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Patterns of response as a function of intelligence, motivation, and personality

David T. Hess

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PATTERNS OF RESPONSE AS A FUNCTION OF INTELLIGENCE, MOTIVATION, AND PERSONALITY

by

David T. Hess

Approved:

Austin E. Grigg, Chairman

H. Warner Bruce

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To my grandparents

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Chapter I

INTRODUCTION

Historical Background. The problem of response set is not new in psychological research (Gibson, 1941). It has been known for quite some time that when one is dealing with unstructured stimulus situations human responses often do not follow the normal probability distribution expected. These biases are most apparent in situations where free choice is involved and thus where there is no reason to choose one response over another. For example, Goodfellow (1940) found that when a coin is flipped, on the first toss, 80 per cent of the subjects will call "heads" instead of the 50 per cent expected by chance. In a "pick one letter" type of situation, Berg and Rapaport (1954) found that "B" is preferred in a choice of A, B, C, D and "X" is preferred in a choice between X and Y. One also finds such biases in motor responses. Robinson (1933) found that in situations where one can turn either right or left and reach the same point, three people will turn right for every person who turns left. In cases where judgments are involved but where the issues are apparently unimportant to the subject, skewed responses also occur (Cronbach 1946; Berg and Rapaport, 1954; Gaier and Bass, 1959).

Cronbach (1946) and Berg (1959) have indicated that one of the crucial variables effecting the appearance of response set is that of ambiguity or lack of structure of the items used. The California F Scale (Adorno, Frenkel-Brunswik, Levinson, and Sanford, 1950) appears to possess items which have ambiguity for some subjects but not for others (Adams, 1962). Thus we would expect that certain individuals would respond to the items on the scale on the basis of set while some others would respond on the basis of item content.

Adams, by using the California F Scale as modified by Messick and Frederiksen (1958), showed that the Content responders (C) and the Response Set Responders (RSR) could be differentiated, and that there were differences in rigidity among the C and RSR groups. Other kinds of differences were not explored.

Couch and Keniston (1960) defined two RSR groups (yeasayers and naysayers), by using a somewhat different way of detecting the two groups (Over-all Agreement Score), and discussed the intellectual and personality differences among them using largely verbal tests and interview material.

Statement of the Problem. The present study will attempt to investigate C and RSR differences, sampling from a broad range of functions, using measures which may be less subject to verbal sets than the more traditional methods used by Couch and Keniston. The differences will be

assessed in terms of the subjects' intelligence, general personality functions, and test taking motivation.

Review of the Literature. The notion of response sets developed by Cronbach (1946) and further extended by Berg (1959) has recently been reviewed by Brown (1964). Since the present study proposes that observation be made of different areas, i. e., intelligence, personality, and attitudes in terms of motivation towards participation in experiments, it would seem more pertinent to review the literature in terms of the rationale and background of some of the measures employed in this study, especially since their use has not been widespread.

In contrasting two groups of Response Set Responders, Couch and Keniston (1960) found no difference in intellectual functioning. The present study attempts to compare a group of Content Responders and a group of Response Set Responders (i. e., those responding in a logically inconsistent manner), therefore, differences occurring due to intellectual functioning cannot be discounted. The Revised Beta Examination will be used to measure the intellectual functioning of the population used in this study.

The Revised Beta Examination was chosen for use in this study for the following reasons: (1) It is non-verbal in nature and thus may be not subject to the effects of verbal sets; (2) It has a coefficient of correlation of .92 when correlated with the WAIS (Hathaway and McKinley, 1951);

(3) It can be administered in group testing sessions in approximately 30 minutes.

Couch and Keniston characterized a number of different kinds of personality attributes in their study. The authors believed that the most significant attributes stemmed from interview material from which they postulated differences in id, ego, and superego functioning. The IES Test was designed to measure behavioral manifestations of this kind.

The IES Test was developed by Dombrose and Slobin in 1951 at Western Reserve University. It was designed to give measurements of the relative strengths of impulses, ego, and superego, and to assess the interaction of the ego, or cognitive processes, with respect to the other processes of the personality, i.e., the impulse and superego structures.

In research dealing with the IES Test, both the initial publication and the work following on it have dealt with differences between known criterion groups. For example, Dombrose and Slobin (1958) originally used 10 tests in their battery in an attempt to demonstrate differences between normals, neurotics and psychotics in terms of the relative strengths of impulses, ego, and superego. They found that the four tests (described below) included in the present IES Test were the most productive in the measurement of these concepts. They concluded that the results showed clearly defined personality differences among the groups studied as measured by the IES Test.

Charnes (1953) attempted to measure impulse, ego, and superego development by comparing the relative strength of these forces at different conceptual age levels (i.e., latency, adolescent, and adult levels) as measured by the IES Test. His results indicated that adults and 10 year olds reacted similarly whereas adolescents reacted differently. Charnes concluded that "the test behavior of the different groups indicates that the tests tap a basic personality balance which is formed by age 10, which is changed by the pressures of adolescence and which is restored in adulthood to its early equilibrium only somewhat altered by intervening growth, education, and socioeconomic status."

Ritz (1954) examined three geriatric groups: a non-institutionalized non-psychotic group; an institutionalized non-psychotic group; and an institutionalized psychotic group. He then compared the results of these three groups with the results of other age groups studied by previous investigators. His findings indicated poor ego functioning in the aged group when taken as a whole and he reported there was "a consistent tendency for the aged subjects, taken together, to show more impulsive potential, more psychic rigidity, and less rational-compromising behavior than the younger subjects."

Golden (1954) used the IES Test with both male and female subjects in the latency period and found it equally applicable to both sexes. Golden then compared the scores of his latency group with those of the latency

group of Charnes (1953). He found that the two groups did not differ significantly.

Rankin and Wikoff found differences between reformatory inmates and a comparison group of college subjects using the Arrow-Dot test of the IES Test. These differences were in the expected direction, i.e., reformatory inmates appeared to be more impulsive. The results were discussed in terms of possible use of the Arrow-Dot-Impulse score in studies of delinquency, as well as possible relationships between the Porteus Maze Q score and Impulse score.

Another area of research has been devoted to the study of the IES Test performance of individuals who behave differently. Bortner (1962) found that individuals who have made different kinds of adjustments to an institution have demonstrated significant differences in IES Test performances. Using three groups, each of which represented a different pattern of adjustment in an institutional environment, Bortner compared them with each other and with non-institutional groups (made up of both older and younger subjects than were used in the institutionalized groups.) He hypothesized that the institutionalized groups would differ from the non-institutional groups and among themselves on the measures of super-ego functioning used and that the differences could not be attributable solely to the effects of aging. This hypothesis was partially substantiated, significant differences being obtained on six of the eight measures used.

Pinckney (1963), as part of a long range study of the personality factors of college students, gave the IES Test to 80 female students. He reports that the scores of his subjects on the various subtests of the IES indicate less experienced impulse, more conformity with superego values, and more controlled behavior as well as good contact with reality.

Bortner (1964a) investigated school subject preference as related to the structure of value systems in elderly, institutionalized males who expressed clear preferences for arithmetic, or reading, or for language and spelling. The IES Test showed differences between the arithmetic preference group and the other two groups in terms of ego strength and impulse expression.

Bortner (1964b) investigated personality differences with respect to preference for skill- or chance-determined outcomes using a population of subjects from a VA Domiciliary. He hypothesized that those individuals who preferred skill-determined outcomes would show greater ego strength as measured by the IES Test. Using one-tailed tests, Bortner found six significant differences between the groups on the IES Test, and the skill-oriented subjects did indeed show significantly greater ego strength. The results were discussed in terms of decision theory and social behavior.

There has been a dearth of studies comparing the IES Test and other kinds of test performances, and validity studies to compare IES Test performance and an over-all "life-style" have been lacking. Work is

is currently underway to make up these deficiencies.

The measurement and assessments of the impulse, ego, and superego processes were developed along the lines of construct validity by using operationally defined behavioral manifestations of the psychoanalytic concepts involved. Dombrose and Slobin (1950) state that their aim is "to provide a group of standard situations specifically designed to elicit behavior which will allow the impulse, ego, and superego to manifest themselves in a readily discernible and quantifiable manner. Comparisons of these manifestations then provide some measure of their relative strengths."

Dombrose and Slobin (1958) point out that they have no intention of creating a specific psychoanalytic personality typology. They fully realize that every individual and every aspect of behavior is as they put it, "the product of interacting, interdependent forces." But they further point out that by the examination of a subject's behavioral manifestations in a number of diverse situations, one can measure some of the above mentioned forces.

There are four subtests comprising the IES Test, and they will now be described along with the reliability figures of the subtests. The descriptions were extracted from Dombrose and Slobin (1958), and the reliability of test scores, as determined by the Kuder-Richardson formula 20 method, are from Rankin and Johnston (1962).

Picture Title Test (PT) -- This test consists of 12 drawings, with each drawing depicting activities and objects which may be classified into impulse and superego categories. The subject is instructed to give the most fitting name or title to the picture. The titles are then scored with respect to general principles and specific criteria given in the manual.

According to Dombrose and Slobin, the titles given to the pictures are indicative of the degree to which the subject can accept impulse and superego pressures as belonging to himself, as well as the degree to which he can integrate them with his more objective judgment.

The reliabilities for the three ipsotic scores for the PT Test are as follows: PT-I .31; PT-E .46; PT-S .39; PT-D .32.

Picture Story Completion Test (PSC) -- This test is made up of 13 sets of cartoons, and in each set two or three of the cartoons begin a story. The subject is instructed to select one of the three pictures provided to complete the story. Each of the three choice situations consist of one impulse-expressive, one ego-integrating, and one superego-inhibiting picture. The test is scored according to the choice the subject makes.

It is believed that the PSC Test expresses the subject's conception of the outside world.

The reliabilities for the three ipsotic scores for the PSC Test are as follows: PSC-I .45; PSC-E .42; PSC-S .13.

Photo-Analysis Test (PhA) -- This test consists of nine men's photographs. Each subject is asked two questions about the behavior and feelings of the men and three plausible answers are provided. The three answer choices consist on one impulse-released answer, one ego-controlled answer, and one superego-restrained answer.

The PhA Test is interpreted as revealing the desired self-gratifications around which the subject organizes his fantasies.

The reliabilities for the three ipsotic scores for the PhA Test are as follows: PhA-I .30; PhA-E .52; PhA-S .23.

Arrow-Dot Test (AD) -- This test consists of a perceptual-motor task that requires the subject to solve 23 simple graphic problems. The subject is instructed to draw the shortest possible line from the point of an arrow to a dot, interspersed between which are a variety of solid lines and black bars (identified as barriers in the instructions); and some dashed-lines and gapped-bars (not mentioned in the instructions), which provide the subject with opportunities for self limitation as determined by internal needs.

On the basis of the rationale discussed in the manual, the responses to each problem are scored in terms of uncontrolled impulse expressions, ego-integrated or realistic satisfaction, or superego-inhibited delayed expression.

The reliabilities for the three ipsotic scores for the AD Test are as follows: AD-I .84; AD-E .86; AD-S .77.

In a factor analytic study of deficit behavior, Coppinger, Bortner and Saucer (1963) discussed two factors, one of which was interpreted as reflecting examiner orientation, while the other was interpreted as reflecting task orientation. The MMPI-L Scale dominated the factor which was interpreted as reflecting examiner orientation, and the Bender-Gestalt Test, Q-sorted for behavioral efficiency, dominated the factor representing task orientation or careful effort.

Although it would be better to employ all of the measures loading on these factors, or to search the literature for more precise estimates of examiner vs. task orientation, it is noted that this in effect would constitute another whole research project in and of itself. Thus, it would seem more feasible to use the MMPI-L Scale and the Bender-Gestalt Test as single best estimates of examiner and task orientation respectively. A drawing task (consisting of three figures) similar to the Bender-Gestalt figures was developed by the investigator for use in the present study rather than using the Bender-Gestalt per se. This was done in the interest of time and the problems that would have been involved in obtaining permission to reproduce the Bender-Gestalt on slides from those who now hold the copyright.

Scores from both measures were expressed in terms of T scores and the measure of task orientation was expressed in terms of MMPI-L Scale T scores minus Figure Drawing Test T scores. In the Coppinger, Bortner, and Saucer study, the Bender Gestalt Test rated for behavioral efficiency, showed high intercorrelations among the Q-sorts; therefore the estimates of a single judge were used for that study. That same judge has Q-sorted the Figure Drawing Task for the present investigation.

The notions concerning task vs. examiner orientation are not unrelated to the concept of Field-Dependence-Independence as developed and elaborated by Witkin and his colleagues (Witkin, Lewis, Hertzman, Machover, Meissner, & Wapner, 1954; Witkin, Dyk, Faterson, Goodenough & Karp, 1962).

Field Independence is defined as the development of a capacity to abstract and take a critical view of experience. This would include the ability to deal with the perception of a complex environment, including perception of self. There are two major aspects of Field Independence: (1) a primarily cognitive aspect, represented by the Embedded Figures measure in this study, and (2) an affective component related specifically to self-concepts measured by the Draw-A-Person test (scored by Machover's criteria).

Since these measures of Field Dependence-Independence are more global than a specific type of orientation, they would suggest a greater degree of generality than would task vs. examiner orientation.

It is likely that the Response Set Responders are less differentiated (higher scores on the Draw-A-Person test) and are more cognitively field dependent (lower scores on the Embedded Figures Task) than the Content group. These directional hypotheses develop out of some of the work already done in the area and are not unrelated to other measures involved in this study. For instance, both the Embedded Figures Task and the Draw-A-Person Test have shown consistent differences among groups that have been compared on the IES Test (Bortner, 1964a & 1964b).

The reliability of the Embedded Figures Task used in this study was not available and the reliability of the Draw-A-Person Test (scored by Machover's criteria) is given by Witkin et al. (1962) as .82.

IQ scores taken from the Revised Beta Test were used to compare the intellectual functioning of the two groups.

Scores on the IES Test, the MMPI-L Scale, the Embedded Figures Task, and the Figure Drawing Task were converted to T scores because of sex differences and because of the need to compare different types of tasks in the statistical analysis (i.e., the MMPI-L Scale and the Figure Drawing Task).

Hypotheses to be tested in this study, grouped by specific areas are as follows:

Intelligence

C>RSR on the Revised Beta Test. (This hypothesis stems from the comparison of a group responding in a logically

inconsistent manner [RSR group] and a group responding on the basis of content.)

Motivation (towards test taking)

C<RSR on MMPI-L T score minus Figure Drawing Task T scores = task orientation. (The C group is more task oriented than the RSR group and by implication, less concerned with social appearances.)

Personality

Ego Scores

C>RSR on AD-E (This hypothesis stems from the notion that the C group will have a tendency to follow directions more carefully than the RSR group.)

RSR>C on PhA-E (We would expect that the RSR group would obtain their success in fantasy rather than in reality.)

C>RSR on PSC-E (In general, we would expect the C group to assess reality more realistically.)

C>RSR on PT-E (In general we would expect the C group to assess reality more realistically.)

Impulse and Superego Scores

C=RSR on Impulse and Superego scores.

Cognitive Complexity

C>RSR on Embedded Figures Task (It is assumed that the

the C group is better able to abstract than the RSR group.) i. e., more field independent.

RSR>C on Draw-A-Person (It is assumed that the RSR group has a less well defined self-concept) i. e., more field dependent.

Chapter II

PROCEDURE

Subjects. The subjects used in this study consisted of 172 male and female college students taken from General Psychology classes at the University of Richmond and Christopher Newport College. The age of the sample used in the study ranged from 17 to 37 years with a mean age of 20.5 years.

Battery. The battery used consisted of the following sub-tests: (1) Modified California F Scale; (2) MMPI-L Scale; (3) Draw-A-Person Test; (4) Embedded Figures Task; (5) Revised Beta Examination; (6) IES Test; and (7) Figure Drawing Task. (see Appendix B).

The battery was developed to facilitate ease of administration in the following manner: Part I consisted of an Inventory (typed on stencils) made up of the F Scale and the MMPI-L Scale; the Revised Beta Examination and the Embedded Figures Task. Part II consisted of the Draw-A-Person Test, the IES Test and the Figure Drawing Task (on slides).

Method. The battery was administered in group testing sessions, with Part I being given during one 50 minute class period and Part II being given during a second 50 minute class period. Part II was administered one week after Part I.

The division of the sample into the necessary C and RSR groups was made in the following manner: the medians for the F+ and F- scale for the total sample were computed and each subject's score on these scales was compared with these medians to determine the group to which he belonged. Those subjects who obtained scores higher than both medians or lower than both medians were assigned to the RSR group, while those subjects who obtained scores higher than one median and lower than the other or vice-versa were assigned to the C group. In cases where one or the other of the two scores fell on the median, the assignment to a specific group was made on the basis of size of the spread between the two scores with those scores having the greatest spread (>4) being assigned to the C group.

When the above mentioned procedure was completed, there was a total of 87 males, 43 of whom were classified as C responders; and 113 females, 43 of whom were classified as C responders. In order to make the four groups equal, one score was dropped from the male RSR group and 27 scores from the female RSR group, on the basis of spread between the two specific scores involved. Those scores having the greatest spread were dropped until the n for that specific subgroup (i. e., male RSR and female RSR) reached 43. The basis of this group assignment decision was the Adams article (1962) and personal communication with Adams.

IQ scores taken from the Revised Beta Examination were used to compare the intellectual functioning of the two groups.

All of the data collected and used in the statistical analysis were converted to z scores and then to T scores to normalize the distribution and because of the need to compare different types of tasks in the statistical analysis (i. e., the MMPI-L Scale and the Figure Drawing Task).

The Q-sort of the Figure Drawing Task was done twice by the aforementioned experienced judge with a one day interval between sorts. The figures were then Q-sorted by a second judge, who had no previous experience. The reliability of these Q-sorts was .73 for the first judge (between his two sorts) and the reliability between the two judges was .76. The first Q-sort of the first judge was used in the present study.

Chapter III

RESULTS

Data comparing the effects of sex and type of response on each measure were analyzed by use of a 2x2 factorial design, each cell containing 43 observations. In each case, Factor A was sex (male vs. female) and Factor B was type of response (RSR vs. C). The .05 level of confidence was used for all tests.

There were no significant differences among the groups in terms of intellectual ability or motivation (towards test taking). Table I and II respectively, in Appendix A, present the analysis of variance summary data for these two areas of investigation.

With respect to the four directional hypotheses concerning ego strength, only one proved to be significant, the Arrow-Dot-Ego score.

Table I presents the analysis of variance summary data showing the main effects of sex and type of response and the interaction effects of these factors for Arrow-Dot-Ego scores. Although the F value for Factor A (sex) is significant at the .01 level of confidence, the main effects of this factor cannot be interpreted due to the significant interaction obtained ($P < .05$).

TABLE I

Summary of Analysis of Variance for Arrow-Dot-Ego Scores

Source	SS	df	MS	F
A (Sex)	1,305.10	1	1,305.10	14.48**
B (Response Type)	301.78	1	301.78	3.35
AB	371.41	1	371.41	4.12*
Error	15,138.50	168	90.11	

**$F_{.99}$ (1, 168) = 6.35
*$F_{.95}$ (1, 168) = 3.92

Table II presents the analysis of variance summary data for the simple effects of Factor A (sex) at both levels of Factor B (type of response) for Arrow-Dot-Ego data. Factor A (sex) at level b_1 (RSR) was significant ($p < .01$).

Table III presents the analysis of variance summary data for the simple effects of Factor B (type of response) at both levels of Factor A (sex) for Arrow-Dot-Ego data. Factor B (response type) at level a_2 (female) was significant ($p < .01$).

Figure 1 shows the profiles of AB (sex by response type) interaction for mean Arrow-Dot-Ego T scores.

Of the eight impulse and superego measures, three showed significant differences. They are the Arrow-Dot-Impulse scores, the Picture Title-Impulse scores, and Arrow-Dot-Superego scores. These data are presented in Tables IV, V, and VI respectively.

Table IV presents the analysis of variance summary data showing the main effects of sex and type of response and the interaction effects of these factors for Arrow-Dot-Impulse scores. Factor A (sex) was significant ($p < .01$) and no interaction effects were found to exist.

Figure 2 shows the profiles of mean Arrow-Dot-Impulse T scores for RSR and C groups of both sexes.

Table V presents the analysis of variance summary data showing the main effects of sex and type of response and the interaction effects of these factors for Picture Titles-Impulse scores. Factor B (type of response) was significant ($p < .05$) and no interaction effects were found to exist.

TABLE II

Analysis of Variance for Simple Effects

for Sex (A) at Response Type (B) for Arrow-Dot-Ego Scores

Source	S	df	MS	F
Factor A (Sex)				
for level b_1 (RSR)	1,534.47	1	1,534.47	17.03**
for level b_2 (C)	142.03	1	142.03	1.58
Error	15,138.50	168	90.11	

**$F_{.99}$ (1, 168) = 6.85
*$F_{.95}$ (1, 168) = 3.92

TABLE III

Analysis of Variance for Simple Effects

for Response Type (B) at Sex (A) for Arrow-Dot-Ego Scores

Source	SS	df	MS	F
Factor B (Response Type)				
for level a_1 (Male)	1.80	1	1.80	.02
for level a_2 (Female)	671.39	1	671.39	7.45**
Error	15,138.50	168	90.11	

**$F_{.99}(1, 168) = 6.85$
*$F_{.95}(1, 168) = 3.92$

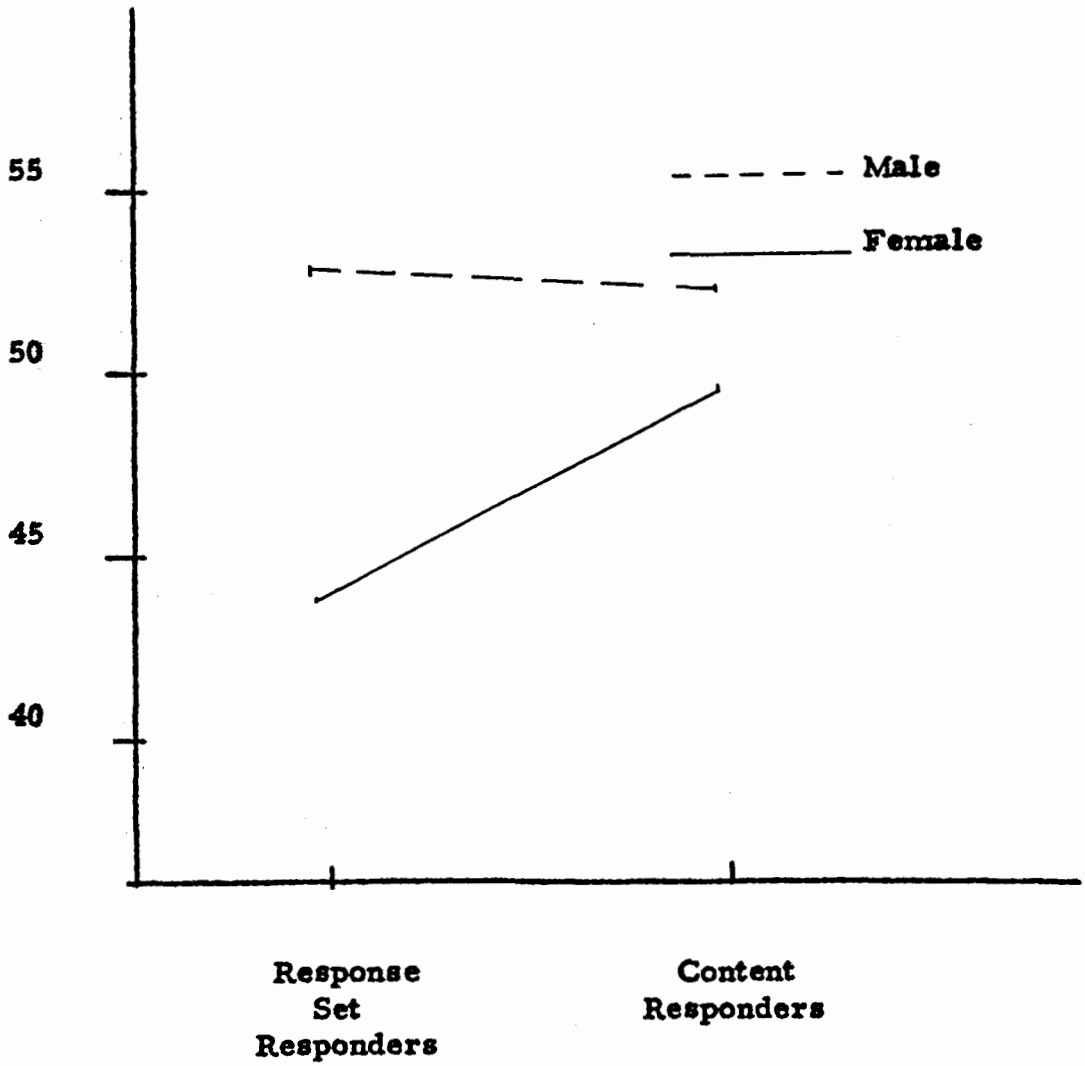


Figure 1. Profiles of AB (sex response type) interaction for mean Arrow-Dot-Ego T scores.

TABLE IV

Summary of Analysis of Variance for Arrow-Dot-Impulse Scores

Source	SS	df	MS	F
A (Sex)	1,468.99	1	1,468.99	15.52**
B (Response Type)	56.32	1	56.32	.60
AB	49.53	1	49.53	.52
Error	15,901.76	168	94.65	

**$F_{.99}$ (1, 168) = 6.85
*$F_{.95}$ (1, 168) = 3.92

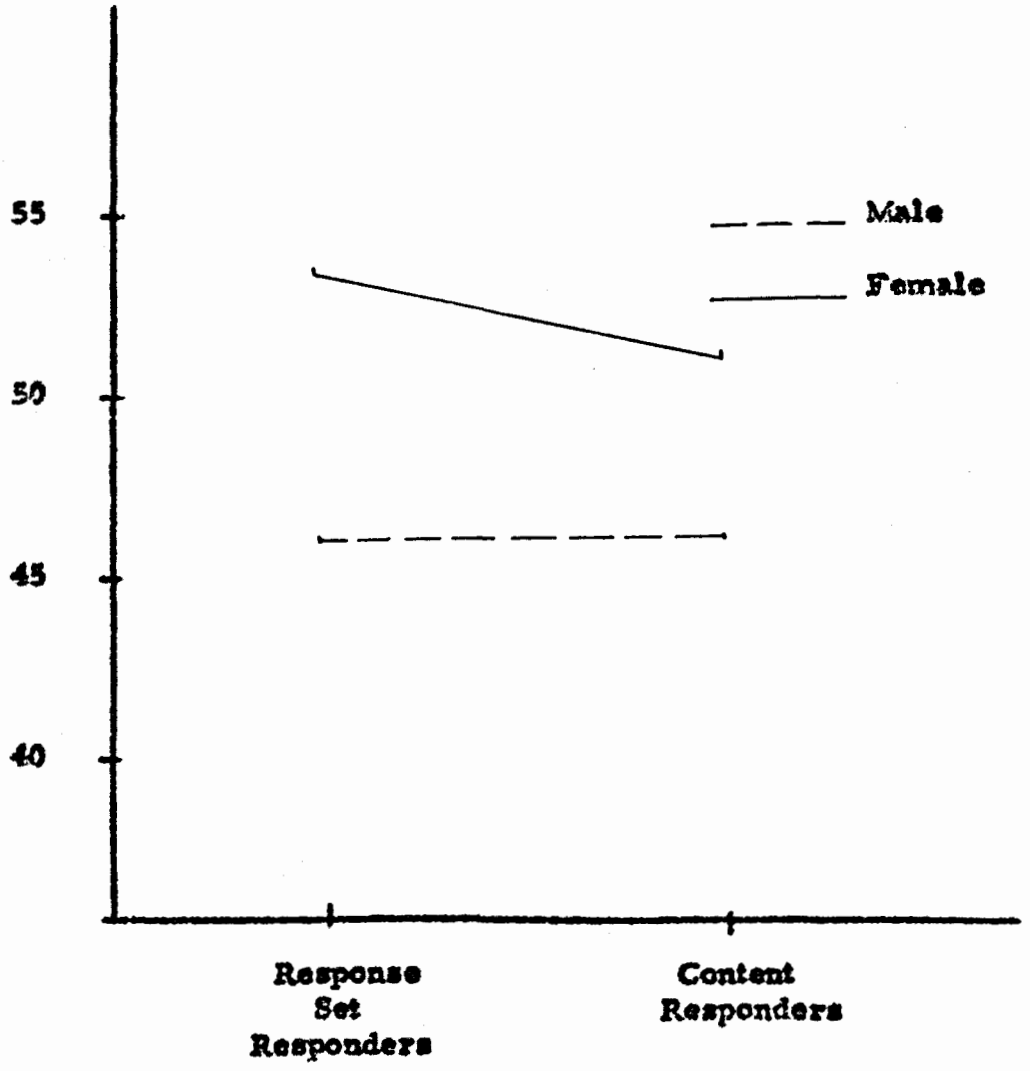


Figure 2. Profiles of mean Arrow-Dot-Impulse T scores for RSR and C groups of both sexes.

TABLE V

Summary of Analysis of Variance for

Picture-Title-Impulse Scores

Source	SS	df	MS	F
A (Sex)	52.77	1	52.77	.52
B (Response Type)	494.40	1	494.40	4.90*
AB	24.91	1	24.91	.25
Error	16,953.50	168	100.91	

**$F_{.99}$ (1, 168) = 6.85
*$F_{.95}$ (1, 168) = 3.92

Figure 3 shows the profiles of mean Picture Title-Impulse T scores for RSR and C groups of both sexes.

Table VI presents the analysis of variance summary data showing the main effects of sex and type of response and the interaction effects of these factors for Arrow-Dot-Superego scores. Although the F value for Factor B (type of response) was significant at the .05 level of confidence, the main effect cannot be interpreted due to the significant interaction obtained ($p<.05$).

Table VII presents the analysis of variance summary data for the simple effects of Factor A (sex) at both levels of Factor B (type of response) for Arrow-Dot-Superego data. Factor A (sex) at level b_1 (RSR) was significant ($p<.01$).

Table VIII presents the analysis of variance summary data for the simple effects of Factor B (type of response) at both levels of Factor A (sex) for Arrow-Dot-Superego data. Factor B (response type) at level a_2 (female) was significant ($p<.01$).

Figure 4 shows the profiles of AB (sex by response type) interaction for mean Arrow-Dot-Superego T scores.

Of the two directional hypotheses concerning Field Dependence measures, one was significant (Draw-A-Person) and one was not (Embedded Figures).

Table IX presents the analysis of variance summary data for the main effects of sex and type of response and the interaction effects of

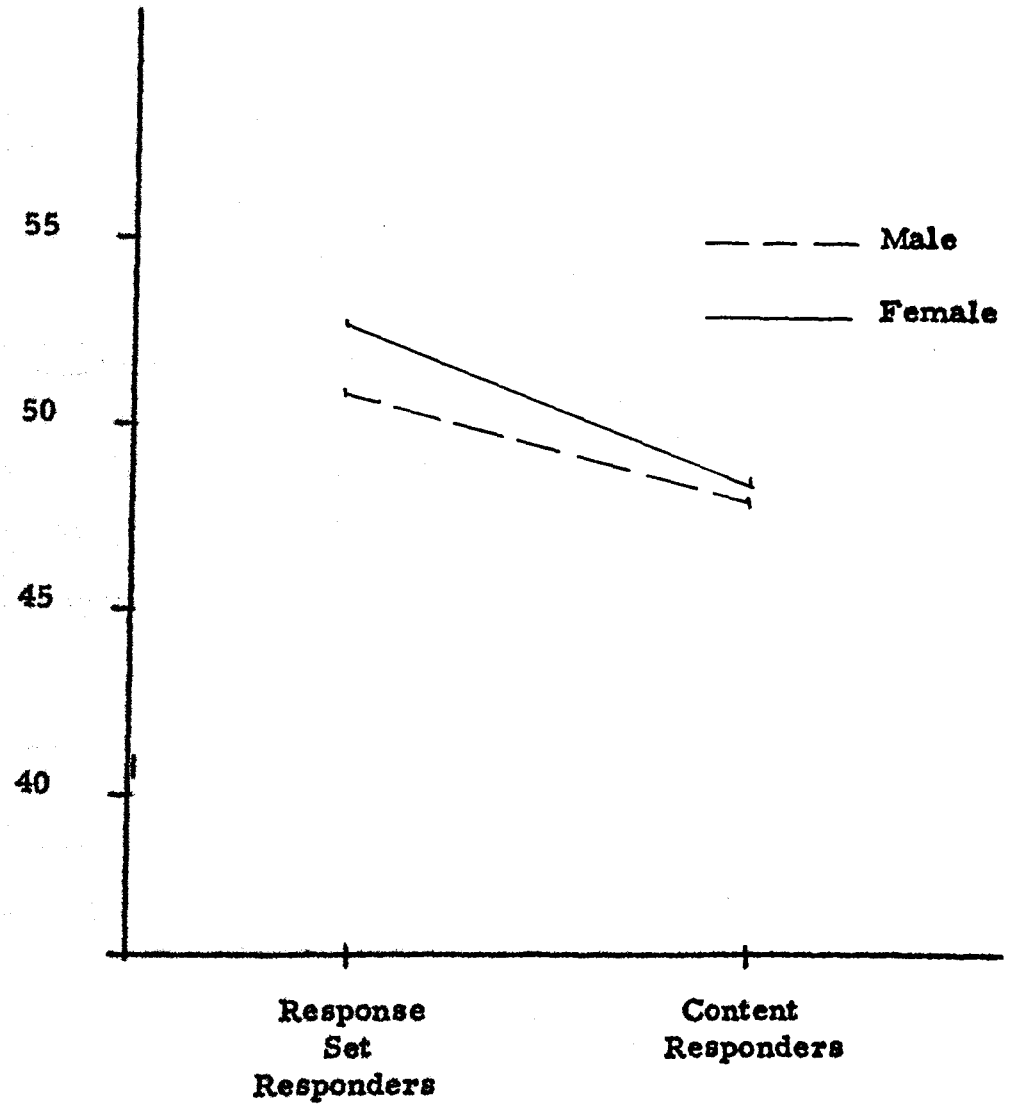


Figure 3. Profiles of mean Picture Title-Impulse T scores for RSR and C groups of both sexes.

TABLE VI

Summary of Analysis of Variance

for Arrow-Dot-Superego Scores

Source	S	df	MS	F
A (Sex)	300.14	1	300.14	3.14
B (Response Type)	446.84	1	446.84	4.68*
AB	432.20	1	432.20	4.52*
Error	16,050.24	168	95.54	

**$F_{.99}$ (1, 168) = 6.85
*$F_{.95}$ (1, 168) = 3.92

TABLE VII

Analysis of Variance for Simple Effects

for Sex (A) at Response Type (B) for Arrow-Dot-Superego Scores

Source	SS	df	MS	F
Factor A (Sex)				
for level b_1 (RSR)	726.34	1	726.34	7.60**
for level b_2 (C)	6.01	1	6.01	.06
Error	16,050.24	168	95.54	

**$F_{.99}(1, 168) = 6.85$
*$F_{.95}(1, 168) = 3.92$

TABLE VIII

Analysis of Variance for Simple Effects

for Response Type (B) at Sex (A) for Arrow-Dot-Superego Scores

Source	SS	df	MS	F
Factor B (Response Type)				
for level a_1 (Male)	.06	1	.06	.00
for level a_2 (Female)	878.97	1	878.97	9.20**
Error	16,050.24	168	95.54	

**$F_{.99}(1, 168) = 6.85$
*$F_{.95}(1, 168) = 3.92$

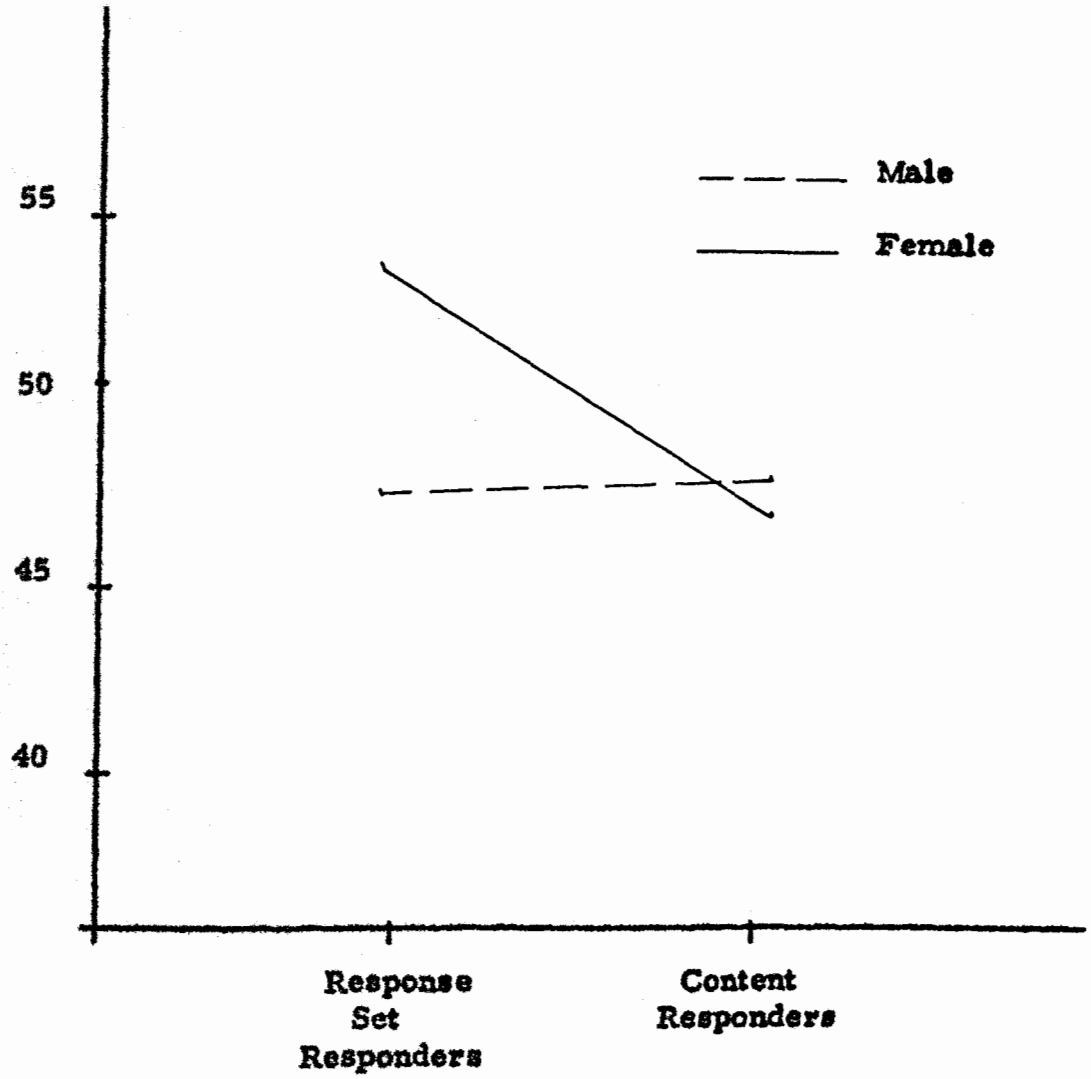


Figure 4. Profiles of AB (sex by response type) interaction for mean Arrow-Dot-Superego T scores.

TABLE IX

Summary of Analysis of Variance of Draw-A-Person Scores

Source	SS	df	MS	F
A (Sex)	1,338.14	1	1,338.14	14.62**
B (Response Type)	313.61	1	313.60	3.43
AB	20.04	1	20.04	.22
Error	15,372.46	168	91.50	

**$F_{.99}$ (1, 168) = 6.85
*$F_{.95}$ (1, 168) = 3.92

these factors for the Draw-A-Person scores. Factor A (sex) was significant at the .01 level of confidence and no interaction effects were found to exist.

Figure 5 shows the profiles of mean Draw-A-Person T scores for RSR and C groups for both sexes.

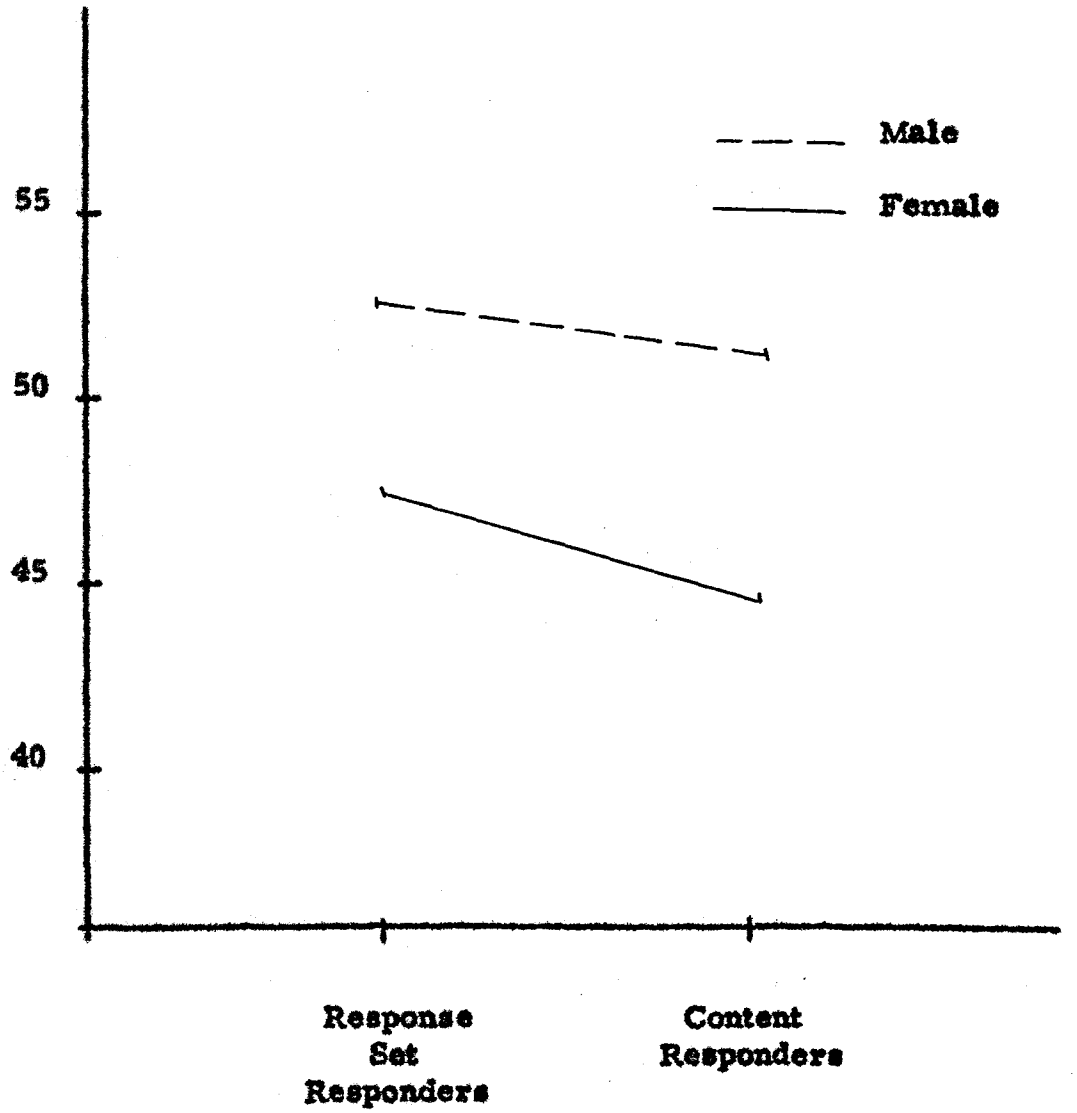


Figure 5. Profiles of mean Draw-A-Person T scores for RSR and C groups for both sexes.

Chapter IV

DISCUSSION

In light of the results the following discussion is offered as a possible interpretation of the data.

Since neither intellectual differences nor differences in motivation (towards test taking) were found, the results will be discussed in terms of the third type of characteristic explored, personality. Even here it seems not so much a matter of personality in general but more specifically a matter of self concepts.

Subsumed under the category of personality characteristics were the measures of the relative strengths of impulse, ego, and superego under the four conditions postulated by Dombrose and Slobin (1958). Also found under the heading of personality characteristics were the measures of Field Dependence-Independence (Witkin et al. 1954). The IES Test yielded six significant differences while the Draw-A-Person Test yielded one significant difference.

In terms of the RSR and C groups, disregarding sex differences, there is one aspect to be noted. This aspect concerns the fact that the RSR group was significantly greater (i. e., scored higher) than the C group on the Picture-Title-Impulse measure.

This difference suggests that the RSR group, when taken as a whole, realize that they have considerable impulse needs within their own self but they lack the capacity to integrate impulses with their objective, impersonal judgment.

Over and above the difference cited above for the two response groups when considered as a whole, there appears to be a differential pattern between RSR and C groups when viewed in terms of sex (male vs. female). Adams (1962) did not analyze his data in terms of sex differences; in fact he did not specify what proportions of his subject population were made up of males and females. Had he done so, it is entirely possible that this same type of differential pattern would have emerged with respect to his findings on rigidity.

Let us now look at the data in terms of this emerging differential pattern. Some of our more common notions concerning the behavior of male and female college students are expressed in terms of maturity and the ability to cope with the types of adult responsibility encountered during this period. In general we look upon females as more mature and seemingly better able to handle culturally defined adult responsibility at this age. The results of this study on two measures (Draw-A-Person Test and Arrow-Dot-Impulse measure) seem to be compatible with these notions.

Specifically, females in general appear to be more field independent than males (lower scores on the Draw-A-Person Test) and thus according to Witkin et al. (1954) do not lack self-assurance, have good self-perception and have little difficulty in accepting adult roles as society defines them for women. On the Arrow-Dot-Impulse measure we find that the females obtain higher scores than do the males suggesting that perhaps they are more impulsive than males. It is interesting to note, however, that the females used in the present study obtained scores on this measure much like those found by Rankin and Johnston (1962) for a group of older women ($\bar{X}$ age=29 years). This would seem to indicate that the present sample of females is acting more like mature adult women and thus could be expected to handle impulsive behavior in a more adult like manner.

The effects of the above mentioned differential patterning for groups of males and females in general can also be extended into those areas in which sex by response type differences were obtained. For instance we find that female C group (as predicted) seem to follow directions more carefully than do the female RSR group on the Arrow-Dot-Ego measure, and according to Dombrose and Slobin (1958), the C group can be considered more reality oriented than the RSR group. Whereas on the Arrow-Dot-Superego measure the female RSR group obtained higher scores than the C group. This finding suggests that the female RSR group overinterpret directions which seems to indicate some fear of

criticism and over-cautiousness on their part.

As one might expect, this same result occurs when one compares the female RSR group to the male RSR group on the Arrow-Dot-Superego measure. The females obtain scores indicating that although they may be more mature than males they are also more aware of the social consequences of not following rules and other external demands of the environment and thus are more cautious in their dealings with the external world.

On the other hand the fact that the male RSR group appears to act more realistically than does the female RSR group (as evidenced by the Arrow-Dot-Ego measure), suggests that these males are not spending an over abundance of time thinking about the task at hand but are simply following the directions as stated.

In view of the above mentioned findings it seems that differences between C and RSR groups can be explained on the basis of personality variables but that when dealing with such differences one must keep in mind the sex of subjects involved.

In the present study, there were no differences between RSR groups when considered as a whole, on the Field Dependence-Independence measures; while the same groups are aware of impulses but tend to integrate them poorly. But in terms of male and female RSR groups one finds a different picture of the Field Dependence-Independence concept and the lack of ability to integrate impulses. Females, while having a

poorly defined self image, also appear overcautious and fearful of criticism, and thus tend not to commit themselves one way or the other. But male RSR subjects while having the same poorly defined self image tend to show a lack of awareness of the problems at hand. If directions are violated or reversal of opinions are constantly expressed, there seems to be no cause for concern in this group.

One would like to see the results of a rating scale as to whether or not the experimental task was regarded as worth participating in. One would predict that the female RSR group would think it quite important, while the males would consider it rather a waste of time.

Thus we can see that sex differences in terms of self perception and the influence of maturity on these perceptions leads to quite different underlying causes of the general reasons for responding in a logically inconsistent manner.

Chapter V

SUMMARY

The present study was concerned with investigating the differences between groups which respond on the basis of content (C) or response set (RSR) when given the modified California F Scale. The differences were assessed in terms of the subjects' intellectual level, general personality, and test taking motivation.

Assessment was made by the way of seventeen different measures derived from six tests. These tests tended to be less subject to verbal sets than some of the more traditional methods used in this area.

The results of the statistical analysis are as follows:

(1) There were no significant intellectual differences between the RSR and C groups.

(2) There were no significant differences between the RSR and C groups in terms of their test taking motivation.

(3) In terms of personality measures, the following seven significant differences were obtained between types of responding, sex, and interactions between sex and type of responding.

(a) RSR > C on the Picture Title-Impulse measure.

(b) M > F on the Draw-A-Person measure.

(c) F > M on the Arrow-Dot-Impulse measure.

(d) C (female) > RSR (female) on the Arrow-Dot-Ego measure.

(e) RSR (female) > C (female) on the Arrow-Dot-Superego measure.

(f) RSR (female) > RSR (male) on the Arrow-Dot Superego measure.

(g) RSR (male) > RSR (female) on the Arrow-Dot-Ego measure.

These differences were discussed in terms of differential patterning due to sex and type of response.

APPENDICES

APPENDIX A

TABLE I

Summary of Analysis of Variance for Beta IQ Scores

Source	SS	df	MS	F
A (Sex)	41.88	1	41.88	.43
B (Response Type)	103.82	1	103.82	1.06
AB	303.69	1	303.69	3.10
Error	16,471.94	168	98.05	

$^{**}F_{.99}(1, 168) = 6.85$
$^{*}F_{.95}(1, 168) = 3.92$

APPENDIX A

TABLE II

Summary of Analysis of Variance

for MMPI-Figure Drawing Task Scores

Source	SS	df	MS	F
A (Sex)	.00	1	.00	.00
B (Response Type)	2.19	1	2.19	.98
AB	2.78	1	2.78	1.25
Error	374.67	168	2.23	

**$F_{.99}(1, 168) = 6.85$
*$F_{.95}(1, 168) = 3.92$

APPENDIX A

TABLE III

Summary of Analysis of Variance

for Picture Story Completion Ego Scores

Source	SS	df	MS	F
A (Sex)	199.93	1	199.93	1.99
B (Response Type)	80.93	1	80.93	.81
AB	1.65	1	1.65	.02
Error	16,867.88	168	100.40	

$^{**}F_{.99}(1, 168) = 6.85$
$^{*}F_{.95}(1, 168) = 3.92$

APPENDIX A

TABLE IV

Summary of Analysis of Variance

for Picture Title Ego Scores

Source	SS	df	MS	F
A (Sex)	67.81	1	67.81	.65
B (Response Type)	127.35	1	127.35	1.23
AB	20.93	1	20.93	.20
Error	17,392.37	168	103.53	

$^{**}F_{.99}$ (1, 168) = 6.85
$^{*}F_{.95}$ (1, 168) = 3.92

APPENDIX A

TABLE V

Summary of Analysis of Variance

for Photo-Analysis Ego Scores

Source	SS	df	MS	F
A (Sex)	82.64	1	82.64	.82
B (Response Type)	45.45	1	45.45	.45
AB	105.39	1	105.39	1.04
Error	16,946.82	168	100.87	

$^{**}F_{.99}$ (1, 168) = 6.85
$^{*}F_{.95}$ (1, 168) = 3.92

APPENDIX A

TABLE VI

Summary of Analysis of Variance

for Photo-Analysis Impulse Scores

Source	SS	df	MS	F
A (Sex)	2.13	1	2.13	.02
B (Response Type)	136.33	1	136.33	1.36
AB	212.88	1	212.88	2.13
Error	16,790.07	168	99.94	

$^{**}F_{.99}\ (1, 168) = 6.85$
$^{*}F_{.95}\ (1, 168) = 3.92$

APPENDIX A

TABLE VII

Summary of Analysis of Variance

for Picture Story Completion Impulse Scores

Source	SS	df	MS	F
A (Sex)	294.36	1	294.36	2.94
B (Response Type)	.41	1	.41	.00
AB	48.84	1	48.84	.49
Error	16,830.12	168	100.18	

**$F_{.99}$ (1, 168) = 6.85
*$F_{.95}$ (1, 168) = 3.92

APPENDIX A

TABLE VIII

Summary of Analysis of Variance for Picture Title Distance Scores

Source	SS	df	MS	F
A (Sex)	1.86	1	1.86	.02
B (Response Type)	313.36	1	313.36	3.10
AB	7.43	1	7.43	.07
Error	16,983.43	168	101.09	

$^{**}F_{.99}$ (1, 168) = 6.85
$^{*}F_{.95}$ (1, 168) = 3.92

APPENDIX A

TABLE IX

Summary of Analysis of Variance

for Picture Story Completion Superego Scores

Source	SS	df	MS	F
A (Sex)	16.36	1	16.36	.16
B (Response Type)	147.28	1	147.28	1.46
AB	56.36	1	56.36	.56
Error	16,958.44	168	100.94	

**$F_{.99}$ (1, 168) = 6.85
*$F_{.95}$ (1, 168) = 3.92

APPENDIX A

TABLE X

Summary of Analysis of Variance

for Photo-Analysis Superego Scores

Source	SS	df	MS	F
A (Sex)	75.43	1	75.43	.74
B (Response Type)	38.77	1	38.77	.38
AB	.11	1	.11	.00
Error	17,124.27	168	101.93	

$^{**}F_{.99}(1, 168) = 6.85$
$^{*}F_{.95}(1, 168) = 3.92$

APPENDIX A

TABLE XI

Summary of Analysis of Variance

for Picture Title Superego Scores

Source	SS	df	MS	F
A (Sex)	190.62	1	190.62	1.91
B (Response Type)	138.05	1	138.05	1.38
AB	46.25	1	46.25	.46
Error	16,783.56	168	99.90	

$^{**}F_{.99}$ (1, 168) = 6.85
$^{*}F_{.95}$ (1, 168) = 3.92

TABLE XII

Summary of Analysis of Variance for Embedded Figures Task Scores

Source	SS	df	MS	F
A (Sex)	151.19	1	151.19	1.51
B (Response Type)	51.24	1	51.24	.51
AB	168.89	1	168.89	1.69
Error	16,774.58	168	99.85	

$^{**}F_{.99}$ (1, 168) = 6.85
$^{*}F_{.95}$ (1, 168) = 3.92

I.

NAME ______________________ Date __________

AGE _____ SEX _____ EDUCATION ______________

FAVORITE SCHOOL SUBJECT (check one)

(1) Arithmetic or mathematics ____
(2) Language ____
(3) Reading ____
(4) Other ____

* *

MODIFIED CALIFORNIA F SCALE

II.

1. No weakness or difficulty can hold us back if we have enough will power.

Strongly Agree:	Agree:	Disagree:	Strongly Disagree:
______	______	______	______

2. A love of freedom and complete independence are the most important virtues children should learn.

Strongly Agree:	Agree:	Disagree:	Strongly Disagree:
______	______	______	______

3. Because human nature is improving, war and conflict will eventually be eliminated.

Strongly Agree:	Agree:	Disagree:	Strongly Disagree:
______	______	______	______

4. Science has its place but there are many important things that can never possibly be understood by the human mind.

Strongly Agree:	Agree:	Disagree:	Strongly Disagree:
______	______	______	______

5. Every person should have complete faith in his own independent judgment, not in some supernatural power whose decisions he obeys, without question.

Strongly Agree:	Agree:	Disagree:	Strongly Disagree:
_____	_____	_____	_____

6. A person who has bad manners, habits, and breeding can hardly expect to get along with decent people.

Strongly Agree:	Agree:	Disagree:	Strongly Disagree:
_____	_____	_____	_____

7. What the youth needs most is strict discipline, rugged determination, and the will to work and fight for family and country.

Strongly Agree:	Agree:	Disagree:	Strongly Disagree:
_____	_____	_____	_____

8. When a person has a problem or worry, he should drop everything and concentrate upon it until the solution appears.

Strongly Agree:	Agree:	Disagree:	Strongly Disagree:
_____	_____	_____	_____

9. It is known with complete certainty that the urge to jump from high places is learned, not inborn.

Strongly Agree:	Agree:	Disagree:	Strongly Disagree:
_____	_____	_____	_____

10. It is best to use some prewar authorities in Germany to keep order and prevent chaos.

Strongly Agree:	Agree:	Disagree:	Strongly Disagree:
_____	_____	_____	_____

11. What this country needs most, more than laws and political programs, is a few courageous, tireless, devoted leaders in whom people can put their faith.

Strongly Agree:	Agree:	Disagree:	Strongly Disagree:
_____	_____	_____	_____

12. Nowadays since democracy demands that people of widely different background and station mix together, a person should not be finicky about catching a disease from any of them.

Strongly Agree:	Agree:	Disagree:	Strongly Disagree:
_____	_____	_____	_____

13. Sex crimes such as rape and attacks on children, deserve more than mere imprisonment; such criminals ought to be publicly whipped, or worse.

Strongly Agree:	Agree:	Disagree:	Strongly Disagree:
_____	_____	_____	_____

14. Some day it will probably be shown that astrology can explain a lot of things.

Strongly Agree:	Agree:	Disagree:	Strongly Disagree:
_____	_____	_____	_____

15. An insult to our honor should always be overlooked, for "whosoever shall smite thee on they right cheek, turn to him the other also".

Strongly Agree:	Agree:	Disagree:	Strongly Disagree:
_____	_____	_____	_____

16. The true American way of life is disappearing so fast that force may be necessary to preserve it.

Strongly Agree:	Agree:	Disagree:	Strongly Disagree:
_____	_____	_____	_____

17. Nowadays more and more people are prying into matters that should remain personal and private.

Strongly Agree:	Agree:	Disagree:	Strongly Disagree:
_____	_____	_____	_____

18. The rebellious ideas that young people sometimes get must be encouraged and developed at all costs to guarantee mature citizenship in adulthood.

Strongly Agree:	Agree:	Disagree:	Strongly Disagree:
_____	_____	_____	_____

19. Wars and social troubles may someday be ended by an earthquake or flood that will destroy the whole world.

Strongly Agree:	Agree:	Disagree:	Strongly Disagree:
_____	_____	_____	_____

20. Most of our social problems would be solved if we could somehow get rid of the immoral, crooked, and feebleminded people.

Strongly Agree:	Agree:	Disagree:	Strongly Disagree:
_____	_____	_____	_____

21. All attempts to divide people into the two distinct classes of the weak and the strong are doomed to failure.

Strongly Agree:	Agree:	Disagree:	Strongly Disagree:
_____	_____	_____	_____

22. Every truly mature person outgrows childish feelings of submissive respect and of excessive love and gratitude for his parents.

Strongly Agree:	Agree:	Disagree:	Strongly Disagree:
_____	_____	_____	_____

23. The wild sex life of the old Greeks and Romans was tame compared to some of the goings-on in this country, even in places where people might least expect it.

Strongly Agree:	Agree:	Disagree:	Strongly Disagree:
_____	_____	_____	_____

24. If people talked things over and didn't work so much, everybody would be better off.

Strongly Agree:	Agree:	Disagree:	Strongly Disagree:
_____	_____	_____	_____

25. It is foolish and ridiculous to have ideas that our lives could possibly be controlled by plots hatched in secret places.

Strongly Agree:	Agree:	Disagree:	Strongly Disagree:
_____	_____	_____	_____

26. The businessman and the manufacturer are much more important to society than the artist and the professor.

Strongly Agree:	Agree:	Disagree:	Strongly Disagree:
_____	_____	_____	_____

27. Homosexuals are never criminals and must not be punished as such.

Strongly Agree:	Agree:	Disagree:	Strongly Disagree:
_____	_____	_____	_____

28. We are bound to admire and respect a person if we get to know him well.

Strongly Agree:	Agree:	Disagree:	Strongly Disagree:
_____	_____	_____	_____

29. No sane, normal, decent person could ever think of hurting a close friend or relative.

Strongly Agree:	Agree:	Disagree:	Strongly Disagree:
_____	_____	_____	_____

30. Nobody ever learned anthing really important through suffering.

Strongly Agree:	Agree:	Disagree:	Strongly Disagree:
_____	_____	_____	_____

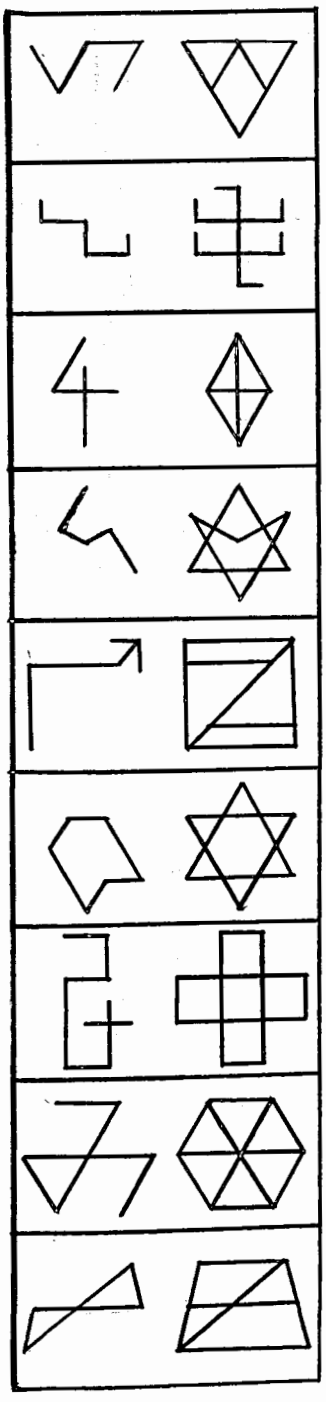
III.

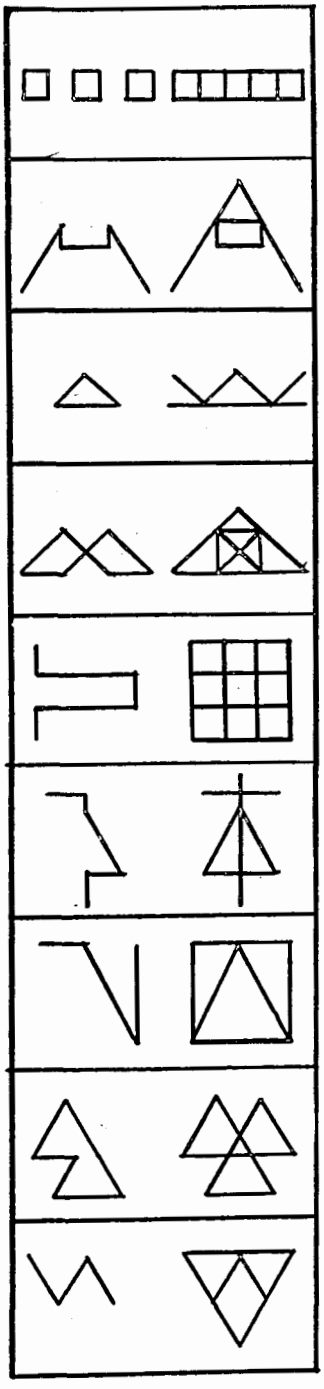
	TRUE	FALSE
1. Once in a while I think of things too bad to talk about.	____	____
2. I do not always tell the truth.	____	____
3. I get angry sometimes.	____	____
4. Sometimes when I am not feeling well I am cross.	____	____
5. If I could get into a movie without paying and be sure I was not seen I would probably do it.	____	____
6. I like to know some important people because it makes me feel important.	____	____
7. I do not like everyone I know.	____	____
8. I gossip a little at times.	____	____
9. Sometimes at elections I vote for men about whom I know very little.	____	____
10. Once in a while I laugh at a dirty joke.	____	____
11. At times I feel like swearing.	____	____
12. I do not read every editorial in the newspaper every day.	____	____
13. Once in a while I put off until tomorrow what I ought to do today.	____	____
14. My table manners are not quite as good at home as when I am out in company.	____	____
15. I would rather win than lose in a game.	____	____

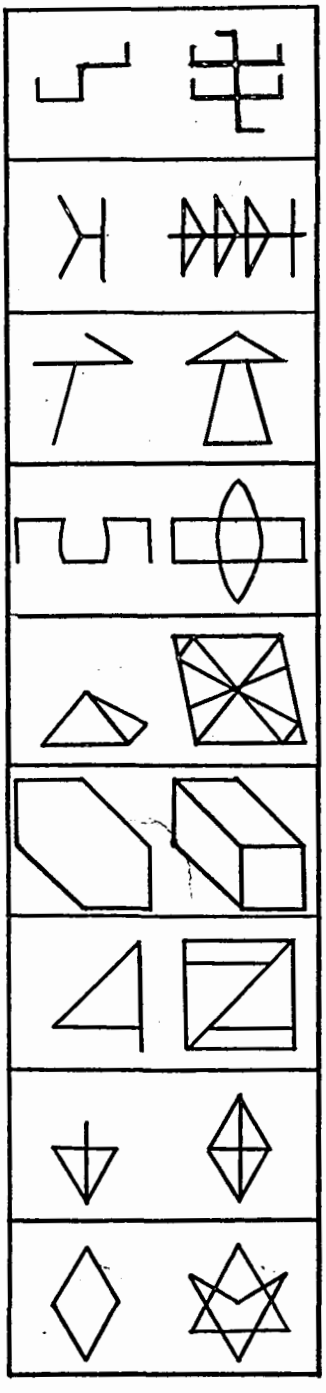
MMPI L SCALE

PART I

In each pair of figures below, mark that part of the second figure which is the same as the first.







GOTTSCHALT EMBEDDED FIGURES

APPENDIX B

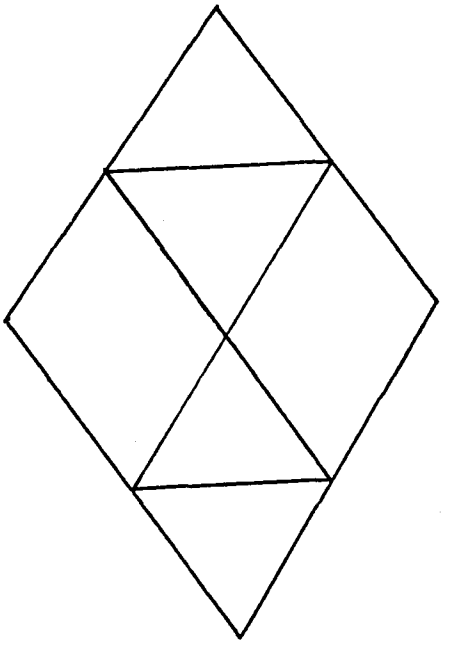


Fig. 1

FIGURE DRAWING TASK

APPENDIX B

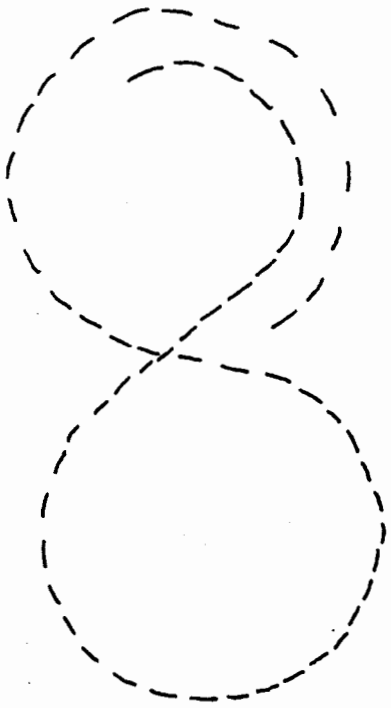


Fig. 2

FIGURE DRAWING TASK

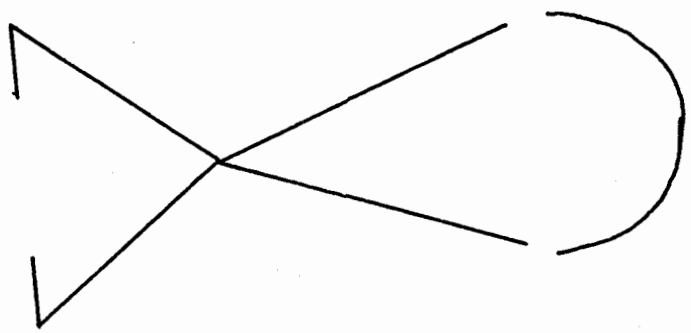


Fig. 3

FIGURE DRAWING TASK

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BIBLIOGRAPHY

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David T. Hess, the author, was born January 31, 1938 in York, Pennsylvania. Upon graduation from William Penn Senior High School in York, he enlisted in the United States Navy, serving four years (1955-1959). After his discharge in 1959 he enrolled at York Junior College in York, Pennsylvania where he majored in Liberal Arts and served as President of the Student Body. Upon graduation from York Junior College in 1961, he transferred to Wake Forest College in Winston-Salem, North Carolina where he majored in psychology and was graduated with a B. A. Degree in 1963. In September 1963 he began his Graduate work in psychology at the University of Richmond and received his M. A. Degree in Psychology in June 1965. While a graduate student he was awarded a Williams Fellowship and was tapped by Psi Chi Honorary Fraternity. He is presently employed as a psychological research assistant with the Veterans Administration at Kecoughtan, Virginia. His future plans include earning his doctoral degree in psychology at the University of Kentucky where he has been awarded an assistantship beginning September 1965.