ANALYSIS OF ANXIETY AND HOSTILITY SCORES FROM THE CONTENT SCORING OF THE RORSCHACH AS THEY ARE AFFECTED BY AGE, SEX AND EDUCATION VARIABLES

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ANALYSIS OF ANXIETY AND HOSTILITY SCORES FROM THE
CONTENT SCORING OF THE RORSCHACH AS THEY ARE
AFFECTED BY AGE, SEX AND EDUCATION VARIABLES

THESIS

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For the Degree of

MASTER OF SCIENCE

By
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Denton, Texas
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CHAPTER I

INTRODUCTION

In 1949 Abraham Elizur proposed content scoring of the Rorschach for anxiety and hostility to supplement what he felt was a weakness of the standard content categories and to present some of the more pertinent clinical constructs for diagnostic and research purposes. High anxiety and hostility states have long been looked upon as symptom indicators of existing or pending emotional problems (16, p. 153; 8, pp. 92-93).

Various levels of anxiety have been found to affect behavior in a wide variety of ways. For instance, rigidity and narrowing of perception, limited awareness of environment, rigid inflexibility of behavior, unsatisfactory adjustive patterns, inhibited creative thinking, impaired learning and thinking, and the general adaptation syndrome, which is a total physical breakdown resulting from physical alarm mobilization over a long period of time are often the results of high anxiety states (9, pp. 166-167, 171).

As a construct, anxiety is defined in many different terms with no single definition being accepted; thus, the causal factors of anxiety are also varied. For example, Freud defined three types of anxiety: neurotic, moral and
reality anxiety. Neurotic anxiety arises when impulses tend to break through ego controls; moral anxiety, when the individual guiltily contemplates doing something or does it; reality anxiety, when the outside world appears dangerous or threatening (8, p. 639).

Existentialists, who place emphasis on the uniqueness of the individual, describe anxiety as arousal by threats to one's being or non being which may stem from either outer or inner sources (8, p. 646). Gordon W. Allport (2, pp. 78-79), who has had some influence on the existential theories, has further proposed that "psychological anxiety and also guilt in adult years may be nothing more than manifestations of unresolved infant distress" resulting from one's conscience. Goldstein (13, p. 269) broadened the causal anxiety framework even further when he proposed that "anything which engenders self realization produces anxiety."

From a learning theory orientation, anxiety can be defined as a vague fear that is acquired through frustration of motives or the threat of frustration (5, p. 429). However, perceptually anxiety has been defined simply as "a signal flag which appears in the subjective of an individual when he is uncertain about the nature of his environment and, thus, fears that it may be threatening (6, p. 264)."

Finally, Webster (14, p. 5) reports that anxiety is "a painful uneasiness of mind over an impending or anticipated ill". It is evident, then, that while descriptions and
definitions of anxiety are similar in general, they vary in specific especially in regard to causal factors; therefore, the orientation of the construct is dependent upon the theoretical framework in which it is operating.

Although many definitions of constructs exist, none are totally accepted by all persons; therefore, it becomes necessary to define explicitly the constructs within the limits of this research and its theoretical orientation. Elizur's (10) Rorschach Content Test, hereafter referred to as RCT, is based upon the Systems of Tension from the Field Theory of Kurt Lewin and the underlying assumptions of the Rorschach technique which will be discussed in greater detail under Rationale.

In light of this theoretical orientation anxiety is defined as:

... an inner state of insecurity which may take one or more of the following forms; fears, phobias, lack of self confidence, extreme shyness, ideas of reference and marked sensitivity. Hostility will denote feelings of resentment and enmity which are often repressed in our culture but almost inevitably show up in the individual's distorted attitudes toward people either being too antagonistic or too submissive (10, p. 248).

Elizur felt that systems of tension and anxiety and hostility could be expressed in terms of animals, nature and objects as well as people (10).

Anxiety and hostility can be studied in two primary ways, physiologically and psychologically. Physiological study deals with changes which have occurred physically, either in
structure or organ functioning. Psychological study deals with the study of behavior and the performance of tasks under anxiety and hostility states. It has been found, however, that there are no specific physiological differences between anxiety and a general fear response. The body reacts much the same way regardless of the nature of the anxiety response (14, p. 10). A psychological study of anxiety and hostility has been found to be a more differentiating technique (11).

The RCT is classified as a psychological test of a projective nature as it adopts the basic assumptions of the projective test. A projective test involves the use of semi-structured or unstructured material such as the Rorschach ink blot cards which are used in the RCT. This unstructured characteristic allows the individual to respond in his own way so that he constructs the situation in his own manner. The projective test has an advantage in that the subject usually has no idea of the interpretation of the response which might bias his response. Also, since there are no right or wrong answers, the projective test is more difficult to fake.

Projective tests involve perception. When the same material is presented in the same way under similar conditions, the differences in perception that arise between the subjects are the functioning of differences between the subjects and their ability to perceive the situation (12, p. 104). The
differences in perception are the result of different states of need or psychological attributes among the subjects (6, p. 122; 3, p. 33). The perception or reaction of the subject may be entirely unconscious of the steering mechanisms involved (1, p. 811). When meaning or content is given to an ambiguous stimulus, then, the situation in which the content was encountered has been generalized through association to the ambiguous stimuli (14, p. 29). This suggests that a given mode of perception represents a deep seated characteristic of the individual (7, p. 156).

Rationale

The RCT assumes the theoretical foundation of the Rorschach technique (10) in that personality can be analyzed through perceptual processes. The meaning of the perception is an interpretation resulting from a single experience of associating present stimuli with past experiences wherein the process is an integration of the whole personality including needs, strivings, and emotions.

As previously mentioned, Elizur bases much of the rationale of the RCT on the Systems of Tension of Kurt Lewin (15). Lewin describes a state of tension as "... the opposition of two fields of force in every direction" (15, p. 94) so that a state of tension exists within an individual when two tendencies toward or against an action are in total conflict. These states of tension tend to discharge
until the closest approximation to an equilibrium or balance can be reached (15, p. 59). Lewin further states that the tension system drives toward discharge at its weakest point and causes activities which serve the execution of the purpose or the release of tension (15, p. 242). However, a substitute satisfaction can have the same effect in discharge as the original (15, p. 243). According to Lewin, emotional and rebellious actions are further facilitated by a very high state of tension (15, p. 88).

Elizur, in concurrence with Lewin, believes that these tensions can break through in the form of fantasy, action and perception (10) and that needs may contribute to these tension levels (15, p. 243). Elizur supports the validity of the RCT on the premise that the internal states of tension within the individual tend to break through when an opportunity is offered, but the tensions are not tied to specific objects and can be associated with objects such as the perceived content of an ink blot (10).

Hostility is often expressed behavioristically by hypercriticalness, readiness to belittle and disparage; a habit of nagging, tendency to hold a grudge; many-sided prejudices; cynicism and suspicion of others' motives (9, p. 334). At times the presence of anxiety is evidenced by behavior which is intended to release the tension and to make dealing with the anxiety state easier. This behavior is called a coping mechanism by Levitt (14, pp. 52-53) and is illustrated by
excessive eating, laughing, cursing, crying and sleeping; talking out, physical exercise, pointless over activity and tics and fantasy. When anxiety, hostility and other tensions cannot be directly expressed, they find indirect means of expression in disguised outlets (9, p. 325).

Anxiety and hostility can be indirectly perceived or expressed through the mechanisms of stimulus generalization, projection or displacement. Under the stimulus generalization mechanism, the person may shift the anxiety or hostility evoking object to another object which has become associated with the original stimulus (14, p. 27). Projection involves the individual's attributing or projecting his own attitudes and behavior to another object or person (5, p. 288). Displacement is described by James C. Coleman (9, p. 201) as "... an unconscious shift of emotion and symbolic meaning from one person or object to a substitute. Typically, it involves discharging hostility onto a safer person or object than the one which aroused it."

One can see from these mechanisms and the preceding discussion that objects and events may have a content beyond the real figure and dimension of the stimulus (1, p. 298). In light of Lewin's theory, then, the perception of an object or event can cause the formation of a tension system which did not previously exist in that form (15, p. 51).

Upon the preceding discussion rests the rationale of the RCT. The tension states of anxiety and hostility are
expressed in the content of the Rorschach ink blots, and these expressions can be observed and realized and their validity measured. Elizur felt the measurement of these scores could be a useful tool to differentiate people for diagnostic and research purposes. Differentiation on the basis of measured scores follows the idea that differences in scores are the result of response biases which are significant of other aspects of the person. This is known as the deviation hypotheses.

The person who deviates from an established pattern of bias in such significant responses . . . is not merely different in such minor or non critical aspects of behavior. . . . The non significant aspect of behavior is a reflection of a critical aspect; the two go hand in hand. The critical aspect is a personality manifestation (4, p. 87).

Levels of anxiety and hostility are individual, and each individual becomes anxious or hostile under situations which are specific to his individuality and to his evaluation of the stimulus. Many persons, however, share similar anxiety and/or hostility-provoking stimuli, but these shared stimuli should not be the result of characteristics which form broad group memberships such as age, sex and education.

Statement of the Problem

This study is concerned with the relationships between the RCT scores of anxiety and hostility and the variables of age, sex and education. Elizur examined the relationship of age and sex to the RCT scores and found the correlation to
be so low as to be insignificant (10). However, the smallness of sample size, limited age range and homogeneity of the group of subjects limits the value of his findings.

The study described in this thesis investigated these relationships more stringently by increasing the age range, randomizing subject selection, and increasing sample size. Presently, no data has been found which investigates the effects of education level on RCT scores. It is felt that if a test method is to have any merit and value in future application, then, all possible influencing variables must be evaluated. The rationale and theoretical basis upon which the RCT rests does not recognize any causal relationships for anxiety and hostility with the variables or age, sex and education. As no real test of these conditions has been investigated, it would be of value to test these relationships.

Hypotheses

The hypotheses for the present research were as follows:

1. There will be no significant difference between age groups on the basis of either the anxiety level or hostility level scores, hereafter referred to as AL and HL scores.

2. There will be no significant difference between sex groups on the basis of either AL or HL scores.

3. There will be no significant correlation between level of education and AL or HL scores.


CHAPTER II

THE INSTRUMENT

Elizur originally intended to develop a new method for scoring and analyzing the content of the Rorschach, but instead his efforts developed into an independent instrument for the measurement of anxiety and hostility. The RCT method involves presenting the standard Rorschach ink blots to a subject and recording the subject's responses without regard to form, color or position on the card. However, protocols which have been elicited in the traditional Rorschach procedure may also be rescored by the RCT method, a procedure which does not in any way influence the RCT scores. The scoring of the responses by Elizur's method involves evaluating the subject's responses and placing each in one of three categories. Any response which can neither be placed in the anxiety category nor the hostility category is a neutral response.

Elizur summarizes the scoring theory in the following manner. Two mechanisms are operating in the person's response to the ink blot: identification and externalization. Identification takes place when the individual identifies himself with the perceived stimuli and can express his feelings of anxiety and hostility. He sees frightened people and animals running away indicating anxiety, and arguing
men and fighting animals indicating hostility (3, p. 287).
Externalization is operating when objects in the environment are responsible for the subject's anxiety or hostility. For example, dragons, bombs and spiders are responses which indicate anxiety, whereas stupid men and ugly women indicate hostility.

Davitz and Mattis investigated the communication of emotional meaning by the use of metaphors which are words or phrases literally denoting one kind of object or idea used in place of another by way of suggestibility of a likeness or analogy between them (2, p. 172). In their research a group of 16 subjects responded to Rorschach cards 2, 4, 6, 8, and 10 with a percept which expressed one of five emotional meanings: anger, anxiety, joy, love and sadness. The subject was to give a response which would indicate one of the emotional categories, but the specific category for each card was changed so that different emotional responses were required of the same card by different subjects.

The 72 total responses were then given to 26 judges who were asked to identify the emotional meanings being expressed. The emotional meaning of the responses was established if the majority of the judges agreed with the intent of the subject and if the number of judges agreeing exceeded the number expected by chance at the .01 level. Fifty-one of the 72 meanings met this requirement. The characteristics of the metaphors used to communicate the emotions were broken down
into three categories: situation symptoms, expressive behavior and words. See Appendix I. The same procedure was then repeated with Rorschach cards 1, 3, 5, 7, and 9 as a cross validation. Three judges were selected to classify the statements and their classifications were checked against the previous results. The first judge correctly classified 84 per cent; the second, 75 per cent; the third, 82 per cent. This suggests a high degree of agreement between the first and second procedures, and the findings of Davitz's and Mattis's study closely parallel examples in the scoring categories of the RCT.

In scoring the RCT protocol an "a" is used to designate anxiety, and an "h" is used to signify hostility. Elizur determined that a capital letter would be used when anxiety or hostility was expressed obviously and explicitly in the response, and small letters would be used when anxiety and hostility were expressed less definitely or in a symbolic manner. Capital letters are scored as 2, and small letters, as 1. Some responses, however, may imply double content and should be scored for both anxiety and hostility. Elizur suggests the following rules as guides for scoring (3, p. 258).

(1) Emotions expressed explicitly or implicitly were scored accordingly: fear, horror, disgust, etc., "A"; reproach, hatred, etc., "H".

(2) Percepts like snakes, witches, bats, dragons, which have a fearful connotation in our culture, were scored "A" regardless of whether or not the subject expressed his feelings verbally. Percepts which usually arouse disgust, like spiders, were scored "a".
(3) Derogatory expression like "ugly", "stupid", etc. were scored "H"; slightly derogatory indications such as "overpolite men", "gossiping women", were scored "h".

(4) Responses like "headless people", "cut off fingers", etc., which could easily be interpreted as denoting anxiety as well as hostility (sadistic tendencies), were scored "ah".

(5) Doubtful cases were sometimes decided by means of an analogy to other responses in the same record or to the general tendency revealed in the record.

(6) The decision was always made on the basis of the response taken as a whole rather than on a single word. Thus, "pretty clouds on a summer day", was scored neutral, while "thunder clouds crashing in the sky", was scored "A" though both responses centered around the word "clouds".

For more explicit detail in scoring methods see Appendix I.

Elizur evaluated the ease and reliability of scoring responses by giving eight persons with no previous training in the Rorschach, but a background in psychology, scoring instructions and asking them to score fifteen records. Each person scored the same fifteen records. Average intercorrelation coefficients among the eight scorers was .77 for "a", .82 for "h" and .86 for "a" and "h" combined. Agreement of the eight scorers with Elizur's scores for the same fifteen records were .89, .93 and .98 for "a", "h" and "a" and "h" respectively. Additional research on interscorer reliability reports correlations ranging from .90 to .99 (10, 1, 5). These studies indicate the high level of interscorer reliability which is attainable with experienced as well as inexperienced scorers.
In establishing validity of his instrument for the measurement of anxiety and hostility, Elizur utilized the method of known groups: a questionnaire dealing with fears, phobias, self confidence, hostility, submissiveness and depression; a second questionnaire dealing with dependency, aloofness, and ideas of reference; a self rating sheet inquiring into the control a subject feels in relation to wishes, desires, and tendencies; and an interview with the subjects in which independent judges rated the interview material in terms of submissiveness, dependency, anxiety and hostility.

### TABLE I

**CORRELATION COEFFICIENTS BETWEEN RCT SCORES AND INDICATIONS OF ANXIETY**

(Reproduced from Elizur, 3, p. 264)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Questionnaire (N=30)</th>
<th>Self Rating (N=30) on control of Fear</th>
<th>Interview (N=20)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Correlation With a &amp; h</td>
<td></td>
</tr>
<tr>
<td>Fears and Phobias</td>
<td>.58**</td>
<td>.23</td>
<td></td>
</tr>
<tr>
<td>Lack of Self Confidence</td>
<td>.39*</td>
<td>.28</td>
<td></td>
</tr>
<tr>
<td>Both Items Combined</td>
<td>.61**</td>
<td>.31</td>
<td></td>
</tr>
<tr>
<td>Worry</td>
<td>.42*</td>
<td>.05</td>
<td></td>
</tr>
<tr>
<td>General Shyness</td>
<td>.17</td>
<td>.14</td>
<td></td>
</tr>
<tr>
<td>Sexual Shyness</td>
<td>.46**</td>
<td>.26</td>
<td></td>
</tr>
<tr>
<td>Feelings of Inferiority</td>
<td>.52**</td>
<td>.09</td>
<td></td>
</tr>
<tr>
<td>All Items Combined</td>
<td>.52**</td>
<td>.19</td>
<td></td>
</tr>
<tr>
<td>Anxiety</td>
<td>.71**</td>
<td>-.16</td>
<td></td>
</tr>
</tbody>
</table>

*Significant at the .05 level

**Significant at the .01 level
Table I shows the correlations of AL and HL scores with the indicators for anxiety. All indicators of anxiety, as established by Elizur, showed a significant positive correlation with the AL scores. Six of the ten indices reached the .01 level of significance. Low non-significant correlations were found between the indicators of anxiety and the HL score which Elizur attributed to frustration in conjunction with the anxiety which leads to a certain level of hostility.

### TABLE II

**CORRELATION COEFFICIENTS BETWEEN RCT SCORES AND DEPENDENCY**

(Reproduced from Elizur, 3, p. 265)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Correlation With a</th>
<th>Correlation With b</th>
</tr>
</thead>
<tbody>
<tr>
<td>Questionnaire (N=30) Dependency</td>
<td>.57**</td>
<td>.19</td>
</tr>
<tr>
<td>Self Ratings (N=30) on control of Dependency</td>
<td>.73**</td>
<td>.17</td>
</tr>
<tr>
<td>Wishes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interview (N=20) Dependency</td>
<td>.23</td>
<td>-.04</td>
</tr>
</tbody>
</table>

**Significant at the .01 level**

Table II depicts the findings of the correlation between the RCT scores and the measures of dependency. Elizur felt that a person with high anxiety would also feel a loss of self confidence and would tend to move toward dependency on other persons (3, p. 264). Two of the three indicators of dependency correlated significantly with the AL scores at the
0.01 level; the third indicator, which is a subjective measure of the judges, did not significantly correlate. Low positive correlation for HL scores is also present in these measures, but none is significant.

TABLE III
CORRELATION COEFFICIENTS BETWEEN RCT SCORES AND INDICATIONS OF HOSTILITY
(Reproduced from Elizur, 3, p. 267)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Correlation With</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>a</td>
<td>h</td>
</tr>
<tr>
<td>Questionnaire (N=30)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1) Self blame</td>
<td>.19</td>
<td>.44*</td>
</tr>
<tr>
<td>(2) Subject regarded as good natured</td>
<td>-.29</td>
<td>.27</td>
</tr>
<tr>
<td>(3) Subject was a &quot;goodygoody&quot; child</td>
<td>-.06</td>
<td>.53**</td>
</tr>
<tr>
<td>(4) Subject believes that people are hostile</td>
<td>.22</td>
<td>.55**</td>
</tr>
<tr>
<td>(5) Subject believes that people are selfish</td>
<td>.06</td>
<td>.21</td>
</tr>
<tr>
<td>All Items Combined</td>
<td>-.02</td>
<td>.74**</td>
</tr>
<tr>
<td>Self Ratings (N=30) on control of hostile</td>
<td></td>
<td></td>
</tr>
<tr>
<td>and aggressive feelings against</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1) Friends</td>
<td>.18</td>
<td>.15</td>
</tr>
<tr>
<td>(2) Members of the family</td>
<td>.03</td>
<td>.38*</td>
</tr>
<tr>
<td>(3) Minority groups</td>
<td>.15</td>
<td>.37*</td>
</tr>
<tr>
<td>All Items Combined</td>
<td>.16</td>
<td>.45*</td>
</tr>
<tr>
<td>Interview (N=20)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hostility</td>
<td>.46*</td>
<td>.60**</td>
</tr>
</tbody>
</table>

*Significant at the .05 level
**Significant at the .01 level

The same instruments (questionnaire, self rating and interview information) were used for indicators of hostility. Table III shows the relationship of these hostility indicators to the AL and HL scores. Although the correlations of the
indices with the HL scores are not as high as the correlation of the indices for anxiety with the AL scores, eight of the eleven correlations were significant and four of these reached the .01 level of significance. Only the interview ratings showed a significant correlation with the AL scores.

Correlations between RCT scores and the questionnaire indications of submissiveness yielded a .64 relationship at the .01 level of significance while the self rating and interview indications for submissiveness were not significant for either the AL or HL scores. Elizur hypothesized a significant positive relationship between submissiveness and hostility on the assumption that submissiveness does not provide an outlet for the build up of hostile tension (3, p. 266). On the basis of these findings, this point is not yet strongly supported. Elizur also believed that persons who are hostile toward others tend to move away from other persons and remain aloof. Scores of aloofness from the questionnaire tend to support the HL scoring validity and the hypotheses with a .43 correlation at the .05 level of significance for HL scores and a .31 non-significant correlation with AL scores.

Persons who have ideas of reference, according to Elizur, are anxious about their safety, and the ideas themselves are a projection of one's own hostility; therefore, Elizur hypothesized a significant relationship of both AL and HL scores with ideas of reference. Ideas of reference scores from the questionnaire indicated correlations of .50 and .48
at the .01 level for anxiety and hostility respectively. This is evidence in reasonable support for the hypothesis and the validity of the scores.

Elizur hypothesized that there would be a significant relationship between RCT scores and measures of depression. He felt that fears, phobias, low self confidence, feelings of inferiority, etc., lead to states of depression which bring about the rise of hostility turned inward. The relationships of AL and HL scores on the questionnaire and self ratings for depression showed significant correlations of .54 and .50 at the .01 level respectively for AL scores, .44 and .50 at the .01 level respectively for HL scores, and a .41 correlation at the .05 level for the self rating with HL scores.

The final validation deals with the method of known groups in which it was hypothesized that a neurotic group of subjects would have higher AL and HL scores than a "normal" group.

**TABLE IV**

**COMPARISON OF THE RCT SCORES OF THE NEUROTICS AND CONTROLS; MEANS AND STANDARD DEVIATIONS**

(Reproduced from Elizur, 3, p. 270)

<table>
<thead>
<tr>
<th>Score</th>
<th>Neurotics</th>
<th>Controls</th>
<th>Dif.</th>
<th>t</th>
<th>t01</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>12.5</td>
<td>5.2</td>
<td>7.3</td>
<td>8.3</td>
<td>2.5</td>
</tr>
<tr>
<td>h</td>
<td>5.6</td>
<td>1.3</td>
<td>4.3</td>
<td>4.1</td>
<td>2.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Neurotics</th>
<th>Controls</th>
<th>F Ratio</th>
<th>F05</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>3.1</td>
<td>2.7</td>
<td>1.3</td>
<td>2.09</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>4.5</td>
<td>1.8</td>
<td>6.3</td>
<td>2.88</td>
</tr>
</tbody>
</table>
Table IV illustrates the findings which support Elizur's hypothesis. The $t$ values for both AL and HL scores easily exceed the .01 level of significance which indicates that the neurotic group's HL score showed significantly greater variability. The preceding research tends to support the validity of the RCT scoring for anxiety and hostility.

The reliability of the subject's scores was tested by scoring the odd and even cards separately and correlating the scores of the two groups. The split-half method evaluated five cards for each group so that resulting coefficients were not as high as was desired. Corrected reliability coefficients for the split-half method were .48 for AL, .75 for HL and .68 for AL and HL combined. Extending the results to thirty cards instead of five by the Spearman-Brown formula increased the correlation to .73, .90 and .86 for AL, HL and AL and HL combined, respectively. The reliability scores are favorable, but they could be desirably higher.

Indications of stability over a period of time are necessary to determine if the RCT is measuring specific situational or long-term anxiety and hostility. Epstine et al. measured the stability of RCT scores over a five week period using ten sets of cards, administering a different set to each of the subjects twice a week for the five week period (4). Epstine's findings indicated that score stability over a short period of time was supported. Lucas (7) found no change in RCT scores over an eight week period for two groups
of 28 nine year old children in which the experimental group was retested under frustrating conditions. Although these studies support reliability of the RCT scores over time, they do not test a wide enough range of conditions, involve enough subjects or give enough strong indication that long-term stability of the scores could be supported. However, inferences for additional research are evident.

In the investigation of validity and reliability of the RCT, Elizur scored the protocols without regard for the number of responses except to require a minimum of twenty. Although Stewart (11) and Page (9) found no relationship between RCT scores and number of responses, Sanders and Cleveland (10) and Westrope (12) found that the greater the number of responses, the higher the content scores. Goldfried, in his review of literature, placed greater value in the findings of the latter group and recommended requiring a fixed number of responses, scoring only the first response from each card or controlling the effect of the number of responses by expressing the AL and HL scores as a percentage of the total number of responses (6, p. 367). The use of percentage scores would have the advantage of being applicable to Rorschach protocols that had been administered in the traditional manner and would not limit the subject's response inclinations.

Goldfried (6, pp. 378-379) summarizes the worth of the RCT as a measure of long-term personality characteristics which is relatively insensitive to situational stress. Its
value in general, however, is far greater than one might expect. Neuringer (8, pp. 318, 324) rates it as essentially a trustworthy instrument under a variety of conditions although it has been found to be less effective with young children.
CHAPTER BIBLIOGRAPHY


CHAPTER III

RELATED STUDIES

Studies dealing with the relationship between RCT scores and behavior indicators of anxiety and hostility have been found to significantly differentiate them from non-anxious and/or non-hostile behavior groups. Cummings (3) found a correlation of .28 at the .05 level for AL scores between groups of nailbiters differentiated on the degree of nail-biting behavior. Research on teeth grinders indicates that there was a statistically significant difference (.05 level) between a group of 40 teeth grinders and 40 non-teeth-grinders on the basis of AL scores (15). The measurement of hostility scores for these same groups showed a significantly higher HL score at the .01 level for the teeth grinding group. This was taken as support for the validity of HL scoring by the authors on the idea that teeth grinding is a form of hostile behavior as well as a nervous mannerism.

A small group of delinquents were found to have significantly higher anxiety scores than did a matched group of controls even though the control group had a higher mean for their responses. In this same group of thirteen adolescent delinquents and thirteen non-delinquents, matched on age, sex and intelligence, Gorlow, Zimet and Fine discovered that the delinquent group had significantly higher HL scores than did the non-delinquents (9).
The ability of the AL score to differentiate between groups at different anxiety levels is illustrated further by Stotsky (14) who found that remitting schizophrenics had higher AL scores when remitted than non-remitting schizophrenics. Grauer (10) found that discharged schizophrenics had a higher AL admission score than long-term schizophrenics.

The above studies tend to support the RCT's sensitivity to clinical indications of anxiety and hostility.

Very little research has been published which deals with the influence of age and sex variables on the RCT. Some research, however, is available on the variability of anxiety and hostility scores from other measuring scales.

Bendig (1), using 219 undergraduate and graduate males and females ranging in age from 17 through 35 years, studied the influence of age and sex variables on the overt and covert anxiety score from the IPAT Anxiety Scale. The results from an analysis of variance demonstrated no statistically significant difference between sex groups for either covert or overt anxiety. No significant decrease with age was found for both forms of anxiety combined, but there was a significant (.05 level) decrease in covert anxiety among the younger subjects. Bendig interpreted the differences between overt and covert anxiety as resulting from the subjects' tendencies to give desirable responses.

A second study by Bendig (2) deals with the influence of age and sex variables on anxiety scores from the Taylor Manifest
Anxiety Scale. Using an analysis of variance, he found no significant difference at the .05 level for either age or sex variables or interaction between these variables for a group of 497 graduate and undergraduate psychology students. If the above studies were characteristic of the relationship of anxiety and hostility to age and sex variables and not a function of the scale used, then, one would not expect RCT scores to significantly differentiate between age and sex groups.

Goldfried (6), in his review of research (16, 17, 7, 8, 11, 13, 5), which used the RCT and other tests (Taylor MAS, MMPI and Multiple Choice TAT) as co-measures of anxiety or for the comparison of results from the tests, concluded that the RCT does not seem to be related to the paper and pencil measures probably because they are more susceptible to faking, social desirability and sets. With this in mind, generalization from non-projective and some semi-projective measures of hostility and anxiety may be of greatly limited value. The best method for research of the RCT, then, may be the testing of the same variable with the same or similar instrument varying time or conditions or slightly varying the situations.

Elizur (14, p. 273) investigated the influence of age on the RCT scores with a group of 30 volunteers, half males and half females, ranging in age from 19 to 43 years. The mean age was 28.6 years with a standard deviation of 6.4. The subjects were college students from five dormitories of a university.
Correlation between age and RCT scores for the males was -.28 for "a" and -.28 for "h". The female's correlation of age with "a" was -.62 and with "h", -.27. Elizur does not account for the difference between the female score and the other findings, but he cautions others not to generalize the results to other groups and other ages.

Analysis of variance of the sex factor as it influences the RCT scores was also investigated by Elizur. No significant difference between males and females was found to reach the .05 level for either the AL or HL score. It was concluded that these findings did not refute the hypothesis and that the differences which did exist were due to chance. An overall observation of the data indicated, however, that the males had higher RCT scores which might be attributed to a younger mean age group while the females showed a higher degree of variability in their scores.

To date, no published research has dealt with the influence of education level on RCT scores; however, Elizur studied the relationship between IQ and RCT scores. The subjects consisted of 14 neurotics and 18 subjects from a volunteer group. Correlations between intelligence and the RCT scores for the neurotic group were .21 for "a" and .23 for "h". Correlations for the subjects in the volunteer group were .24 for "a" and .19 for "h". All the correlations were positive, but none were found to be significant. It appears from this limited sample that the RCT scores are only affected by IQ by a
chance relationship, but Elizur felt the need for additional study in this direction.

In the present research, an investigation of the influence of educational level attained on RCT scores is proposed. Intelligence Quotient has been found to be related to the level of educational achievement (12, p. 98). It is expected that results similar to those between IQ and RCT scores will prevail for correlations between education and RCT scores.


CHAPTER IV

METHODOLOGY

Subjects

The subjects were 64 volunteers randomly selected from the Dallas-Fort Worth metropolitan area. The random selection was accomplished by consecutively numbering each street in the alphabetical listing of streets and selecting 32 streets from each metropolitan area by number through a table of random numbers. In this way, half of the subjects came from the Dallas area and half, from the Fort Worth area. One subject was taken from each selected street, that subject being the first volunteer who met the requirements of one of the age groups.

The groups were arbitrarily established on the basis of age and sex. Half of the subjects were males and half were females ranging in age from 12 to 56 years. The subjects were divided into four age groups each containing a span of nine years and separated by a gap of four years (12-20 yrs., 25-33 yrs., 38-46 yrs. and 51-59 yrs.). Each age group contained 16 subjects, eight males and eight females, four each from the Dallas area and four each from the Fort Worth area. After completing subject solicitation, it was felt that each geographical area, socioeconomic level and ethnic
group was sufficiently represented although no attempt was made to control these variables.

With regard to education, the subjects ranged from five years through 21 years with wide variability between age and level of education. Without recording occupational representations, it was noted that students, housewives, clergy, salesmen, teachers, railroad laborers, military, business executives and manufacturing employees were represented among the sample population.

Procedure

Each willing subject was tested at his own residence upon initial contact. The subject's age, sex and level of education was recorded by the examiner. The subject was then read the standard instructions for the Rorschach technique (1). The ten Rorschach cards were individually presented to the subject, and his responses to the blots were recorded by the examiner. The prescribed method of encouragement during administration was used when necessary.

The protocols were then scored in accordance with the Elizur content scoring for anxiety and hostility and expressed as a percentage based on the number of responses in the protocol. The AL and HL scores for each subject were placed in the appropriate age group and divided within the group on the basis of sex. Means and standard deviations were computed for the AL and HL scores. The scores were then separately tested for the first and second hypotheses by a
$2 \times 4$ analysis of variance. Any significant variance (.05 level or above) is tested by the $t$ test and again a .05 level is required.

The data were then arranged by placing the subjects in a descending order of educational level attained and recording the corresponding AL and HL scores. The data for level of education and RCT score, computed separately for AL and HL, were subjected to a Pearson product-moment correlation to determine support or rejection of the third hypothesis.
CHAPTER V

RESULTS AND DISCUSSION

The present research was aimed at the investigation of three hypotheses. In review, they are:

1. There will be no significant difference between age groups on the basis of either anxiety or hostility scores.

2. There will be no significant difference between sex groups on the basis of either anxiety or hostility scores.

3. There will be no significant correlation between level of education and anxiety or hostility scores.

Empirical Findings

TABLE V

MEANS AND STANDARD DEVIATIONS OF AL SCORES GROUPED ACCORDING TO AGE AND SEX

<table>
<thead>
<tr>
<th></th>
<th>1 (12-20)</th>
<th>2 (25-33)</th>
<th>3 (38-46)</th>
<th>4 (51-59)</th>
<th>Combined (Sex Only)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Mean</td>
<td>Mean</td>
<td>Mean</td>
<td>Mean</td>
</tr>
<tr>
<td>Males</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>8.878</td>
<td>12.517</td>
<td>12.868</td>
<td>7.927</td>
<td>11.472</td>
</tr>
<tr>
<td>Females</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>18.775</td>
<td>25.275</td>
<td>31.072</td>
<td>23.712</td>
<td>24.693</td>
</tr>
</tbody>
</table>

F (Sex) = .016 non-significant
F (Age) = 1.027 non-significant
F (Interaction) = .805 non-significant
Table V presents a summary of the means, standard deviations and F ratios of AL scores for the variables of age and sex. The analysis of variance for this data revealed no significant results for either age, sex or interaction of the two. The first and second hypotheses for AL scores are supported.

Table VI presents a summary of the means, standard deviations and F ratios of HL scores for the variables of age and sex. Manipulation of the results by the analysis of variance revealed a significant F for difference between age group (.05 level) and sex group (.01 level). Interaction of age and sex was not significant. The first and second hypotheses are not supported for the HL score.
The t test indicates that a significant difference for HL scores exists between age groups 1 and 4 (.05 level) and between age groups 1 and 3 (.02 level). Also, significant t's were found to exist between age groups 2 and 4 and age groups 2 and 3 at the .05 level. No significant differences were found among any of the four female age groups or between male age groups 1 and 2. Also, male groups 1 and 2 were not found to differ significantly from any of the female groups. The differences found between male age groups 1 and 2 were not significantly greater than chance. However, a significant difference between male age groups 1 and 4 (.02 level) and male groups 1 and 3 (.01 level) was evident. Differences by t test were also found to be significant between male groups 2 and 3 (.05 level) and groups 2 and 4 (.02 level).

The r correlation between level of education and AL scores is .05. The r correlation for HL scores with level of education is .03. Thus, the third hypotheses is accepted for both AL and HL scores.

Discussion

It is evident from Table VI that two groups have HL scores which are very much higher than the other groups. The male age groups 3 (38-46 years) and 4 (51-59 years) had mean HL scores which were significantly higher than any other grouping of scores and accounted for the significant F for the variable of sex. The scores made by these two male groups were high enough to raise any configuration grouping in which
they might be included to a level of significance; therefore, the significant F for the variable of age is accountable to these two groups.

Investigation of the individual scores from the raw data in Appendix II shows that the HL scores of the males in the 51-59 age group were much higher than the mean for the entire population while the females in this age group scored near or below the population mean. The same conditions are true of the males in the 38-46 year group. One might conclude that the significant difference in these groups is the result of a few high individual scores and a small group sampling. It may be of explanatory value to note that the individuals in the older age grouping tended to represent both extremes of the socioeconomic scale whereas the two younger age groups tended to favor the middle class more strongly. However, in observing all the individual scores and the standard deviations for HL scores, it is evident that a great deal of individual variability in scores is present. This extreme variability indicates the need for a very much larger sample to determine if it is a function of a peculiarity in the sampling of this research or an indication that the HL score is an unstable measure in general. The influence of such a wide range of socioeconomic status and/or occupations as has been included in this research might also be examined; however, if socioeconomic or occupational classes would significantly affect HL scores, it would seem that a similar effect would be observable with the AL scores.
Stability of AL scores among sex and age groups is evident from this research. However, there are indications that young persons may have slightly lower levels of anxiety and show less variability of AL scores than the other age groups although these indications are not statistically significant.
CHAPTER VI

SUMMARY AND CONCLUSIONS

The purpose of this study was to determine the influence of age, sex and education on the anxiety and hostility scores derived from the content scoring of the Rorschach. Sixty-four subjects were randomly selected from two metropolitan areas representing both sexes and fitting into one of four age groups ranging from 12-59 years. The subjects were administered the ten Rorschach ink blots, which were scored for anxiety and hostility on the basis of the Elizur content scoring criteria. The influence of age and sex on anxiety and hostility scores was tested by the analysis of variance for each measure individually. The influence of level of education was tested for both anxiety and hostility scores separately by a Pearson product-moment correlation.

Statistical manipulation of the data indicated that there was no significant correlation of level of education with either anxiety or hostility scores. No significant differences were indicated between age groups, sex groups or interaction between the groups on the basis of anxiety scores. Differences between the age groups and also the sex groups for hostility scores were found to be significant. Closer examination of the data by t test showed that the two older
male age groups had very much higher HL scores than the other
groups and accounted for the significance of differences with
any groups in which they were combined. It was questioned
as to whether or not these differences were characteristics
of the influence of age and sex groups on the hostility score
or a peculiarity in population sampling for this study. The
recommendation was made that the influence of socioeconomic
levels be investigated in future research.

Findings from the present research appear to indicate
that anxiety scores from the Elizur content scoring of the
Rorschach are not significantly affected by the variables of
age, sex and level of education. The influence of age and
sex on hostility scores was not in line with expectations,
and additional research is necessary before it can be defi-
nitely concluded that age and sex influence hostility scores
of the Rorschach Content Test.
APPENDIX I

EXAMPLES OF METAPHORS WHICH COMMUNICATE EMOTIONAL MEANING

(Reproduced in part from Davitz and Mattis, pp. 159-160)

Anger

1. Looks like a bull charging.
2. It looks like a cat that's hissing at something.
3. They look like reindeer. There's a bridge and this side is at war with that side.
4. Two little dogs stamping on each other.
5. A kind of insect which annoys me.

Anxiety

6. It looks like a class that's hoping for high marks.
7. Fragmentation.
8. It looks like unstableness, instability. Looks like emotion, confusion. The person doesn't know what to do. He wants to put these things together but doesn't know how.
9. It looks like confusion.
10. Two animals having a foot in a trap. He doesn't have sufficient footing.
12. It looks like a monster coming after me.
13. Two pink figures on the right are two wild birds and rat combinations treading upon grey part to devour it.
14. A fox. His hair is standing up because he might be shot by a hunter. He's going to be shot.
15. Some kind of bird who flew up there because someone is after him.
16. Two animals searching for food or something. Looking.

Joy

17. An infant lying on its back, hands extended in the air.
18. A whole group of people getting together and expressing different ideas and having agreement.
19. It looks like a birthday coloring. The kind of colors used for decorating for a party.
20. A huge giant laughing uproariously. Seems to be throwing his head back and laughing.
Love

22. Two animals climbing up a mountain to get to each other. They're mates on opposite sides of a mountain.
23. A merging or union of two separate bodies.
24. Two bears hugging each other.

Sadness

25. It looks like death and someone is crying. Like it's all smeared.
26. The colors are going from light to dismal, birth, life, then death.
27. A placenta. Loss of an unborn child.
28. A person lying prostrate with no urge to do anything.
REVISED CHARACTERISTICS OF METAPHORS WHICH COMMUNICATE EMOTIONAL MEANING

(Reproduced from Davitz and Mattis, p. 168)

<table>
<thead>
<tr>
<th>Emotional meaning</th>
<th>Situation</th>
<th>Expressive behavior</th>
<th>Words with subjective referent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td>Threat; impeding hostility or danger; fearful object</td>
<td>Grimacing, staring, hair standing up</td>
<td>Fragmentation, instability, confusion, tension</td>
</tr>
<tr>
<td>Anger</td>
<td>Hostility ongoing or momentarily imminent; warlike figure</td>
<td>Hissing, teeth bared, smoke springing from mouth</td>
<td>Harsh</td>
</tr>
<tr>
<td>Sadness</td>
<td>Loss; death or dying; hostility already occurred</td>
<td>Drooped mouth; crying; lying prostrate</td>
<td>Empty, hollow dismal, dark grey, somber</td>
</tr>
<tr>
<td>Love</td>
<td>Two animals or persons coming together; objects in harmony or unity</td>
<td>Hugging, kissing</td>
<td>Serene, peaceful, warm, soft</td>
</tr>
<tr>
<td>Joy</td>
<td>Ongoing active pleasure</td>
<td>Smiling, laughing</td>
<td>Animated, pleasant, brightness, lightness</td>
</tr>
</tbody>
</table>
INSTRUCTIONS FOR SCORING
(Reproduced from Elizur, pp. 259-260)

The scores of each record are to be summed up into two general scores of "total a" and "total h". Each "A" is counted as 2 "a"s, each "H" as 2 "h"s, and an "ah" score is counted as 1 "a" and 1 "h". The following will illustrate the various ways in which anxiety and hostility may be expressed in the responses and will serve as a guide for scoring.

(1) Emotions and Attitudes Expressed or Implied (A,a,H,h)

Responses which reveal feelings or attitudes or fear, unpleasantness, sorrow, pity and the like are scored "A", those containing hatred, dislike, criticism, derogation and the like "H". Responses which manifest such feelings or attitudes to a smaller degree are scored accordingly "a" or "h".

Note that the feeling or attitude may be related to the observer (like an animal that he is afraid of) as well as to the figure perceived in the ink blot (a person or animal being frightened or sad). Note also that feelings or attitudes are often implied rather than expressed overtly (thus "a dangerous place" implies fear and "a silly fact" implies derogation.

Examples:

A: A frightening giant; A weeping child; A dangerous crevice; Darkness and gloom.
a: An unpleasant animal.
H: A type of man I hate; An ugly figure; A stupid animal; An angry face; A quarrelsome person.
h: Gossiping women; Two butlers making each other compliments.

(2) Expressive Behavior (A, H)

Watch the behavior of the figure perceived as to whether it indicates anxiety or hostility. In the first case score "A", in the latter "H".

Examples:

A: A girl escaping; A retreating animal; A rabbit running away.
H: Two animals fighting with each other; they squashed the butterfly; a wolf devouring its prey; a killed animal.
(3) **Symbolic Responses (a, h)**

No far fetched symbolic interpretations are asked for in the present scoring system, but whenever a response reveals a clear symbolic meaning it is scored accordingly "a" or "h".

Examples:

- **a**: An unbalanced figure; dead leaves; a tree with broken branches; scarecrow; an impression of coldness.
- **h**: The red represents struggle; a primitive war-mask.

(4) **Cultural Stereotypes of Fear (A, a)**

Certain percepts, which are assumed to have a general connotation of fear in our culture are to be scored "A" even if they appear without any further elaboration. Percepts which are usually connected with a moderate degree of unpleasantness should be scored "a". The latter score should also be given to responses containing a religious element. In observing the present rule, adhere closely to the following examples rather than enlarging unduly upon the extent of the stereotypes.

Examples:

- **A**: bats; snakes; monsters; witches; a human skeleton or skull; dead man or dead animal; blood; atomic bomb; volcano; clouds; fire; smoke.
- **a**: spiders; mosquitoes; totem pole; church; priest.

(5) **Objects of Aggression (H, h)**

Responses containing objects which are usually used for aggressive purposes are to be scored "H" or "h". (Note that "atomic bomb" is scored "A" for in it the element of fear is much more pronounced.)

Examples:

- **H**: Arrow; gun; pistol.
- **h**: pliers; knife; teeth.

(6) **Double Connotation (ah)**

Responses that contain clear evidence of both, anxiety and hostility, or which leave you in doubt as to whether they contain the one or the other factor, are to be scored "ah".
Examples:

ah: Headless person; an injured bear; a child with cut-off arms; a torn butterfly; a policeman; an animal going to attack you, I feel somewhat scared.

(7) Unscorable or "Neutral" Responses

There is of course no sharp line between scorable and unscorable responses. The following examples of borderline cases which were selected as occurring most frequently, should be left unscored. However, the same "neutral" response, if elaborated further could become an "A" or "H" response. Thus, "an insect", according to the following list is "neutral", but "an unpleasant or dangerous insect" should receive "A", "a fighting insect", and "H" score.

Examples of Unscored Responses:

1. Animals: Frogs; mice; bugs; crabs; bears.
2. Anatomical: Spinal cord; X-ray pictures; bones; lungs, etc. (Exception: Human skeleton or skull "A".)
3. Miscellaneous: Coat of arms; rocks; skin of an animal.
APPENDIX II

TABLE I

A AND H SCORES FOR THE VARIABLES OF AGE AND SEX

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Fort Worth</th>
<th>Dallas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>A%</td>
<td>H%</td>
</tr>
<tr>
<td>12-20 yrs</td>
<td>20.8</td>
<td>0</td>
</tr>
<tr>
<td>25-33 yrs</td>
<td>16.0</td>
<td>0</td>
</tr>
<tr>
<td>38-46 yrs</td>
<td>12.5</td>
<td>50.0</td>
</tr>
<tr>
<td>51-59 yrs</td>
<td>16.7</td>
<td>16.7</td>
</tr>
<tr>
<td>Females</td>
<td>A%</td>
<td>H%</td>
</tr>
<tr>
<td>12-20 yrs</td>
<td>12.3</td>
<td>3.5</td>
</tr>
<tr>
<td>25-33 yrs</td>
<td>17.6</td>
<td>0</td>
</tr>
<tr>
<td>38-46 yrs</td>
<td>55.6</td>
<td>18.5</td>
</tr>
<tr>
<td>51-59 yrs</td>
<td>33.3</td>
<td>0</td>
</tr>
<tr>
<td>Ed. in yrs.</td>
<td>A%</td>
<td>H%</td>
</tr>
<tr>
<td>------------</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>16.5</td>
<td>16.0</td>
<td>0</td>
</tr>
<tr>
<td>16.0</td>
<td>22.2</td>
<td>11.1</td>
</tr>
<tr>
<td>16.0</td>
<td>17.6</td>
<td>0</td>
</tr>
<tr>
<td>14.0</td>
<td>52.9</td>
<td>17.6</td>
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<td>14.0</td>
<td>16.7</td>
<td>16.7</td>
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<td>12.0</td>
<td>7.7</td>
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</tr>
<tr>
<td>12.0</td>
<td>18.2</td>
<td>9.1</td>
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</tr>
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<td>9.0</td>
<td>40.0</td>
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<td>9.0</td>
<td>21.1</td>
<td>0</td>
</tr>
<tr>
<td>9.0</td>
<td>33.3</td>
<td>0</td>
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