PERSONALITY DIFFERENCES BETWEEN GRADUATE STUDENTS IN CLINICAL AND EXPERIMENTAL PSYCHOLOGY AT VARYING EXPERIENCE LEVELS

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This is to certify that the

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ABSTRACT

PERSONALITY DIFFERENCES BETWEEN GRADUATE STUDENTS IN CLINICAL AND EXPERIMENTAL PSYCHOLOGY AT VARYING EXPERIENCE LEVELS

By Robert M. Nagle

The main function of the present study was to determine whether Bordin's theoretical assumption ("that different occupations afford differing opportunities for the expression of impulses, for the utilization of defenses, and for organizing one's dealings with the world; and that occupational groups do very significantly from one another in important personality characteristics") applies to clinical and experimental psychologists. The second function was to examine whether training during graduate school and/or experiences prior to admission to graduate school are responsible for personality differences in clinical and experimental psychologists. The third function of this study was to investigate the effect of experience on the personality of graduate students in psychology irrespective of field. The fourth function of the study was to observe and predict the patterning of graduate student groups on each scale studied in comparison to undergraduate norm groups for each variable.

To assess personality differences and changes on the same personality characteristics during graduate school, 82 male graduate students at Michigan State University in clinical and experimental psychology at beginning (first year) and advanced (third and fourth year) levels completed three personality scales. The tests used were Witkin's Hidden figures Test, a measure of field dependence-independence (FD-FI), Rotter's Internalization - Externalization Scale, a measure of expectancy regarding locus of reinforcement

(I-E), and Byrne's revised Repression - Sensitization Scale, as a measure of defense mode (R-S).

Summing over level of graduate school education, it was found that clinicians were significantly more field dependent, internalized, and repressed than experimentalists. The results on the repression - sensitization dimension were significant in the opposite direction from that predicted. Experience prior to graduate school education does not appear responsible for the personality differences in clinical and experimental psychologists since only on the repression - sensitization dimension were beginning clinicians significantly different (clinicians were more repressed than beginning experimentalists). On the other hand, experience and selection factors during graduate school do appear to cause advanced clinicians to be significantly more internalized and field dependent than advanced experimentalists.

Summing over field of specialization, advanced graduate students were significantly more field independent than beginning students. Advanced clinical students showed no significant differences from beginning clinical students. Advanced experimental students though, were significantly more field independent and repressed than beginning experimental students. Also, on two of the three variables (the R-S dimension being the exception) the trend of mean scores from beginning to advanced levels increases for both clinicians and experimentalists. Thus it does appear that experience in graduate school in psychology causes changes in personality, and experience in each of the two fields discussed in the present study affects the same personality characteristics differentially.

The results did not fully support Bordin's theory since beginning clinicians and experimentalists were not different on two of the three personality variables. It must not be forgotten, though, that beginning clinicians and experimentalists are significantly different on the R-S scale, so this variable could act as a differentiating force in the selection of a major field along with other variables not studied in this research. On the other hand, it does appear that experience in graduate school and more specifically in each of the two major fields results in important and significant personality changes. These changes produce groups of clinicians and experimentalists who have widely different personality characteristics by the time they earn their doctorates.

The results on the R-S scale were opposite from those predicted. However, it does not appear that 68 of 82 graduate students in psychology could be repressors. It does appear, from prior research as well as from the present study, that the R-S scale is more a measure of social desirability and adjustment than it is a measure of repression.

Further study in this area is essential. The present study has shown that clinicians and experimentalists at M.S.U. are different on the present personality characteristics. However, other more central characteristics also need to be assessed. We need to study characteristics that can be closely tied to important behavoral manifestations of clinicians and experimentalists. Then we can begin to predict and select persons who would have the best chance of being successful in their graduate study and in their later professional duties.

PERSONALITY DIFFERENCES BETWEEN GRADUATE STUDENTS IN CLINICAL AND EXPERIMENTAL PSYCHOLOGY AT VARYING EXPERIENCE LEVELS

By

Robert Morris Bogle

A THESIS

Submitted to
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DEDICATED

TO CAROL, DEBBIE, AND KIM

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This thesis is dedicated to my wife, Carol, and my children, Debbie and Kim, whose moral support and loving encouragement were instrumental in my finishing something on time for once in my life.

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CHAPTER I

INTRODUCTION

The present study is an investigation of personality differences between various occupations and more specifically studies personality differences between clinical and experimental psychologists. This research also attempts to identify possible causes, time periods, and trends of personality differentiation for clinicians and experimentalists. A number of writers on this topic do not believe that personality characteristics have very much influence in occupational choice. Super (1957) states that personality traits seem to have no clear cut and practical significant differential relationship to vocational preference, entry, success, or satisfaction. Ginzberg, Ginsburg, Axelrad, and Herma (1951) believe that occupational choice involves the balancing of a series of subjective elements with the opportunities and limitations of reality, and the crystallization of occupational choice inevitably has the quality of a compromise.

At the specific level, Shaffer (1953) and Kelly and Fiske (1951) maintain that there are no personality differences between clinical and experimental psychologists which can account for their often widely divergent occupational roles. Opposing that view, Bordin (1966) and some of his colleagues assert that clinical and experimental psychologists do have basic personality differences that account for their differing professional activities.

Kelly and Fiske's (1951) study is often used as proof that there are few measurable personality differences between clinical and experimental psychology students. However, the present author believes that the Kelly and Fiske study had serious methodological and design problems that may have caused its negative findings. Some of the problems with that study were:

(a) the criteria were inappropriate for the purposes for which they were designed. Kelly and Goldberg (1959) state that though their criteria appear to be objective indices of performance, nonetheless they may mask sizeable differences in the actual functioning of the subjects. They also declare that the situationally specific nature of many of the criterion measures appears to be the most reasonable explanation for the general low correlations found in the original and follow up study.

(b) the persons who gave and interpreted some of the tests were, often not fully trained and a more careful analysis and use of the tests might have produced some significant relationships with the criteria. For example, Harrison (1966) stated that some of the staff members assigned to TAT assessment were by their own statement relatively inexperienced. If the TAT write-ups had been matched against composite write-ups based on all other information on the examinees, more favorable results would have been obtained.

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(c) the results were confounded by using different graduate schools. Some schools select and train clinical students to be practicing professionals; other schools select

and train every graduate student to be a researcher and do not train clinical students very thoroughly in clinical practice (Potthorst and Kovacs, 1962). Since the goals and rationale for selection and training were not described for any school used we cannot separate the effect of different types of experiences on personality traits.

(d) the study lacked an integrated theoretical approach. It appears that the Kelly and Fiske study attempted to cover too large an area in too general a manner. If there are differences between clinicians and experimentalists they are probably very subtle and complex. The most effective way of searching for differences in the two groups would be to carefully test the accuracy of various theoretical propositions.

On the other hand, Kelly and Goldberg (1959) as part of a follow up study of the Kelly and Fiske investigation selected psychologists from this follow up study who were relatively "pure" representatives of the three subfields: therapist, academician, and administrator. These subjects were compared on all the measures selected for the original study and the follow up questionnaire. It was found that therapists were significantly different from academicians in that they were less rebellious in childhood, they had less intrapsychic conflict, they were less curious, they were less scientific and creative, and they were more altruistic.

Personality Differences

Bordin (1966) has theorized that clinical and experimental psychologists share equal amounts of the element of interpersonal

curiosity, but that they have unequal amounts of the two motivations, compassion and doubt. He believes that clinicians are more often motivated by the capacity to reverberate to the feelings of others, particularly to their distress and that experimentalists are usually motivated by their doubts. Compassion urges the need for immediate action to alleviate distress, whereas doubt urges caution and distance to find the truth.

Galinsky (1962) had clinical psychologists and physicists answer specific questions about their childhood and parent's rearing practices during a forty-five minute interview. He found that as children, clinical psychologists had more opportunity to be curious about interpersonal relations than did physicists; and that emotional expression and frank discussion of people's behavior was characteristic of family conversation; during childhood clinical psychologists had closer and warmer relationships with their mothers than did physicists; physicists received more intellectual stimulation from their families than did clinical psychologists; discipline of physicists was rigid and stressed obedience while discipline of clinical psychologists was flexible and stressed appeal to feelings; physicists had fewer but less stormy relationships with peers than did clinical psychologists who had strong but conflictual attachments to their families.

Bordin, Nachmann, and Segal (1963) have drawn up a structural dimension of work which appears to have application

in the search for personality differences between many occupational groups (excluding those persons who are motivated or constrained mainly by external forces). Their dimensions were based on the earlier theoretical assumptions and research results of Nachmann (1960), Segal (1961) and Galinsky (1962). Bordin, Nachmann, and Segal (1963) consider that the elaboration and refinement of the structure of dimensions of work has to be carried out via a repeated weaving back and forth between job analysis, personality traits, and the assumptions regarding the childhood experiences which generate these traits. They assume that the complex adult activities retain the same instinctual sources of gratification as the simple infantile ones. They suggest ten dimensions: (a) nurturant (feeding and fostering); (b) oral (aggressive cutting and biting devouring); (c) manipulative (physical and interpersonal); (d) sensual (sight, sound, and touch); (e) anal (acquiring, timing-ordering, hoarding, and smearing); (f) genital (erection, penetration, impregnation, and producing); (g) exploratory (sight, sound, and touch); (h) flowing-quenching; (i) exhibiting; (j) rhythmic movement.

Each occupation is rated on a four point scale as to the degree to which the job requires the activity described by each subcategory of each dimension. The occupation is also rated as to instrumental mode or the tools and activities through which the impulse is expressed, the person or thing toward which the activity is directed, whether the activity

Is masculine or feminine, and whether the affective component of the activity is accepted or repressed. In order to rate an occupation on Bordin's dimensions he feels that direct observation of the worker on his job will be important to identify the modes of expressing and controlling one's impulses that the activities afford. To find the gratifications that the occupation affords, he looks to the worker's experience of his work, his descriptions of his experiences, the psychological significance of the products of his work, and his fantasies. Examples of the definitions of some of Bordin's dimensions are: (a) the dimension of curiosity is defined as having to do with the occupation's use of the sense organs for finding out about the world-investigating, exploring, knowing the facts; (b) the dimension of manipulation is defined as the profession's amount of power over people or physical objects.

Measurement of Differences Between Clinicians and Experimentalists

Basically this study is concerned with whether there are measurable personality differences between clinical and experimental psychologists and the effect of experiences during graduate school on these personality characteristics. Bordin's structured dimensions of work do not appear to be developed well enough, as yet, for the separation of two such similar groups as clinical and experimental psychologists. For example, the rating of an occupation on Bordin's dimensions is a very subjective endeavor since none of his dimensions have been

operationally defined. Bordin, et al., (1963) state that their categories of work activity or of impulse expression may not at this stage be dimensions in a statistical sense, nor is it certain whether the dimensions are independent of one another. As can be observed only a few of the previously cited dimensions of work are useful in describing and separating various occupations, even considering those whose functions are sharply defined and widely contrasting. Bordin, et al., (1963) have stated that one of the most difficult and yet most critical tasks in the confirmation of their theoretical scheme is the development of measures for the dimensions in terms of personality organization.

Therefore, some objective and operationalized personality categories are required. It is also necessary that we have measures that have some theoretical basis for differentiating clinicians and experimentalists. If both of these criteria are met then it appears more feasible to test whether there are personality differences between clinicians and experimentalists. A review of the literature suggests the selection of three interdependent continua (field dependence-independence, internalization-externalization, and repression-sensitization) which seems to have promise for differentiating clinicians and experimentalists. These three bi-polar variables appear to have some relationship to Bordin's dimensions of curiosity and manipulation and his affective component of the dimensions. But more importantly they have been operationally defined by the development of tests which purport to measure each of the continua.

In an attempt to integrate these interdependent measures, Crego (1966) demonstrated that various configurations of the three tests could be isolated from a sample of college freshmen and sophomores. He also noted that those configurations or patterns were consistent with the earlier findings by Witkin (1965) who related several different behavior patterns to various configurations of field dependence-independence, internalization-externalization, and repression-sensitization. For example, Witkin (1965) reported that field dependent, externalized, and repressed persons who were in therapy felt better quicker than persons with the opposite personality characteristics, but their improvement was not maintained. Following this idea, Pollack and Kiev (1963) found that therapists who were field independent, externalized, and isolated tended to favor either a directive and instructional or a passive observational approach to their patients, whereas therapists who were less field independent, less externalized, and less isolated favored personal and mutual relations with their patients.

Field Dependence - Independence (FD-FI)

Field dependence-independence is the perceptual aspect of a dimension which Witkin, Dyk, Paterson, Goodenough, and psychological differentiation. This dimension, with its two spheres in the perceptual and cognitive realms, appears to be an important personality dimension which distinguishes among people and is related to many other categories of personality.

Differentiation represents a maturational process toward greater analysis, articulation, and structuring of experience. Maturation proceeds from a relatively unstructured state, wherein the self is undifferentiated from the field, toward increasing differentiation and consequent integration across psychological areas. The unstructured, undifferentiated state reflects the organism's global unarticulated response to stimuli; increasing structuring of experience represents development of increased articulation in response to features of the environment, greater specificity of response in terms of more differentiated modes of responding and concurrently, increased differentiation of the self from the field.

Witkin's bi-polar variable of FD-FI or psychological differentiation appears to be similar to Bordin's occupational dimension of curiosity. Bordin (1966) feels that psychologists share a curiosity about others and the need to understand human behavior, experience, and ourselves. With regard to other occupational groups Nachmann (1960) found that reading skills were taught to social workers and lawyers at an earlier age than dentists. Parents of social workers and lawyers were more concerned with intellectual and school achievement than dentists. Reading was important to social workers and dentists as a means of gaining parental approval rather than as a source of enjoyment for its own sake as it was for lawyers. In a study described more fully earlier in this paper, Galinsky (1962) found that clinical psychologists as children had more opportunity to be curious about interpersonal relations both from the vantagepoint of hearing about the behavior of

people outside the family as well as from having the opportunity to observe emotional interaction within the family. Physicists had more intellectual interests and more intellectual stimulation from their family than did clinical psychologists.

Internalization - Externalization (I-E)

Rotter (1966) states, "When a reinforcement is perceived by the subject as following some action of his own, but not being entirely contingent upon his action, then in our culture, it is typically perceived as the result of luck, chance, fate; or it may be perceived as under the control of powerful others, or as unpredictable because of the great complexity of the forces surrounding him." "When the event is interpreted in this way by an individual, we have labeled this a belief in external control. If the person perceives that the event is contingent upon his own behavior or his own relatively permanent characteristics, we have termed this a belief in internal control."

The I-E continuum is similar to Bordin's description of his dimension of manipulation. The I-E scale measures a continuum of power versus powerlessness, but it is the power to reinforce one's own actions and behavior versus the control of reinforcement of the self by the environment or others. Rotter (1966) has noted that internalization is a prerequisite for control of the environment and of others. There has also been some research relating Bordin's dimension of manipulation to various occupational groups. Social workers

and lawyers reported an emphasis in their family on firm but reasonable self discipline, whereas dentist's related their family's discipline as harsh and repressive. Regard for feelings of others as an aim of discipline, concern for human suffering as an ethic instilled in the children, and appeal to consideration for others as a method of discipline was more frequent in the homes of social workers than dentists or lawyers. Galinsky (1962) found that the discipline of physicists was rigid, stressed obedience and was meted out by their mothers.

Repression - Sensitization (R-S)

Byrne (1961) has defined the dimension of personality characterized as repression-sensitization in terms of an individual's usual response to anxiety evoking stimuli. At the repressing extreme are behaviors which serve to avoid anxiety arousing stimuli and at the sensitizing extreme are behaviors which involve approaching or controlling the threatening stimuli. Then the middle of the dimension should represent those individuals who do not defend against anxiety but adjust realistically to it.

This variable fits into Bordin's affective component of his dimensions, except that Byrne's test deals not only with defenses against affect but with defenses against any anxiety producing stimuli. There is also some general research relating other occupations and duties to their handling of affect. Nachmann (1960) found that social worker's apparently repressed

negative feelings toward their fathers. Galinsky (1962) found that the intellectual discussion in physicists families seemed to be for the purpose of avoiding more personal matters. He also found that physicists were more isolated from their peers and girls than clinical psychologists. Clinical psychologists had more conflict with their families than physicists but also faced the anxiety that brought and were also closer to their families.

Differences in Training

Many psychologists assert that if the training programs were better, clinicians would also be publishing scientists. Thus various methods have been proposed to implement the training of the clinician as a researcher (Garfield, 1966; Hoch, Ross, and Winder, 1966; and Raimy, 1950). This view has grown despite the fact that few clinical psychologists carry out the role of publishing researcher (Levy, 1962), regardless of what kind of training program they come from.

Shaffer (1953) collected data from over 500 clinical psychologists on questions concerning their work, training, and backgrounds. They were also separated by means of an attitudinal scale into those describing themselves as being intuitive or objective. The intuitive psychologist received psychotherapy, was inspired by clinically oriented writers, and identified with idealized persons who were in practice. Objective psychologists were interested in research, were stimulated by authors of well designed research, and identified

with research workers. He concluded that clinical psychologists do not fall at either extreme of the attitude scale, nor does he believe that personality differences account for the sub groups that were either intuitive or objective. Rather he believes that the sub groups can be accounted for by the training they received and to the work they have done.

Bordin (1966) takes the view that clinicians are motivated mainly by compassion and the experimentalists are usually motivated by doubt. He concludes that there will be only a minority of psychologists in whom compassion and doubt are equally strong. He believes then that an undue emphasis on doubt in graduate training can alienate the potential clinician. The training programs, therefore, should be flexible enough to allow an individual clinician to follow his inclinations and yet teach him enough of the research method so that he can carry out naturalistic and observational studies which are a very necessary part of psychology.

Thus, the present study investigates whether graduate students in clinical psychology manifest different personality characteristics from graduate students in experimental psychology. And further it investigates whether experiences during graduate school or experiences obtained before graduate school are responsible for any personality differences between the two groups. Accordingly a comparison of beginning (first year) graduate students in clinical and experimental psychology and a comparison of advanced (third and fourth year) graduate students in clinical and experimental psychology will give.

evidence as to whether prior experiences or experiences throughout graduate school have the major effect on personality characteristics and differences of graduate students in psychology. Following Bordin's(1953) theory, differences should be found between clinical and experimental psychologists at both beginning and advanced levels, since he hypothesizes that basic personality differences stemming from methods of infantile instinctual gratification are responsible for later occupational choice. Shaffer's (1953) theory would apparently predict that clinical and experimental psychologists would not manifest different personality characteristics until the advanced level since he found no useful relationships between antecedent experiences and his intuitive-objective attitudes.

The second major aspect of the present study is to examine the trend and nature of personality changes from beginning to advanced levels of graduate study. Although only two very limited points in the continuous progression of a person's life are being sampled, it is assumed that these points are indicative of earlier and later trends in the psychologist's personality and development in his occupation. It is possible that graduate school experiences cause no change in the personality characteristecs of a majority of students. It is also possible that only random changes occur in the personality of most students. The present author, however, contends that knowledge of personality characteristics and occupational interest will allow the direction of change to be predicted. The prediction then can be tested by comparing advanced students

with beginning students as a group and by comparing advanced and beginning students for each specialty.

Owing to the fact that experience or training is a very important part of this study, it is imperative that the type of experiences obtained by graduate students in clinical and experimental psychology can be generally identified. This variable has been controlled in the present study since the graduate school from which students have been drawn does emphasize and value both applied and research training in psychology.

DIFFERENCES BETWEEN CLINICAL VERSUS EXPERIMENTAL AND ADVANCED VERSUS BEGINNING STUDENTS

Clinical versus Experimental Students - Roe (1956) found that research psychologists had higher standard scores on the non verbal part of the WAIS than clinical psychologists who reversed those scores. Goodenough and Karp (1961) reported that the embedded figures test and block design, picture completion, and object assembly from the WAIS were highly and positively related. They also found that the comprehension sub test of the WAIS was highly and negatively related to the FD-FI test. Thus the research would indicate that experimental psychologists who generally perform better on non verbal IQ tests than clinical psychologists should have higher FD-FI scores. We would expect the higher FD-FI scores for experimental psychologists to hold for beginning and advanced students since we assume that this is one of the personality differences that leads to a person's choice of one field or the other.

One of the assumptions of the present research is that research psychologists at both beginning and advanced levels more than clinical psychologists perceive rewards and punishment as emanating from personal and non personal forces external to themselves. It is assumed that researchers are more concerned with controlling the external environment, including other people, than they are with changing or examining themselves. The author contends that persons who become primarily researchers have been reinforced, more often than clinicians by parents, peers, and once in graduate school by their teachers, for controlling change in the environment. They are not rewarded as often by the authorities in their environment for introspecting and changing their own behavior in order to have more power over their own behavior and also that of others. The clinician, one might speculate, has more often felt that he is responsible for his behavior and the behavior and feelings of people who interact with him. He has been reinforced, especially by his teachers, for altering his own feelings and behavior. The clinician throughout life has been interested in people and is usually introspective (Galinsky, 1962). He has found that he is rewarded for doing things for other people and for controlling his own behavior, at first in line with what others want and then to meet the needs of his own self actualization. This makes it more likely that he will also be able to change important people in his milieu. Shaffer's (1953) finding that the intuitive clinician wanted to know himself better and the objective

clinician was more interested in theory and research could be extended to clinicians and experimentalists quite easily. He also found that the intuitive clinician was more interested in therapy and diagnosis and the objective clinician was interested in research and teaching which fits the present theory nicely. Kell and Mueller (1966) state the main thesis well:

> "The expansion of feelings, which is the basic means for internalizing may, of course, lead to a fulmination of feelings of conflict. This is the counseling objective, however, since the acute experience of conflict as internal to one's self is the necessary emotional prelude to the development of new alternatives and new internally felt means of control. Parents and other perceived sources of conflict (authority) can then be incorporated and integrated in new ways and even experienced as meaningful and helpful in the continuous unfolding of life."

From the time of Freud it has been considered imperative that the therapist in training have a personal analysis to prevent the therapist from defending against anxiety brought about by his own interpersonal difficulties. Assuming that therapy is effective, advanced clinical students, who usually have had personal therapy and supervision which trains the clinician to handle anxious circumstances without overly defending, should be less defensive than advanced experimental students. Roe's (1956) study defends this view since she found that clinical psychologists were slightly better adjusted on the MMPI, Rorschach, and Guilford-Martin tests than experimental psychologists. Beginning clinical students should be

less defensive than beginning experimentalists since this appears to be one of the prime selection criteria for clinical students. Also their greater interest in themselves and their problems may have motivated them to seek help for any emotional difficulties at an earlier time in their life.

Advanced versus Beginning Students - Kell and Mueller (1966) stress that a supervisor helps a student therapist become a better therapist by helping him differentiate his feelings and conflicts from those of his client. Gottesman (1961) found that therapeutic ability and experience in a group of counselor trainees was significantly and positively related to degree of differentiation of concepts achieved by subjects in distinguishing other people in the world. Thus there is some theoretical and experimental evidence that more experienced therapists are more field independent than less experienced ones.

All of the groups of grad students should be more field independent than college undergrads (Witkins, et al., 1962; Goodenough and Karp, 1961; and Gardner, Jackson, and Messick, 1960). Although Witkin, et al., (1962) has stated that differentiation is a stable characteristic which does not show increasing development past maturity, the author suggests an increase in differentiation from beginning to advanced graduate student levels. Should this be found it does not necessarily mean a developmental change in differentiation but more likely shows the high relationship between differentiation and intellectual abilities (Gardner, Jackson, and Messick, 1960). Since some of the students who are less

differentiated might tend to drop out leaving only the most highly differentiated individuals at the advanced levels. Another possibility, especially in clinical psychology, is that persons who are field dependent tend to use repression under stress as reported by Witkin (1965). One might speculate that clinical psychology students who are highly repressed are more likely to leave the program than those using sensitizing defenses.

Researchers as they increase in competence should also increase in externality as it relates to their feeling more capable in controlling the environment. It is assumed experimentalists perceive anxiety as arising from external events and persons. Thus, they would try to take luck out of transactions by developing their abilities to control external events to the utmost. With increasing experience would come increasing order and prediction of events. The advanced experimentalist would treat himself as part of the environment and would seek to control his own behavior as an objective and controllable series of events. He would be less likely to tolerate mysterious fantasies and internal subjective emotional forces which are not quantifiable.

On the other hand, clinicians should increase in internality with increasing experience. Advanced clinicians would be expected to experience feelings and thoughts opposite to those just described. Their training would accentuate their tendency to be aware of their own feelings and traits in relation to and separated from others. For example, Abeles (1963) found that more advanced counseling trainees responded

with a greater range and complexity of affect to a projective test. Instead of controlling details of the environment, as experimentalists do, they would be expected to analyze themselves and others when under stress in order to gain more understanding of how they can increase their ability to handle the situation.

Both the beginning clinical and the beginning experimental students perceive a great deal of environmental pressure. They are in intense competition with each other and are literally fighting for their professional futures. They often feel that they are never allowed to let up for a minute since they are forced to jump over more difficult hurdles and they believe that if they do ease up any other person in the graduate student group can easily take over for them. This intense competition means that many of them, especially if they have even mild difficulties in interpersonal relations, will isolate themselves even further from close meaningful relationships with fellow graduate students. The relative lack of competence will foster feelings of inadequacy which their teachers and supervisors often accentuate by their overcontrol and "management from afar" (Kell and Mueller, 1966). All of these circumstances would, of course, increase anxiety and result in defensiveness. Most advanced graduate students have demonstrated that they belong in graduate school, possessing more concrete and fewer obstacles to their goal. They've been around long enough to find fellow graduate students that they can trust and like, their competency is no longer in doubt, and they have usually found teachers who have fostered

their professional and personal development without stifling their independence.

Pattern Study

In order to enhance the study of differences between experimental and clinical and beginning and advanced students an attempt is made to compare scores made by these groups to available normative data on the criterion instruments. In this context an attempt is made to predict patterns of scores for sub groups as they would be expected to differ from normative data.

CHAPTER II

STATEMENT OF PROBLEM AND HYPOTHESES

Clinical versus Experimental Students

Nachmann (1960), a student of Bordin, expresses the general assumptions with which the first part of the present study is concerned. "(a) different occupations afford differing opportunities for the expression of impulses, for the utilization of defenses, and for organizing one's dealings with the world." "(b) occupational groups do vary significantly from one another in important personality characteristics, despite the modifying and perhaps sometimes obliterating circumstances that all men have basically the same impulses and that many occupations can be bent to serve many aims." Thus clinicians and experimentalists should be significantly differentfrom each other in the directions predicted on the indicated three personality variables.

I. Clinical students will be significantly less field independent, more internalized, and less defensive (repressing or sensitizing) than experimental students.

In order to test whether experiences prior to admission to graduate school have affected the personality traits observed in this study, beginning clinicians and beginning experimentalists will be compared. Our expectation will follow Bordin's theory that persons who enter a field should be significantly different on the variables studied herein, especially since those traits are similar to the variables described by Bordin and his students which differentiated the

practitioner from the scientist.

Ia. Beginning clinical students will be significantly less field independent, more internalized, and less defensive (repressing or sensitized) than beginning experimental students.

The personality characteristics and differences of advanced graduate students in clinical and experimental psychology in a graduate school which emphasizes clinical practice for clinicians and research for experimentalists should be maintained or enhanced from those that were found for beginning graduate students.

Ib. Advanced clinical students will be significantly less field independent, more internalized, and less defensive (repressing or sensitized) than advanced experimental students.

Advanced versus Beginning Students

The experiences and selection factors occurring throughout graduate school should have an affect on the personality of graduate students irrespective of field as indicated in the last section of this study.

II. Advanced students will be significantly more field independent and less defensive than beginning students.

Over and above the shared experiences of graduate school each field should have significant influence on its students' personality characteristics that is different for each variable or characteristic because of the different experiences, personality attributes, and selection factors involved in that area.

IIa. Advanced clinical students will be significantly more field independent, more internalized, and less defensive (repressing or sensitized) than beginning clinical students.

IIb. Advanced experimental students will be significantly more field independent, more externalized, and less defensive (repressing or sensitized) than beginning experimental students.

Pattern of Mean Scores

The detailed hypotheses of differences between nearly each group and every other group has allowed a prediction of mean scores for each group on each scale. These predictions were broken into six broad categories in terms of the mean of the undergraduate norm group for that variable.

IIIa. The mean score of beginning clinical students will fall into the pattern M-H, M-L, and M-H on the FD-FI, I-E, and R-S tests respectively.

b. The mean score of beginning experimental students will have the pattern H, M-L, and H on the FD-FI, I-E, and R-S dimensions respectively.

c. Advanced clinical students will have mean scores exhibiting the pattern H, L, and M on the FD-FI, I-E, and R-S continua respectively.

d. Advanced experimental students will have mean scores with the pattern H^1, M, and M-H on the FD-FI, I-E, and R-S tests respectively.

The six categories used for the pattern of mean scores were:

1. H^1 - 2SD above the mean of the respective norm group.
2. H - 1SD above the mean of the respective norm group.
3. M-H- Between the mean of the norm group and H.
4. M - At the mean of the respective norm group.

5. M-L- Between the mean of the norm group and L.

6. L - 1SD below the mean of the respective norm group.

A score was considered M-H or M-L if a test for the difference between means showed it to be significantly different from the mean of the norm group or significantly different from the score 1SD from its respective norm group mean.

5. M-L- Between the mean of the norm group and L.

6. L - 1SD below the mean of the respective norm group.

A score was considered M-H or M-L if a test for the difference between means showed it to be significantly different from the mean of the norm group or significantly different from the score 1SD from its respective norm group mean.

CHAPTER III

METHOD

Subjects

Eighty-two male-first, third, and fourth year graduate students in clinical and experimental psychology at Michigan State University who agreed to participate when contacted by phone were the subjects for the present study. Two advanced experimental and five beginning experimental students refused to participate in the study. No clinical students at either level refused participation. One beginning clinical student, six beginning experimental, two advanced clinical and two advanced experimental students could not be contacted because they had changed their address or had left the campus.

An attempt to compare the clinical and experimental psychologists in the present study with graduate students in the Humanities and the Physical Sciences was unsuccessful. The assumption was that clinical psychologist would have been more like students in the Humanities and would have been different than students in the physical sciences on the three variables tested. It was also assumed that experimental psychologists would have been more like students in the Physical Sciences and different from those in Humanities. These assumptions could not be tested since 15 out of 17 graduate students in Physics contacted either would not participate or did not show up on their scheduled testing time. This compares with 7 out of 9 graduate students in English and Philosophy who did participate in the

study when contacted. In light of the lack of cooperation from students in Physics, the plan to compare students in Humanities and the Physical Sciences with psychologists was dropped for the present study.

For the purposes of the study, clinicians were those men registered with the psychology department as clinical or counseling psychology students. Clinical and counseling psychology students were grouped together since all of the research and theory comparing different areas of psychology has found them to be alike (Roe, 1956; Schoefield, 1966). Also, only counseling students were used who had taken essentially the same courses as the clinical students and who had identical practicum and intern experience. Two counseling psychology students were included in the advanced clinical sample. All other graduate students in psychology, including those in child, personality and social, were considered experimental students. There has been no research comparing the three areas named above with other areas in psychology. Persons in those areas do appear to have more academic and research interests, and their training is also usually quite different from clinical students since they have no practicum or intern experiences. Students in industrial psychology were not used in the study since prior research has shown that they combine some of the characteristics of clinicians and experimentalists (Roe, 1956; Goldberg, 1959).

Significant sex differences, with women being extremely variable, have been found to exist in the measurement of field dependence - independence (Witkin, et al., 1962). Therefore, only

male graduate students were used as subjects.

Beginning graduate students were students who were in their first year of graduate study with 1 to 36 graduate credits from Michigan State University or some other accredited university. Advanced graduate students were students who were in their third or fourth (or more) year of graduate study with 73 graduate credits or above. Third and fourth year graduate students were used as advanced students since it does appear that third year graduate students are usually considered advanced by faculty and other students. By the end of their third year both clinical and experimental students have finished many of their upper level courses and have had at least a year and probably two of practical experience in their respective areas. This should differentiate them from beginning students who usually have had only minimal practice experience in testing and therapy or research.

Instruments

The Hidden Figures Test - Level of psychological differentiation was measured by scores on the field dependence - independence dimension. These scores were obtained through the administration of the Hidden Figures Test, an embedded figures instrument, The Hidden Figures Test, Test cf - 1 from the Educational Testing Service Battery, represents a measure of flexibility of closure as originally constructed. This is an adaptation of Thurstone's Gottschaldt Figures Test (Thurstone, 1944). Several studies have indicated that flexibility of closure and field dependence - independence dimensions are the same (Gardner, Jackson, and Messick, 1960; Jackson, Messick, and Meyers, 1964; Witkin, et al., 1962).

The test is comprised of thirty-two patterns containing an embedded figure which the subject is to locate. All patterns are achromatic and the use of memory is required at only a minimal level. Total number of identified embedded figures represents the score on the field dependence - independence dimension.

Epstein (1957), and Silverman, Cohen, Shmavonian, and Greenberg (1961) have confirmed Witkin's finding of the relationship between articulation of body concept and the cognitive study of psychological differentiation. Witkin, et al., (1962) report that persons with an articulated cognitive style give evidence of a developed sense of separate identity, in other words, they have an awareness of needs, feelings and attributes which they identify as distinct from those of others. Sense of separate identity implies experience of the self as segregated. It also implies experience of the self as structured internal frames of reference have been formed and are available as guides for definition of the self. The less developed sense of separate identity of persons with a global cognitive style manifests itself in reliance on external sources for definition of their attitudes, judgements, sentiments, and of their views of themselves. Witkin (1965), and Shonbar (1964) reported that persons who experience in articulated fashion tend to use specialized defenses, as isolation. In contrast, persons with a global cognitive style tend to use such defenses as massive repression and primitive denial. These latter defenses involve an indescriminate total blotting out of memory for past experiences and of perception of stimuli. Their feelings strongly influence thought and

perception, in other words, that feelings are not kept sufficiently discrete from thoughts and percepts.

The relationship between psychological differentiation and types of pathology has also been demonstrated by many studies. Witkin (1965) stated that there is some suggestion of greater frequency of pathology at the extremes than in the middle of the range of differentiation. Also, pathology takes quite different forms at the two extremes. Differentiated persons when they break down, show delusions, expansive and euphoric ideas of grandeur, outward direction of aggression, overideation, and/or continuing struggle for the maintenance of identity, however bizarre the attempt. With persons of a global cognitive style there are often severe identity problems, with little struggle for maintenance of identity, deep seated dependency problems, inadequately developed controls, resulting in chaotic functioning, and passivity and helplessness.

The I - E Scale - Internal versus external control of reinforcement was measured by scores on the I - E scale developed by Rotter (1966). Many investigators have recognized that differences in subject behavior are related to task difference along a dimension of skill and chance (Goodnow and Postman, 1955; Cohen, 1960; Feather, 1959). Many studies on complex learning can be summarized in a clear cut manner, when a subject perceives the task as controlled by the experimenter, chance, or random conditions, past experience is relied upon less. Consequently, it may be said that he learns less and learns the wrong things (Phares, 1961; James, 1957; Rotter, Liverant, and Crowne, 1961).

Rotter (1966) found that the I-E scale was not related to social desirability. The items are concerned with the subjects' expectations about how reinforcement is controlled and not to the preference for internal or external control. Further, it is not identical to the measure of inner versus outer - directedness or introversion - extroversion. The scale was developed so as to include a minimum number of items which are internally consistent (.70), reliable over time (.72), and are not related to IQ (-.09). The I-E scale has high construct validity as measured by the ability to predict differences in behavior for individuals above or below the median of the scale, or from correlations with behavorial criteria (Rotter, 1966). Maladjustment and I-E scores are related but in a rather complex fashion. No significant sex differences were found, but Negros and lower social class persons were more externalized (Battle and Rotter, 1963).

Seaman (1963) and (1964), and Strickland (1965) found strong support for the hypothesis that a generalized expectancy - that one can affect the environment through one's own behavior - is present in at least two different cultures, in many different ways. It was also found that internals were usually more achievement oriented, although this is a complex relationship and that internals resist subtle suggestion more successfully than externals (Rotter, 1966).

The I-E test is a 29 item, forced choice test including 6 filler items intended to make somewhat more ambiguous the purpose of the test. High scores represent externalization.

The R - S Scale (Health and Opinion Survey)- Defense mode was measured by scores on the dimension of repression - sensitization as developed by Byrne (1961). On the basis of research with this strument Byrne (1964), found that sensitizers in comparison with repressers may be characterized as more intellectualizing, making more deviant responses on adjective check lists (Byrne, 1961) describing themselves in more negative terms (Altrocchi, Parsons and Dickoff, 1960), and characterizing themselves as more anxious than repressors (Joy, 1963; Ullman and McReynolds, 1963). At the same time sensitizers seem more appreciative of humor (O'Connell and Peterson, 1964), exhibit less autonomic responsiveness with a stressful situation (Lazarus and Alfert, 1964), and seem less disrupted than repressors on a word association test containing "threatening words" (Lomont, 1965). Compared to sensitizers, repressers are reported to have greater difficulty in recalling nonsense syllables associated with poor performance on an intelligence test and personality test (Gossett, 1964), and to have a higher perceptual threshold for words associated with failure (Terpone, 1966). In describing their own emotional response to threat, repressers tend to deny and sensitizers freely to admit feelings of anxiety (Davison, 1963; Lazarus and Alfert, 1964; Pomerance, 1963).

There is considerable confusion existing on the basis of research findings regarding the relationship of repression end of the dimension to maladjustment. Byrne, Golightly, and Sheifield (1965); Joy (1963); and Terpone and Lamb (1967) found that the relationship between R-S and adjustment is linear.

On the other hand Ullman (1962) found data to support a curvilinear hypothesis. However, there seems to be little question that the sensitizing end of the dimension reflects maladjustment. Thus, the relative position of the groups in this study should remain the same even if a linear relationship exists. The only effect should be, in that case, that the scores will fall nearer the repression end of the scale than hypothesized.

The R-S scale has been found to have high internal consistency (.94) as well as high test-retest (.82) reliability (Byrne, Barry, and Nelson, 1963). The scale is comprised of 127 items plus 55 filler items and is administered as the "Health and Opinion Inventory." Answers to the MMPI derived scale are true - false and are not subject to a time limit. High scores on the scale represent the sensitizing end of the dimension while low scores classify subjects as repressors.

Procedure

Each of the subjects were contacted by telephone by the experimenter to solicit their aid in taking part in the research. They were told:

> My name is Bob Nagle. I'm in clinical psychology and I'm working at the MSU Counseling Center this year. I'm working on my dissertation and I'm using graduate students in psychology as my subjects. I need every person I can get and I'm wondering if you would help me by being a subject in my study. About all I can tell you without contaminating the results is that the study is about various

personality characteristics of graduate students. There are three short tests and they are all paper and pencil tests. It will only take you an hour to complete them. The results of your tests will be confidential and only group data are being used. Any time that you have an hour free during the next three weeks I will meet you in room 219 in the Counseling Center and administer the tests. Now can you tell me what day and what hour you have free so that you can take the tests.

The subjects were tested individually and in small groups of not more than five in a large study room in the MSU Counseling Center. Each subject took the entire battery of three tests in one sitting. Half of the subjects were administered the tests in the order: 1. Hidden Figures Test, 2. The I-E Test, 3. The R-S Test. The order of the tests was then reversed for the second half of the subjects. [1]All of the tests were administered by the author who also kept time on the Hidden Figures Test.

Instructions for the R-S and Hidden Figures Test were as printed in standard fashion on the test booklets. Subjects were given no help with regard to questions about individual items except to tell them to read the instructions again or answer the best they could. The R-S and I-E Tests were not timed but the subjects were encouraged to finish as quickly as possible and to put down the first answer they thought of. They were asked not to try to figure out how they were expected to answer, but to answer the questions as truthfully as possible. Instructions for the I-E scale were those used by Crego (1966).

[1] Tests of differences between means found no significant differences between subjects in the same group on the same test from an order effect.

CHAPTER IV

RESULTS

The responses of the 82 male graduate students in psychology on each of the three instruments are close enough to a normal distribution, as shown in appendix A, to use tests of means in analyzing the results. Data concerning the distribution of total scores on each dimension are given in Table 1.

Clinical versus Experimental Students

I. Clinical students will be significantly less field independent, more internalized, and less defensive (repressing or sensitizing) than experimental students.

Ia. Beginning clinical students will be significantly less field independent, more internalized, and less defensive (repressing or sensitized) than beginning experimental students.

Ib. Advanced clinical students will be significantly less field independent, more internalized, and less defensive (repressing or sensitized) than advanced experimental students.

A two way classification analysis of variance was carried out between level of graduate school education and students' major area for each of the three personality variables. Tables 2,3, and 4 indicate that hypothesis I was confirmed for the FD-FI and I-E dimensions, but was significant in the opposite direction from that predicted on the R-S scale. Clinical students were significantly less field independent and more internalized than experimental students; however, they were also significantly

TABLE 1

Range of Scores, Standard Deviations, Means, and the Number of Subjects in Graduate Student Groups and Norm Groups for Total Scores on Measures of Field Independence - Dependence, Internalization - Externalization, and Repression - Sensitization.

Group	Measures	Test		
		FD - FI	I - E	R - S
Beginning Clinical (N= 13)	Range	1 - 23	0 - 12	9 - 46
	S D	6.97	3.61	11.04
	Mean	11.15	5.30	21.00
Beginning Experimental (N = 17)	Range	4 - 29	1 - 16	2 - 94
	S D	6.08	4.51	23.74
	Mean	13.88	6.88	37.41
Advanced Clinical (N = 27)	Range	4 - 24	1 - 9	9 - 52
	S D	5.09	2.19	10.50
	Mean	14.70	4.63	20.78
Advanced Experimental (N = 25)	Range	7 - 30	1 - 19	7 - 58
	S D	5.91	3.77	12.48
	Mean	17.96	7.76	25.44
Norm Groups	N	99	575	733
	Range	2 - 25	0 - 20	1 - 105
	S D	5.60	3.88	20.10
	Mean	11.69	8.15	42.25

[a]Normative Data on FD - FI from Crego (1966)
[b]Normative Data on I - E from Rotter (1966)
[c]Normative Data on R - S from Byrne, Barry, and Nelson (1963).

TABLE 2

Analysis of Variance of Field Dependence - Field Independence Scores

Source	df	MS	F
Grade School Class (A)	1	242.36	7.03[c]
Students' Major Area (B)	1	156.01	4.53[a]
A X B	1	36.48	1.06
Error	78	34.46	

[a] $p < .05$

[c] $p < .01$

TABLE 3

Analysis of Variance of Internalization - Externalization Scores

Source	df	MS	F
Grade School Class (A)	1	.08	.006
Students' Major Area (B)	1	134.72	11.09[d]
A X B	1	10.75	.88
Error	78	12.15	

[d] $p < .005$

TABLE 4

Analysis of Variance of Repression - Sensitization Scores

Source	df	MS	F
Grade School Class (A)	1	8.48	.04
Students' Major Area (B)	1	1825.09	8.33[c]
A X B	1	1441.24	6.58[b]
Error	78	218.99	

[c] $p < .01$

[b] $p < .025$

lower on the R-S scale than experimental students. On the other hand, there was also a significant interaction effect between level of graduate school education and major area as Table 4 shows.

Individual tests of differences between means showed that Hypothesis Ia was completely rejected. Beginning experimentalissts were more field independent than beginning clinicians ($t=1.28$; $p<.20$) and beginning clinicians were more internalized than beginning experimentalists ($t=1.25$; $p<.20$). However, these ratios only approached significance in the predicted direction. Opposed to the above results was the finding that beginning clinicians were significantly lower on the R-S dimension than beginning experimentalists ($t=2.52$; $p<.05$). A check of the cell means, though, shows that the interaction effect occurring in the R-S dimension was accounted for by the mean scores for beginning clinicians and beginning experimentalists. Beginning clinicians had a cell mean four points lower than expected and beginning experimentalists had a cell mean seven points higher than expected. Thus the interaction affect and the fact that the significant difference between beginning clinicians and researchers on the R-S test was in the opposite direction from that predicted presents special problems in the interpretation of this finding.

Individual tests of differences between means indicated that advanced experimentalists were significantly more field independent than advanced clinicians ($t=2.02$; $p< .05$) and advanced clinicians were significantly more internalized than advanced researchers ($t=3.26$; $p<.01$). But the R-S scale again presented

contradictory findings since the difference between the two advanced groups on the R-S scale only approached significance ($t=1.46$; $p<.20$) with clinicians having the lower R-S score. Nevertheless, two out of three parts of Hypothesis Ib were confirmed.

Advanced versus Beginning Students

II. Advanced students will be significantly more field independent and less defensive (repressing or sensitizing) than experimental students.

IIa. Advanced clinical students will be significantly more field independent, more internalized, and less defensive (repressing or sensitizing) than beginning clinical students.

IIb. Advanced experimental students will be significantly more field independent, more externalized and less defensive (repressing or sensitizing) than beginning experimental students.

A two way classification analysis of variance was performed with level of graduate school education and students' major area as the main effects. Tables 2,3, and 4 disclosed that only on the FD-FI dimension were advanced students significantly different from beginning students, i. e., advanced students had significantly higher field independence scores than beginning students.

Hypothesis IIa was totally rejected. Advanced clinical students were not significantly different from beginning clinical students on FD-FI ($t=1.81$; $p<.10$), although the difference approached significance. On the I-E and R-S dimensions they did not even approach significance.

On the other hand advanced experimental students were significantly more field independent ($t=2.25$; $p<.05$) and were

more defensive ($t=2.01$; $p<.05$) than beginning experimental students with the last ratio being in the opposite direction from that predicted. There was no significant difference between advanced and beginning researchers on the I-E variable.

Although in four out of six cases there were no significant differences between beginning and advanced students, the trend of mean scores from beginning to advanced levels, as portrayed graphically in Figures 1,2, and 3, fit the theoretical assumptions of the present study. As predicted both clinical and experimental students increase in field independence scores from beginning to advanced levels. Also as predicted clinicians obtained lower I-E scores at the advanced level and advanced experimentalists had higher I-E scores at the advanced level and advanced experimentalists had higher I-E scores than beginning experimenters. This predicted divergence in mean scores led to the significant difference found between advanced clinicians and experimentalists. The scores on the R-S dimension did not fit the assumed trend at all. Therefore, on two of the three variables the trend of mean scores fit the theory perfectly.

The individual t tests carried out for the mean scores of each group on the R-S scale show that beginning experimentalists have significantly higher mean scores than each of the other three groups ($t_{1C-1E}=2.52$; $p<.05$; $t_{4E-1E}=2.01$; $p<.05$; $t_{4C-1E}=2.73$; $p<.05$). In other words, if the validity of the R-S scale is accepted, all other graduate students in psychology at M.S.U. are significantly more repressed than beginning experimental students and more repressed than the norm group of college students.

Pattern of Mean Scores

4a. The mean score of beginning clinical students will fall into the pattern M-H, M-L, and M-H on the FD-FI, I-E, and R-S tests respectively (see Table 5 for explanation of symbols).

b. The mean score of beginning experimental students will have the pattern H, M-L, and H on the FD-FI, I-E, and R-S dimensions respectively.

c. Advanced clinical students will have mean scores exhibiting the pattern H, L, and M on the FD-FI, I-E, and R-S continua respectively.

d. Advanced experimental students will have mean scores with the pattern H^1, M, and M-H on the FD-FI, I-E, and R-S tests respectively.

Hypothesis 4a-4d were tested by: (1) observing the pattern of means over the three dimensions for each graduate student group; (2) then comparing those mean scores in terms of SD from the norm group means; (3) noting finally their relationship to the predicted pattern of mean scores. Table 5 gives the predicted and actual pattern of means for the graduate student groups in terms of their SD from the norm group means.

As can be observed, all the actual scores for the FD-FI dimension are in the predicted direction; however, each group's score is one category lower than the predicted mean scores. The scores of the graduate student groups for the I-E continuum are exactly as predicted. The mean scores for advanced clinicians and experimentalists and beginning experimentalists are in the predicted position relative to each other on the R-S scale, but they are all two categories lower than predicted. Beginning clinicians are three

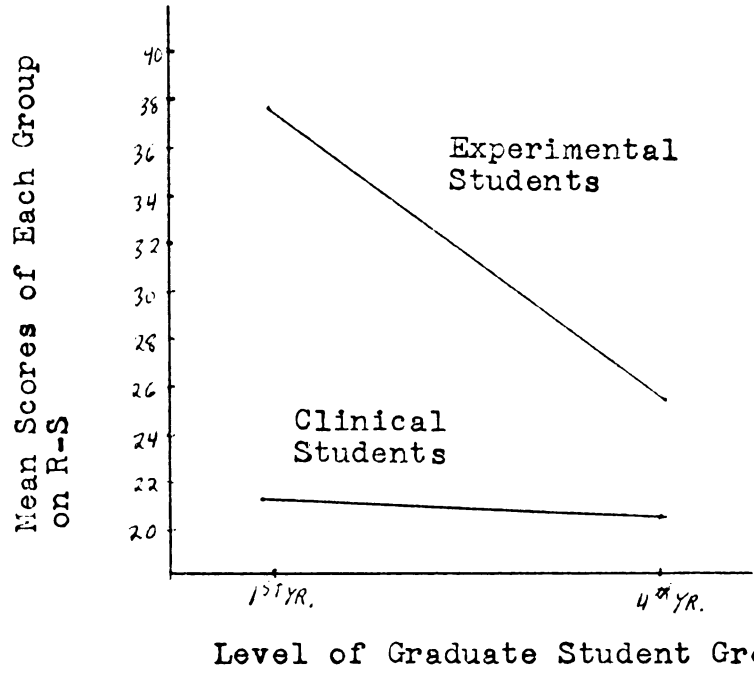

Fig. 3. Comparison of Mean Scores of Experimental and Clinical Students from First to Fourth Year Level on R-S

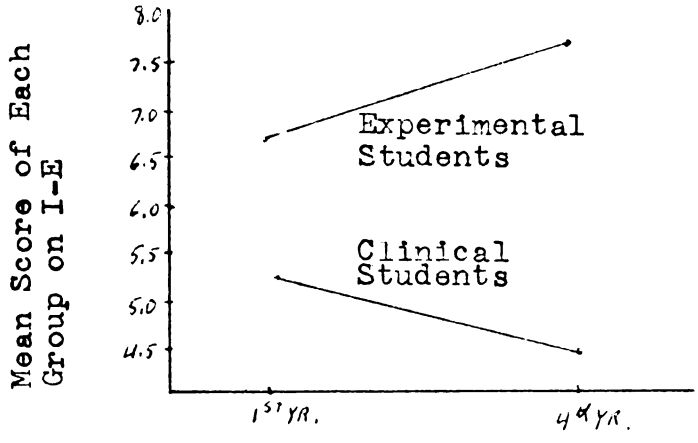

Fig. 2. Comparison of Mean Scores of Experimental and Clinical Students from First to Fourth Year Level on I-E

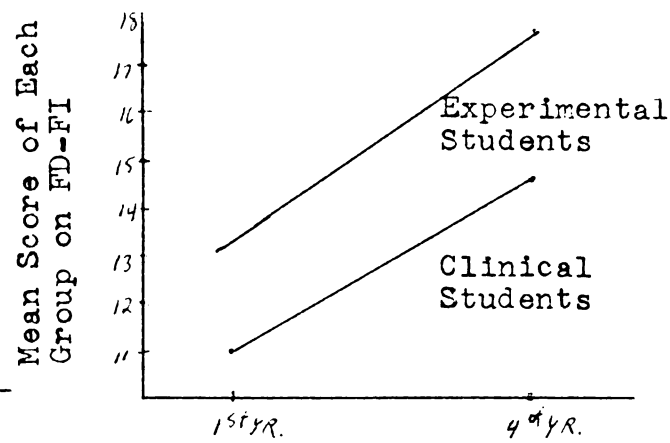

Fig. 1. Comparison of Mean Scores of Experimental and Clinical Students from First to Fourth Year Level on FD-FI

TABLE 5

Predicted and Actual Position of the Mean Score for Each Graduate Student Group on Each Test Relative to the Norm Group Means

	Graduate Student Groups							
	Beginning Clinical		Beginning Experimental		Advanced Clinical		Advanced Experimental	
	Pred. M	Actual M	Pred.M	Actual M	Pred. M	Actual M	Pred.M	Actual M
FI	M-H	M	H	M-H	H	M-H	H^1	H
E	M-L	M-L	M-L	M-L	L	L	M	M
S	M-H	L	H	M	M	L	M-H	M-L

Note - H^1 = 2 SD above the mean of the respective norm group
H = 1 SD above the mean of the respective norm group
M-H = between the mean of the norm group and H
M = at the mean of the respective norm group
M-L = between the mean of the norm group and L
L = 1SD below the mean of the respective norm group

Note - see Table 1 for M and SD of each group including norm group

Note - A score was considered M-H or M-L if a test for the difference between means showed it to be significantly different from the mean or the score 1 SD from its respective norm group mean.

categories lower than predicted on the R-S test and are also not in the predicted position relative to the other groups. Therefore, each graduate student group has a pattern of mean scores, at least on two of the three dimensions, that closely approximates those scores that would be predicted from the theory.

categories lower than predicted on the R-S test and are also not in the predicted position relative to the other groups. Therefore, each graduate student group has a pattern of mean scores, at least on two of the three dimensions, that closely approximates those scores that would be predicted from the theory.

CHAPTER V

DISCUSSION

Differences in Personality

The present study gives only qualified support to Bordin, et al's., (1963) contention that clinicians and experimentalists manifest personality differences and that these personality differences are expressed by the type of occupation they choose. The results were somewhat equivocal since beginning clinicians were not significantly different from beginning experimentalists on the field-dependence-independence and internalization-externalizations dimensions. The only test on which beginning clinicians and experimentalists were significantly different was the repression-sensitization scale.

Nevertheless, this study does not prove that clinicians and experimentalists have similar personality characteristics. It does indicate that clinicians and experimentalists were not different on two of the three personality variables measured in this investigation at one point during their first year of graduate school. First year clinicians were significantly lower on the R-S scale than beginning experimentalists. This is certainly an indication that the two beginning groups are different on at least one personality trait that may stem from earlier experiences and may have had an influence on or be the result of the choice of their respective major areas. The differences on the FD-FI and I-E scales for the two beginning groups were not statistically significant, though they were in the predicted direction. Further, the samples of beginning

students were small. One speculates that if the proportions presently found were maintained in samples of only ten more subjects in each, the differences would have been significant on the FD-FI and I-E tests. Finally, the results fit the theory presented in this study very closely in terms of differences between groups and in trends over time. And each one of the measurement scales appears to have been extended near to its upper or lower ceiling and the author doubts that more extreme differences in absolute scale points, maintaining the trend of scores, could have been obtained. For example, the mean scores for both groups of clinicians on the I-E scale were very near the lower limit of measurement for that test. It might be that clinicians are more internalized than their scores on the I-E test indicated, but the range of the test simply might not be great enough to measure that amount of internalization. The same possibility exists for the more extreme mean scores on the R-S and FD-FI scales as well.

Another factor that could have been responsible for the lack of significant differences between beginning groups on the FD-FI and I-E dimensions was the fact that most of the subjects in the beginning groups were tested near the end of their first year of graduate school. The first year of graduate school is dominated by emphasis on didactic teaching of theory, research methodology, and statistics, both for clinicians and experimentalists. Therefore, since experiences during graduate school have been found to be a potent force later in their careers, it might also be that clinicians and experimentalists

are drawn closer together during their first year as manifested by their performance on the measures used in this study.

Another factor to be considered is that there is no objective evidence relating the instruments used in this study to any of Bordin's dimensions. The only study carried out relating Bordin's dimensions to a personality test was Segal's (1961) investigation in which he used the Rorschach test. The scales used in the present study are more limited in their scope. Unlike the Rorschach test which attempts to measure the whole personality, the tests used in this study are objective and cognitive tests which do not measure latent personality characteristics. Further, the method of measurement on Bordin's dimensions and on our three continua are very different; the former requires an observer to rate an occupation in terms of the dimensions, whereas the latter demands a subject to answer questions about himself and the world. Thus the measurements used in this research are very different from any utilized by Bordin. It is thus possible that the bi-polar variables do not measure the same personality traits as described by Bordin, et al., (1963). The present investigation would not necessarily invalidate Bordin's dimensions and theory.

If persons do not enter the various fields of psychology because of their different needs and motivating personality characteristics, it would follow that most individuals who enter graduate school in psychology have very similar personality traits and needs. Bordin (1966) theorizes that all psychologists share equal amounts of the element of interpersonal curiosity and it may be that they are alike in many other

personality characteristics and motivations as well. Supporting this view is the knowledge that beginning graduate students at Michigan State University in clinical and experimental psychology have approximately the same IQ, achievement scores, and Grade Point Average. It may be that all persons who enter psychology for graduate study are interested in knowing about people and in helping people. But it is only after entering graduate school that an individual finds out how to study and change human behavior. It is at this point and thereafter that the individual's peers and professors train him and have a dominant effect on the type of work that he does. All of these influences then would gradually change some of his personality characteristics and his method of expressing these characteristics.

But it may also be that even advanced students in psychology have not changed in their personality characteristics, rather that they have learned different means of satisfying the same needs. For example, behavior therapists seem to be mainly experimentally oriented psychologists who are also interested in helping people. Their main difference from more traditional therapists appears to be that they are more interested in satisfying their nurturant needs by the use of objective and scientifically proven theories and techniques. Experimental psychologists seem able to defer their needs for nurturance more than practicing clinicians. Their need to nurture might be expressed in their interactions with their colleagues and evidence supporting this appears to be the frequency of

multiple author and team publication and research.

Of course, this still leaves us with the problem of why individuals choose to model themselves after an intuitional clinician or an objective researcher. Is it just chance that leads one person to be a therapist and another a pure scientist? Could it be that there are many different types of environmental, social, and personality factors that interact to produce the typical clinician or researcher, so that any one variable or kind of variable does not produce enough of the variance to allow prediction?

There is one aspect that the present study hints at which needs to be studied in more detail. That is the question of whether there are personality predispositions. For example, Bordin (1966) states that clinicians can be alienated by an undue emphasis on doubt in their earlier graduate training. Another thread of evidence is that no matter what type training program they were in most clinicians do not carry out research. Could it be then that there are certain personality characteristics that manifest themselves in a very limited manner until a certain type of training and experience allows them to be expressed? Thus the person who has personality traits that predispose him to do the work of a therapist, who is trained as a researcher, may do neither job very well as Bordin implied. This would mean that a person who was predisposed strongly one way or the other would be very unlikely to change to the opposite type of occupation no matter what type of training he was given.

multiple author and team publication and research.

Of course, this still leaves us with the problem of why individuals choose to model themselves after an intuitional clinician or an objective researcher. Is it just chance that leads one person to be a therapist and another a pure scientist? Could it be that there are many different types of environmental, social, and personality factors that interact to produce the typical clinician or researcher, so that any one variable or kind of variable does not produce enough of the variance to allow prediction?

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Differences in Experience

The results of the present study show that beginning clinicians and experimentalists do not attain significant differences on the FD-FI and I-E scales, but that advanced clinicians and experimentalists are significantly different on those tests. Therefore, these findings appear to support Shaffer's (1953) theory that the crucial factors in differences between psychologists, some of whom are objective and more interested in research and others who are intuitive and interested in professional practice, are the persons whom they choose to model themselves after, the type graduate training they receive, and the work they engage in during their professional life.

The analyses comparing advanced students to beginning students, which are then broken down into individual comparisons of advanced and beginning students in each field, offer more support for the assumption that the selective factors and experiences in each field during graduate school are the main forces that cause differences between clinicians and experimentalist's personality. It was found that advanced experimentalists were significantly more field independent than beginning experimentalists, that advanced clinicians approached significance in being more field independent than beginning clinicians, and that advanced experimentalists had scores significantly lower on the repression-sensitization scale than beginning experimentalists.

However, it was not only absolute differences between advanced and beginning groups that supported the theory that experiences and selective factors are of paramount importance in the differences in personality variables between clinicians and researcher; but it was also the direction of scores from beginning to advanced levels that supported that idea and the idea that the forces are selective or different on each field. The direction of scores on the field dependence-independence scale were toward higher FI for both advanced clinicians and researchers as predicted; nevertheless, clinicians' scores rose more slowly than experimentalists' scores and their FI scores at the advanced level were only about even with beginning experimentalists. Thus, whatever the experiential and selective factors are during graduate school, those that affect experimentalists appear to cause a relatively greater increase of FI scores for researchers than for clinicians as predicted. This supports the idea that experiences and selective factors are different for clinicians and experimentalists, or at least that they are more intense for experimentalists than for clinicians if they are similar. The results of the repression-sensitization scale are strong in support of the above contention. The factors that affect experimentalists apparently cause a significant drop in R-S scores from beginning to advanced levels; whereas, there is no change in clinicians' scores from beginning to advanced levels. But it is the internalization-externalization dimension that gives strongest support to the supposition that experiences are different for clinicians and experimentalists and

cause different types of personality change. Even though neither advanced clinicians nor advanced experimentalists were significantly different from beginning students in each of those areas, the trend of change was in diverging directions so that advanced clinicians were highly more internalized than advanced experimentalists. That would appear to give strong support to the hypothesis that the influences on the personality of clinicians are often different from those on experimentalists.

FIELD DEPENDENCE - FIELD INDEPENDENCE

Advanced clinicians scored lower on FI than advanced experimentalists, as predicted. In line with the definition of the test this means that experimentalists are able to separate details from a complex background better than clinicians. They should be better able to analyze, articulate, and structure experience according to Witkin (1965). The present finding fits with the activities expected from the researcher. The research psychologist has to filter many ideas and bits of evidence from widely varied sources in order to devise and design his research. He has to be objective and separate himself from personal and emotional considerations as much as possible. He must analyze and synthesize seemingly extraneous bits of evidence in order to come up with testable hypotheses and theories from the results of his studies. He is constantly curious and constantly unsure that anything is explained or carried out correctly enough.

The finding that advanced students score significantly higher on FI than beginning students also fits the predictions. There are four possible interpretations of results: (a) graduate school experiences cause a rise in FI scores for a majority of clinical and experimental students; (b) students with lower FD-FI scores drop out of graduate school; (c) the samples were not comparable; (d) some combination of the above possibilities. Witkin (1965) and Gardner, et al. (1960) maintain that FD-FI scores are stable with increasing age, experience, and under many different circumstances. Thus, the research seems to contradict the first possibilty. However, there has been no research on the effects of long term specific training on FD-FI scores. Graduate school experience does appear to be directed toward this type of activity which would train a student to analyze and articulate his experiences more fully and correctly for both clinicians and experimentalists, although the uses which the different areas would make of these analyses would be different. Since that is the case the first possibility must be strongly considered until further research either proves or disproves it.

The second possibility should be considered very seriously. There is a large dropout rate from graduate school in psychology at M.S.U. and other similar schools in the country. And, since FD-FI supposedly relates not only to non-verbal intelligence, but also to various personality traits it is conceivable that those students with lower FI scores (especially along with other deviant traits) are the ones who tend to drop out or be dropped from graduate school. The student whose perception

and cognitive style is not well articulated would undoubtedly have difficulty in carrying out the various activities expected of him in graduate school. The person with a global cognitive style whose sense of separate identity was poorly developed and who tended to use repressing defenses would also have troubles in the clinical area (Allen, 1967; Fenichel, 1945; and Rogers, 1951) and in experimental psychology.

The third alternative, that the beginning and advanced groups are not comparable, does not appear to be as likely as the first two interpretations, but still is conceivable. The test scores of academic achievement of beginning students is slightly higher than those of the advanced students when they entered graduate school, but this does not appear to have affected the FE-FI scale which is highly related to intellectual ability. And none of the other selection criteria have been changed over the last four years so that all known variables seem comparable. Thus this interpretation looks to be the least tenable, especially since the scores of the beginning students fit the theory as well as they do. However, the only way to rule out this possibility is by a longitudinal study that follows the same subjects throughout their graduate career.

Possibility (d), that some combination of the above three alternatives has occured, cannot be evaluated since none of the other alternatives have been tested and studied individually. But it should be considered in any future study that seeks to solve this issue and possibly several factors could be tested in the same study.

REPRESSION-SENSITIZATION

The results for the repression-sensitization dimension, in which significant differences between clinicians and experimentalists, but in the opposite direction from those predicted were found, were somewhat unexpected. An examination of the significant interaction effect indicates that beginning experimentalists have an observed mean score eight points higher than expected on the R-S scale. Therefore, each of the other three groups except beginning experimentalists shows lower scores on the R-S scale than the norm group.

Since it seems highly unlikely that nearly all graduate students in psychology at M.S.U. (63 of 62) are repressors, some other explanations must be found for the results. Two explanations appear most likely to have some validity: (a) graduate students answered the questions in a socially desirable manner (b) the R-S scale measures adjustment (R) - maladjustment (S).

(a) Since the MMPI, the parent scale of the R-S test, is highly and positively related to several measures of social desirability (Edwards, 1953; Crowne and Marlowe, 1960; Hanley, 1961; and Boe and Kogan, 1966), it is logical to expect that the R-S scale would also be related to the tendency to answer true-false questions in a socially desirable manner. However, Bernhardson (1967), Byrne (1964), and Silber and Grebstein (1964) found significant negative correlations with the R-S scale and social desirability. On the other hand, Megargee

(1966) and Wilcox and Krasnoff (1967) found that various types of reality pressures can influence test taking attitude and increase or decrease answering in a socially desirable direction. Graduate students in psychology are a highly sophisticated group in the interpretation and taking of tests. They probably would not want to seem abnormal or maladjusted in the eyes of a fellow student and any professors who might see the results. They might feel that they had a stake in appearing well adjusted and their knowledge of the MMPI would easily allow this to occur.

It is difficult to explain why first year clinicians should show so much more of a tendency to answer the questions on the R-S scale in a socially desirable manner than beginning researchers. In both other scales they were much closer together in their scores and appeared to come from the same population. However, it could be that beginning clinicians would feel strongly that they have to look well adjusted, whereas beginning experimentalists would not feel that a relatively poorer score would affect their graduate school career. In as much as most of the beginning students were near the end of their first year it would also seem likely that many of the clinicians would have had some experience with the MMPI which the experimentalists would not have had. They then would be able to give a better impression of themselves than beginning researchers.

However, both Silber and Grebstein (1964) and Doe and Kogan (1966) discovered that the proportion of variance common to the two dimensions of R-S and SD fell within the range of

10 to 20%. There is some reason to believe that much more of the variance can be attributed to social desirability (Boe and Kogan, 1966), but even so there is probably at least one other major factor that contributes a large amount of the variance.

(b) The second explanation is that the R-S scale measures adjustment (R) - maladjustment (S). The definition of well adjusted would be that the behavior patterns which are common in a group may come to be deemed desirable; hence items reflecting such traits would validly be endorsed more frequently (Megargee, 1966). Of course, whether persons who endorse these items actually show them more often in behavior is still a question, but there has been a wealth of research evidence to support the idea that the R-S scale measures endorsement of adjustment items as well as behavioral adjustment.

Ullmann (1962) found that neuro-psychiatric patients are significantly more sensitizing than undergraduates; sensitizers respond more deviantly to Gough's Adjective Check List than do repressors (Byrne, 1961; Lucky and Grigg, 1964); sensitizers have a greater discrepancy between self and ideal than repressors (Byrne, 1961; Byrne, et al., 1963); sensitizers are more anxious than repressors on 7-MMPI scales (Joy, 1963); sensitizers respond to sexual stimuli with more anxiety and positive and negative affect than do repressors (Byrne and Sheffield, 1965); and Tempone and Lamb (1967) found a linear relationship between the R-S scale and other measures of adjustment. Only two studies support a curvilinear hypothesis for the R-S scale (Ullman, 1962; Lomont, 1965).

According to this interpretation beginning experimentalists would be the least well adjusted of the groups. However, since the mean score of beginning researchers is only slightly lower than the mean of the norm group of college freshmen and sophomores, it is assumed that they are at least as well adjusted as the average college student. Part of the explanation of the relatively high mean score for beginning experimentalists is that there are a few individuals who have very high R-S scores. It would occur by chance that there are a few individuals who are poorly adjusted which raises the mean score of the whole group inordinately.

The acceptance of an adjustment and conformity description of the R-S scale does not detract from the findings of this study. Both advanced clinicians and experimentalists would be expected to be very well adjusted and highly conforming. Both groups have learned what is expected of them and have become fairly comfortable in their jobs or they would not have survived to near the completion of graduate school. It is interesting that clinicians show no change in conformity and adjustment from beginning to advanced level, but that experimentalists change to the point where their scores are the same as clinicians. Could it be that graduate school turns people into absolute conformists or do the low scores represent optimal adjustment to life? Actually the answer could involve both explanations. People need to conform to their societies laws and mores. The clinician must behave and appear well adjusted because that is what is expected of him by his clients and colleagues. He may appear eccentric in some areas

of living but if this becomes too visible the effect on his clients may be to make him ineffective. The same explanation holds for researchers as well. The researcher is expected to spend much of his time doing research. He has learned to conform to the extremely complex rules of scientific research and writing. So further research is needed to explain the nature and extent of the conformity and adjustment of graduate students in psychology.

INTERNALIZATION-EXTERNALIZATION

The results on the I-E test also support the hypotheses. Advanced clinicians were significantly more internalized than advanced experimentalists. Crego (1966) found that internalization-externalization is an integrating factor for psychological differentiation and defense type. He discovered that there were several different patterns of integrated personality and behavior that could be described by the three continua. Thus all of the mean patterns described in the present study are of integrated people, as defined by Crego, who carry out their integration in different ways. For example, the clinician is highly differentiated and FI, though not as high as the experimentalist. He highly structures his experience and has a strong sense of his separate identity. But his curiosity and analysis is directed toward himself and through his self to others. He is taught throughout life that he must know himself in order to know others, that he must control his own needs and behaviors in order to control the needs and

behaviors of others. Internalization of reinforcement appears to be a necessary forerunner of the use of one's feelings in dealing with other persons. Therefore, internalization-externalization is a dimension through which type of perception, cognitive style, and defense form is focused and integrated into behavior.

The trend of changes between beginning and advanced students in both areas is extremely important. Both beginning groups of students are significantly lower than the norm group mean and then the scores diverse for the mean scores for advanced student. Advanced experimentalists have approximately the same mean score as the norm group and advanced clinicians have an even lower mean score than the two beginning groups. The same possibilities for explaining the changes in scores from beginning to advanced students exist for IE scores as for FD-FI scores.

The theory predicts that experimentalists should become more externalized with experience and then clinicians should become more internalized with experience. That is exactly what did happen. The clinician learns to depend on himself in therapy and diagnosis. At first he is closely supervised in all clinical activities, but as he gains more experience he is allowed more and more on his own. The success or failure of his cases, diagnosis, and suggestions depends more often on his ability to convince his clients to follow his advice and believe in him to help them. As Rogers (1955) states,

> "It is the fact that the therapist has let himself float in this stream of experience of life previously, and found it rewarding, that makes him each time less fearful of taking the plunge. It is my confidence that makes it easier for the client to embark also, a little bit at a time."

The experimentalist learns research design, statistics, and many ways of controlling for error. He learns to be objective and doubting (Bordin, 1966) about every detail of his research. No matter how often he feels he has carried out the perfect experiment his colleagues will remind him of details that he has missed or forgotten to control. Thus he becomes better at controlling the environment, but the very nature of the scientific method also makes him more and more aware of his own fallibility. The researcher criticizes the therapist for becoming too subjective and involved and having no check on his flaws and imperfections (Rogers, 1955), whereas the researcher attempts to remove himself as much as possible from his subjective self in order to find as many flaws as possible.

The probability that clinicians with relatively high I-E scores drop out of school or change fields and that experimentalists with low I-E scores also drop out must be appraised. That interpretation as an explanation for the higher I-E scores of advanced researchers and the lower I-E scores of advanced clinicians does not seem to have much power. It might occur in that way but it would have to be part of a very complex process. It is possible that a clinician with high I-E scores in a school that stresses intuition and introspection would find himself feeling uncomfortable and out of place. The same thing could happen to an experimentalist

with low I-E scores who was in a school oriented only toward objectivity and pure science. However, it would appear that other factors would need to be in operation rather than just the locus of reinforcement being integrated poorly with the prevailing atmosphere of the school or the field. So that this interpretation, by itself, does not seem to explain the results on the I-E scale.

PATTERNS OF MEAN SCORES

The pattern of mean scores for each group fits into what Crego (1966) calls "an integrated pattern of adjustment." The mean scores for each group on each variable, except for beginning clinical on FD-FI and advanced experimental on I-E are significantly different from the average scores for college students. This is strong evidence that all groups of psychologists manifest different personality characteristics than the average college population. It should then be possible to use the actual pattern of mean scores for each group in predicting the interest, satisfaction, and success of an individual in clinical or experimental psychology. This type of predictive pattern has often showed great promise, but few results (for example, Wechsler's patterns using the WAIS). However, if it is able to stimulate further research in this area it will be worthwhile.

FURTHER RESEARCH

The present study has important implications for further research and practice in the selection and training of graduate students in psychology. The conclusion that advanced clinical and experimental psychologists are different in the personality

continua studied has been upheld. However, an important study that should be carried out is a longitudinal investigation of the variables inspected in this study to control for non comparable cross sectional samples. Each subject could then be studied more carefully and it might be possible to identify more precisely some of the influences that cause change in individuals and within groups.

A research effort that ties differences between clinicians and experimentalists at the beginning level to earlier influences that might cause those differences would appear worthwhile. How much does undergraduate training and peer group relationships in college have to do with the specific selection of a field in graduate school? Do undergraduate experiences affect the specific variables looked at in the current study? How do basic needs and stages, in the analytic sense, make an influence on these later interests and motivations? Much of this type of research would have to be retrospective, but it might also be possible to look at undergraduate majors in psychology and compare them with graduate students which would extend the immediate measurement of personality characteristics and make some of the unreliable retrospective work unnecessary. It might be possible to take undergraduates and graduates in psychology and test them with the instruments used in this study and then make predictions about the fields they would enter. For example, the person who had a low I-E score would not necessarily go into clinical psychology, but he would be more likely to go into a field where he was

relatively independent and which had a lot of interaction with and influence over other people.

Further research should examine more closely the trend and types of changes that take place in graduate students in psychology. It seems unlikely that the training in graduate school will be able to make a person who is interested in being a practitioner, whose personality characteristics are similar to the applied psychologist, and who has been reinforced most of his life for helping people into a pure scientist, or vice versa. This is especially true when we are not sure what types of training have the most effect on how a student picks a person to model himself after. The present study shows that the trends present in beginning students continue and increase in strength to the end of graduate school. It does not show whether there were individuals who reversed their trends and why they would have done so.

Another question that needs investigation centers on research into the meaning of the dimensions studied. Are clinical psychologists who have the advanced clinical pattern, as discovered in this study, the best diagnosticians or therapists? Are those students with the advanced experimental pattern the best scientists? Of course, a study such as the one proposed would require some kind of measures of outcome, which are a thorny problem in their own right. This particular problem was what defeated the Kelly and Fiske (1951) study, but a study that is based on theoretical principles with research backing it up and showing differences between clinicians and experimentalists seems more likely to find relationships

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with criteria than a hit and miss exploratory study.

How do graduate schools differ in their selection and training of graduate students in the different areas of psychology? If the present study were carried out at another graduate school that emphasizes research or traching or diagnostics, would the results have been different? This is an essential study but one that has never been carried out. The Kelly and Fiske study mentioned that there were wide differences but made no attempt to study that part of the problem.

Are the bi-polar variables used in this study actually related to Bordin's dimensions? Are there other variables that need to be added to or used in place of the present ones? Could better scales or instruments be developed that are more refined with higher and lower ceilings? It was the author's opinion that many of the questions in each of the scales did not get at what he was theoretically interested in. Possibly a configural or pattern analytic model would help in the delineation of questions that are most pertinent for describing each grouping. Also variables such as an empathy scale might be very valuable in differentiating the two main groups used in the present research.

There is a great deal that needs to be done in the selection and training of graduate students in all areas of psychology. It appears that we need to investigate ourselves as well as others in order to make psychology a science and practice.

CHAPTER VI

SUMMARY

The main function of the present study was to determine whether Bordin's theoretical assumption ("that different occupations afford differing opportunities for the expression of impulses, for the utilization of defenses, and for organizing one's dealings with the world; and that occupational groups do vary significantly from one another in important personality characteristics") applies to clinical and experimental psychologists. The second function was to examine whether training during graduate school and/or experience prior to admission to graduate school are responsible for personality differences in clinical and experimental psychologists. The third function of this study was to investigate the effect of experience on the personality of graduate students in psychology irrespective of field. The fourth function of the study was to observe and predict the patterning of graduate student groups on each scale studied in comparison to undergraduate norm groups for each variable.

To assess personality differences and changes on the same personality characteristics during graduate school, 82 male graduate students at Michigan State University in clinical and experimental psychology at beginning (first year) and advanced (third and fourth year) levels completed three personality scales. The tests used were Witkin's Hidden Figures Test, a measure of field dependence - independence (FD-FI), Rotter's Internalization - Externalization Scale, a measure of expectancy

regarding locus of reinforcement (E-I), and Byrne's revised Repression - Sensitization Scale, as a measure of defense mode (R-S).

Summing over level of graduate school education, it was found that clinicans were significantly more field dependent, internalized, and repressed than experimentalists. The results on the repression - sensitization dimension were significant in the opposite direction from that predicted. Experience prior to graduate school education does not appear responsible for the personality differences in clinical and experimental psychologists since only on the repression - sensitization dimension were beginning clinicians significantly different (clinicians were more repressed than beginning experimentalists). On the other hand, experience and selection factors during graduate school do appear to cause advanced clinicians to be significantly more internalized and field dependent than advanced experimentalists.

Summing over field of specialization, advanced graduate students were significantly more field independent than beginning students. Advanced clinical students showed no significant differences from beginning clinical students. Advanced experimental students though, were significantly more field independent and repressed than beginning experimental students. Also, on two of the three variables (the R-S dimension being the exception) the trend of mean scores from beginning to advanced levels increases for both clinicians and experimentalists. Thus it does appear that experience in graduate school in psychology causes changes in

personality, and experience in each of the two fields discussed in the present study affects the same personality characteristics differentially.

The results did not fully support Bordin's theory since beginning clinicians and experimentalists were not different on two of the three personality variables. It must not be forgotten, though, that beginning clinicians and experimentalists are significantly different on the R-S scale, so this variable could act as a differentiating force in the selection of a major field along with other variables not studied in this research. On the other hand, it does appear that experience in graduate school and more specifically in each of the two major fields results in important and significant personality changes. These changes produce groups of clinicians and experimentalists who have widely different personality characteristics by the time they earn their doctorates.

The results on the R-S scale were opposite from those predicted. However, it does not appear that 68 of 82 graduate students in psychology could be repressors. It does appear, from prior research as well as from the present study, that the R-S scale is more a measure of social desirability and adjustment than it is a measure of repression.

Further study in this area is essential. The present study has shown that clinicians and experimentalists at M.S.U. are different on the present personality characteristics. However, other more central characteristics also need to be assessed. We need to study characteristics that can be closely tied to important behavoral manifestations of clinicians and experimentalists. Then we can begin to predict and select persons who would have the best chance of being successful in their graduate study and in their later professional duties.

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APPENDIX A

Distribution of FD - FI, I - E, and R - S Scores for 82 Male Graduate Students in Psychology at Michigan State University

FD-FI Score	f	Cum f	I-E Score	f	Cum f	R-S Score	f	Cum f
30-32	1	82	22-23	0	82	125-129	0	82
27-29	1	81	20-21	0	82	120-124	0	82
24-26	5	80	18-19	1	82	115-119	0	82
21-23	8	75	16-17	1	81	110-114	0	82
18-20	14	67	14-15	0	80	105-109	0	82
15-17	15	53	12-13	5	80	100-104	0	82
12-14	13	38	10-11	8	75	95-99	0	82
9-11	12	25	8-9	11	67	90-94	1	82
6-8	9	13	6-7	18	56	85-89	0	81
3-5	2	4	4-5	14	38	80-84	0	81
0-2	2	2	2-3	16	24	75-79	0	81
			0-1	8	8	70-74	0	81
						65-69	2	81
	82			82		60-64	0	79
						55-59	3	79
						50-54	1	76
						45-49	3	75
						40-44	2	72
						35-39	4	70
						30-34	7	66
						25-29	8	59
						20-24	17	51
						15-19	18	34
						10-14	9	16
						5-9	5	7
						0-4	2	2
							82	

PLEASE NOTE:

Appendices B-D, "Hidden Figures Test," © 1962 by Educational Testing Service, pages 78-94, not microfilmed at request of author. Available for consultation at Michigan State University Library.

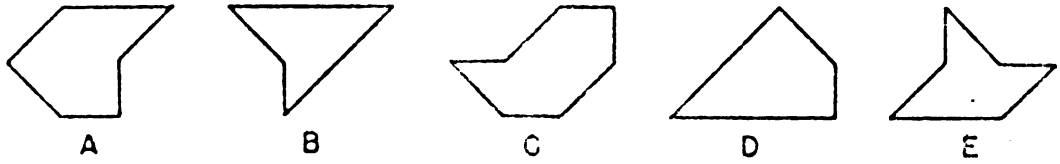
UNIVERSITY MICROFILMS.

— CS-1

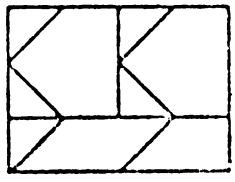
This is a test of your ability to find which one of five simple figures can be found in a more complex pattern. At the top of each page in this test are five simple figures lettered A, B, C, D, and E. Beneath each row of figures is a page of patterns. Each pattern has a row of letters beneath it. Indicate your answer by putting an X through the letter of the figure which you find in the pattern.

NOTE: There is only one of these figures in each pattern, and this figure will always be right side up and exactly the same size as one of the five lettered figures.

Now try these 2 examples.

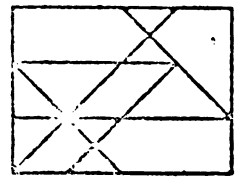


I



A B C D E

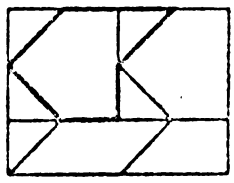
II



A B C D E

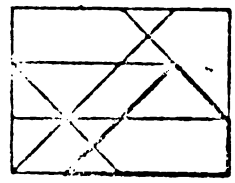
The figures below show how the figures are included in the problems. Figure A is in the first problem and figure D in the second.

I



X B C D E

II



A B C X E

Your score on this test will be the number marked correctly minus a fraction of the number marked incorrectly. Therefore, it will not be to your advantage to guess unless you are able to eliminate one or more of the answer choices as wrong.

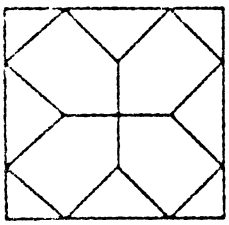
You will have 10 minutes for each of the two parts of this test. Each part has 2 pages. When you have finished Part 1, STOP. Please do not go on to Part 2 until you are asked to do so.

DO NOT TURN THIS PAGE UNTIL ASKED TO DO SO.

Developed under NIMH Contract M-4186

Part 1 (21 minutes)

1.



A B C D E

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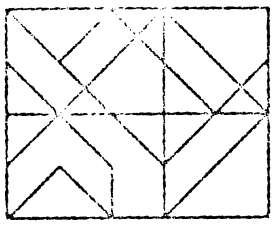

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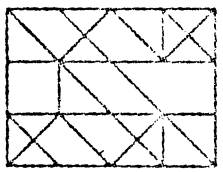

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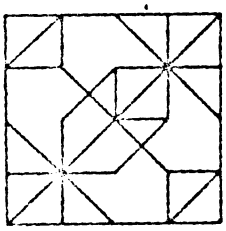

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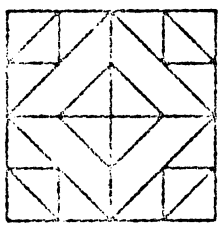

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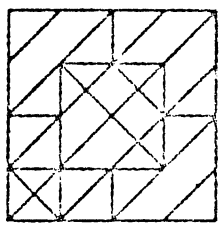

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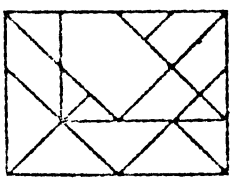

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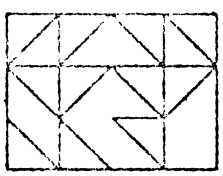

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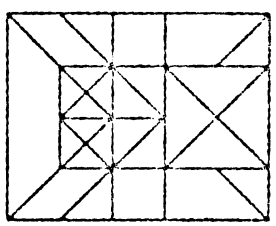

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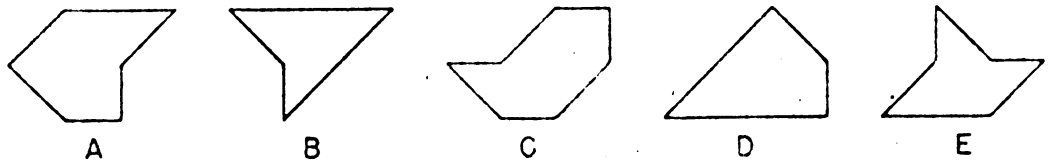
Part 2 (continued)



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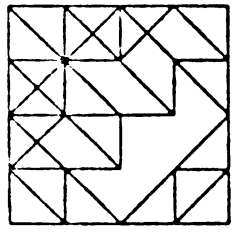

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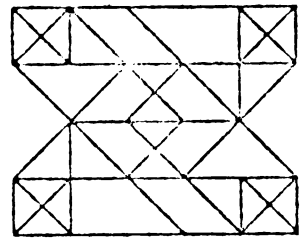

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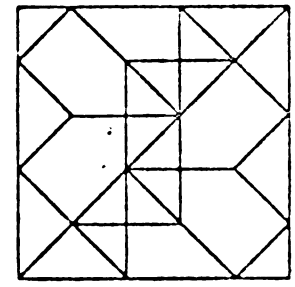

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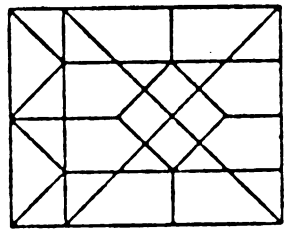

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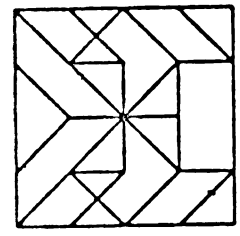

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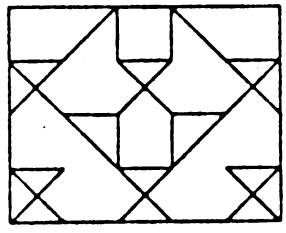

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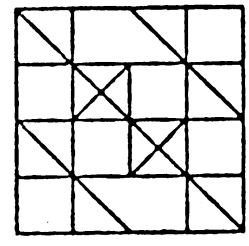

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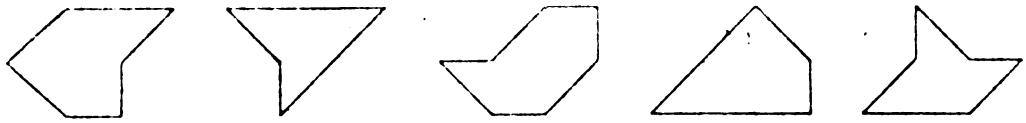
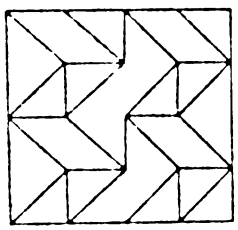


17. 
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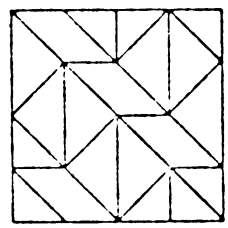
18. 
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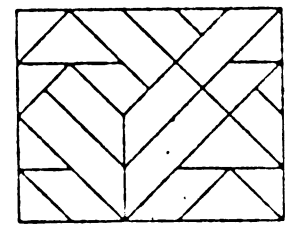
19. 
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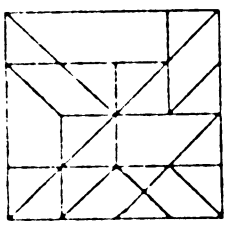
20. 
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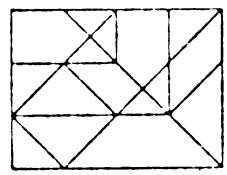
21. 
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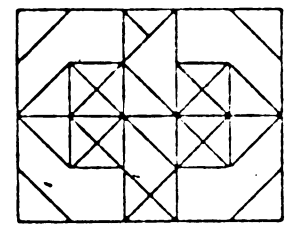
22. 
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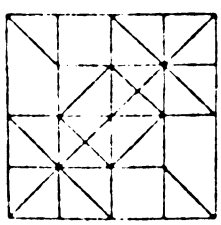
23. 
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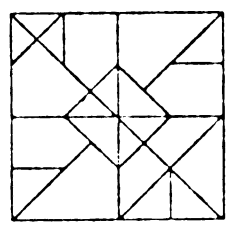
24. 
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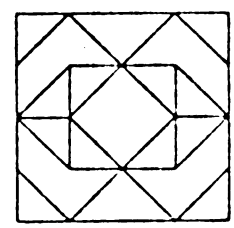
25. 
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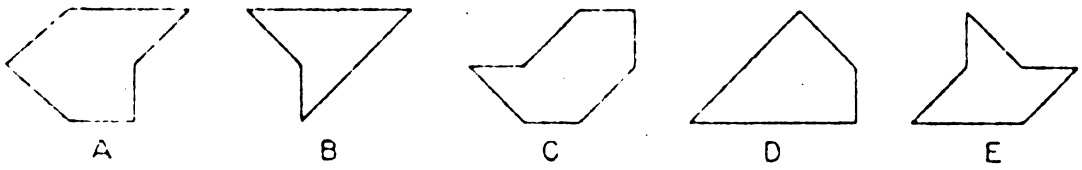

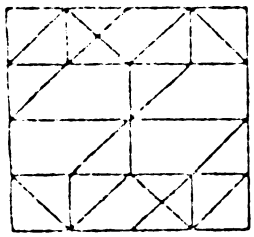

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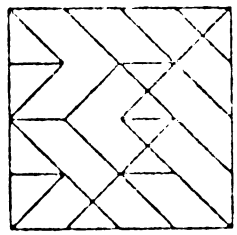

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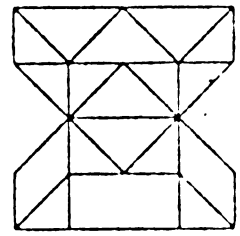

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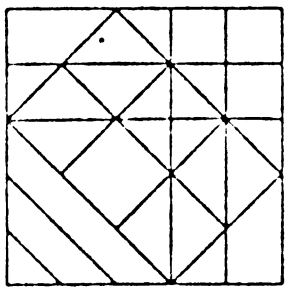

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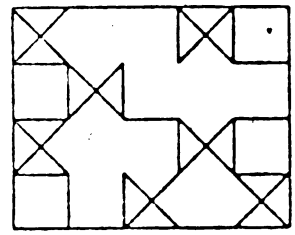

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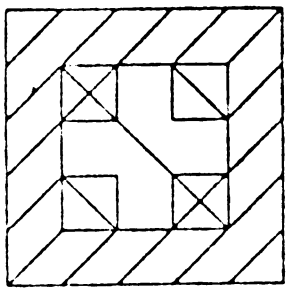

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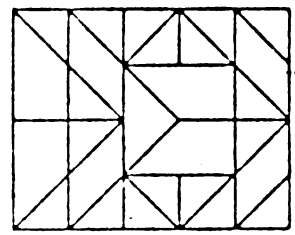

A B C D E

DO NOT GO BACK TO PART 1, AND
DO NOT GO ON TO ANY OTHER TEST UNTIL ASKED TO DO SO.

STOP.

APPENDIX C

I-E SCALE

On answer sheet, "1" corresponds to "a". "2" corresponds to "b".

1. a. Children get into trouble because their parents punish them too much.
   b. The trouble with most children nowadays is that their parents are too easy with them.

2. a. Many of the unhappy things in people's lives are partly due to bad luck.
   b. People's misfortunes result from the mistakes they make.

3. a. One of the major reasons why we have wars is because people don't take enough interest in politics.
   b. There will always be wars, no matter how hard people try to prevent them.

4. a. In the long run people get the respect they deserve in this world.
   b. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.

5. a. The idea that teachers are unfair to students is nonsense.
   b. Most students don't realize the extent to which their grades are influenced by accidental happenings.

6. a. Without the right breaks one cannot be an effictive leader.
   b. Capable people who fail to become leaders have not taken advantage of their opportunities.

7. a. No matter how hard you try some people just don't like you.
   b. People who can't get others to like them don't understand how to get along with others.

8. a. Meredity plays the major role in determining one's personality.
   b. It is one's experiences in life which determine what they're like.

9. a. I have often found that what is going to happen will happen.
   b. Trusting to fate has never turned out as well for me as making a decision to take a definate course of action.

10. a. In the case of the well prepared student there is rarely if ever such a thing as an unfair test.
    b. Many times exam questions tend to be so unrelated to course work that studying is really useless.

11. a. Becoming a success is a matter of hard work, luck has little or nothing to do with it.
    b. Getting a good job depends mainly on being in the right place at the right time.

12. a. The average citizen can have an influence in government decisions.
    b. This world is run by the few people in power, and there is not much the little guy can do about it.

13. a. When I make plans, I am almost certain that I can make them work.
    b. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.

14. a. There are certain people who are just no good.
    b. There is some good in everybody.

15. a. In my case getting what I want has little or nothing to do with luck.
    b. Many times we might just as well decide what to do by flipping a coin.

16. a. Who gets to be the boss often depends on who was lucky enough to be in the right place first.
    b. Getting people to do the right thing depends upon ability, luck has little or nothing to do with it.

17. a. As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.
    b. By taking an active part in political and social affairs the people can control world events.

18. a. Most people don't realize the extent to which their lives are controlled by accidental happenings.
    b. There is really no such thing as "luck".

19. a. One should always be willing to admit mistakes.
    b. It is usually best to cover up one's mistakes.

20. a. It is hard to know whether or not a person really likes you.
    b. How many friends you have depends upon how nice a person you are.

21. a. In the long run the bad things that happen to us are balanced by the good ones.
    b. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.

22. a. With enough effort we can wipe out political corruption.
    b. It is difficult for people to have much control over the things politicians do in office.

23. a. Sometimes I can't understand how teachers arrive at the grades they give.
    b. There is a direct connection between how hard I study and the grades I get.

24. a. A good leader expects people to decide for themselves what they should do.
    b. A good leader makes it clear to everybody what their jobs are.

25. a. Many times I feel that I have little influence over the things that happen to me.

b. It is impossible for me to believe that chance or luck plays an important role in my life.

26. a. People are lonely because they don't try to be friendly.
b. There's not much use in trying too hard to please people, if they like you, they like you.

27. a. There is too much emphasis on athletics in high school
b. Team sports are an excellent way to build character.

28. a. What happens to me is my own doing.
b. Sometimes I feel that I don't have enough control over the direction my life is taking.

29. a. Most of the time I can't understand why politicians behave the way they do.
b. In the long run people are responsible for bad government on a national as well as on a local level.

APPENDIX D.

HEALTH AND OPINION SURVEY

This inventory consists of numbered statements Read each statement and decide whether it is true as applied to you or false as applied to you

You are to mark your answer on the answer sheet you have. Look at the example of the answer sheet shown at the right. If a statement is TRUE or MOSTLY TRUE, as applied to you, blacken between the lines in the column headed T. (See A at the right.) If a statement is FALSE or NOT USUALLY TRUE, as applied to you, blacken between the lines in the column headed F. (See B at the right.) If a statement does not apply to you or if it is something that you don't know about, make no mark on the answer sheet.

Remember to give YOUR OWN opinion of yourself Do not leave any blank spaces if you can avoid it.

In marking your answers on the answer sheet, be sure that the number of the statement agrees with the number on the answer sheet Make your marks heavy and black. Erase completely any answer you wish to change Do not make any marks on this booklet.

Remember, try to make some answer to every statement.

NOW OPEN THE BOOKLET AND GO AHEAD

Section of Answer sheet correctly marked.

	T	F
A		
B		

1. I have a good appetite
2. I wake up fresh and rested most mornings.
3. I am easily awakened by noise.
4. I like to read newspaper articles on crime
5. My hands and feet are usually warm enough.
6. My daily life is full of things that keep me interested
7. I am about as able to work as I ever was
8. There seems to be a lump in my throat much of the time.
9. I enjoy detective or mystery stories
10. Once in a while I think of things too bad to talk about.
11. I am very seldom troubled by constipation
12. At times I have fits of laughing and crying that I cannot control.
13. I am troubled by attacks of nausea and vomiting
14. I feel that it is certainly best to keep my mouth shut when I'm in trouble
15. At times I feel like swearing.
16. I find it hard to keep my mind on a task or job
17. I seldom worry about my health.
18. At times I feel like smashing things
19. I have had periods of days, weeks, or months when I couldn't take care of things because I couldn't "get going."
20. My sleep is fitful and disturbed.
21. Much of the time my head seems to hurt all over.
22. I do not always tell the truth.
23. My judgment is better than it ever was
24. Once a week or oftener I feel suddenly hot all over, without apparent cause.

25. I am in just as good physical health as most of my friends.

26. I prefer to pass by school friends, or people I know but have not seen for a long time, unless they speak to me first.

27. I am almost never bothered by pains over the heart or in my chest.

28. I am a good mixer.

29. Everything is turning out just like the prophets of the Bible said it would.

30. I do not read every editorial in the newspaper every day.

31. I sometimes keep on at a thing until others lose their patience with me.

32 I wish I could be as happy as others seem to be.

33 I think a great many people exaggerate their misfortunes in order to gain the sympathy and help of others.

34 I get angry sometimes.

35 Most of the time I feel blue.

36. I sometimes tease animals.

37. I am certainly lacking in self-confidence.

38. I usually feel that life is worthwhile.

39. It takes a loss of argument to convince most people of the truth.

40. Once in a while I put off until tomorrow what I ought to do today.

41. I think most people would lie to get ahead.

42. I do many things I regret afterwards.

43. I go to church almost every week.

44 I have very few quarrels with members of my family.

45. I believe in the second coming of Christ.

46. My hardest battles are with myself.

47. I have little or no trouble with my muscles twitching or jumping.

48. I don't seem to care what happens to me.

49. Sometimes when I am not feeling well I am cross.

50. Much of the time I feel as if I have done something wrong or evil.

51. I am happy most of the time.

52. Some people are so bossy that I feel like doing the opposite of what they request, even though I know they are right.

53 Often I feel as if there were a tight band about my head.

54 My table manners are not quite as good at home as when I am out in company

55. I seem to be about as capable and smart as most others around me.

56 Most people will use somewhat unfair means to gain profit or an advantage rather than to lose it

57. The sight of blood neither frightens me nor makes me sick

58. Often I can't understand why I have been so cross and grouchy.

59. I have never vomited blood or coughed up blood.

60. I do not worry about catching diseases.

61. At times my thoughts have raced ahead faster than I could speak them.

62. If I could get into a movie without paying and be sure I was not seen I would probably do it.

63 I commonly wonder what hidden reason another person has for doing something nice for me.

64 I believe that my home life is as pleasant as that of most people I know.

65. Criticism or scolding hurts me terribly

66 My conduct is largely controlled by the customs of those about me.

67. I certainly feel useless at times

68. At times I feel like picking a fist fight with someone

69 I have often lost out on things because I couldn't make up my mind soon enough.

70. It makes me impatient to have people ask my advice or otherwise interrupt me when I am working on something important.

71. I would rather win than lose in a game.

72. Most nights I go to sleep without thoughts or ideas bothering me.

73. During the past few years I have been well most of the time.

74. I have never had a fit or convulsion.

75. I am neither gaining or losing weight.

76. I cry easily.

77. I cannot understand what I read as well as I used to.

78. I have never felt better in my life than I do now.

79. I resent having anyone take me in so cleverly that I have to admit that it was one on me.

80. I do not tire quickly.

81. I like to study and read about things that I am working at.

82. I like to know some important people because it makes me feel important.

83. What others think of me does not bother me.

84. It makes me uncomfortable to put on a stunt at a party even when others are doing the same sort of thing.

85. I frequently have to fight against showing that I am bashful.

86. I have never had a fainting spell.

87. I seldom or never have dizzy spells.

88. My memory seems to be all right.

89. I am worried about sex matters.

90. I find it hard to make talk when I meet new people.

91. I am afraid of losing my mind.

92. I am against giving money to beggars.

93. I frequently notice my hand shakes when I try to do something.

94 I can read a long while without tiring my eyes.

95. I feel weak all over much of the time.

96. I have very few headaches.

97. Sometimes, when embarrassed, I break out in a sweat which annoys me greatly.

98. I have had no difficulty in keeping my balance in walking.

99. I do not have spells of hay fever or asthma.

100. I do not like everyone I know

101. I wish I were not so shy

102. I enjoy many different kinds of play and recreation.

103. I like to flirt.

104. In walking I am very careful to step over sidewalk cracks.

105. I frequently find myself worrying about something

106. I gossip a little at times.

107. I hardly ever notice my heart pounding and I am seldom short of breath.

108. I have at times stood in the way of people who were trying to do something, not because it amounted to much but because of the principle of the thing.

109. I get mad easily and then get over it soon.

110. I brood a great deal.

111. I have periods of such great restlessness that I can not sit long in a chair.

112. I dream frequently about things that are best kept to myself

113 I believe I am no more nervous than most others.

114. I have few or no pains.

115. Sometimes without any reason or even when things are going wrong I feel excitedly happy, "on top of the world."

116 I can be friendly with people who do things which I consider wrong

117 Sometimes at elections I vote for men about whom I know very little.

118. I have difficulty in starting to do things

119. I sweat very easily even on cool days.

120. It is safer to trust nobody

121. Once a week or oftener I become very excited.

122. When in a group of people I have trouble thinking of the right things to talk about.

123. When I leave home I do not worry about whether the door is locked and the windows closed.

124. I do not blame a person for taking advantage of someone who lays himself open to it.

125 At times I am all full of energy

126. My eyesight is as good as it has been for years.

127. I have often felt that strangers were looking at me critically.

128. I drink an unusually large amount of water every day.

129. Once in a while I laugh at a dirty joke.

130. I am always disgusted with the law when a criminal is freed through the arguments of a smart lawyer.

131. I work under a great deal of tension.

132 I am likely not to speak to people until they speak to me.

133. I have periods in which I feel unusually cheerful without any special reason

134. Life is a strain for me much of the time

135 In school I found it very hard to talk before the class.

136 Even when I am with people I feel lonely much of the time

137. I think nearly anyone would tell a lie to keep out of trouble

138 I am easily embarrassed.

139 I worry over money and business

140. I almost never dream

141. I easily become impatient with people.

142. I feel anxiety about something or someone about all the time.

143. Sometimes I become so excited that I find it hard to get to sleep.

144. I forget right away what people say to me.

145. I usually have to stop and think before I act even in trifling matters.

146. Often I cross the street in order not to meet someone I see.

147. I often feel as if things were not real.

148. I have a habit of counting things that are not important such as bulbs on electric signs, and so forth.

149. I have strange and peculiar thoughts.

150. I get anxious and upset when I have to make a short trip away from home.

151. I have been afraid of things or people that I knew could not hurt me.

152. I have no dread of going into a room by myself where other people have already gathered and are talking.

153. I have more trouble concentrating than others seem to have.

154 I have several times given up doing a thing because I thought too little of my ability.

155. Bad words, often terrible words, come into my mind and I cannot get rid of them.

156 Sometimes some unimportant thought will run through my mind and bother me for days.

157. Almost every day something happens to frighten me.

158. I am inclined to take things hard.

159. I am more sensitive than most other people.

160. At periods my mind seems to work more slowly than usual.

161 I very seldom have spells of the blues.

162. I wish I could get over worrying about things I have said that may have injured other people's feelings.

163. People often disappoint me

164. I feel unable to tell anyone all about myself

165 My plans have frequently seemed so full of difficulties that I have had to give them up.

166. Often, even though everything is going fine for me, I feel that I can't care about anything.

167. I have sometimes felt that difficulties were piling up so high that I could not overcome them

168. I often think, "I wish I were a child again."

169. I have often met people who were supposed to be experts who were no better than I

170. It makes me feel like a failure when I hear of the success of someone I know well

171 I am apt to take disappointments so keenly that I can't put them out of my mind

172. At times I think I am no good at all

173. I worry quite a bit over possible misfortunes

174. I am apt to pass up something I want to do because others feel that I am not going about it in the right way.

175. I find it hard to set aside a task that I have undertaken, even for a short time.

176 I have several times had a change of heart about my life work.

177. I must admit that I have at times been worried beyond reason over something that really did not matter.

178. I like to let people know where I stand on things

179 I have a daydream life about which I do not tell other people

180. I have often felt guilty because I have pretended to feel more sorry about something than I really was

181. I feel tired a good deal of the time.

182. I sometimes feel that I am about to go to pieces