Examiner Influence on the Holtzman Inkblot Technique

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EXAMINER INFLUENCE ON THE
HOLTZMAN INKBLOT TECHNIQUE

by

Robert G. Hamilton

A thesis
submitted to the
Faculty of the School of Graduate
Studies in partial fulfillment
of the
Degree of Master of Arts

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Special thanks is given both to the many students who freely gave of their time to obtain subjects for the experimenter and to the subjects who participated in the experiment. Without their help the study would have been impossible.

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Robert G. Hamilton
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Clinical psychologists have, in general, favoured the use of projective techniques in the assessment of personality. One of the most popular and widely used techniques has been the Rorschach Inkblot Test. Since its publication in 1921, there has been considerable research on the test which has revealed some of its weaknesses. The recent development of the Holtzman Inkblot Technique (HIT) is an endeavour to overcome three major weaknesses of the Rorschach: lack of agreement in scoring, an unstandardized inquiry, and difficulty of interpretation due to variations in the number of responses (Holtzman, Thorpe, Swartz, and Herron, 1961).

However, there are still other factors present which tend to limit the objectivity of the test. One area of difficulty is the effect of the examiner's personality and behaviour upon the subject's responses. During the past 15 years, a number of studies have stimulated interest in the problem of examiner influence on projective test responses. Two comprehensive review articles by Masling (1960) and Kintz, Delparto, and Mettee (1965) have summarized the work with the Rorschach, but no research has been done with the HIT in this particular area. Thus the present study explored the effect of the examiner's attitude upon the results of the subject's HIT protocol.

Recent research has shown that the Rorschach responses cannot be
regarded solely as a function of the subject's personality. A number of studies have investigated the examiner's influence on the subject's responses. For instance, Lord (1950) examined Rorschach response categories under three experimental conditions: hostile administration, neutral administration, and friendly administration. Thirty-six subjects took the Rorschach under three conditions. Under each condition, the test was administered by a different female examiner. She found significant differences in 20 response categories between the three conditions. A significant difference was also found between each examiner's subjects under the neutral condition. This latter variation was associated with the effect of the examiner's personality.

The effect that different examiners may have on a subject's responses to the Rorschach was also examined by Baughman (1951). He had 15 examiners administer and score the Rorschachs of 633 out-patients of neurotic classification. His results showed significant differences between the examiners for 16 of the 22 scoring variables. As Baughman points out, the main difficulty in interpreting the data is that the differences are not entirely a result of the different personalities of the examiners, but also reflect variations in scoring.

Gibby (1952) investigated the influence of the examiner on the inquiry phase of the Rorschach. He found that even when he constructed a standardized inquiry, there was still a difference in some of the scoring cat-
egories due to the examiner's personality. As an example, his results showed that overt hostility of the examiners produced an increase in the shading response category. In another attempt to study examiner influence on the Rorschach, Gibby, Miller, and Walker (1953) selected a homogeneous group of subjects. Experienced examiners and standard conditions of testing were used. The authors found three scoring categories (F, C, and FY) with significant differences due to personality differences in examiners.

Sanders and Cleveland (1953) also found an interaction between the examiner's personality and the type of protocol which he obtained from the subject. Nine students took the Rorschach, after which they were trained as Rorschach examiners. Each administered the Rorschach to 30 different subjects. To control for possible variation due to scoring error, they had two experienced clinical psychologists score the protocols. At the end of the administration, each subject completed a questionnaire dealing with the attitude of the examiner. The subjects seemed to indicate a liking for examiners whom they perceived, in general, as being low in anxiety compared to those who were rated high in anxiety. The authors also found that overtly anxious examiners (as determined by subjects' ratings on a questionnaire) elicited a higher number of responses, a greater variety of responses, and more white space from the subjects than did the examiners with lower overt anxiety. Furthermore, the "more overt the exam-
iner's hostility, the more stereotypy and passivity and the less human and hostile content the subjects revealed" in the protocol.

On the other hand, Berger (1954) examined the effect of the examiner's personality on the subject's Rorschach protocol and concluded that, on the whole, the test reflected only insignificant examiner differences. This finding does not agree with that of Lord or Sanders and Cleveland. Since Lord's study was conducted under highly varied conditions of administration, this may account for the discrepancy between the two studies. Berger did find a significant relationship between two response categories, popular and space, in the examiner's own Rorschach protocol, and his tendency to elicit the same two response categories in the protocols of the subjects which he tested.

The preceding six studies have examined some aspect of the examiner's personality, conscious or unconscious, which influenced the outcome of the subject's protocol. The following four pieces of research are concerned with verbal and nonverbal cues given deliberately by the examiner. Subjects may consciously or unconsciously respond to these cues and thus certain response categories may be significantly altered.

Wickes (1956) investigated the effect of verbal and nonverbal behaviour of the examiner upon the Rorschach protocol. In the verbal group, the examiner alternately said, "good", "fine", or "all right" after each movement (M) response. In the nonverbal group, the examiner alternately
nodded, smiled, or leaned forward after each M response. The administration of the third group was conducted without any cues. The findings showed a significant increase in the number of M responses for both the verbal and the nonverbal groups.

Effects of verbal and nonverbal reinforcement on the Rorschach were also examined by Gross (1959). In the verbal reinforcer group the examiner said, "good", in the nonverbal reinforcer group the examiner nodded after every human content response, and in the control group no cues were given. He found a significant increase in the number of human content responses for the verbal and nonverbal groups. Magnusson (1960) found a significant increase in the number of popular responses between a group given a verbal reinforcer, "uh-huh", and a group given a nonverbal reinforcer, nodding of the head, as compared to a control group.

The studies with verbal and nonverbal conditioning so far have been concerned with the effect of examiners explicitly giving reinforcement to elicit an increase in certain subject response categories. Masling (1965) investigated the examiner's unconscious tendency to condition subjects' responses on the Rorschach. He instructed two groups of graduate students in the use of the Rorschach. He told one group that examiners always elicited more human responses than animal responses from their subjects. He told the other group that examiners always elicited more animal responses than human responses. The author found a significant
difference between the ratio of human and animal responses which were elicited from each group. No evidence was found, in the tape recorded protocols, to support verbal conditioning. Masling suggested the possibility of nonverbal cues to account for the group differences.

As already noted, both the examiner's personality and his behaviour are important factors in the administration of the Rorschach Inkblot Test. An additional factor that can influence the test results is the "set" with which the subject approaches the test. Alterations in the Rorschach "set" (including the task the subject is required to perform and what he thinks is expected of him) were investigated by Hutt (1950). He purposefully gave the subjects specific instructions to alter certain Rorschach scoring categories. For example, he told one group to "tell everything they saw, and to find as many human responses as they could". The author found that these volitional factors greatly influenced the test results, and from this conclusion he made the assumption that unconscious "sets" could also influence the test results.

In another study of the effect of "set" on the Rorschach, Abramson (1951) told the subjects that successful business and professional people tended to perceive the blots in a certain way. To one group of subjects he said that these people see the blots by wholes (W) and he told the other group of subjects that these people see the blots by detail (D). He found that both "sets" significantly increased the direction of the area desig-
The combined effect of "set" and verbal and nonverbal reinforcers on the subject's HIT protocol was examined by Simkins (1960). He employed 75 HIT cards before their publication in 1961. He was also collecting data for the standardization of the test and did not use the present standardized technique of administration. The reinforcer he used consisted of the examiner saying "mm-hm" and nodding his head for the reinforced response category. The positive "set" instructions for the subject indicated that the purpose of the test was to measure intellectual and creative potential, and the negative "set" instructions indicated that the test measured neurotic potential in a normal population. His results showed that under the positive "set" instructions, the reinforcer increased the response; and under the negative "set" instructions, the reinforcer had a "punishing" effect which produced a decrease in the response.

A related aspect of "set" has been discussed by Orne (1962). He has done some quasi-experimental work with what he terms the "demand characteristics" of an experimental situation. He defines this term as "the total cues which convey an experimental hypothesis to a subject, thereby becoming significant determinants of his behaviour". Orne hypothesizes that volunteer subjects have a positive self-interest in the outcome of the experiment and hence they consciously or unconsciously try to produce what the experimenter is searching for. Stated otherwise,
the roles of the experimenter and the subject have become identified with certain mutual expectations, and the subject has developed a "set" about what he thinks is expected of him.

A study that deals with the "demand characteristics" of an experiment was conducted by Rosenthal and Persinger (1962). Subjects were asked to pretend that they had been in an experiment and to rate how the examiner would have behaved during the experiment if they had been there. The high correlation between the pseudo subjects' rating of the examiner and the real subjects' (subjects in the actual experiment) rating of the examiner "suggested the operation of a stereotype effect in the subjects' perception of the role of the examiner."

To sum up, previous research, which has dealt almost exclusively with the Rorschach, indicates that the personality of the examiner and his behaviour during the test administration has a significant effect on a subject's test responses. Since the HIT is a comparatively new projective test, it is not surprising that to date there has been only one publication in the area of examiner influence on subjects' responses. It was assumed that because of the similarity of the two inkblot tests, certain aspects of previous research involving the Rorschach would be applicable to the HIT.
Experiment I

The purpose of the first experiment of the study was to investigate 21\textsuperscript{1} response categories of the HIT plus word productivity (number of words given per inkblot) under three different conditions of administration. The three conditions differed in terms of the "warmness" or "coldness" of the examiner's attitude. Some of the previous studies which have examined examiner's attitude and influence upon subjects' Rorschach responses have employed conditions which would not normally be used in a testing situation. The present research with the HIT was designed to study the effects of variations in examiner attitude that are plausible in a normal testing situation. The study was also undertaken because no research in this area has been done with the standardized HIT.

Hypothesis

The author hypothesized that there are significant differences in the response categories between the three conditions of administration.

Furthermore, it is hypothesized that subjects' conscious perception of the conditions of administration coincides with the actual conditions of administration.

Experiment II

The purpose of the second portion of the study was two-fold: First,
to discover any aspects of the test "set" which might have influenced the subjects' responses to the experimental conditions, and second, to obtain subjects' evaluation of the examiner's personality on the Leary Interpersonal Checklist. This evaluation was made in order to determine if there were any significant relationship between subjects' perception of the examiner's personality and the examiner's ability to adopt the appropriate roles in each experimental condition.
EXPERIMENT I

Method

Subjects and materials

The Ss were 45 male and 45 female Caucasian undergraduate students at Western Michigan University (mean age 20 years, range 18 to 30 years). Forty-five of the Ss were selected from the University dormitories and the other 45 Ss were selected from an introductory psychology class. The Ss from the introductory psychology class were fulfilling a course requirement, serving as Ss for two hours of experimentation. The E had never had any previous contact with the Ss. Other students helped the E obtain Ss by making appointments for the Ss to be tested. The Ss were assigned to one of the three groups (warm, neutral, and cold test administration) in the order they appeared at the clinic by referring to a table of random numbers. There were 15 males and 15 females in each group. Only one S had had prior exposure to a Rorschach and none with the HIT.

The HIT consists of two forms (A and B) of 45 inkblots each, with 22 scorable variables for each response, the S giving only one response per inkblot. Form A was used in the present study. A questionnaire (see Appendix A) designed to measure the S's feelings about the E's attitude was also employed. The questionnaire consisted of 26 two-choice items. The 26 questions were constructed from six basic concepts: anxiety, hostility,
rejection, indifference, acceptance, and friendliness.

Procedure

One of the rooms of the Psychological Clinic was used for testing. When the S arrived, the secretary notified the E. This enabled him to identify the S immediately, thereby eliminating any interpersonal contact with others. One E tested all Ss with the HIT. The following instructions were read to the Ss in each group:

"I have here a set of inkblots which were made by dropping ink on paper and folding it. I'd like you to look at each inkblot and tell me what it might look like, what it might represent, or what it could be. Since these are only inkblots, there are no right or wrong answers and each blot looks like different things to different people. It's possible for a person to see several things in each inkblot, but I want you to give me only ONE response for each card. After you see something and tell me about it, I'll ask you some questions about it because I want to see it in the same way you do, I'll be writing down what you say and making note of the time, but you may take as long as you wish on each card. Do you have any questions?"

The following procedure was employed for each of the three groups. At the end of the HIT administration, each S was asked to complete a short questionnaire. The questionnaire was a description of how the S felt during the testing situation and an evaluation of the E's attitude. The information remained anonymous as the S put his answered questionnaire in an envelope and placed it in a pile with the other questionnaires. The E left the room until the S was finished and returned only when the S called him. It was explained to the S that he could receive information
and the results of the experiment if he were interested. No explanation was given to any S about the experiment at this point.

Group I: Warm Attitude. When the S arrived, the E greeted him by his Christian name and introduced himself. The S was asked his year in college and his age. In order to establish "rapport" with the S, a conversation of approximately three minutes was initiated. If the S was in his freshman year, he was asked the following questions: (a) What area of study do you think you will major in, John? (a) What courses are you taking? (c) Which do you find most interesting? If the S was not in his freshman year, he was asked: (a) What subjects are you majoring in, John? (b) How did you come to choose that field? (c) What courses are you taking this year? When the S answered the questions, the E commented with "Uh-huh" or "That sounds interesting". After the S talked for three minutes, the E suggested that the experiment should begin. The instructions were then read to the S.

As the E handed the card to the S, he looked at the S and made a comment such as, "Here's the first one" or "Here you are". Comments were continued in this manner for every odd-numbered card. After the S verbalized his response, the E said "good", "fine", or "all right" for every odd-numbered response (unless the S rejected the card). The S and the E sat side-by-side at the same desk. Following the free association phase, the inquiry was conducted. For each response, the E asked a question to
clarify location, a question regarding characteristics of the percept, and a question encouraging elaboration. At the end of the test administration, the questionnaire was completed.

Group II: Neutral Attitude. Instead of the E asking questions, as in Group I, the E explained about the HIT being a "new" test and because of this, studies were being conducted with it. The S was also told that the experiment was a study in group differences and that his responses would remain anonymous. The test instructions were then read. When the E handed the card to the S, he looked at him, but made no comment. When the S gave his response, the E said, "Uh-huh" with every odd-numbered response. The S and the E were facing each other at the corner of the table. At the end of the test administration, the questionnaire was completed under the conditions already described.

Group III: Cold Attitude. When the S arrived, the E met him but did not look him in the eye nor did he introduce himself. His only comment was, "Come in". The identifying information was gathered and the test instructions were read. When the E handed the card to the S, he made no comment and did not look at the S. When the S gave his response, there was no comment forthcoming. The S was seated opposite the E. At no time during this administration did the E look directly at the S. If any questions were asked by the E, he was either ignored, if at all possible, or told to save his questions until after the test. At the end of the test
administration, the questionnaire was completed.

There were four variables which were altered in each group: the introductory talk, looking at the S including a comment, comment or no comment after the response, and the seating arrangement (see Appendix B).

Results

A two-by-three analysis of variance was employed to test group differences, sex differences, and interaction on 15 of the 22 HIT scoring categories which had normal distribution. Table 1 presents the F ratios of analysis of variance for the three experimental groups, sex difference, and interaction. Six of the response categories, Form Definiteness (FD), Form Appropriateness (FA), Movement (M), Integration (I), Human (H), and Word Productivity (WP), were found to be significant at the .05 level. Five of the response categories showed significant differences less than the .01 level. The warm attitude group produced the highest values and the cold attitude group produced the lowest values. Trends (p less than .10) were also obtained in four of the response categories: Animal (A), Barrier (Br), Penetration (Pn), and Popular (P). The F ratios for sex and interaction (between group condition and sex) were not significant.

The Newman-Keuls method was then applied to the F ratios of the groups to establish which pairs of group means differed significantly.
TABLE 1
Analysis of Variance for 15 HIT Response Categories

<table>
<thead>
<tr>
<th>Variable</th>
<th>F ratios</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Groups</td>
<td>Sex</td>
<td>Interaction</td>
</tr>
<tr>
<td></td>
<td>df=2/84</td>
<td>df=1/84</td>
<td>df=2/84</td>
</tr>
<tr>
<td>RT - Reaction Time</td>
<td>1.56</td>
<td>2.03</td>
<td>2.02</td>
</tr>
<tr>
<td>L - Location</td>
<td>0.59</td>
<td>0.27</td>
<td>1.96</td>
</tr>
<tr>
<td>FD - Form Definiteness</td>
<td>15.34**</td>
<td>0.92</td>
<td>1.89</td>
</tr>
<tr>
<td>FA - Form Appropriateness</td>
<td>3.89*</td>
<td>0.53</td>
<td>0.48</td>
</tr>
<tr>
<td>C - Colour</td>
<td>1.11</td>
<td>0.95</td>
<td>2.07</td>
</tr>
<tr>
<td>M - Movement</td>
<td>6.19**</td>
<td>0.09</td>
<td>0.25</td>
</tr>
<tr>
<td>I - Integration</td>
<td>15.87**</td>
<td>1.15</td>
<td>0.10</td>
</tr>
<tr>
<td>H - Human</td>
<td>7.35**</td>
<td>0.15</td>
<td>0.56</td>
</tr>
<tr>
<td>A - Animal</td>
<td>2.97</td>
<td>0.45</td>
<td>1.24</td>
</tr>
<tr>
<td>Ax - Anxiety</td>
<td>1.57</td>
<td>1.94</td>
<td>1.48</td>
</tr>
<tr>
<td>Hs - Hostility</td>
<td>0.31</td>
<td>0.94</td>
<td>0.95</td>
</tr>
<tr>
<td>Br - Barrier</td>
<td>2.79</td>
<td>2.57</td>
<td>0.54</td>
</tr>
<tr>
<td>Pn - Penetration</td>
<td>2.82</td>
<td>3.36</td>
<td>0.02</td>
</tr>
<tr>
<td>P - Popular</td>
<td>2.41</td>
<td>2.29</td>
<td>0.06</td>
</tr>
<tr>
<td>WP - Word Productivity</td>
<td>53.47**</td>
<td>0.37</td>
<td>1.30</td>
</tr>
</tbody>
</table>

Note - Group N=30, Sex N=15 males and 15 females.
*p is less than .05
**p is less than .01
Table 2 presents the $q_r$ statistic for the inter-group comparison differences. All of the six variables, FD, FA, M, I, H, and WP, showed significant variation between the warm and cold groups. Four variables, FD, I, H, and WP, showed significant differences between the neutral and warm groups, but only one variable, WP, was significant between the cold and neutral groups.

Seven of the 22 response categories showed truncated distributions; therefore, a Chi-Square test was used for these response categories. Table 3 presents the $x^2$ statistic for the group comparison, sex comparison, and interaction. The three groups showed significant differences ($p$ less than .01) in response categories Rejection (R) and Balance (B) and a trend ($p$ less than .10) on Shading (Sh) was observed. The warm attitude group produced the highest values in B and the lowest values in R, while the cold attitude group produced the lowest in B and the highest in R. There was only one significant interaction between the group condition and sex; it was in the Ab response category. The response categories R, B, Sex (S) and Anatomy (At) showed significant sex differences.

The next analysis of the experiment dealt with the questionnaire. Responses to the questionnaire were scored either warm or cold; then a tabulation was made of the frequencies of the cold responses for each group. Table 4 presents the results of a "t" test analysis of group differences. The cold group gave significantly more cold responses and significantly fewer warm responses than either the neutral or warm group.
TABLE 2

Inter-Group Comparison of
Six HIT Response Categories
by the Newman-Keuls Method

<table>
<thead>
<tr>
<th>Variable</th>
<th>Warm-Cold</th>
<th>Cold-Neutral</th>
<th>Neutral-Warm</th>
</tr>
</thead>
<tbody>
<tr>
<td>FD</td>
<td>7.45**</td>
<td>1.98</td>
<td>5.97**</td>
</tr>
<tr>
<td>FA</td>
<td>3.61*</td>
<td>2.58</td>
<td>1.27</td>
</tr>
<tr>
<td>M</td>
<td>4.97**</td>
<td>2.51</td>
<td>1.27</td>
</tr>
<tr>
<td>I</td>
<td>7.86**</td>
<td>2.69</td>
<td>3.86**</td>
</tr>
<tr>
<td>H</td>
<td>5.04**</td>
<td>0.04</td>
<td>5.06**</td>
</tr>
<tr>
<td>WP</td>
<td>14.41**</td>
<td>4.35**</td>
<td>10.20**</td>
</tr>
</tbody>
</table>

Note- Group N=30, df=2/84
*p is less than .05
**p is less than .01
### TABLE 3

Chi-Square Analysis for Seven HIT Response Categories

<table>
<thead>
<tr>
<th>Variables</th>
<th>Group x² values</th>
<th>Sex x² values</th>
<th>Interaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>R -Rejection</td>
<td>54.40**</td>
<td>11.92**</td>
<td>0.09</td>
</tr>
<tr>
<td>S -Space</td>
<td>1.98</td>
<td>0.53</td>
<td>1.84</td>
</tr>
<tr>
<td>Sh -Shading</td>
<td>3.13</td>
<td>0.18</td>
<td>2.82</td>
</tr>
<tr>
<td>At -Anatomy</td>
<td>2.57</td>
<td>18.00**</td>
<td>4.94</td>
</tr>
<tr>
<td>Sx -Sex</td>
<td>0.62</td>
<td>27.56**</td>
<td>3.26</td>
</tr>
<tr>
<td>Ab -Abstraction</td>
<td>1.05</td>
<td>0.56</td>
<td>27.16**</td>
</tr>
<tr>
<td>B -Balance</td>
<td>12.15**</td>
<td>4.00*</td>
<td>1.67</td>
</tr>
</tbody>
</table>

Note - Group N=30, Sex N=15 males and 15 females.

*p is less than .05

**p is less than .01

### TABLE 4

At Test Analysis Of Questionnaire Responses of Real Subjects

<table>
<thead>
<tr>
<th>Groups</th>
<th>Males Means</th>
<th>t</th>
<th>Females Means</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warm-Cold</td>
<td>5.00</td>
<td>12.46</td>
<td>3.40</td>
<td>14.33</td>
</tr>
<tr>
<td>Warm-Neutral</td>
<td>5.00</td>
<td>9.00</td>
<td>3.40</td>
<td>7.20</td>
</tr>
<tr>
<td>Neutral-Cold</td>
<td>9.00</td>
<td>12.46</td>
<td>7.20</td>
<td>14.33</td>
</tr>
</tbody>
</table>

Note - Group N=30, Sex N=15 males and 15 females.

*p is less than .05

**p is less than .01
EXPERIMENT II

Method

Subjects and material

The Ss were 10 male and 10 female Caucasian students (mean age 20 years, range 18 to 26) who served as Ss to fulfill a course requirement for introductory psychology. As in Part I, none of the Ss were acquainted with or had had previous contact with the E.

The questionnaire from Part I was employed and Leary's Interpersonal Checklist was used by the Ss to evaluate the E's personality.

Procedure

The 20 Ss were assigned to either a warm or cold group condition by consulting a table of random numbers with the restriction that there were five males and five females in each group. Instead of taking the test, each S in the warm group was asked to imagine how he would have felt during the test; his impressions were formulated upon the description that the E gave of the test. The four variables (introductory talk, looking at the S, commenting, and seating arrangement) which constituted the warm group were explained individually to each S. The S was then asked to answer the same questionnaire that the real Ss used, in terms of how he thought he would have felt. The S was also asked to rate the E's person-
sions of the E during the short period (8-10 minutes) that the E explained the test. It was explained that the S was to base his impressions upon the examiner as a person talking with him, rather than the way the E acted in the warm group. The E left the room while the S completed the written work.

Similarly, the cold group of five males and five females had all the variables which composed the cold group described individually to them. They then took the questionnaire and completed the Leary Interpersonal Checklist.

In both groups, the questionnaire and the Leary Interpersonal Checklist were sealed in an envelope by the S and placed with the completed ones before the E was called back into the room. Thus, the S's anonymity was assured.

Results

A "t" test analysis of the questionnaire responses for the pseudo subjects (Ss who had the experimental procedure described to them) is presented in Table 5. The pseudo subjects in the cold group gave significantly more cold responses and significantly less warm responses than the pseudo subjects in the warm group.

Table 6 is a "t" test comparison between the questionnaire responses of the "real" subjects (subjects who took the HIT) and the pseudo subjects.
### TABLE 5

**A t Test Analysis of Questionnaire Responses of Pseudo Subjects**

<table>
<thead>
<tr>
<th>Groups</th>
<th>Males</th>
<th></th>
<th>Females</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Warm-Cold</td>
<td>Meets</td>
<td>t</td>
<td>Means</td>
<td>t</td>
</tr>
<tr>
<td></td>
<td>3.00</td>
<td>21.40</td>
<td>12.52**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.20</td>
<td>23.00</td>
<td>9.19**</td>
<td></td>
</tr>
</tbody>
</table>

Note- Group N=10, Sex N=5 males and 5 females.

**p is less than .01**

### TABLE 6

**A t Test Comparison of Questionnaire Responses of Real and Pseudo Subjects**

<table>
<thead>
<tr>
<th>Groups</th>
<th>Males</th>
<th></th>
<th>Females</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Warm-Warm</td>
<td>Meets</td>
<td>t</td>
<td>Means</td>
<td>t</td>
</tr>
<tr>
<td></td>
<td>5.00</td>
<td>3.00</td>
<td>2.23*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.40</td>
<td>3.20</td>
<td>0.15</td>
<td></td>
</tr>
<tr>
<td>Cold-Cold</td>
<td>Meets</td>
<td>t</td>
<td>Means</td>
<td>t</td>
</tr>
<tr>
<td></td>
<td>12.46</td>
<td>21.40</td>
<td>4.49**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>14.33</td>
<td>23.00</td>
<td>3.67**</td>
<td></td>
</tr>
</tbody>
</table>

Note- The underlined groups are pseudo. In the real group N=30, Sex N=15 males and 15 females. In the pseudo group N=10, Sex N=5 males and 5 females.

*p is less than .05

**p is less than .01**
Both males and females in the pseudo cold group gave significantly more cold responses than the males and the females in the "real" cold group. The males in the pseudo warm group gave significantly more warm responses than the males in the "real" warm group. There was no significant difference for the females in the pseudo and the "real" warm groups.

The pseudo subjects' evaluation of the examiner's personality on the Leary Interpersonal Checklist is schematically presented in Figure 1. Two-thirds of the Ss in both the warm and cold groups placed the examiner in the Managerial-Autocratic division. The remaining one-third of the Ss in the cold group placed the examiner in the Competitive-Narcissistic division. The remaining one-third of the warm group showed no systematic variation; half placed the examiner in the Competitive-Narcissistic area and half placed him in the Responsible-Hypernormal area.
FIG. 1

SCHEMATIC PRESENTATION OF THE SUBJECTS’ PERCEPTION OF THE EXAMINER’S PERSONALITY

○ WARM GROUP (N=10)
△ COLD GROUP (N=10)
DISCUSSION

The results of the present research showed that the examiner's behaviour significantly influenced the following eight of the 22 response categories of the HIT: FD, FA, M, I, H, WP, B, and R (in the three group conditions). A comparison of the response categories between the warm and cold groups showed more significant differences than the comparison of the neutral and warm groups or the neutral and cold groups.

The effect of the warm administration, which was structured to produce a testing situation of relaxation and acceptance, resulted in greater overall productivity in the subjects' protocols than in the neutral or cold group administrations. The higher value of FD (definiteness of the form of the concept reported), in the warm group, suggests greater intellectual effort and more use of a creative imagination. The greater value of FA (the goodness of fit of the form of the concept to the form of the inkblot) is indicative of a productive effort on the subject's part to seek out appropriate forms. The increase of I variable (organization of two or more adequately perceived blot elements into a larger whole) also shows a greater intellectual effort. The higher level of M (ascription of movement or potential for movement to the percept) involves a process of imagination that the individual feels free to use (Klopfer and Davidson, 1962). The high H (Human content) coupled with a high M is indicative of
active intellectual function by the subject (Klopfer and Davidson, 1962). The high WP (the number of words in each inkblot response) may be regarded as an interest on the subject’s part to be productive; to show intellectual capacity and imagination and, at the same time, his willingness to please the examiner, since the examiner is asking for the subject’s cooperation in making responses.

The effect of the cold administration, which was structured to produce a testing situation void of any friendliness or encouragement, resulted in less productivity of most scoring categories. The number of R (Rejections) was higher and the WP was lower, which was indicative of low intellectual effort and low creative imagination.

The effect of the neutral administration, which was structured to produce a business-like approach to the testing situation, yielded results that for the most part were between the productivity of the warm and cold group.

Projective tests are often influenced by the "set" of the subject. To investigate what role the test "set" played in the results of this study, a questionnaire was administered to the subjects who took the HIT (real subjects) and to a group of subjects who had the experiment described to them (pseudo subjects). In the first experiment the questionnaire was used to see if the real subjects' conscious perception of the examiner coincided with how the examiner thought his attitude would be perceived.
The results showed that the subjects did perceive the examiner's attitude in the predicted direction. An item analysis showed that 23 of the 26 items were good discriminators between the three groups.

The significant difference between the questionnaire results (Table 6) of the real subjects and those of the pseudo subjects suggest the operation of a test "set" by the real subjects. The real subjects did not perceive the cold attitude of the examiner as being as cold as it was intended. This conclusion is supported by two facts. First, the greater number of cold responses which the pseudo subjects (both males and females) gave compared to the real subjects. Second, the type of questions which the majority of the real subjects did not mark as cold. Virtually none of the pseudo subjects in the cold group marked the question "The examiner appeared friendly to me" as true, but 60% of the real subjects in the cold group marked it as true. Question number four, "I had the feeling that the examiner refused my friendliness during the session", was answered by 80% of the pseudo subjects as true and true by only 40% of the real subjects. Again, question number 12, "I tended to like the examiner", was answered by only 10% of the pseudo subjects as true, but 67% of the real subjects marked it true. It seems clear, then, that the real subjects did not perceive the intended degree of "coldness" on the examiner's part.

One explanation might be that the subjects were reluctant to be critical of the examiner. Another explanation might be that they could not ac-
cept the fact that they were being ignored. In any case, the set with which the subject approaches the test can influence his perception of the testing situation.

The preceding discussion has been concerned with the comparison of the pseudo cold subjects' questionnaire with the real cold subjects' questionnaire. In comparing the pseudo warm group to the real warm group, only the males showed significant differences; that is, the pseudo warm males gave more warm responses than the real males. One explanation for this difference may be that males can intellectually conceive relationships that have "warm" interpersonal ties with other males; but, when actually in a situation, they have a tendency to withdraw from this personal closeness. The pseudo females, on the other hand, had a tendency to rate the examiner exactly as the real warm subjects. This does not seem surprising since it is commonly assumed that females are generally considered more sensitive to interpersonal relationships.

In addition to the test set, another source of variance that is very difficult to control is the demand characteristics (cues which convey an experimental hypothesis to a subject) of the experimental situation. Two methods were used to control and analyze this variable; an investigation of the examiner's behaviour and an investigation of the subject's mode of responding. First, in dealing with the examiner's behaviour, it is important that he be aware of and in control of his behaviour so that he does
not give conscious cues to the subjects about the type of responses that would support his hypothesis. He does not want to communicate, in any way, the hypothesis he is testing. As Orne (1962) mentions, subjects are only too willing to "help" the experimenter obtain positive results. Thus, in Experiment I, the examiner tried to control his verbal behaviour by employing a standardized procedure in each of the groups, thus limiting the possibility of a systematic verbal conditioning of the subject's responses in any one response category. The examiner's verbal responses were given at every odd-numbered response, regardless of the type of response which the subject gave. Nonverbal behaviour is much more difficult to control as it can easily be unconscious on the part of the examiner. Nevertheless, an attempt was made to keep the examiner's movement and gestures at a minimum, as prescribed by the four experimental variables in each of the experimental groups, in order to prevent any nonverbal systematic conditioning of any one response category.

Second, if the examiner controls his verbal and nonverbal behaviour in the testing situation, it may reduce the possibility of demand characteristics cues creeping in. But even then there is still a possibility that some unknown demand characteristic (behavioural cue of the examiner) could be observed by the subjects. To investigate the possibility that the difference in the HIT response categories was not entirely due to demand characteristics, a comparison of the questionnaires of the real and pseudo
subjects was made. The theory underlying this comparison (Orne, 1962) is that the results of the questionnaire of the pseudo subjects represent the demand characteristics because the treatment effect has been eliminated. If the comparison between the real and the pseudo subjects' responses showed no differences, it could be assumed that the results of the experiment were influenced more by the demand characteristics than the treatment effect. However, in the present study, there is a large difference between the real and the pseudo subjects' responses; hence it can be assumed that the responses of the real subjects represent the treatment effect. In other words, they answered the questionnaire on the basis of how they felt rather than on the basis of what they thought the examiner wanted.

One step in generalizing from the questionnaire to the HIT administration would lead to the following assumption: that the subjects also gave responses on the HIT on the basis of how they perceived the inkblots and not on the basis of what they thought the examiner's hypothesis might have been.

In an effort to control another possible variable, the examiner made an assumption about his personality. He assumed that regardless of his basic personality, he would not be perceived as especially warm or cold by his subjects. To test this assumption, he had 10 pseudo warm and 10 pseudo cold subjects describe his personality with the Leary Interpersonal Checklist (see Figure 1). Two-thirds of the subjects placed the ex-
aminer in the Managerial-Autocratic division, i.e., able to give orders, well thought of, likes responsibility, good leader, respected by others, often admired, and makes a good impression. Since the Managerial-Autocratic personality falls between the Competitive-Narcissistic, a somewhat cold type, and the Responsible-Hypernormal, a definitely warm type, it would appear that the examiner did not express an overtly cold or warm attitude. This was an attempt to control for what Levy (1956) mentions, unequal interaction effect with subjects by holding the examiner's influence constant within each group.

It would seem only natural now that the sensitivity of the HIT would reflect the examiner's attitude in the subject's protocol. It is this very sensitivity which makes the HIT useful as a clinical instrument. But its usefulness depends upon the examiner's awareness of his own behaviour in the testing situation. Because of the plausibility of the three group conditions already described, as attitudes which could be demonstrated by an examiner, and because of the large variation that was observed in several different response categories, it is important that the examiner be aware of his behaviour. Otherwise he will not realize how he can and does influence the subject's productivity on the test.

One difficulty in drawing generalizations from this study is that only one examiner was used; and, as McGuigan (1963) notes, generalization from one examiner to a population of examiners must be done exceeding-
ly cautiously, at best. What the study does suggest, then, is a need for a methodological approach that will include a sample of examiners.
SUMMARY

Experiment I investigated the examiner influence upon subjects' protocols of the HIT. Ninety subjects were divided into three groups, 15 males and 15 females in each. Each group differed in the degree of "warmness" or "coldness" of the examiner's attitude. An analysis of variance and a Chi-Square test showed significant differences between the two extreme conditions for the response categories, FD, FA, M, I, H, WP, B, and R as a result of the examiner's attitude. A questionnaire administered to the subjects to obtain an evaluation of their perception of the examiner's attitude showed that they did perceive the intended difference in the examiner's attitude.

In Experiment II, the warm and cold group conditions were described respectively to two groups of subjects (each group consisted of 10 males and 10 females). They answered the questionnaire on the basis of how they thought they would have felt during the experiment. A comparison between the real subjects' and the pseudo subjects' questionnaire suggested the operation of a test set. It also suggested that the difference in the HIT response categories was due primarily to the treatment effect and not to the demand characteristics of the testing situation. The pseudo subjects also evaluated the examiner's personality on the Leary Interpersonal Checklist. The examiner's personality was perceived by the majority of the subjects as being neither warm nor cold.
REFERENCES


APPENDIX A

QUESTIONNAIRE

To help us analyze the results of this research, you are being asked to complete this short questionnaire. The success of our research depends upon your willingness to answer the following questions as truthfully and honestly as you can. If you feel critical of the examiner, say so. The questionnaire will not be used for an evaluation of the examiner, but for an evaluation of the research project. The information you give will be anonymous; the examiner himself will not know how you have answered the questions. When you are finished, fold the questionnaire and put it into the envelope; then seal the envelope. Place the envelope with the rest of the completed questionnaires before you. The envelopes will be opened at a later date.
INSTRUCTIONS

For each statement there are two possible answers, agree or disagree. Put a mark in the column which seems most appropriate for YOU. If you agree with a statement even slightly, no matter how little, then put a mark in the "agree" column. If you disagree even slightly, then put a mark in the "disagree" column. Be sure to answer all questions. Do NOT answer the questions on the basis of how you think the examiner should act. Answer them on the basis of how you felt in the testing situation. Go ahead and begin.

1. The examiner appeared unconcerned about me as a person..............................// //
2. The examiner appeared friendly to me..............................// //
3. Assuming that I was slightly uncomfortable; I can say that I was uncomfortable during the whole session... // //
4. I had the feeling that the examiner refused my friendliness during the session..............................// //
5. Near the end of the test I felt more at ease with the examiner..............................// //
6. The examiner gave me his support throughout the test..............................// //
7. I could describe the atmosphere of the testing situation as being comfortable..............................// //
8. A great deal of my anxiousness decreased as the test progressed..............................// //
9. The examiner's attitude irritated me..............................// //
10. I get the impression that the examiner was indifferent toward me.............................. //
11. The examiner's attitude helped me to relax........ //
12. All in all, I tended to like the examiner.......... //
13. I felt the same amount of uneasiness during the whole test...................................... //
14. The examiner gave me the impression that he did not care about me as a person..................... //
15. The examiner understood how I felt during the test.///
16. I felt that the examiner approved of the kind of responses which I gave................................. //
17. I had the feeling that the examiner found fault with my behaviour...................................... //
18. The examiner was helpful.............................................. //
19. I have a tendency to dislike the examiner's approach.///
20. The examiner's attitude appeared cold to me....... //
21. I believed that I received encouragement from the examiner.............................................. //
22. The examiner's attitude made me a little nervous.///
23. It seemed to me that the examiner expected too much.///
24. The examiner gave me the feeling that I was more than just another student.............................. //
25. I see the examiner as a person who is rather "neutral" in his feelings toward me............................. //
26. The examiner seemed to be too businesslike in his approach.............................................. //
APPENDIX B

THE THREE EXPERIMENTAL GROUPS AND THE FOUR VARIABLES

<table>
<thead>
<tr>
<th>Variables</th>
<th>Warm</th>
<th>Neutral</th>
<th>Cold</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPENING</td>
<td>Talk with S for 3 mins.</td>
<td>Explain about test</td>
<td>No conversation</td>
</tr>
<tr>
<td>COMMENTS</td>
<td>Instructions</td>
<td>Instructions</td>
<td>Instructions</td>
</tr>
<tr>
<td>HAND CARD</td>
<td>Look at S</td>
<td>Look at S</td>
<td>Don't look at S</td>
</tr>
<tr>
<td>TO SUBJECT</td>
<td>Plus comment</td>
<td>No comment</td>
<td>No comment</td>
</tr>
<tr>
<td>INQUIRY(^1)</td>
<td>Good, Fine, All right</td>
<td>Uh-huh</td>
<td>No comment</td>
</tr>
<tr>
<td>PHASE(Ice)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SEATING</td>
<td>At corner</td>
<td>Directly</td>
<td></td>
</tr>
<tr>
<td>ARRANGEMENT</td>
<td>Side-by-side</td>
<td>Of table</td>
<td>Across table</td>
</tr>
</tbody>
</table>

\(^1\) Questions of Inquiry

Q\(_1\) - "Where in the blot do you see a.............?"
Q\(_c\) - "What is there about the blot that makes it look like...........?"
Q\(_e\) - "Is there anything else you care to tell me about it............?"