psychological Association, and American Psychological Association.

Date of Final Examination: June 26, 1952.

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AUTHOR: GARDNER BROWNING WALKER

THESIS ADVISER: GUY A. LACKEY

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TYPIST: GORDON F. CULVER