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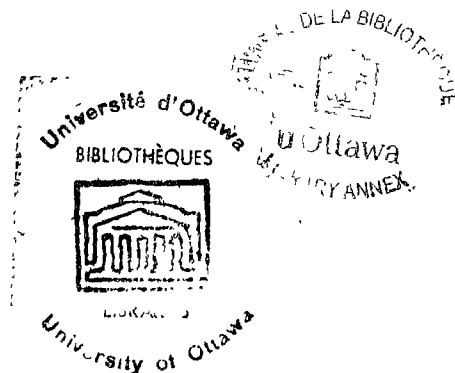
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A STUDY OF THE STABILITY OF THE SELF-CONCEPT  
IN A LEVEL OF ASPIRATION EXPERIMENT

by Murray Kent Teris

Thesis presented to the ~~Faculty of Arts~~  
of the University of Ottawa through the  
School of Psychology as partial ful-  
fillment of the requirements for the  
degree of Doctor of Philosophy.



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## INTRODUCTION

Within recent years there has been a tremendous upsurge in the field of personality research. More and more effort has been devoted to attempts to validate the offered hypothetical constructs of human behavior. This study falls within this category.

Among the basic constructs of personality structure and psychopathology is the hypothesis that the self-concept or ego undergoes integrative or disintegrative changes in reaction to external events. This concept of personality structure is widely used today in developmental theory, abnormal and social psychology, and in the clinical application of psychology. Yet, a review of the literature discloses that the evidence offered to support this notion has been in the form of clinical observations, case history reports, and distinctly indirect experimentation.

The purpose of this study is to attempt to provide a more direct, empirical study of the problem of integration and disintegration of the self-concept.

The first portion of this report reviews the background of the problem and frames it within the dynamic, macroscopic picture of human adjustment. Once the self-concept or ego and the processes of integration and disintegration are identified, defined, and assigned their position in the structure of human adjustment, the experimental situation is described. Chapter II then, deals with a

description of the methodology and the experimental population.

The results of the experimental study are shown in Chapter III. Some highlights and comparisons of the statistics are made, but these are only directed to accentuate some factors.

Following the findings are the conclusions. In this portion of the report several closing aspects are included. The findings are discussed and some interpretations made, research conclusions are drawn, the study is summarized, and some implications for further research are noted.

## CHAPTER I

### THE BACKGROUND AND THE PROBLEM

The problem which is to be considered in this study cannot be isolated from the total greater picture of human adjustment. In order to facilitate visualization of the problem, some co-factors and their operations will be considered first. With this background established as a frame of reference, the particular problem of this study will be considered.

In the course of studying the process of human adjustment, several highly significant factors have been pointed out as pivotal elements in human behavior. One of these factors is the individual's concept of himself. A second such factor is the way the individual perceives himself and the world. The last of these factors to be considered here is the goal object to which he aspires.

The self-concept factor is of prime interest in this study. However, before the self-concept factor and the problem of this study are considered, in keeping with the format of creating a frame of reference, some aspects of goal behavior and the nature of perception will be examined. In examining these latter factors, the material will be presented in the form of experimental studies, thus providing some of the historical, theoretical, and empirical conclusions.

In the course of considering the self-concept factor, a basic element in this study, attention will be drawn to some of its relationships to perception and goal behavior, to some of the theoretical formulations of the self-concept, and to some experiments dealing with its structure and functioning. With this necessary background presented, a statement of the problem to be dealt with in this study will be made.

#### 1.-Some Considerations of Goal Behavior

One of the factors isolated as basic in human behavior is goal behavior. It has been learned that in the course of adjusting to a situation, the individual will alter his goal by either raising or lowering it. It has also been learned that this treatment of the goal is directly or indirectly related to personal and situational characteristics. Many of the facts on goal alteration have come to be known as a result of studies on the level of aspiration.

Historically, studies in the area of aspiration are reported<sup>1</sup> to have started with Dembo, a student of Lewin, as an outgrowth of a study on anger. In her experiment Dembo used frustration induced by a hopelessly difficult task to stimulate anger. As an incidental finding she learned that

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<sup>1</sup> John W. Gardner, "The Use of the Term 'Level of Aspiration'", Psychological Review, Vol. 47, 1940, p. 59.

when the goal was too difficult the subject selected a new goal which ran in the same direction as the required more difficult one. This realization led to a series of further experiments in aspiration in which the general approach was to present selected subjects with a situation. They were then given some frame of reference, asked to set a goal and then attempt to meet that goal. They were then asked to evaluate their performance by being required to set a new goal. In some experiments manipulation of the goal itself was studied, and in other instances various aspects of behavior associated with goal setting were considered.

Adams<sup>2</sup> learned that with success people increased their level of aspiration while when they experienced failure aspirations were lowered. In reporting this he confirmed an earlier report by Hoppe<sup>3</sup>. Chapman and Volkmann<sup>4</sup> showed that goal evaluation was a relative thing depending upon anchorage points. Child and Whiting<sup>5</sup> found confirming

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2 Donald K. Adams, "Age, Race, and Responsiveness of Levels of Aspiration to Success and Failure", Psychological Review, Vol. 36, 1939, p. 573.

3 John W. Gardner, loc. cit.

4 Dwight W. Chapman and John Volkmann, "A Social Determinant of the Level of Aspiration", Journal of Abnormal and Social Psychology, Vol. 34, 1939, p. 225-238.

5 Irving L. Child and John W. M. Whiting, "Determinants of Level of Aspiration: Evidence from Everyday Life", Journal of Abnormal and Social Psychology, Vol. 44, 1949, p. 303-314.

evidence of the level of aspiration experiments in everyday life. They learned that shifts in goals corresponded to success and failure and pointed out that the stronger the emotional experience the greater the probability of such a shift occurring. They also disclosed that failure was likely to lead to withdrawal in the form of avoidance of goal setting. In addition, they noted that the effects of failure produced a more varied response than did success. Frank<sup>6</sup> commented on the relationship between goals, success or failure, and self evaluation. He also pointed out<sup>7</sup> that the differences between level of aspiration and level of past performance depended upon three needs: (1) the need for the level of aspiration and future performance to be close, (2) the need for the level of aspiration to be high regardless of performance, and (3) the need to avoid failure. Gould and Lewis<sup>8</sup> studied discrepancy scores (the difference between performance and goal). They found that the greatest discrepancy occurred more often in the first trial than in

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6 Jerome D. Frank, "Recent Studies of the Level of Aspiration", Psychological Bulletin, Vol. 38, 1941, p. 218-222.

7 Jerome D. Frank, "Some Psychological Determinants of the Level of Aspiration", American Journal of Psychology, Vol. 47, 1935, p. 291.

8 Rosalind Gould and Helen Block Lewis, "An Experimental Investigation of Changes in the Meaning of Level of Aspiration", Journal of Experimental Psychology, Vol. 27, 1940, p. 422-438.

later trials but they also noted that discrepancy scores operating under different standards are reliably different.

A number of studies have dealt with personality factors as they related to goal setting behavior. Frank<sup>9</sup> was one of the early workers in this area to point out that the level of aspiration related to individual personality factors that extended beyond the experimental situation. Cohen<sup>10</sup> classified personality characteristics which he isolated in aspiration tasks. These he described as rigid, arbitrary, flexible, and conforming. Holt<sup>11</sup> showed that the discrepancy between prediction and performance, shifts in estimates of ability, ranges of aspirations, and shifts in personal importance of abilities all reflected consistent patterns of defense. He substantiated his findings with case studies. Bayton<sup>12</sup> showed that ego needs played a major role in goal setting and aspirational behavior.

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9 Jerome D. Frank, "Individual Differences in Certain Aspects of the Level of Aspiration", American Journal of Psychology, Vol. 47, 1935, p. 127.

10 Louis D. Cohen, "Patterns of Response in Levels of Aspiration Tasks", American Psychologist, Vol. 5, 1950, p. 310.

11 Robert R. Holt, "Level of Aspiration as Ego Defense", Psychological Bulletin, Vol. 39, 1942, p. 457.

12 James A. Bayton, "Interrelations between Levels of Aspiration, Performance, and Estimates of Past Performance", Journal of Experimental Psychology, Vol. 33, 1943, p. 1-21.

Hausman<sup>13</sup> pointed out such operant traits as instability, perseveration, stubbornness, and impaired judgment. Cohen<sup>14</sup> studied the self-acceptance factor in explicit goal statements. Some isolate personality traits were also identified by Rotter<sup>15</sup>.

A few studies were carried out with abnormal subjects. Perhaps the most meaningful of these studies was reported by Sears<sup>16</sup>. She found that unlike normal subjects, neurotic children continued to raise their goals after failure rather than lower the goals. Hausman<sup>17</sup> studied the aspirational rigidity of paranoids and also aspiration behavior in schizophrenia where he found no relationship between level of aspiration and level of performance. Escalona<sup>18</sup> found

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13 M. F. Hausman, "A Test to Evaluate Some Personality Traits", Journal of General Psychology, Vol. 9, 1933, p. 179-189.

14 Louis D. Cohen, "Level of Aspiration Behavior and Feelings of Adequacy and Self-Acceptance", Journal of Abnormal and Social Psychology, Vol. 49, 1954, p. 84-86.

15 Julian B. Rotter, "Level of Aspiration As a Method of Studying Personality: III - The Analysis of Patterns of Response", Journal of Social Psychology, Vol. 21, 1945, p. 159-177.

16 Pauline S. Sears, "Level of Aspiration in Academically Successful and Unsuccessful Children", Journal of Abnormal and Social Psychology, Vol. 35, 1940, p. 498-536.

17 M. F. Hausman, loc. cit.

18 Sibylle K. Escalona, "The Effect of Success and Failure Upon the Level of Aspiration and Behavior in Manic Depressive Psychoses", University of Iowa Studies, Child Welfare, Vol. 16, No. 3, 1940, p. 199-302.

that manics tended to show great mobility in setting a level of aspiration and that they seemed especially sensitive to failure.

A number of experiments have shown that goal behavior and reactions to success and failure are strongly influenced by social forces. Hilgard, Sait, and Margret<sup>19</sup> showed that being in a group strongly influenced goal-setting as compared to being alone. Gould and Lewis<sup>20</sup>, Chapman and Volkman<sup>21</sup>, and Volkman<sup>22</sup> all showed how goal setting behavior was altered when the subject compared himself to various socio-economic groups.

There have also been a number of other experiments reported which have studied various factors in goal behavior. Galensky and Stewart<sup>23</sup> found that there was greater resistance to extinction following 50% reinforcement (telling the subjects they were successful) rather than 100% and using

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19 Ernest R. Hilgard, Edward M. Sait, and G. Ann Margret, "Level of Aspiration as Affected by Relative Standing in an Experimental Group", Journal of Experimental Psychology, Vol. 27, 1940, p. 411-221.

20 Rosalind Gould and Helen Block Lewis, loc. cit.

21 Dwight W. Chapman and John Volkman, loc. cit.

22 John Volkman, "The Anchoring of an Affective Scale", American Journal of Psychology, Vol. 49, 1937, p. 88-92.

23 Alberta S. Galensky and Jeanne C. Stewart, "Extinction of a Success Aspiration Following Three Conditions of Reinforcement", American Psychologist, Vol. 4, 1950, p. 223-224.

aperiodic rather than periodic reinforcement. Adams<sup>24</sup> related the realism of goal setting to age. Rosensweig<sup>25</sup> showed that with increasing age there is more of a tendency to want to repeat failures. He associated this with more pride and the desire to excel. He also related the absence of this characteristic in younger children to McDougall's theory of hedonism and conditioning of pleasantness and success.

From the studies cited above and from the multitude of similar studies on this and related topics reported in the journals, the fact has been accepted that people set and manipulate goals in accordance with internal and external factors as they adjust to situational demands.

## 2.-Some Considerations of Perception

A second apparently basic process in human adjustment is the alteration of perception. Some of the knowledge on this subject came from aspirational studies. The studies reported by Hilgard, Sait, and Margret<sup>26</sup>, Gould and Lewis<sup>27</sup>,

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24 Donald K. Adams, loc. cit.

25 Saul Rosensweig, "Preferences in the Repetition of Successful and Unsuccessful Activities As a Function of Age and Personality", Journal of Genetic Psychology, Vol. 42, 1933, p. 423-441.

26 Ernest R. Hilgard, Edward M. Sait, and G. Ann Margret, loc. cit.

27 Rosalind Gould and Helen Block Lewis, loc. cit.

Chapman and Volkman<sup>28</sup>, Volkman<sup>29</sup>, all showed that the subjects saw the goal differently when the frame of reference was changed.

A number of other studies have demonstrated that perceptual behavior becomes disrupted and changed under stress and frustration. Some such studies are reported by Bruner and Postman<sup>30</sup>, and Bruner<sup>31</sup>. The fact that needs influence perceptual processes was reported by Postman and Bruner<sup>32</sup>, by Bruner<sup>33</sup>, by Sanford<sup>34</sup>, and by Levine, Chein, and Murphy<sup>35</sup>. Probably the most meaningful of the studies in this area was reported by Postman and Bruner who stated

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28 Dwight W. Chapman and John Volkman, loc. cit.

29 John Volkman, loc. cit.

30 Jerome S. Bruner and Leo Postman, "Tension and Tension Release as Organizing Factors in Perception", Journal of Personality, Vol. 15, 1947, p. 300-308.

31 Jerome S. Bruner, "Perception Under Stress", Psychological Review, Vol. 6, 1948, p. 314-323.

32 Leo Postman and Jerome S. Bruner, "Personal Values as Selective Factors in Perception", Journal of Abnormal and Social Psychology, Vol. 43, 1948, p. 142-154.

33 Jerome S. Bruner, "Symbolic Value As an Organizing Factor in Perception", Journal of Social Psychology, Vol. 27, 1948, p. 203-208.

34 R. N. Sanford, "The Effect of Abstinence from Food upon Imaginal Processes", Journal of Psychology, Vol. 2, 1936, p. 129-136.

35 Richard Levine, Isidor Chein, and G. Murphy, "The Relation of the Need to the Amount of Visual Distortion. A Preliminary Report", Journal of Psychology, Vol. 13, 1942, p. 283-293.

that, "Under a variety of experimental conditions and with widely diverse stimulus material perceptual response has been shown to be selective, responsive to the demands of motivation, and modifiable through experience<sup>36</sup>"

If the above conclusions were supported with reports of physiological reaction and perceptual change such as those of McClelland and Lieberman<sup>37</sup>, McGinnies<sup>38</sup>, Postman and Schneider<sup>39</sup>, and Vanderplas and Blake<sup>40</sup>, a fairly conclusive picture can be arrived at that perceptions do change, as a factor in human adjustment, to situational requirements.

### 3.-Some Considerations of the Self-Concept

Combining all that has been covered above it can now be said, with a fair degree of certainty, that as the individual attempts to adjust himself to a situation he can vary

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36 Leo Postman and Jerome S. Bruner, "The Perceptual Consequences of Success and Failure", Journal of Abnormal and Social Psychology, Vol. 47, 1952, p. 213.

37 David C. McClelland and Alvin M. Lieberman, "The Effect of Need for Achievement on Need Related Words", Journal of Personality, Vol. 18, 1949, p. 236-251.

38 Elliott M. McGinnies, "Emotionality and Perceptual Defense", Psychological Review, Vol. 56, 1949, p. 244-251.

39 Leo Postman and B. Schneider, "Personal Values, Visual Recognition and Recall", Psychological Bulletin, Vol. 58, 1951, p. 271-284.

40 James M. Vanderplas and Robert R. Blake, "Selective Sensitization in Auditory Perception", Journal of Personality, Vol. 18, 1949, p. 252-266.

the goal and/or his perceptions to facilitate the adjustive process. The picture is not complete, however. There is reason to believe that there is a deep lying personal factor associated with these processes. Such a factor has been commented upon by several reporters. Several such comments were made in the reports of level of aspiration studies. Frank<sup>41</sup> spoke of personality factors in the level of aspiration situation that went beyond the experimental situation. In his studies on aspiration Bayton<sup>42</sup> spoke of ego involvement in the task. Holt pointed out that, "Consistent patterns of defense were established [. . .]<sup>43</sup>". Rotter not only spoke of his own feelings on the subject but drew upon other researchers for support when he said, "History of studies of success and failure on the individual go beyond studies on level of aspiration. Freud and Adler, Rosensweig, Dollard and Doob, Sears, all spoke of this matter<sup>44</sup>". Sears<sup>45</sup> identified the personal factor as feelings of security and

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41 Jerome D. Frank, "Individual Differences in Certain Aspects of the Level of Aspiration", loc. cit.

42 James A. Bayton, "Performance As a Function of Expressed and Non-Expressed Levels of Aspiration", American Psychologist, Vol. 3, 1948, p. 274.

43 Robert R. Holt, loc. cit.

44 Julian B. Rotter, "Level of Aspiration As a Method of Studying Personality: I.-A Critical Review of Methodology", Psychological Review, Vol. 49, 1942, p. 463.

45 Pauline S. Sears, loc. cit.

insecurity. Gardner<sup>46</sup> spoke of this personal factor as a vague inner sense to make out well.

Several of the studies on perceptual changes also alluded to this personal factor. Postman and Bruner<sup>47</sup> suggested that changes in the perceptual processes were ego defense mechanisms. McGinnies<sup>48</sup> also spoke of this change as ego defense. Frenkel-Brunswik<sup>49</sup> and McClelland and Lieberman<sup>50</sup> also made similar suggestions.

Throughout the references discussed above the writers speak of this personal factor as the self or the ego. Other writers have spoken of this factor. Freud offered a description of this personality factor:

The ego is that part of the id which has been modified by the direct influence of the external world. Its operations include bringing the influence of the external world to bear upon the id and its tendencies, and endeavors to substitute the reality principle for the pleasure principle which reigns supreme in the id. The ego plays the part which the id devolves upon instinct.<sup>51</sup>

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46 John W. Gardner, op. cit., p. 68.

47 Leo Postman and Jerome S. Bruner, "Personal Values as Selective Factors in Perception", loc. cit.

48 Elliot M. McGinnies, op. cit., p. 251.

49 Else Frenkel-Brunswik, "Intolerance of Ambiguity As an Emotional and Perceptual Variable", Journal of Personality, Vol. 18, 1949, p. 108-143.

50 David C. McClelland and Alvin M. Lieberman, loc. cit.

51 Sigmund Freud, The Ego and the Id, London, Hogarth, 1927, p. 29.

Levine and Murphy<sup>52</sup> showed that learning and forgetting material which was favorable to or against communism was definitely concerned with ego-involved attitudes. Wallen<sup>53</sup> similarly found clear evidence of the selective factor in ego-involved material. Rosensweig<sup>54</sup> also reported such findings. Approaching this personal factor and adjustment from a different point of view, Lewis and Franklin<sup>55</sup> spoke of the ego factor and adjustment from the point of view of work experience.

From what has been seen above, a personal factor can be identified as being operant in the process of adjustment. This personal factor is sometimes called the self and sometimes the ego.

In order to clarify this personality element, several views on this subject will be cited. Fenichel said;

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52 J. M. Levine and G. Murphy, "The Learning and Forgetting of Contraversial Material", Journal of Abnormal and Social Psychology, Vol. 38, 1943, p. 507-517.

53 R. W. Wallen, "Ego-Involvement As a Determinant of Selective Forgetting", Journal of Abnormal and Social Psychology, Vol. 37, 1942, p. 20-39.

54 S. Rosensweig, "An Experimental Study of Repression with Special Reference to Need Persistent and Ego-Defensive Reactions to Frustration", Journal of Experimental Psychology, Vol. 32, 1943, p. 64-74.

55 H. B. Lewis and M. Franklin, "An Experimental Study of the Role of the Ego in Work: II.-The Significance of Task-Orientation in Work", Journal of Experimental Psychology, Vol. 30, 1944, p. 195-215.

"The ego is that part of the mind that handles reality<sup>56</sup>" or "The sum of the mental representations of the body and its organs, the so-called body images constitutes the idea of I and is of basic importance for the further formation of the ego<sup>57</sup>". Alexander described this entity by way of its functions. "One main function of the ego is to confront the facts of inner perception with the results of sense perception, i.e. to bring subjective demands in harmony with the internal circumstances<sup>58</sup>". English and Finch spoke of the ego as "mediating" between the demands of the instincts and the reality of the environment<sup>59</sup> or simply as, "the personality of the mature person is headed by a strong flexible ego<sup>60</sup>". Sullivan provided a link between the psychoanalytic ego concepts and concepts of the self when he said that the ego was "personification of the self<sup>61</sup>".

Perhaps the most comprehensive study of experimental and theoretical formulations of the self has been brought

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56 Otto Fenichel, The Psychoanalytic Theory of Neurosis, New York, Norton, 1945, p. 35.

57 Ibid., p. 36.

58 Franz Alexander, "Development of Ego Psychology", in S. Lorand, ed., Psychoanalysis Today: Its Scope and Function, New York, International University, 1944, p. 147.

59 O. Spurgeon English and Stuart M. Finch, Introduction to Psychiatry, Chicago, Norton, 1954, p. 37.

60 Ibid., p. 235.

61 Harry Stack Sullivan, The Interpersonal Theory of Psychiatry, New York, Norton, 1953, p. 167.

forth by Sherif and Cantril. In general, they point out that people's awareness and knowledge of themselves are embodied in attitudes which make up their self-concepts.

In brief, the ego consists of many attitudes which from infancy on are related to the delineated and accumulating "I", "me", "mine" experiences. These attitudes which may be ego-attitudes, are constituent components of the ego. Apart from the constellation of these ego-attitudes there is no such entity as the ego.<sup>62</sup>

At the risk of belaboring this point, one more definition is note worthy. This definition appears to stem from the ideas of Sherif and Cantril and points out that:

When an individual is assigned the task of evaluating himself, whatever the method of this evaluation, he inevitably makes reference to a system of central meanings that he has about himself and his relations to the world about him which we call the self-concept.<sup>63</sup>

In speaking of the self-concept this latter definition will be used except with the notation that the reference to "central meanings" will refer to the "ego-attitudes" as defined above.

#### 4.-Consideration of the Problem

To this point it has been noted that in the process of adjustment there are at least three variables: the goal,

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<sup>62</sup> Muzifer Sherif and Hadley Cantril, The Psychology of Ego-Involvements, New York, Wiley, 1947, p. 4.

<sup>63</sup> John J. Brownfain, "Stability of the Self-Concept As a Dimension of Personality", Journal of Abnormal and Social Psychology, Vol. 47, 1952, p. 597-606.

the perception, and the self-concept. In bringing about an adjustment, authors of experimental studies have attempted to show that both the goal and perception may be changed. The question now presents itself as to whether the self-concept remains fixed or also changes or undergoes alteration in some way.

Many writers in the past have indicated that the self-concept is not fixed and immutable, but rather a changing factor. Sherif and Cantril state that:

The ego cannot be regarded as a fixed, rigid, or permanent entity. For no matter how well formed or "integrated" the ego may seem to be it can be and sometimes is considerably altered by stresses and strains and upheavals of one sort or another.<sup>64</sup>

English and Finch have made the following statement:

Another situation of this same type is found in the insipient stages of a psychosis where the ego is gradually disintegrating and falling prey to the ever present intellectual pressures.<sup>65</sup>

Once again in speaking of schizophrenia English and Finch state that, "[. . .] bowel and bladder training are completely lost and ego functions disintegrate [. . .]<sup>66</sup>". Fenichel clearly indicated this disintegrative phenomenon when he said, "Every individual has a breaking point<sup>67</sup>". French

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64 Muzifer Sherif and Hadley Cantril, op. cit., p. 386.

65 O. Spurgeon English and Stuart M. Finch, op. cit., p. 54.

66 Ibid., p. 65.

67 Otto Fenichel, op. cit., p. 122.

describes what he believes to be the process leading to disintegration of the self-concept and the actual disintegrative process:

According to our hypothesis frustration occurs when one believes or realizes that a goal to which he is committed is unattainable. The result of such frustration is disintegration of the integrative pattern.<sup>68</sup>

French also states, "Frustration ends with physiological disintegration of goal-directed strivings<sup>69</sup>".

What evidence is offered to substantiate the theorizing of disintegration of this self-concept? All available substantiating proof offered appears to consist chiefly of case history observations, statements, or distinctly indirect experiments.

Zawadski and the Lazarsfelds offer the following statement. "I look for a job. I bow with servility. I ask, I beg, I humble myself and I lose my ego<sup>70</sup>"

The results of severe social trauma on personality ~~was~~<sup>were</sup> studied and reported by Allport, Bruner, and Jandorf<sup>71</sup>.

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68 Thomas M. French, The Integration of Behavior, Chicago, University Press, 1952, p. 155.

69 Ibid., p. 128.

70 B. Zawadski, B. Lazarsfeld, P. Lazarsfeld, "The Psychological Consequence of Unemployment", Journal of Social Psychology, Vol. 6, 1935, p. 238.

71 G. W. Allport, J. S. Bruner, and E. M. Jandorf, "Personality Under Social Catastrophe: Ninety Life Histories of the Nazi Revolution", Character and Personality, Vol. 10, 1941, p. 1-22.

They found that under loss of self-esteem there was a breakdown of the ego. To obtain this information they studied persons in prisons as well as those in destroyed communities. Bettelheim<sup>72</sup> also studied the effects of severe conditions on personality and on the basis of clinical observations offered descriptions of personality breakdown and the loss of ego. Once again following the case history method Bales<sup>73</sup> described ego disintegration in an alcoholic.

The following experimental reports are representative of the empirical studies in this area of human behavior. Levanway<sup>74</sup> showed that following the administration of a stress situation there were positive changes in attitudes concerning self acceptance, the acceptance for others, and the expressed tendency toward liking more people. Fey<sup>75</sup> made a similar study and reported that people with high self-acceptance scores tend to accept others and to be

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72 B. Bettelheim, "individual and Mass Behavior in Extreme Situations", Journal of Abnormal and Social Psychology, Vol. 38, 1943, p. 417-452.

73 R. F. Bales, "Social Therapy For a Social Disorder - Compulsive Drinking", Journal of Social Psychology, Vol. 1, 1945, p. 14-22.

74 Russell W. Levanway, "The Effects of Stress on Expressed Attitudes Toward Self and Others", Journal of Abnormal and Social Psychology, Vol. 50, 1955, p. 225-226.

75 William F. Fey, "Acceptance By Others and Its Relation to Acceptance of Self and Others: A Revaluation", Journal of Abnormal and Social Psychology, Vol. 50, 1955, p/ 274-276.

accepted by others. Brownfain<sup>76</sup> attempted to relate stability of the self-concept to happiness. He identified stability of the self-concept as the minimal discrepancy between negative and positive self-ratings, and attempted to correlate this with statements of happiness by the subject and others. Cohen<sup>77</sup> studied the relationship between self-acceptance and feelings of adequacy or inadequacy. In reporting her findings, Sears<sup>78</sup> pointed out that experimentally induced success or failure produced feelings of ego reassurance or ego threat within the individual.

To recapitulate, experimental evidence has been offered to show that in the process of adjustment an individual may vary his goal and/or his perceptions. In the process of experimentation a self or ego factor has been identified. Theoretical statements have been offered which state that this self-concept may undergo integrative or disintegrative processes depending upon external conditions. Evidence to support this notion has been in the form of clinical observations, case history reports, or distinctly indirect experimentation.

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76 John J. Brownfain, loc. cit.

77 Louis D. Cohen, "Level of Aspiration Behavior and Feelings of Adequacy and Self Acceptance", Journal of Abnormal and Social Psychology, Vol. 49, 1954, p. 84-86.

78 Pauline Sears, op. cit., p. 532.

## 5.-The Problem

The purpose of this study is to attempt to provide a more direct empirical study of the problem of integration and disintegration of the self-concept. The definition of self-concept as given above is restated as follows: Self-concept refers to a constellation of self-attitudes derived from the process of the individual evaluating himself and his relations to the world about him. The definition of integration and disintegration is derived from French<sup>79</sup>. Integration is seen as an increase of strength of the self-concept based upon more positive self-attitudes and derived from satisfaction of goal-directed activity. Disintegration conversely would imply a weakening of the self-concept based upon more negative self-attitudes and derived from frustration of goal-directed activity.

Previous attempts to find evidence have generally led experimenters to turn to rather severe, traumatic situations. It is conceded that if disintegration does occur one would most likely find it in such instances. However, it is not feasible to produce such conditions in a laboratory study and also level of aspiration studies have suggested that a milder but similar reaction could be expected in specially

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79 Thomas M. French, op. cit., p. 52-53.

organized laboratory situations. Sherif and Cantril have commented on this problem:

The accumulated experiments related to ego involvements show that even under artificial laboratory conditions judgment and reaction are temporarily altered in situations to which the ego is linked experimentally.<sup>80</sup>

Frank has remarked indirectly but clearly about such a situation:

The level of aspiration situation is usually a threat to the subject's self-esteem in that he must not only exhibit his ability for someone else, but must openly commit himself as to his expectation of future achievement.<sup>81</sup>

Chapman and Volkmann said, "What the subject has himself accomplished with labor is likely to have 'ego-value'<sup>82</sup>"

Sears has also made statements which relate to this matter:

Self-confident, successful children react to the level of aspiration situation in a similar way, whereas children lacking in confidence, may adapt one of a number of different behavioral techniques in this situation.<sup>83</sup>

Rapaport has also spoken about the positive aspects of such studies<sup>84</sup>.

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80 Muzifer Sherif and Hadley Cantril, op. cit., p. 96.

81 Jerome D. Frank, "Recent Studies of the Level of Aspiration", op. cit., p. 223.

82 Dwight W. Chapman and John Volkmann, op. cit., p. 235.

83 Pauline S. Sears, op. cit., p. 526.

84 David Rapaport, "Freudian Mechanisms and Frustration Experiments", in Silvan S. Tomkins, ed., Contemporary Psychopathology, Cambridge, Harvard, 1947, p. 582-587, previously published in Psychoanalytic Quarterly, Vol. 11, No. 4, October 1942, (no pages).

It is hypothesized that if the theoretical formulations are correct and the self-concept does undergo integrative and disintegrative processes, then such changes could be induced in a laboratory situation. It is further felt that if conditions of success and failure are created for a number of subjects, the changes described above will be produced and that evidence of such changes could be obtained. To be truly significant an attempt will be made to effect a continuous picture in a series of success-failure situations. In this way, if the expected changes occur, a sequential picture of the changes will be had.

## CHAPTER II

### THE METHODOLOGY AND THE POPULATION

Theoreticians and experimenters in the problems of personality and adjustment have proposed that the self-concept is not fixed and immutable, but rather subject to integration and disintegration. These integrative and disintegrative processes are felt to result from satisfying or dissatisfying outcomes of goal-directed activity. The purpose of this study is to attempt to measure the stability of the self-concept as the individual experiences success and failure, and in this way gather empirical evidence concerning the hypothesis. Furthermore, it is felt that a clearer, more meaningful understanding would be arrived at if a continuous series of such evaluative measurements were obtained, thus providing a dynamic view of the process.

Although a detailed description of the methodology is given below, an overall outline of the experiment is presented at this point so that the relationship of the items discussed in the rationale below will be more evident.

In general, a series of subjects are submitted to four level of aspiration situations using the Rotter Aspiration Board. In each situation the subjects are required to set a goal and then to try to obtain the goal in three trials. Each subject is then either successful or unsuccessful at attaining his goal. The effects of this success

or failure experience, in terms of changes in the self-concept, are measured when the subject is asked to draw the human figure following each of his four experiences in the level of aspiration situation. Any change in the drawing is finally evaluated in terms of integration or disintegration as described above.

In describing the rationale for the experimental design and the use of the specific instruments the following topics will be examined: the presence of the self-concept in level of aspiration studies; the relationship between self-concept and level of aspiration studies; the validity of the Rotter Aspiration Board as a tool in level of aspiration experiments; the relationship of the self-concept to the human figure drawing; and the existent capacity for analysis of human figure drawing components.

#### 1.-The Self-Concept in Level of Aspiration Studies

Before considering some aspects of the nature and relationship between the self-concept and level of aspiration tasks, the definition of the self-concept factor is restated for a point of reference. In this study self-concept refers to a constellation of self-attitudes derived from the process of the individual evaluating himself and his relations to the world about him. The following references to experimental studies in level of aspiration

situations are used to establish the fact that the self-concept, as described above, is a basic force in goal behavior as revealed in level of aspiration experiments.

Perhaps the most direct statement of the relationship between the self-concept and goal behavior was made by Frank:

The level of aspiration usually represents a compromise between the subject's evaluation of his ability with respect to the difficulty of the task and his desire to achieve a high level of performance.<sup>85</sup>

In this same study Frank<sup>86</sup> spoke of the value of the level of aspiration technique for studying the relationships between self-evaluation and aspirational behavior. He also spoke of such factors as self-confidence, ambition, and subjectivity as being related to goal-setting behavior. In concluding his study Bayton<sup>87</sup> pointed out that there is a definite relationship between ego involvement and the results in level of aspiration studies. Cohen<sup>88</sup> found that there was a significant relationship between self-acceptance or self-rejection and goal-setting behavior. In another

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85 Jerome D. Frank, "Recent Studies of the Level of Aspiration", op. cit., p. 222.

86 Ibid., p. 218.

87 James A. Bayton, "Performance As a Function of Expressed and Non-Expressed Levels of Aspiration", loc. cit.

88 Louis D. Cohen, "Level of Aspiration Behavior and Feelings of Adequacy and Self-Acceptance", loc. cit.

study Bayton<sup>89</sup> indirectly referred to the self-concept when he spoke of the need to do well and to avoid failure in level of aspiration experiments. Rosensweig<sup>90</sup> related goal-behavior with pride. Gardner<sup>91</sup> associated certain personality characteristics, such as general sense of security and dissatisfaction with status, with goal-setting activity. Sears<sup>92</sup> related the self-concept to level of aspiration goal-setting activity when she correlated the goal behavior with self-evaluative inventories requiring the individuals to rate themselves as to how good they felt they were and how good they wished they could be. Yacorzynski<sup>93</sup> related confidence in oneself to the ability to predict improved scores. In speaking of this same relationship Holt said:

Consistent patterns of defense were established in terms of discrepancy between predictions and

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89 James A. Bayton, "Interrelation Between Levels of Aspiration, Performance, and Estimates of Past Performance", loc. cit.

90 Saul Rosensweig, "Preferences in the Repetition of Successful and Unsuccessful Activities As a Function of Age and Personality", op. cit., p. 440.

91 John W. Gardner, "The Relation of Certain Personality Variables to Level of Aspiration", Journal of Psychology, Vol. 9, p. 191-206.

92 Pauline S. Sears, "Level of Aspiration in Relation to Some Variables of Personality: Clinical Studies", Journal of Social Psychology, Vol. 14, 1941, p. 311-336.

93 G. K. Yacorzynski, "Degree of Effort: III - Relationship to the Level of Aspiration", Journal of Experimental Psychology, Vol. 30, 1942, p. 407-413.

performances, shifts in estimates of ability, ranges of aspirations, and shifts in personal importance of abilities.<sup>94</sup>

As a result of a rather extensive study, Rotter<sup>95</sup> pointed out the self evaluation problem in the level of aspiration situation. Chapman and Volkmann<sup>96</sup> pointed out the nature of social influences on this relationship. They showed that during the process of evaluating himself in preparation to judging himself in terms of the task, the individual drew upon information of how well others did. When the reference groups were changed, as, for example, performance of W.P.A. workers was given, or the performance of college professors was given, the subject altered his score according to the frame of reference presented.

The studies cited support the notion that the self-concept is operant in level of aspiration studies. Not only has evidence been offered to show that alteration and goal-setting behavior involve an evaluation of the self, but also that the self-concept is affected by the results of performance as evidenced in the appearance of defense behavior.

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94 Robert R. Holt, loc. cit.

95 Julian B. Rotter, "Level of Aspiration As a Method of Studying Personality: III - The Analysis of Patterns of Response", loc. cit.

96 Dwight W. Chapman and John Volkmann, loc. cit.

## 2.-The Rotter Aspiration Board

The instrument selected for the success or failure experience is the Rotter Aspiration Board. To be of value, the aspirational activity should produce ego involvement<sup>97</sup> and should be an instrument which is not easily influenced by extraneous factors. The Rotter Aspiration Board has such qualities. The author himself has offered supporting evidence in the form of reports of his findings during the construction of the Board<sup>98</sup> and as a result of his validation studies<sup>99</sup>. Evaluation of the Rotter Aspiration Board was carried out by Klugman. He conducted two<sup>100,101</sup> studies of this instrument and found that, while the device had no relationship to schooling, mechanical ability, or mental ability, the Board was sensitive enough to produce ego

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97 Irving L. Child and John W. M. Whiting, op. cit., p. 314.

98 Julian B. Rotter, "Level of Aspiration As a Method of Studying Personality: II - Development and Evaluation of a Controlled Method", Journal of Experimental Psychology, Vol. 31, 1942, p. 410-422.

99 Julian B. Rotter, "Level of Aspiration As a Method of Studying Personality: IV - Group Validity Studies", Character and Personality, Vol. 11, 1943, p. 255-274.

100 Samuel F. Klugman, "Relationship Between the Rotter Aspiration Board with Various Types of Tests", Journal of Psychology, Vol. 55, 1942, p. 400-406.

101 Samuel F. Klugman, "Emotional Stability and Level of Aspiration", Journal of General Psychology, Vol. 38, 1948, p. 101-118.

involvement. Support for the claim of ego involvement comes from several sources. It has been pointed out by Sears<sup>101a</sup>, Holt<sup>101b</sup>, Frank<sup>101c</sup>, and Adams<sup>101d</sup> that the discrepancy scores and shift of bid after performance reflected ego involvement. An example of such behavior in an experiment involving only failure was reported by Steisil and Cohen<sup>101e</sup>. They found a  $t$  of 4.14 with  $p$  .01 for shifts downward with failure. Cohen<sup>101f</sup> found a coefficient of .298 between shifts and feelings of self-acceptance. Frank<sup>101g</sup> found a discrepancy score of -1.25 after easier tasks and -7.00 after harder tasks. Preston, Bayton, and McGinnies<sup>101h</sup>

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101a Pauline S. Sears, "Level of Aspiration in Academically Successful and Unsuccessful Children", op. cit., p. 520.

101b Robert R. Holt, op. cit., p. 457.

101c Jerome D. Frank, "Recent Studies of the Level of Aspiration", op. cit., p. 221.

101d Donald K. Adams, op. cit., p. 573.

101e Iran M. Steisil and Bertram D. Cohen, "The Effects of Two Degrees of Failure on Level of Aspiration and Performance", Journal of Abnormal and Social Psychology, Vol. 46, 1951, p. 56-69.

101f Louis D. Cohen, "Levels of Aspiration Behavior and Feelings of Adequacy and Self-Acceptance", op. cit., p.85.

101g Jerome D. Frank, "The Influence of Level of Aspiration on Performance in One Task on the Level of Aspiration in Another", Journal of Experimental Psychology, Vol. 18, 1935, p. 165.

101h Malcolm G. Preston, James A. Bayton, Elliott McGinnies, "Differential Effect of a Social Variable upon Three Levels of Aspiration", Journal of Experimental Psychology, Vol. 29, 1941, p. 360.

found a low correlation of .31 between performance and estimate which they too interpreted as defending the theory of needs and ego involvement. Sears<sup>10li</sup> obtained a  $X^2$  of 12.53 at  $p .01$  to show that discrepancy scores related to ego strength after the task. Bayton and Whyte<sup>10lj</sup> obtained a  $t 5.13$  at  $p .01$  for mean difference score and mean confidence ratings.

The presence of shifting the bid on the Rotter Board under conditions similar to those described above could then be interpreted as reflecting ego involvement on the instrument. Rotter<sup>10lk</sup> reported a coefficient of .70 for shifts of bid with performance and Cohen<sup>10ll</sup>, using the Rotter Board, reported a coefficient of .963 for reliability of adjusting goals to success and failure. Bills found a correlation of .51 at  $p .01$  between the Rotter Board and scores on an adjustment inventory which led him to conclude

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10li Pauline S. Sears, "Level of Aspiration in Academically Successful and Unsuccessful Children", op. cit., p. 531.

10lj James A. Bayton and Ester C. Whyte, "Personality Dynamics During Success and Failure Sequences", Journal of Abnormal and Social Psychology, Vol. 45, 1950, p. 583-591.

10lk Julian B. Rotter, "Level of Aspiration As a Method of Personality Study: II - Development and Evaluation of a Controlled Method", op. cit., p. 415.

10ll Louis D. Cohen, "Patterns of Response in Levels of Aspiration Tasks", op. cit., p. 310.

that, "[ . . .] acceptance of self shown by the Index was sufficiently related to attitudes toward performance, direction of expressed attitude toward performance, estimate of performance and recall of performance<sup>101m</sup>".

The above findings indicate that the self-concept factor is involved in performance on the Rotter Board to a moderately significant degree.

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<sup>101m</sup> Robert E. Bills, "A Comparison of Scores on the Index of Adjustment and Values with Behavior in Level of Aspiration Tasks", Journal of Consulting Psychology, Vol. 17, No. 3, 1953, p. 211.

Further evidence as to the suitability of the Rotter Aspiration Board for use as a level of aspiration instrument is found in the success obtained in actual field experiments. Cohen<sup>102</sup> found the Board highly valuable and valid from the point of view of the criteria described above. Excellent results were also obtained by Zelen<sup>103</sup> and Cassel<sup>104</sup>.

The above references have shown that the Rotter Aspiration Board induces sufficient ego involvement so that in the process of setting a goal and attempting to meet that goal on this device, the individual's self-concept becomes closely involved from two points of view. First, the person calls upon his self-concept in assessing his skills against the problem presented by the Board when he sets his goal. Second, after performing, the individual's self-concept is affected by his success or failure in meeting his goal.

From the above references it has been learned that performance on this instrument is free of many of the

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102 Louis D. Cohen, "Patterns of Response in Levels of Aspiration Tasks", loc. cit.

103 Seymour L. Zelen, "Level of Aspiration and Rigidity on the Rorschach Compared with Operationally Determined Measures", American Psychologist, Vol. 5, 1950, p. 470.

104 Russell N. Cassel, "An Experimental Investigation of the 'Reality Strata' of Certain Objectively Defined Groups of Individuals By Use of the Level of Aspiration Technique", American Psychologist, Vol. 5, 1950, p. 471-472.

common external influences inherent in other tasks. This is quite important since it allows for more purity in measurement.

### 3.-The Human Figure Drawing

In selecting an instrument for the measurement of change in the self-concept it was necessary to give careful consideration to several factors. The instrument selected would have to measure the self-concept as directly as possible and yet, in keeping with the dynamic nature of the study, reflect this personality variable as a functioning whole. Since, as pointed out above, the laboratory situation is not structured to produce a traumatic reaction but rather a minor movement, the instrument selected must be capable of sufficient sensitivity to detect such changes. The instrument selected as the measuring device for this study would have to be acceptable to the individual so that the measuring device does not arouse undue emotion which would influence the test adversely. Furthermore, in selecting a measuring instrument, consideration is given to its ability to make a series of repeat measurements in a sequence without introducing boredom, practice effects, or resentment and to continue to make its measurements as accurately the last time as the first time. Last, in selecting a measuring instrument with the characteristics

described above, consideration is given to the fact that the changes measured must be capable of evaluation .

In seeking an instrument from among the available psychological devices, consideration was given to such tools as inventories and questionnaires. However, while these approaches may detect attitudes or self-concept well, they are not efficient beyond a single administration at one session. Also, such instruments tend to increase the administration time element greatly and thus increase the risk of loss of rapport. It was therefore decided to use the Human Figure Drawing Test, a projective technique which is constantly winning more approval. Since this approach to the measurement of personality has not received sufficient recognition so that its use here would go unchallenged, a series of references are given below to establish the validity of the uses to which it will be put.

The most exhaustive study of the historical background of the psychological and psychiatric interest in and use of drawings was made by Anastasi and Foley<sup>105</sup>. These authors showed that this approach to personality study received recognition almost one hundred years ago. In 1880 Lombroso is reported to have described such characteristics

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105 Anne Anastasi and John P. Foley, "A Survey of the Literature on Artistic Behavior In the Abnormal: I - Historical and Theoretical Background", Journal of General Psychology, Vol. 25, 1941, p. 187-237.

as originality, eccentricity, symbolism and minuteness of detail. In 1876 Simon is said to have reported the diagnostic value of such productions and he discussed at length the correlations between the clinical syndrome and the drawing attributes. Guislain is reported to have been interested in this projective study of the insane. In 1892 Seglas used productions of the insane to illustrate his ideas. In 1924 Vinchon described drawings of different types of characteristics found in insanity. In his 1929 writing of Psychoanalyse de l'art, Baudouin discussed the various complexes and the psychoanalytic mechanism in art. Between 1930 and 1934 Pfister described changes in drawing which corresponded to changes in the patient during the course of psychotherapy. In Lehrbuch der Psychiatrie, Kraepelin identified the value of studying drawings as a means of personality study. Anastasi and Foley point out that in 1919 Prinzhorn spoke of insane art as an expression of the whole personality. In 1928 Plaut and in 1934 Kretchmer brought attention to the value of this approach. In The Borderland, Hyslop recognized the psychological value of such an instrument. Anastasi and Foley have identified other outstanding persons as identifying the validity and value of this means of personality study. Among the names mentioned are Rush, Earle, Kiernan, Hrdicka, and Kempf. They also quote a more recent authority as Lewis as

saying, "The productions are said to serve in the process of objectification and in the socialization of conflicts".

Goodenough is recognized as one of the early researchers in this area of personality study. In the course of studying drawings for intellectual evaluation, it was seen that the differences in the drawings went beyond the intellectual problem. Rather it seemed to yield rich clinical material<sup>106</sup>.

Perhaps the most concise statement of the self-concept factor in the human figure drawing was made by Machover:

When an individual attempts to solve the problem of the directive to "draw a person", he is compelled to draw from some sources. External figures are too varied in their body attributes to lend themselves to a spontaneous, composite, objective representation of a person. Some process of selection involving identification through projection and introjection enters at some point. The individual must draw consciously, and no doubt unconsciously, upon his whole system of psychic values. The body, or the self, is the most intimate point of reference in any activity. . . . .  
 . . . . . Consequently, the drawing of a person, in involving a projection of the body image, provides a natural vehicle for the expression of one's body needs and conflicts.<sup>107</sup>

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<sup>106</sup> Florence L. Goodenough, "Studies In the Psychology of Children's Drawings", Psychological Bulletin, Vol. 25, 1928, p. 272-283.

<sup>107</sup> Karen Machover, Personality Projection in the Drawing of the Human Figure, Springfield, Thomas, 1949, p. 5.

In concluding a study that is indirectly related to this problem, Huntley<sup>108</sup> stated that the experiment tended to show in a significant way that the individual's body and his physical personal characteristics constitute an integral part of his ego.

The work of Allport and Vernon is also considered among the leading authoritative references in this area. The following references are taken from their work on expressive movements. This report is basic to the understanding of drawing as a diagnostic tool.

Each individual, through endowment transacting with learning experiences expression of himself in movement patterns (internal and external) which are characteristic and which reveal the unity of his personality (or its disunity).<sup>109</sup>

Fundamentally, our results lend support to the personalistic contentions that there be some degree of unity in personality, that this degree of unity is reflected in expression and that for this reason sets and habits of expression show a certain consistency among themselves.<sup>110</sup>

It surely is not unrealistic to assume that insofar as personality is organized expressive movement is harmonious and self-consistent, and insofar as personality is un-integrated, expressive movement is self-contradictory.<sup>111</sup>

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108 C. W. Huntley, "Judgments of Self Based Upon Records of Expressive Behavior", Journal of Abnormal and Social Psychology, Vol. 35, 1940, p. 427.

109 G. W. Allport and P. E. Vernon, Studies in Expressive Movement, New York, Macmillan, 1932, p. 170.

110 Ibid., p. 171.

111 Ibid., p. 182.

This unity and self-contradictory quality of expressive movement, if measured and studied, could provide important information for the study of individual personality. The difficulties of capturing, recording, and measuring the transient qualities of overt movement are obvious; it becomes necessary to seek some means of doing so. Paintings and drawings are movements "captured" on a flat surface; they should therefore reveal much about personality.<sup>112</sup>

Alschuler and Hattwick<sup>113</sup> made a genetic study of the human figure drawing. They pointed out that children first attempt to draw the human figure at about the age of three and one-half years and that these figures usually represent themselves.

Elkisch<sup>114</sup> has contributed much to the psychological understanding of the human figure drawing through her extensive studies. Time after time she points out that the drawing represents a projection of the person's inner world.

In enumerating the postulates underlying the H-T-P, Buck<sup>115</sup> indicates that drawing of the person, as well as that of the house and the tree, are regarded as self-portraits.

Since this area of psychological interest extends back many years, numerous studies have been conducted.

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<sup>112</sup> Ibid.

<sup>113</sup> R. H. Alschuler and W. Hattwick, "Easel Painting As an Index of Personality in Preschool Children", American Journal of Orthopsychiatry, Vol. 13, 1943, p. 616-625.

<sup>114</sup> Paula Elkisch, "Children's Drawings In a Projective Technique", Psychologica 1 Monographs, No. 1, 1945, p. 20.

<sup>115</sup> J. N. Buck, "The H-T-P Test", Journal of Clinical Psychology, Vol. 4, 1948, p. 154.

Swensen<sup>115a</sup> attempted to validate the concept that in performing the Draw-a-Person Test the individual is adequately identifying himself. He obtained a  $X^2$  of 7.15 with a p .05 and a reliability coefficient of .84. Zimmer<sup>115b</sup> compared eight personality dimensions by raters with drawings made by the subject and obtained a coefficient of .82. A great deal of the validating testimony found in the literature is in the form of case histories. In a study of fifty subjects<sup>115c</sup> the personality as presented in the drawing was compared to the Rorschach and other methods. Although no statistical procedures were applied it was felt that there was a significantly high correlation between the drawing as a reflection of the subject and the personality structure as shown on the other methods. In the validation study<sup>115d</sup> of the H-T-P which also utilizes the drawing of a person, the subject was later asked to identify the figure during an inquiry. In a study of ten cases the figure drawing was

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115a Clifford H. Swensen, "Sexual Differentiation in the Draw-a-Person Test", Journal of Clinical Psychology, Vol. 11, 1955, p. 37-41.

115b Herbert Zimmer, "Predictions By Means of Two Projective Tests of Personality Evaluations Made by Peers", Journal of Clinical Psychology, Vol. 10, 1954, p. 352-356.

115c Ruth L. Monroe, "Three Projective Methods Applied to Sally", Journal of Abnormal and Social Psychology, Vol. 40, 1945, p. 215-227.

115d John Buck, "The H-T-P Technique", Journal of Clinical Psychology, Vol. 5, 1949, p. 37-76.

identified as reflecting the subject 80% of the time.

Intensive individual case work-ups have been reported by Machover<sup>115e</sup>, Machover and Wexler<sup>115f</sup>, and Margolis<sup>115g</sup>.

A great deal of the material reported in the literature which is of a validating nature presents indirect evidence. Secord and Jourard<sup>115h</sup> reported a study aimed at showing the relationship between feelings about the self and their reflection in ideas about the body. They found the relationship between body cathexis and self-cathexis to be .58 for men and .66 for women. They concluded that the correlations were sufficiently significant to support the hypothesis that feelings about the body are commensurate with feelings about the self. Holtzman<sup>115i</sup> found that 76%

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115e Karen Machover, "Human Figure Drawings: The Case of Gregor. Interpretation of Test Data: Symposium Presented to American Psychological Association Meeting, Denver, 1949", Rorschach Research Exchange and Journal of Projective Techniques, Vol. 13, December 1949, p. 447-450.

115f Karen Machover and Rochelle M. Wexler, "A Case of Manic Excitement", Rorschach Research Exchange and Journal of Projective Techniques, Vol. 12, No. 4, 1948, p. 179-201.

115g Muriel Franklin Margolis, "A Comparative Study of the Human Figure Drawing at Three Points in Therapy", Rorschach Research Exchange and Journal of Projective Techniques, Vol. 12, No. 1, 1948, p. 94-105.

115h Paul F. Secord and Sidney M. Jourard, "The Appearance of Body Cathexis: Body Cathexis and the Self", Journal of Consulting Psychology, Vol. 17, 1953, p. 345-346.

115i W. M. Holtzman, "The Examiner As a Variable in the Draw-a-Person Test", Journal of Consulting Psychology, Vol. 16, 1952, p. 147.

of the subjects drew their own sex first. Levy stated that,

Of 5000 adult subjects examined, 87 percent drew their own sex first . . . . . Those two facts suggest that it is usual for an unselected group of people to draw their own sex first and it is usual for a selected group of homosexuals to draw the opposite sex first.115j

Lehner and Gunderson<sup>115k</sup> showed that there was a definite positive relationship between age and height of the subject and the figure drawn. Lehner and Silver<sup>115l</sup> found that there was more of a tendency for a subject to approximate his age on a same sex drawing than on an opposite sex drawing when they reported a correlation of .57 for females drawing females and .37 for females drawing males. For males drawing males the coefficient was .20 and for males drawing females it was .10. Albee and Hamlin<sup>115m</sup> obtained a coefficient of .89 at p .01 in a study involving judging the subject from the drawing.

115j Sidney Levy, "Figure Drawing As a Projective Test", in Lawrence Edwin Abt and Leopold Bellak, editors, Projective Psychology, Clinical Approaches to the Total Personality, New York, Knopf, 1950, p. 263.

115k George F. J. Lehner and Eric K. Gunderson, "Height Relationships and the Draw-a-Person Test", Journal of Personality, Vol. 21, 1952, p. 392-399.

115l G. F. J. Lehner and H. Silver, "Age Relationships and Draw-a-Person Test", Journal of Psychology, Vol. 17, 1948, p. 199-209.

115m George W. Albee and Roy M. Hamlin, "Judgment of Adjustment from Drawings; The Application of Rating Scale Methods", Journal of Clinical Psychology, Vol. 16, 1950, p. 363-365.

Although studies dealing with the self-concept in drawings have varied in the directness of their nature and the consistency of their findings, the suggestion is that this characteristic is present to a moderately significant degree.

The first part of the discussion of the human figure drawing was directed toward showing that for many years outstanding scientists have recognized the value of this technique in the study of personality. The second aim of the discussion was to show that the self-concept is a basic personality variable projected into the drawing. The remaining objectives of this discussion of the human figure drawing will be to point out the sensitivity of the instrument, some methods of evaluation, and reliability of evaluation. It is felt that this purpose can be best served by referring to a series of studies aimed at understanding these factors.

Perhaps the most direct reflection of the ability of the drawing to reflect the individual was demonstrated in a physiological-psychological study. In a study of histamine tolerance, changes in the body were seen to be reflected in the figure drawing. Graham<sup>115n</sup> found the relationship to have a coefficient of .70 at the .04 level of confidence. Other studies demonstrating this sensitivity are of a less direct nature. A study by Wolff<sup>116</sup> showed that the presence of enclosures suggested low security and symbols of

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<sup>115n</sup> Stanley R. Graham, "Relationship between Histamine Tolerance, Visual Autokinesis, Rorschach Human Movement, and Figure Drawing", Journal of Clinical Psychology, Vol. 10, 1955, p. 370-373.

<sup>116</sup> Werner Wolff, "Projective Methods for Personality Analysis of Expressive Behavior in Preschool Children", Character and Personality, Vol. 10, 1942, p. 309-330.

defense and that aggression suggested low security. Waehner<sup>117</sup> pointed out that introverts can be differentiated from extroverts in that they produce conventional rather than expressive content. Elkisch<sup>118</sup> stated that the predominance of symbolism in a child's productions during middle childhood is a symptom of neurotic disturbance. Brick<sup>119</sup> drew attention to the fact that free and volcanic drawings are indications of acute emotional conflict and that repeated contents of hostility, aggression, and fear gave indications of deeper disturbance. Alschuler and Hattwick<sup>120</sup> concluded that color gave the clearest clues as to the nature and intensity of the emotional life. When two groups were compared for the use of color versus the use of line and form, it was found that the group that avoided the use of color showed greater self-control, greater concern with external stimuli, and a higher frequency of reasoned rather than impulsive behavior. In speaking of the size of the drawing Liss said that, "It is related to ego and attitudes toward

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117 T. S. Waehner, "Interpretations of Spontaneous Drawings and Paintings", Genetic Psychological Monographs, No. 33, 1946, p. 35.

118 Paula Elkisch, loc. cit.

119 Maria Brick, "The Mental Hygiene Value of Children's Art Work", American Journal of Orthopsychiatry, Vol. 14, 1944, p. 136-146.

120 R. H. Alschuler and W. Hattwick, op. cit., p. 15.

mass and space<sup>121</sup>". Alschuler and Hattwick<sup>122</sup>, in speaking of space, said that it is a picture of the individual relating to and reacting to his environment. There are also a great number of other studies which have devoted themselves to differential diagnosis but which by their nature also reflect the sensitivity of this instrument. A few such studies and reports were submitted by Abell<sup>123</sup>, England<sup>124</sup>, Albee<sup>125</sup>, Bender<sup>126</sup>, Berman, Klein, and Lippman<sup>127</sup>, Modell<sup>128</sup>,

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121 Edward Liss, "The Graphic Arts", American Journal of Orthopsychiatry, Vol. 8, 1938, p. 97.

122 R. H. Alschuler and W. Hattwick, Painting and Personality, Chicago, University Press, 1947, p. 14.

123 Theodora Abel, "Free Designs of a Limited Scope As a Personality Index", Character and Personality, Vol. 7, 1938, p. 50-62.

124 Arthur O. England, "Non-Structural Approach to the Study of Children's Fears", Journal of Clinical Psychology, Vol. 2, 1946, p. 364-368.

125 George W. Albee and Roy M. Hamlin, "Judgment of Adjustment from Drawings; The Application of Rating Scale Methods", Journal of Clinical Psychology, Vol. 6, 1950, p. 363-365.

126 Laretta Bender, "Art and Therapy in Mental Disturbances of Children", Journal of Nervous and Mental Diseases, Vol. 86, 1937, p. 249-263.

127 Abraham B. Berman, Alexander A. Klein, and Abbott Lippman, "Human Figure Drawings As a Projective Technique", Journal of General Psychology, Vol. 45, 1951, p. 57-70.

128 Arnold H. Modell, "Changes in Human Figure Drawings By Patients Who Recover From Depressed States", American Journal of Orthopsychiatry, Vol. 21, 1951, p. 584-596.

Royal<sup>129</sup>, and Page<sup>130</sup>. Further indications as to the sensitivity of this instrument will be seen below in the discussion of some methods of evaluation.

There are essentially two basic approaches to the evaluation of drawings. One evaluative method deals with content while the other method focuses on the formal aspects. These two approaches are similar to theme and structural evaluations in the Thematic Apperception Test or in the Rorschach Ink Blot Test. As pointed out in the hypothesis, this study is interested in the measurement of integrative-disintegrative aspects of the self-concept. Since such integrative-disintegrative characteristics are in reality a continuum as the continuous relationship adjustment-maladjustment, it is felt that the aims of measurement can best be served by limiting the evaluation to the formal or structural aspects.

The following references discuss various formal scoring elements from the point of view of integration and disintegration. Some notion of integration and disintegration in drawings can be obtained from the generalized

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129 Robert E. Royal, "Drawing Characteristics of Neurotic Patients Using a Drawing of a Man and Woman Technique", Journal of Clinical Psychology, Vol. 5, 1949, p. 392-395.

130 Howard E. Page, "Detecting Psychoneurotic Tendencies in Army Personnel", Psychological Bulletin, Vol. 42, 1945, p. 645-658.

statement by Elkisch<sup>131</sup>. She pointed out that integration is based upon inner organization which is essentially centered on some external or internal force. Disintegration, according to Elkisch, is seen in a drawing which is piecemeal, lacks centering, in which the elements fall apart, and which is asunder.

Elkisch<sup>132</sup> has defined other drawing characteristics. In speaking of the type of stroke she identified a rigid stroke which she called rule and a flexible, relaxed, free movement stroke which she called rhythm. She felt that adjustment was defined by rhythm over rule.

Waehner<sup>133</sup> pointed out that a substantial disproportion of the size of the figural components to the entire form reflects special anxiety and disturbance. Wolff<sup>134</sup> also recognized that normal proportions and balance of the parts to the whole is characteristic of adjusted, adoptive, secure people. Alschuler and Hattwick<sup>135</sup>, on the other hand, concluded that a well adjusted person keeps within the proportions of the page (using about two-thirds of the page).

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131 Paula Elkisch, op. cit., p. 35.

132 Ibid.

133 T. S. Waehner, op. cit., p. 41.

134 Werner Wolff, The Personality of the Preschool Child, New York, Gruen and Stratton, 1946, p. 175.

135 R. H. Alschuler and W. Hattwick, Painting and Personality, Chicago, University Press, 1947, p. 153.

Much attention has been given to the characteristic of centering the drawing. It is generally felt that a well adjusted person<sup>136,137</sup> will show a well distributed picture and that a maladjusted person will show rigid symmetry. It has been shown<sup>138</sup> that a large number of maladjusted persons take pains to obtain precise centering of the drawing.

Attention has been given to the tendency on the part of the producer to expand and contract his drawings. Expansion is regarded as widening the drawing and perhaps presenting only part of the object. This is regarded as a sign of instability. Compression beyond the usual proportions, however, is also regarded as a sign of pathology. Speaking on this subject Elkisch said, "Expansion may appear as a flight of ideas or as an escape from one's self. If it is combined with dynamics that are not controlled it suggests aggression<sup>139</sup>".

Machover spoke of tiny figures. "Micrographic figures are also encountered frequently in the deeply

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136 T. Schmidl-Waehner, "Formal Criteria For the Analysis of Children's Drawings", American Journal of Orthopsychiatry, Vol. 12, 1942, p. 98.

137 Peter Napoli, "Finger-Painting and Personality Diagnosis", Genetic Psychological Monographs, No. 34, 1946, p. 179.

138 T. S. Waehner, op. cit., p. 42.

139 Paula Elkisch, op. cit., p. 20.

repressed and neurotically depressed individuals<sup>140</sup>". Several researchers<sup>141,142</sup> have stated that a drawing should contain enough elements so that it is complete without being overcomplex and, on the other hand, it should not be oversimplified.

The appearance of shading and heavy reinforced lines has been discussed by several researchers. Waehner<sup>143</sup>, Alschuler and Hattwick<sup>144</sup>, and Machover<sup>145</sup>, have all stated that the appearance of this characteristic indicates an anxious, insecure, repressed individual and that this element is frequently seen in pathology.

To this point, in discussing the human figure drawing as a measuring instrument, it has been demonstrated that the self-concept is felt to be reflected in the drawing of the human figure, that the drawing of the human figure is sensitive to the emotional status of the individual. In addition, some methods of evaluation have been discussed. The question is now raised as to the accuracy of evaluation.

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140 Karen Machover, op. cit., p. 91.

141 Paula Elkisch, op. cit., p. 23.

142 Maria Brick, op. cit., p. 140.

143 T. S. Waehner, op. cit., p. 43.

144 R. H. Alschuler and W. Hattwick, Painting and Personality, op. cit., p. 157.

145 Karen Machover, op. cit., p. 98-99.

A study by Albee and Hamlin<sup>146</sup> showed the reliability for judgments by experienced scorers to be  $r .95$  at 1% l.o.c. Lehner and Gunderson<sup>147</sup> obtained a coefficient of  $.90$  consistency. Fisher and Fisher<sup>148</sup> obtained 80% agreement between raters for certain diagnostic signs. Page<sup>149</sup> and Precker<sup>150</sup> have reported similar findings.

#### 4.—The Experimental Method

The experimental process actually involves two separate but interrelated processes. One of these processes is the level of aspiration situation which makes use of the Rotter Aspiration Board. The other is the process that attempts to measure the effects of the experience on the self-concept. For this aspect of the study the Human Figure Drawing Test was used.

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<sup>146</sup> G. W. Albee and E. Hamlin, "An Investigation of the Reliability and Validity of Judgments Inferred from Drawings", Journal of Clinical Psychology, Vol. 5, 1949, p. 390.

<sup>147</sup> George F. J. Lehner and Eric K. Gunderson, "Reliability of Graphic Indices In a Projective Test (Draw a Person)", Journal of Clinical Psychology, Vol. 8, 1952, p. 125-128.

<sup>148</sup> Seymour Fisher and Rhoda Fisher, "Test of Certain Assumptions Regarding Figure Drawing Analysis", Journal of Abnormal and Social Psychology, Vol. 45, 1950, p. 727-732.

<sup>149</sup> Howard E. Page, loc. cit.

<sup>150</sup> Joseph A. Precker, "Painting and Drawing in Personality Assessment", Journal of Projective Techniques, Vol. 14, 1950, p. 262-286.

The experimental experience of the subject in chronological order is as follows: The subject was seated between two tables which were situated at approximately right angles. On one table were the following supplies: Several sheets of  $8\frac{1}{2}$ " by 11" white paper, and a standard pencil with an eraser. The other table contained the Rotter Aspiration Board. This arrangement made possible easy movement from one task to the other by having the subject pivot slightly in the chair. It was felt that this arrangement gave some physical continuity to the task.

The first step in the study was to ask the subject simply to "draw a person". After the subject completed this task, the drawing was removed from sight and the subject's attention was drawn to the Rotter Board. The Rotter Board, which is illustrated in the Appendix, is an oak board measuring  $38\frac{1}{4}$  inches in length, 2 inches in height, and 4 inches in width. There is a channel 1 inch deep and  $\frac{1}{4}$  and  $\frac{1}{16}$  inches wide in the center. In this channel are thirty-five holes which are  $\frac{3}{4}$  of an inch in diameter and  $\frac{1}{16}$  of an inch deep. The last nineteen holes are marked, from the front to the rear, with numbers from one through ten and then from nine descending to one again. The Board is operated by hitting a ball with a rod made from a  $\frac{1}{2}$  inch dowel 14 inches long. The ball then rolls through the channel and stops, generally at one of the numbers, after

being slowed by the first sixteen numbers which are unmarked. The hole in which the ball finally comes to rest determines the score. In order to increase the anxiety, ego involvement, and ego threat two variables were introduced. One of these variables consisted of using two balls, a heavier steel ball and a lighter marble ball. The other variable consisted of the use of a block at the far end of the Board which enabled the experimenter to raise or lower that end of the Board between one-quarter and one-half inch. The use of the steel ball and the higher setting made goal attainment considerably more difficult, if not impossible, since the angle of inclination frequently caused the ball to roll back out of the scoring position. Sears has remarked about the use of such techniques:

Experimentally induced success provides social norms for the individual which induce him to believe that he has been and is performing much better than average[. . .]similarly, experimentally induced failure provides a condition of insecurity for the subjects of all groups.<sup>151</sup>

Rotter<sup>152</sup> also recommended the introduction of such devices.

Facing the Rotter Board the subject was told that by using the stick as a billiard cue, the ball could be caused

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<sup>151</sup> Pauline S. Sears, "Level of Aspiration in Academically Successful and Unsuccessful Children", op. cit., p. 532.

<sup>152</sup> Julian B. Rotter, "Level of Aspiration As a Method of Studying Personality: II - Development and Evaluation of a Controlled Method", op. cit., p. 414.

to roll through the channel to one of the numbers. He was then given five practice trials and asked to try to get the 10, the highest score possible. During this practice period the Board was kept at the one-quarter inch position, and the marble ball was used. With this combination it was easy to attain quite a high score. The subject was then informed that he would have three attempts at the Board and that the final score would be a combination of the three sub-scores. It was pointed out that in three trials the highest possible score attainable was 30. The subject was then asked to estimate the best possible score he thought he could actually make. If necessary, the subject was given several examples to be sure he understood the instructions<sup>153</sup>. After the subject submitted an estimate, the aspirational situation was once again clarified by the experimenter saying, "You are going to try for X-score. We'll consider you successful if you get X-score or better and a failure if you get a lower score".<sup>154</sup> Once the estimate was made and the subject turned to the task, the ball and the height of the Board were altered in his presence. Once altered, the variables were retained for all three trials. However, for each situation the arrangements were changed following the estimate.

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153 This procedure is recommended in Ibid., p. 413.

154 These criteria of success and failure recommended in Donald K. Adams, loc. cit.

The following sequence of combinations of the variables was used: Practice - light ball and low position; first situation - heavy ball and high position; second situation - light ball and low position; third situation - light ball and high position; fourth situation - heavy ball and low position. The unexpected use of these variables in this unpredictable manner aroused much anxiety, as evidenced by many emotional outbursts and verbal reactions, and is felt to have contributed much toward the increased personal involvement on the part of the subjects.

Following the subject's efforts to attain the goal-bid and the computation of the final score for the situation, the subject was asked to evaluate his performance in terms of success or failure in attaining his goal. The evaluation given by the subject was used to provide an opportunity for the subject to further consider the outcome of his efforts and to provide continuity with the next step. This declaration was not used in the evaluation, for it was felt that defense mechanisms might come into play here. Once the subject made his declaration he was asked again to "draw a person".

The procedure of estimating a goal, performing, declaring success or failure, and drawing a person was continued until four level of aspiration experiences were completed and five drawings were obtained. It might be appropriate at this point to note that sequence experiences

are a basic feature of level of aspiration experiments. Furthermore, the human figure drawing has been used in a sequence measuring experience<sup>155</sup> quite successfully.

The total time involved in this phase of the study generally involved twenty to thirty minutes.

#### 5.-The Population

The aims of this study served as a guide in selecting the population. The characteristics of integration-disintegration are not alleged to be unique with a particular group. Rather, this phenomenon is felt to be a standard part of personality make-up and thus common to all people. The aims of this study seek to gather empirical evidence of this process. Thus, the population was selected on the basis of the characteristic as it would appear in a normal group and as it might appear in a group of people who would show a greater tendency to display such a reaction. The two groups into which the population fall, then, are a normal group and a group of psychoneurotic subjects. The selection of the psychoneurotic group is based upon suggestions in the literature which leads to the expectancy described above.

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<sup>155</sup> Muriel Franklin Margolis, "A Comparative Study of the Human Figure Drawing at Three Points in Therapy", Rorschach Research Exchange and Journal of Projective Techniques, Vol. 12, No. 1, 1948, p. 94-105.

The ego of the personality has a great need for approval. . . . .  
 . . . . . The mature and secure person has an inner core to his personality built up during childhood which gives him the feeling that he is potentially lovable. The immature, neurotic, or psychotic individual has an inner insecure core built out of feeling that he could not possibly be loved by anyone and in addition in many ways is unable to love himself.156

The anxiety in these situations causes the ego to increase its activities in terms of defense mechanisms.157

In the emotionally disturbed individual, whether he be psychoneurotic or of the personality disorder type, the ego is frequently limited in its strength and hampered in its activity by the presence of conflictual material.158

Fenichel presents the following picture:

Every individual has a breaking point. However in different persons the ease with which the point may be reached varies greatly. . . .] In persons with a neurotic disposition there is not only a quantitative impoverishment of the ego which permits stimuli to provoke traumatic situations, there is also a qualitative sensitization at certain points of complexes. Experience in the realm of the complexes tend to have traumatic effects. [. . .] 159

The picture thus created is that of an unspecific disintegration of the personality, in which the abolition of differentiations and the regression toward childish dependence are prominent.160

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156 O. Spurgeon English and Stuart M. Finch, op. cit., p. 68.

157 Ibid., p. 54.

158 Ibid., p. 37.

159 Otto Fenichel, op. cit., p. 122.

160 Ibid., p. 123.

In a more specific way latent neurotic dispositions may be mobilized by a trauma.<sup>161</sup>

The neurotic is less able to tolerate anxiety than the normal and quickly falls back on primitive defenses.<sup>162</sup>

Within the aims and expectancies of the experimental situation, with the occurrence of success and failure on the level of aspiration task, if the hypothesized integration-disintegration occurs, a small change should be seen in the normal group. Since the ego structure of the neurotic has less strength and tends to be morbid, a more severe disintegrative reaction to failure and a less integrative response to success is expected. By the organization of the population along these lines, if the expected changes occur, a rather dynamic picture of the integrative-disintegrative process should be obtained.

The population was broken down into two groups of twenty-four normals and twenty-four psychoneurotics. These groups were further subdivided into two sub-groups of twelve males and twelve females each. The psychoneurotic population was obtained from people coming into a community mental hygiene clinic. A breakdown of the psychiatric classifications may be seen in Table I. The tests were administered as part of the normal diagnostic work-up. The normal

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<sup>161</sup> Ibid., p. 123.

<sup>162</sup> Ibid., p. 119.

Table I. - Psychiatric Classification  
of Psychoneurotic Subjects.<sup>1</sup>

Diagnosis	Males Females	
Psychoneurosis, Anxiety Reaction	5	4
Psychoneurosis, Dissociative Reaction	0	1
Psychoneurosis, Conversion Reaction	4	2
Psychoneurosis, Phobic Reaction	1	1
Psychoneurosis, Obsessive-Compulsive Reaction	1	1
Psychoneurosis, Depressive Reaction	1	3

<sup>1</sup> Diagnosis and classification made by a psychiatric team in accordance with the descriptions given in Mental Disorders, Diagnostic and Statistical Manual, Washington, D.C., American Psychiatric Association, 1952, xii-130 p.

population was selected from the general population upon individual solicitation with the view toward matching in-so-far as possible the psychoneurotic population.

Population controls were used in the selection of subjects to insure the attainment of two fairly well matched groups. It was felt that this procedure was necessary so that there would be some degree of assurance that if the differences in degree occurred as expected, this difference would be due only to the personality factor and not to extraneous influences. To insure comparability of the groups several procedures were used. First, all subjects were given the Minnesota Multiphasic Personality Inventory. The T-score of 70 was used as the cut-off and the recommended signs of neurosis as the neurotic triad (Hs, D, Hy, and Pt)<sup>163</sup> was used to diagnose the psychoneurotic condition. All the subjects in the normal group scored within acceptable limits of normality. Furthermore, clinical diagnoses made by a psychiatric team were available for all psychoneurotic subjects.

The intelligence factor for the group was kept fairly similar by the administration of the Wechsler-Bellevue Adult Intelligence Scale, Form I. A breakdown of the results of this population control factor may be seen in Table II.

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<sup>163</sup> S. R. Hathaway and J. C. McKinley, Manual, Minnesota Multiphasic Personality Inventory, New York, Psychological Corporation, 1951, p. 25.

Table II. - Distribution of Wechsler-Bellevue Adult Intelligence Test (Form I) Scores.

Scale	Factor	Group					
		Normal			Psychoneurotic		
		Males	Fe- males	Com- bined	Males	Fe- males	Com- bined
Verbal	Mean	114	116	115	107	100	104
	Median	120	117	118	110	98	104
	Range	43	47	50	52	31	52
Perform- ance	Mean	110	108	109	109	105	107
	Median	111	111	111	108	104	106
	Range	35	39	44	44	33	44
Full	Mean	113	114	114	109	102	105
	Median	118	115	116	109	101	105
	Range	38	42	42	52	34	52

While the normal group was slightly higher than the neurotic group the differences between both groups were still within the same general intellectual range, that of high normal to bright normal people. In Table II it can be seen that there was slightly better coherence within each of the groups than between the groups. Within the normal group the mean verbal score for males was 114 while the mean verbal score for females was 116. The mean performance score for normal males was 110 and for normal females the mean performance score was 108. The full scale mean score for normal males was 113 and for the normal females the mean full scale score was 114. In the psychoneurotic group the mean verbal score for males was 107 and for females it was 100. The mean performance score for the psychoneurotic group was 109 for males and 105 for females. The full scale mean scores for psychoneurotic males was 109 and for psychoneurotic females it was 102. The differences between the groups is more apparent when the combined scores are compared. The mean combined verbal score was 115 for the normal group and 104 for the psychoneurotic group. The mean combined performance score for the normal group was 109 while the psychoneurotic group scored 107 for this factor. The full scale combined score was 114 for the normal group and 105 for the psychoneurotic group. The inter-group difference for the full scale scores was not felt to be so remarkable as to invalidate comparison of the groups.

An examination of Table III will show the groups to be quite coherent as concerns the age factor. Within the normal group the mean for the males was 31.2 years and the mean age of the females was 33 years. In the psychoneurotic group the mean age of the males was 30.8 years and the mean age of the females was 40 years. An inter-group comparison may be obtained by comparing the mean combined ages. For the normal group this was 32.1 years and for the psychoneurotic group this was 35.4 years. In regard to the age factor the groups were felt to be quite similar.

To compare the educational-socio-economic factors the rating scale devised by the Research Bureau of the Psychological Corporation was employed. This device rates five factors on a scale from zero to three. Thus, for education, if the individual had an eighth grade education or less he was rated zero, for some high school education without completion he received one credit, for a completed high school education and perhaps some post-high school or some college education he received two credits, while for a completed college education he received three credits. According to this classification system professionals, proprietors, and managers received three credits, sales or clerical workers two credits, craftsmen, foremen or operatives one credit, and service workers, domestics, and laborers zero credit. If the individual owned one new car or two cars he received

Table III. - Distribution of  
Ages of Population.

Group	Factor		
	Mean	Median	Range
<b>Normal</b>			
Male	31.2	30.5	27
Female	33.0	29.5	34
Combined	32.1	30.0	35
<b>Psycho- neurotic</b>			
Male	30.8	29.0	22
Female	40.0	41.0	30
Combined	35.4	33.0	32

three credits and for no car or a bought used one he received one credit. If the subject owned his own home he received two credits and if he rented a home one credit. A private telephone line received two credits, a party line received one credit, and no telephone received zero credit.

The distribution of education-socio-economic factors may be seen in Table IV. Examination of this table shows that there is a fair intra-group and inter-group consistency for phone, car, and home. However, the normal group slightly exceeds the psychoneurotic group in occupation and education. This difference is due primarily to the status of the normal female group. Nevertheless, the final total for the normal group is 9.5 and for the psychoneurotic group is 8.3. These groups are thus comparatively similar.

#### 6.-Treatment of the Data

The subject's estimate of future performance or bid on the Rotter Aspiration Board will be compared to the subsequent performance and if the achieved score is equal to or greater than the bid the subject's efforts will be rated successful. If, on the other hand, the performance ends in a total score for the three trials which is lower than the bid, the subject's efforts will be rated as a failure.

The drawings produced will be evaluated for the following formal characteristics: symmetry, space, rhythm

Table IV. - Educational, Socio-Economic Description of Population.<sup>1</sup>

Factor	Group					
	Normal			Psychoneurotic		
	Fe-	Com-		Fe-	Com-	
	Males	males	bined	Males	males	bined
Education	2.0	2.5	2.3	2.0	1.6	1.8
Occupation	2.3	2.8	2.5	1.8	2.0	1.9
Home	1.3	1.6	1.5	1.5	1.7	1.6
Car	1.8	2.2	2.0	2.0	1.8	1.9
Phone	.9	1.4	1.2	1.0	1.2	1.1
Totals	8.3	10.5	9.5	8.3	8.3	8.3

<sup>1</sup> Evaluations made by use of the scale organized for population control by the Research Bureau, Psychological Corporation. This scale rates the factors on a scale from zero to three. The above figures are mean scores for the specified group.

and rule, expansion and compression, complexity and simplicity, and shading. These scoring categories are defined as follows:

Symmetry is defined as the construction of the human figure which is essentially balanced. Symmetry contains some flexibility of position without being lopsided, awkward or diffuse at one extreme or rigidly centered at the other extreme<sup>164,165,166</sup>.

Space is defined as the area of the possible work surface used for the drawing. A healthy drawing should be fairly well proportioned and occupy about one-half to two-thirds of the page and be approximately centrally located<sup>167,168,169,170</sup>.

Elkisch<sup>171</sup> has defined rhythm and rule. Rhythm refers to use of a stroke which is flexible, relaxed, and reflects free movement. Rule refers to use of a stroke that reflects rigidity. Adjustment is characterized by rhythm over rule.

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164 Karen Machover, op. cit., p. 87-88.

165 T. Schmidl-Waehner, op. cit., p. 101.

166 Peter Napoli, op. cit., p. 179.

167 T. Schmidl-Waehner, op. cit., p. 98.

168 T. S. Waehner, op. cit., p. 41.

169 Maria Brick, op. cit., p. 141.

170 Karen Machover, op. cit., p. 89-92.

171 Paula Elkisch, op. cit., p. 35.

Expansion and compression can best be defined within the framework of the rules governing the use of space. Expansion is defined as the production of an oversized figure which takes on gigantic proportions or is of such size that but part of the figure can be presented within the available work area. Compression is defined as the production of a figure which utilizes distinctly less than one-half the available work area. Compression particularly refers to figures which are quite tiny and may even become microscopic in size<sup>172,173</sup>.

The normal figure tends to be rather complete from the point of view of anatomical characteristics, clothing and associated paraphernalia necessary to represent the figure in full<sup>174</sup>. If complexity is extended to the point where it includes extensive, belabored detailing, such as a scrollwork, the petals of a flower, or plaid print in clothing, it is considered as an unhealthy sign. Simplification is defined as reduction of a figure to its primitive or essential elements. Examples of simplification are the nude figure, partially clothed figure, transparencies, essential outline without obvious details as a belt or collar.

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172 Ibid., p. 20.

173 Karen Machover, op. cit., p. 89-92.

174 Paula Elkisch, op. cit., p. 21.

Shading is defined as the graphic reinforcement of the lines or the filling in of a portion so that it appears solid to some degree<sup>175</sup>.

The drawing produced by the subject is to be evaluated in terms of the formal drawing characteristics described above. In the evaluative process the first, or control drawing, serves only as a basis for comparing the second since the second theoretically represents any changes which may have occurred as an outcome of the first aspirational situation, while the control drawing merely represents the individual before the experiment. Each subsequent drawing will be compared to the earlier production and determination will be made as to integrative-disintegrative processes which may appear. The drawing will be rated as integrative if the total number of normal or integrative signs is greater than the total number of disintegrative signs. Conversely, a drawing will be rated disintegrative if the total number of disintegrative signs is greater than the total number of integrative signs.

The results of the level of aspiration tasks and the figure drawings will be compared for relationships and the hypothesis tested.

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<sup>175</sup> Karen Machover, Personality Projection in the Drawing of the Human Figure, ~~1949~~, p. 98-100.

## CHAPTER III

### THE FINDINGS

The data gathered in the course of exposing the subjects to the experimental situation have been organized in such a manner as to make possible comparison, analysis, and interpretation. The aim of this chapter is to present the raw data and the data after statistical procedures have been applied. It should be noted that while the original experimental plan indicated that only the actual findings, as compared to subject ratings, would be used in determining the experimental outcome, treatment of subject ratings is also presented below. Inclusion of this material was based primarily upon the need to validate the assumption that subject ratings would be too strongly influenced by defenses to be of value. However, it was also felt that presentation of this material would be of value in the final interpretation of the findings.

The data gathered in the course of the experiment are divided into two sections. The first section concerns itself with information related to the hypothesis, i.e. that failure in the level of aspiration situation would result in disintegration of the self-concept while success would lead to integration of the self-concept, and that these changes would be measurable through the human figure drawing. The

second section deals with additional information which relates to the basic methods of evaluating the data and provides additional understanding of the findings.

### 1.-Experimental Findings

The discussion of the experimental findings is divided into sub-groupings. The first of these groupings presents the experimental raw data and then the raw data as percentages for easier comparison. The second sub-grouping presents an evaluation of the experimentally determined results while the third sub-grouping attempts to present the findings from a point of view of relationship between the variables.

The raw data are presented in two sets of tables. The first of these sets presents the data classified according to the actual aspirational task performance, i.e. if the subject actually succeeded in attaining or surpassing the set goal. The second of these sets of tables presents the same information classified according to subject ratings of success or failure at attaining the goal.

An examination of Table V will disclose the frequency and distribution of integrative and disintegrative drawings under the categories of actual success or failure for the normal male and female populations. In addition to these classifications the information is presented according

Table V. - Raw Frequency Distribution of Integrative-Disintegrative Drawings Classified by Actual Success or Failure of Aspirational Performance on Successive Aspirational Experiences of the Normal Population.

Group	Aspirational Experience	Success		Failure	
		Integra- tive	Disinte- grative	Integra- tive	Disinte- grative
Normal Males	1st	1	1	1	9
	2nd	2	1	5	4
	3rd	0	1	1	10
	4th	1	1	2	8
Normal Females	1st	0	0	1	11
	2nd	3	0	3	6
	3rd	2	1	4	5
	4th	4	1	4	3
Combined Normal Males and Females	1st	1	1	2	20
	2nd	5	1	8	10
	3rd	2	2	5	15
	4th	5	2	6	11

to the sequence of aspiration experiences since, it will be remembered, the first and third experiences are more prone to failure and the second and fourth experiences lend themselves more readily to success. In this table the most noticeable aspect of the distribution is that the preponderance of aspirational experiences ended in failure though it was slightly less so in the second and fourth experiences. While the proportions were somewhat consistent for males and females, the females tended to gain more successes as they progressed while the males remained more or less the same.

The raw frequency distribution for the psychoneurotic male and female populations is found in Table VI. The distribution of integrative and disintegrative drawings for this group, which is classified in the same manner as Table V, shows an almost identical arrangement of results as the normal population. Thus, in the first aspirational experience the normal groups had 2 successes and 22 failures while the psychoneurotic group had 1 success and 23 failures. In the second aspirational experience the normal group produced 6 successes and 18 failures while the psychoneurotic group had 7 successes and 17 failures. The third aspirational experience ended in 4 successes for the normal group and 20 failures while the psychoneurotic group also had 4 successes and 20 failures. In the fourth aspirational experience the normal group had 7 successes and 17 failures while

Table VI. - Raw Frequency Distribution of Integrative-Disintegrative Drawings Classified by Actual Success or Failure of Aspirational Performance on Successive Aspirational Experiences of the Psychoneurotic Population.

Group	Aspirational Experience	Success		Failure	
		Integrative	Disintegrative	Integrative	Disintegrative
Psychoneurotic Males	1st	0	0	1	11
	2nd	1	1	1	9
	3rd	0	1	0	11
	4th	1	1	0	10
Psychoneurotic Females	1st	0	1	3	8
	2nd	2	3	0	7
	3rd	1	2	0	9
	4th	3	1	0	8
Combined Psychoneurotic Males and Females	1st	0	1	4	19
	2nd	3	4	1	16
	3rd	1	3	0	20
	4th	4	2	0	18

the psychoneurotic group had 6 successes and 18 failures. The similarity of these two groups extends further. The normal males had a total of 8 successes and 40 failures and the psychoneurotic males had 5 successes and 43 failures. The normal females had 11 successes and 37 failures while the psychoneurotic females had 12 successes and 36 failures. Once again the slightly greater feminine achievement of success is pointed out.

Though the normal and psychoneurotic groups were seen to be quite similar in the distribution of aspirational successes and failures, the distribution of integrative and disintegrative drawings presents some differences. From Table VII it can be seen that the normal group produced a total of 13 integrative drawings and 6 disintegrative drawings in response to successful aspirational experiences and 21 integrative and 56 disintegrative drawings in response to failure aspirational experiences. In comparison, the psychoneurotic group produced a total of 8 integrative drawings and 10 disintegrative drawings in response to successful aspirational experiences and 5 integrative and 73 disintegrative drawings in response to failure aspirational experiences. While combining the groups masks some of the differences, nevertheless some interesting totals appear. The grand total of the combined groups shows 21 integrative and 16 disintegrative drawings in response to

Table VII. - Raw Frequency Distribution of Integrative-Disintegrative Drawings Classified by Actual Success or Failure of Aspirational Performance by Various Subgroups of the Total Population.

Group	Success		Failure	
	Integra- tive	Disinte- grative	Integra- tive	Disinte- grative
Normal Males	4	4	9	31
Normal Females	9	2	12	25
Combined Normal Males and Females	13	6	21	56
Psychoneurotic Males	2	3	2	41
Psychoneurotic Females	6	7	3	32
Combined Psychoneurotic Males and Females	8	10	5	73
Normal and Psychoneurotic Males	6	7	11	72
Normal and Psychoneurotic Females	15	9	15	57
Combined Normal and Psychoneurotic Males and Females	21	16	26	129

successful aspirational experiences and 26 integrative and 129 disintegrative drawings in response to failure aspirational experiences.

Further examination of Table VII shows that the female subjects tended to produce more integrative drawings following success than did the male subjects. This is particularly true of the normal female subjects.

The comparative data to that presented above is given in Tables VIII, IX, and X classified according to subject ratings of success or failure. The following discussion of the data compares Table VIII and Table IX.

A breakdown of the drawings using the subject's rating as a classification criteria shows that on the first aspirational experience the normal group had a total of 12 successes and 12 failures while the psychoneurotic group had 7 successes and 17 failures. On the second aspirational experience the normal group had a total of 18 successes and 6 failures while the psychoneurotic group had a total of 11 successes and 13 failures. As a result of the third aspirational experience the normal group had a total of 12 successes and 12 failures while the psychoneurotic group had 7 successes and 17 failures. On the fourth aspirational experience the normal group had a total of 13 successes and 11 failures and the psychoneurotic group had the same number of successes and failures.

Table VIII. - Raw Frequency Distribution of Integrative-Disintegrative Drawings Classified by Rated Success or Failure of Aspirational Performance on Successive Aspirational Experiences of the Normal Population.

Group	Aspirational Experience	Success		Failure	
		Integra- tive	Disinte- grative	Integra- tive	Disinte- grative
Normal Males	1st	4	4	1	3
	2nd	3	5	1	3
	3rd	1	3	1	7
	4th	4	1	1	6
Normal Females	1st	4	0	4	4
	2nd	5	5	1	1
	3rd	2	6	1	3
	4th	6	2	2	2
Combined Normal Males and Females	1st	8	4	5	7
	2nd	8	10	2	4
	3rd	3	9	2	10
	4th	10	3	3	8

Table IX. - Raw Frequency Distribution of Integrative-Disintegrative Drawings Classified by Rated Success or Failure of Aspirational Performance on Successive Aspirational Experiences of the Psychoneurotic Population.

Group	Aspirational Experience	Success		Failure	
		Integrative	Disintegrative	Integrative	Disintegrative
Psycho-neurotic Males	1st	2	3	1	6
	2nd	2	4	2	4
	3rd	0	3	0	9
	4th	2	4	0	6
Psycho-neurotic Females	1st	1	1	0	10
	2nd	1	4	1	6
	3rd	0	4	0	8
	4th	1	4	2	5
Combined Psycho-neurotic Males and Females	1st	3	4	1	16
	2nd	3	8	3	10
	3rd	0	7	0	17
	4th	3	8	2	11

In a further comparison of the distribution of data for the normal group, given on Table VIII, with that of the psychoneurotic group, given on Table IX, attention is drawn to the following results. The distribution of integrative-disintegrative drawings classified by the subjects' ratings is distinctly different than the distribution classified by actual performance as described above. In the first aspirational experience the normal group produced a total of 8 integrative and 4 disintegrative drawings in response to aspirational success and 5 integrative and 7 disintegrative drawings in response to aspirational failure. On the first aspirational experience the psychoneurotic group produced 3 integrative and 4 disintegrative drawings after aspirational success and 1 integrative and 16 disintegrative drawings after aspirational failure. As a result of success on the second aspirational experience the normal group drew 8 integrative and 10 disintegrative pictures while after failure they drew 2 integrative and 4 disintegrative drawings. On the second aspirational experience the psychoneurotic group drew 3 integrative and 8 disintegrative pictures after success and 3 integrative and 10 disintegrative drawings after aspirational failure. Following the third aspirational experience the normal group produced 3 integrative and 9 disintegrative drawings in response to aspirational success and 2 integrative and 10 disintegrative drawings after failure.

The third aspirational experience for the psychoneurotic group resulted in 0 integrative and 7 disintegrative drawings after success and 0 integrative and 17 disintegrative after aspirational failure. Following the fourth aspirational experience the normal group made 10 integrative and 3 disintegrative drawings after success and 3 integrative and 8 disintegrative after failure. The psychoneurotic group produced 3 integrative and 8 disintegrative drawings after success and 2 integrative and 11 disintegrative drawings after failure on the fourth aspirational experience.

The differences between the distributions classified according to the actual performance criteria or the subjects' rating criteria may be more easily seen when Table X is compared to Table VII which was described earlier. It will be recalled that on Table VII the tendency for the total combined groups was toward more integrative drawings after aspirational success and more disintegrative drawings after aspirational failure. From Table X it can be seen that there are more disintegrative than integrative drawings following both success and failure.

In order to bring the data into sharp focus and thus facilitate comparison and analysis, the raw data has been converted to percentages. The presentation of this data follows the same general sequence as that followed in the discussion of the raw data, i.e. a discussion of the results

Table X. - Raw Frequency Distribution of Integrative-Disintegrative Drawings Classified by Rated Success or Failure of Aspirational Performance by Various Subgroups of the Total Population.

Group	Success		Failure	
	Integrative	Disintegrative	Integrative	Disintegrative
Normal Males	12	13	4	19
Normal Females	17	13	8	10
Combined Normal Males and Females	29	26	12	29
Psychoneurotic Males	6	14	3	25
Psychoneurotic Females	3	13	3	29
Combined Psychoneurotic Males and Females	9	27	6	54
Normal and Psychoneurotic Males	18	27	7	44
Normal and Psychoneurotic Females	20	26	11	39
Combined Normal and Psychoneurotic Males and Females	38	53	18	83

under the categories of actual versus rated performance outcome and, within these groupings, a discussion first of the data by the sequence of aspirational experiences for the various subgroups before the data is combined and discussed as a whole.

The percentage of responses of integrative or disintegrative drawings to success or failure in the aspirational situation for the normal male population is shown in Table XI. An examination of this table clearly shows that an average of 16.6% of this population succeeded in their aspirational attempts while an average of 83.3% of the aspirational attempts ended in failure. An examination of the "easier", i.e. the second and fourth experiences, with the "harder", i.e. the first and third experiences, shows that in the "easier" an average of 20.8% succeeded and 79.2% failed while on the "harder" experiences an average of 12.4% succeeded and 87.5% failed. On the whole, this group responded to successful aspirational experiences by producing an average of 41.6% integrative drawings and 58.3% disintegrative drawings. They responded to failure with an average of 23.3% integrative drawings and 76.3% disintegrative drawings.

The distribution of similar data for the normal female population may be found in Table XII. From this table it may be seen that this group succeeded an average of 22.9% and failed an average of 77.1%. If these figures are

Table XI. - A Comparison of Actual Aspirational Performance with Drawing Response of the Normal Male Group on Successive Aspirational Experiences Expressed in Percentage.

Aspirational Experience	Aspirational Performance	%	Drawing	
			Integrative	Disintegrative
			%	%
1st	Success	16.6	50.0	50.0
	Failure	83.4	10.0	90.0
2nd	Success	25.0	66.6	33.3
	Failure	75.0	55.5	44.4
3rd	Success	8.3	0.0	100.0
	Failure	91.7	9.0	91.0
4th	Success	16.6	50.0	50.0
	Failure	83.4	20.0	80.0
Average Success		16.6	41.6	58.3
Average Failure		83.3	23.3	76.3

Table XII. - A Comparison of Actual Aspirational Performance with Drawing Response of the Normal Female Group on Successive Aspirational Experiences Expressed in Percentage.

Aspirational Experience	Aspirational Performance	%	Drawing	
			Integrative	Disintegrative
			%	%
1st	Success	0.0	0.0	0.0
	Failure	100.0	8.3	91.7
2nd	Success	25.0	100.0	0.0
	Failure	75.0	33.3	66.6
3rd	Success	25.0	66.6	33.3
	Failure	75.0	44.4	55.5
4th	Success	41.6	80.0	20.0
	Failure	58.4	57.0	43.0
Average Success		22.9	82.2	17.7
Average Failure		77.1	35.7	64.2

broken down into the "easier" and "harder" experiences it will be seen that the population achieved an average of 33.3% success and 66.7% failure on the "easier" experiences and 12.5% success and 87.5% failure on the "harder" experiences. A study of the distribution of integrative-disintegrative drawings shows that in response to successful aspirational experiences this group produced an average of 82.2% integrative and 17.7% disintegrative drawings while in response to failure in the aspirational experience they produced 35.7% integrative and 64.2% disintegrative drawings. This data proves of further interest if the occurrence of integrative-disintegrative drawings are broken down further. In a comparison of the "easier" and "harder" aspirational experiences it may be seen following success the group produced an average of 90% integrative and 16.6% disintegrative drawings while after the "harder" experiences they produced 33.3% integrative drawings and 10% disintegrative drawings. Following aspirational failure the normal female group produced an average of 45.1% integrative and 54.3% disintegrative drawings after the "easier" experiences and 26.3% integrative and 73.6% disintegrative drawings following the "harder" experiences.

The results of the actual aspirational success or failure in terms of integrative-disintegrative drawings for the combined normal male and female population is shown in

Table XIII. This breakdown shows, as did the earlier one, that a far greater percentage of this group failed than succeeded. There is an average of 19.7% success and 80.2% failure for the combined normal population. It is of interest to note that as a result of the "harder" experiences an average of 12.5% succeeded and 87.5% failed, while as a result of the "easier" experiences 27% succeeded and 73% failed. An examination of the distribution of integrative and disintegrative drawings shows that following the successful aspirational experiences the normal population produced an average of 63.5% integrative drawings and 36.5% disintegrative drawings. Following the failure aspirational experiences the combined normal male and female groups produced an average of 28.3% integrative and 71.6% disintegrative drawings. As found previously, a breakdown of the findings by "easier" and "harder" experiences proves most interesting. Following success on the "easier" experiences the group produced an average of 77% integrative and 23% disintegrative drawings, while after the "harder" aspirational experiences they produced 50% integrative and 50% disintegrative drawings. After failure on the "easier" experiences it was found that there was 39.7% integrative and 60.2% disintegrative drawings, while following failure on the "harder" aspirational experiences there occurred 17% integrative and 83% disintegrative drawings.

Table XIII. - A Comparison of Actual Aspirational Performance with Drawing Response of the Combined Normal Male and Female Groups on Successive Aspirational Experiences Expressed in Percentage.

Aspirational Experience	Aspirational Performance	%	Drawing	
			Integrative %	Disintegrative %
1st	Success	8.0	50.0	50.0
	Failure	92.0	9.0	91.0
2nd	Success	25.0	83.0	17.0
	Failure	75.0	44.4	55.5
3rd	Success	17.0	50.0	50.0
	Failure	83.0	25.0	75.0
4th	Success	29.0	71.0	29.0
	Failure	71.0	35.0	65.0
Average Success		19.7	63.5	36.5
Average Failure		80.2	28.3	71.6

Similar data to that discussed above for the psychoneurotic population are embodied in Tables XIV, XV, and XVI. The psychoneurotic male group is covered in Table XIV. An examination of this data shows that the psychoneurotic male group succeeded an average of 10.3% and failed an average of 89.6% in the aspirational situations. A breakdown of the data into aspirational experiences shows that they succeeded an average of 16.6% and failed an average of 83.4% on the "easier" experiences, while this psychoneurotic male group attained an average of 4.1% successes and an average of 95.8% failures on the "harder" experiences.

The distribution of integrative-disintegrative drawings, as shown in Table XIV, reveals that following successful aspirational experiences the psychoneurotic male group produced an average of 33.3% integrative and 66.6% disintegrative drawings. Following failure they produced an average of 4.5% integrative and 95.4% disintegrative drawings. A further subdivision of this data into "easier" and "harder" aspirational experiences shows that after the "easier" experiences this group reacted to success with an average of 50% integrative and 50% disintegrative drawings, while after the "harder" experiences they produced no integrative drawings and all disintegrative drawings. On the other hand, failure on the "easier" experiences resulted in an average of 5% integrative and 95% disintegrative drawings, and after

Table XIV. - A Comparison of Actual Aspirational Performance with Drawing Response of the Psychoneurotic Male Group on Successive Aspirational Experiences Expressed in Percentage.

Aspirational Experience	Aspirational Performance	%	Drawing	
			Integrative	Disintegrative
			%	%
1st	Success	0.0	0.0	0.0
	Failure	100.0	8.3	91.7
2nd	Success	16.6	50.0	50.0
	Failure	83.4	10.0	90.0
3rd	Success	8.3	0.0	100.0
	Failure	91.7	0.0	100.0
4th	Success	16.6	50.0	50.0
	Failure	83.4	0.0	100.0
Average Success		10.3	33.3	66.6
Average Failure		89.6	4.5	95.4

the "harder" experiences they responded with an average of 4.1% integrative and 95.8% disintegrative drawings.

A percentage presentation of the frequency distribution for the psychoneurotic female group is given in Table XV. From this table it may be seen that this group succeeded an average of 27% and failed an average of 72.7%. There are some differences when the data is broken down into "easier" and "harder" trials. On the "easier" trials they experienced an average of 37.5% and failed an average of 62.4%, while on the "harder" experiences they succeeded an average of 16.6% and failed an average of 83.3%.

A study of the distribution of integrative and disintegrative drawings, as given in Table XV, shows that following aspirational success the psychoneurotic females produced an average of 37% integrative and 62.9% disintegrative drawings. Following aspirational failure this group responded with 6.7% integrative and 93.2% disintegrative drawings. In a comparison of the "easier" versus the "harder" aspirational experiences it may be seen that following success on the "easier" experiences this group produced an average of 57% integrative drawings and 42.5% disintegrative drawings. Success on the "harder" experiences was followed by an average of 16.6% integrative and 83.3% disintegrative drawings. Failure on the "easier" experiences was followed by 0% integrative and 100% disintegrative

Table XV. - A Comparison of Actual Aspirational Performance with Drawing Response of the Psychoneurotic Female Group on Successive Aspirational Experiences Expressed in Percentage.

Aspirational Experience	Aspirational Performance	%	Drawing	
			Integrative	Disintegrative
			%	%
1st	Success	8.3	0.0	100.0
	Failure	91.7	27.0	73.0
2nd	Success	41.7	40.0	60.0
	Failure	58.3	0.0	100.0
3rd	Success	25.0	33.3	66.6
	Failure	75.0	0.0	100.0
4th	Success	33.3	75.0	25.0
	Failure	66.6	0.0	100.0
Average Success		27.0	37.0	62.9
Average Failure		72.7	6.7	93.2

drawings, while failure on the "harder" experiences was followed by an average of 13.5% integrative and 86.5% disintegrative drawings.

The data for the combined psychoneurotic male and female groups are shown in Table XVI. The combined neurotic group had an average of 18.7% success and 81.2% failure on the aspirational experiences. The "easier" aspirational experiences resulted in an average of 27% success and 73% failure, while the "harder" aspirational experiences resulted in an average of 10.5% success and 89.5% failure.

The distribution of integrative-disintegrative drawings for the combined psychoneurotic male and female groups is also shown in Table XVI. Here it can be seen that aspirational success was followed by an average of 33.6% integrative and 66.3% disintegrative drawings, while aspirational failure was followed by an average of 5.7% integrative drawings and 94.2% disintegrative drawings. An examination of the "easier" and "harder" aspirational experiences shows that after success on the "easier" experiences this combined group produced an average of 54.8% integrative and 45.1% disintegrative drawings, while failure on the "easier" experiences was followed by an average of 3% integrative and 97% disintegrative drawings. Success on the "harder" aspirational experiences was followed by an average of 12.5% integrative and 87.5% disintegrative drawings, while failure

Table XVI. - A Comparison of Actual Aspirational Performance with Drawing Response of the Combined Psycho-neurotic Male and Female Groups on Successive Aspirational Experiences Expressed in Percentage.

Aspirational Experience	Aspirational Performance	%	Drawing	
			Integrative	Disintegrative
			%	%
1st	Success	4.0	0.0	100.0
	Failure	96.0	17.0	83.0
2nd	Success	29.0	43.0	57.0
	Failure	71.0	6.0	94.0
3rd	Success	17.0	25.0	75.0
	Failure	83.0	0.0	100.0
4th	Success	25.0	66.6	33.3
	Failure	75.0	0.0	100.0
Average Success		18.7	33.6	66.3
Average Failure		81.2	5.7	94.2

on the "harder" experiences was followed by an average of 8.5% integrative and 91% disintegrative drawings.

In keeping with the plan of presenting the data from the viewpoints of actual aspirational performance and subject's ratings of aspirational success or failure, the information just presented above is shown on Table XVII through Table XXII reclassified according to subject ratings.

The data on aspirational and drawing behavior classified by subject rating for the normal male group is shown on Table XVII. From this table it can be seen that an average of 52.1% succeeded and 47.8% failed on the aspirational experiences. The "easier" experiences resulted in an average of 54.3% success and 45.6% failure, while the "harder" experiences resulted in an average of 49.9% success and 49.9% failure.

The distribution of integrative-disintegrative drawings is as follows. After success an average of 48.1% integrative and 51.9% disintegrative drawings were presented, while after failure an average of 19.1% integrative and 80.8% disintegrative drawings were produced. A further breakdown of the data shows that on the "easier" aspirational experiences success was followed by an average of 58.7% integrative and 41.3% disintegrative drawings, while failure was followed by an average of 19.6% integrative and 80.4% disintegrative drawings. On the "harder" aspirational

Table XVII. - A Comparison of Aspirational Performance Ratings of the Normal Male Group with Drawing Response on Successive Aspirational Experiences Expressed in Percentage.

Aspirational Experience	Aspirational Performance	%	Drawing	
			Integrative %	Disintegrative %
1st	Success	66.6	50.0	50.0
	Failure	33.3	25.0	75.0
2nd	Success	66.6	37.4	62.6
	Failure	33.3	25.0	75.0
3rd	Success	33.3	25.0	75.0
	Failure	66.6	12.5	87.5
4th	Success	42.0	80.0	20.0
	Failure	58.0	14.2	85.8
Average Success		52.1	48.1	51.9
Average Failure		47.8	19.1	80.8

experiences success resulted in an average of 37.5% integrative and 62.5% disintegrative drawings, while failure was followed by an average of 18.7% integrative and 81.2% disintegrative drawings.

The distribution of data according to the normal female group ratings of aspirational success and failure is shown in Table XVIII. This table shows that the group experienced an average of 62.4% success and 37.4% failure. The "easier" aspirational experiences resulted in an average of 74.9% success and 24.9% failure, while the "harder" experiences resulted in an average of 49.9% success and 49.9% failure.

An examination of Table XVIII shows that following aspirational success the normal female group presented an average of 62.2% integrative and 37.5% disintegrative drawings, while after failure they produced an average of 43.7% integrative and 56.2% disintegrative drawings. On the "easier" aspirational experiences success was followed by an average of 62.5% integrative and 37.5% disintegrative drawings, while failure was followed by an average of 50% integrative and 50% disintegrative drawings. Successful performance on the "harder" aspirational experiences was followed by an average of 62.5% integrative and 37.5% disintegrative drawings, and failure on the "harder" experiences brought forth an average of 37.5% integrative and 62.5% disintegrative drawings.

Table XVIII. - A Comparison of Aspirational Performance Ratings of the Normal Female Group with Drawing Response on Successive Aspirational Experiences Expressed in Percentage.

Aspirational Experience	Aspirational Performance	%	Drawing	
			Integrative %	Disintegrative %
1st	Success	33.3	100.0	0.0
	Failure	66.6	50.0	50.0
2nd	Success	83.3	50.0	50.0
	Failure	16.6	50.0	50.0
3rd	Success	66.6	25.0	75.0
	Failure	33.3	25.0	75.0
4th	Success	66.6	75.0	25.0
	Failure	33.3	50.0	50.0
Average Success		62.4	62.2	37.5
Average Failure		37.4	43.7	56.2

The experimental behavior of the combined normal male and female groups classified by the subject's rating of aspirational success or failure is shown in Table XIX. This distribution shows that the combined normal group experienced an average of 57% success and 42% failure. It is interesting to note that the combined group had an average of 50% success and 50% failure on the "harder" trials, but an average of 64.5% success and 35.5% failure on the "easier" aspirational experiences.

The distribution of integrative and disintegrative drawings shows that following aspirational success an average of 53.2% integrative and 46.7% disintegrative drawings were produced, while following aspirational failure an average of 29.6% integrative and 70.3% disintegrative drawings were produced. A further reclassification of the data shows that on the "easier" aspirational experiences success was followed by an average of 60.6% integrative and 39.3% disintegrative drawings, while failure was followed by an average of 30.2% integrative and 69.7% disintegrative drawings. On the "harder" aspirational experiences success was followed by an average of 45.8% integrative and 54.1% disintegrative drawings, while after failure an average of 29.1% integrative and 70.9% disintegrative drawings were produced.

The distribution of data for the psychoneurotic male group classified by subject rating of aspirational success

Table XIX. - A comparison of Aspirational Performance Ratings of the Combined Normal Male and Female Groups with Drawing Response on Successive Aspirational Experiences Expressed in Percentage.

Aspirational Experience	Aspirational Performance	%	Drawing	
			Integrative	Disintegrative
			%	%
1st	Success	50.0	66.6	33.3
	Failure	50.0	41.6	58.4
2nd	Success	75.0	44.4	55.5
	Failure	25.0	33.3	66.6
3rd	Success	50.0	25.0	75.0
	Failure	50.0	16.6	83.4
4th	Success	54.0	76.9	23.1
	Failure	46.0	27.2	72.8
Average Success		57.0	53.2	46.7
Average Failure		42.0	29.6	70.3

or failure is to be found in Table XX. An examination of this table shows that this group had an average success of 16.7% and an average failure of 58.2%. The "easier" aspirational experiences resulted in an average of 50% for both success and failure, while on the "harder" trials there was an average of 33.5% success and 66.5% failure.

A study of the distribution of integrative and disintegrative drawings shows that following success there was produced an average of 26.6% integrative and 73.3% disintegrative drawings. Compared to this there was an average of 12.2% integrative and 87.7% disintegrative drawings produced after failure. On the "easier" trials success was followed by an average of 33.3% integrative and 66.6% disintegrative drawings, while failure was followed by an average of 16.6% integrative and 83.3% disintegrative drawings. On the "harder" trials success was followed by an average of 20% integrative and 80% disintegrative drawings, while failure was followed by an average of 8.3% integrative and 91.7% disintegrative drawings.

The data classified by the subject's rating for the psychoneurotic female group is shown in Table XXI. Here it may be seen that this group experienced success an average of 33.5% and failure an average of 66.4% of the time. The "easier" experiences gave rise to success an average of 58%, while the "harder" experiences resulted in success an

Table XX. - A Comparison of Aspirational Performance Ratings of the Psychoneurotic Male Group with Drawing Response on Successive Aspirational Experiences Expressed in Percentage.

Aspirational Experience	Aspirational Performance	%	Drawing	
			Integrative	Disintegrative
			%	%
1st	Success	42.0	40.0	60.0
	Failure	58.0	16.6	83.4
2nd	Success	50.0	33.3	66.6
	Failure	50.0	33.3	66.6
3rd	Success	25.0	0.0	100.0
	Failure	75.0	0.0	100.0
4th	Success	50.0	33.3	66.6
	Failure	50.0	0.0	100.0
Average Success		41.7	26.6	73.3
Average Failure		58.2	12.2	87.7

Table XXI. - A Comparison of Aspirational Performance Ratings of the Psychoneurotic Female Group with Drawing Response on Successive Aspirational Experiences Expressed in Percentage.

Aspirational Experience	Aspirational Performance	%	Drawing	
			Integrative	Disintegrative
			%	%
1st	Success	17.0	50.0	50.0
	Failure	83.0	0.0	100.0
2nd	Success	42.0	20.0	80.0
	Failure	58.0	14.2	85.8
3rd	Success	33.3	0.0	100.0
	Failure	66.6	0.0	100.0
4th	Success	42.0	20.0	80.0
	Failure	58.0	28.5	71.5
Average Success		33.5	22.0	77.0
Average Failure		66.4	10.6	89.3

average of 25.1% and failure an average of 74.8%. As this table shows, after success the group produced an average of 22% integrative and 77% disintegrative drawings, while after failure there was an average of 10.6% integrative and 89.3% disintegrative drawings. On the "easier" trials success was followed by an average of 20% integrative and 80% disintegrative drawings, while after failure there was an average of 21.3% integrative and 78.6% disintegrative drawings. On the "harder" trials, after success there was an average of 25% integrative and 75% disintegrative drawings, while failure was followed by an average of 0% integrative and 100% disintegrative drawings.

The distribution of the data classified by the subject's rating of aspirational success or failure for the combined psychoneurotic male and female groups is shown in Table XXII. From this table it can be seen that this group experienced success an average of 37.8% and failure an average of 61.4% of the aspirational situations. There was a slightly greater tendency toward success on the "easier" experiences with success occurring an average of 46% and failure an average of 54% of the time. In comparison, on the "harder" experiences the group had an average of 29.1% successes and 70.9% failures.

A study of the distribution of integrative and disintegrative drawings shows that after success an average

Table XXII. - A Comparison of Aspirational Performance Ratings of the Combined Psychoneurotic Male and Female Groups with Drawing Response on Successive Aspirational Experiences Expressed in Percentage.

Aspirational Experience	Aspirational Performance	%	Drawing	
			Integrative	Disintegrative
			%	%
1st	Success	29.2	42.8	57.2
	Failure	70.8	5.8	94.2
2nd	Success	46.0	27.2	72.8
	Failure	54.0	23.0	77.0
3rd	Success	29.0	0.0	100.0
	Failure	71.0	0.0	100.0
4th	Success	46.0	27.2	72.8
	Failure	54.0	15.3	84.7
Average Success		37.8	24.3	75.7
Average Failure		61.4	11.0	88.9

of 24.3% integrative and 75.7% disintegrative drawings were produced, while following failure an average of 11% integrative and 88.9% disintegrative drawings were offered. Examination of the "easier" trials shows that success here was followed by an average of 27.2% integrative and 72.8% disintegrative drawings, while failure was followed by an average of 19.1% integrative and 80.8% disintegrative drawings. On the "harder" experiences success was followed by an average of 24.3% integrative and 75.7% disintegrative drawings, while failure was followed by an average of 11% integrative and 88.9% disintegrative drawings.

The results of the various aspirational experiences are shown in combined form in Table XXIII through Table XXVIII. Thus, the following discussion deals with the total of all four aspirational experiences and the total of the subsequent drawings.

The distribution of data for the normal group classified by actual aspirational success or failure is shown in Table XXIII. Here it can be seen that the normal population experienced failure about four times as often as success or 80.2% as compared to 19.8%. The normal females experienced success slightly more often than the males or 22.9% as compared to 16.7%. The tendency for the combined normal group was to produce integrative drawings following success, i.e. 68.4% integrative to 31.6% disintegrative

Table XXIII. - A Comparison of Total Actual Aspirational Performance with Drawing Response of the Various Normal Population Groupings Expressed in Percentage.

Group	Performance	%	Drawing	
			Integra- tive %	Disinte- grative %
Normal Males	Success	16.7	50.0	50.0
	Failure	83.3	22.5	77.5
Normal Females	Success	22.9	81.8	18.2
	Failure	77.1	32.4	67.6
Combined Normal Males and Females	Success	19.8	68.4	31.6
	Failure	80.2	27.3	72.7

drawings, and to produce disintegrative drawings after failure, i.e. 27.3% integrative and 72.7% disintegrative drawings. This tendency is somewhat more clear in the normal female group than the male group.

The distribution of actual aspirational performance data for the psychoneurotic population is gathered in Table XXIV. Generally, the incidence of success and failure for the combined psychoneurotic group is quite similar to the combined normal population. Thus, the neurotics experienced 18.7% success compared to the normal 19.8% success, and the psychoneurotics had 81.3% failure compared to the normal group's 80.2% failure. There is a slight difference between the various male and female groups in terms of success and failure. The psychoneurotic males did not quite experience as much success as did the normal males, i.e. 10.4% compared to 16.7%, though the neurotic females did have a slightly greater incidence, i.e. 27.1% compared to 22.9%. Unlike the normal population, there is not quite the same tendency to produce the same flow of integrative and disintegrative drawings. While the combined psychoneurotic male and female groups produced more disintegrative than integrative drawings after failure, i.e. 6.4% integrative and 93.6% disintegrative, unlike the normal group the psychoneurotics produced slightly more disintegrative than integrative drawings after success, i.e. 44.4% integrative and

Table XXIV. - A Comparison of Total Actual Aspirational Performance with Drawing Response of the Various Psychoneurotic Population Groupings Expressed in Percentage.

Group	Performance	%	Drawing	
			Integra- tive %	Disinte- grative %
Psychoneurotic Males	Success	10.4	40.0	60.0
	Failure	89.6	4.6	95.4
Psychoneurotic Females	Success	27.1	46.1	53.9
	Failure	72.9	8.6	91.4
Combined Psycho- neurotic Males and Females	Success	18.7	44.4	55.5
	Failure	81.3	6.4	93.6

55.5% disintegrative. The same relative proportional distributions are seen for the individual psychoneurotic male and female groups.

The total combined normal and psychoneurotic populations for the combined aspirational experiences classified by actual aspirational performance is shown in Table XXV. Here once more the greater incidence of failure than success can be seen for the various subgroups. It is interesting to note that while the combined normal and psychoneurotic groups followed the pattern of producing more integrative than disintegrative drawings after success, i.e. 68.7% integrative to 31.3% disintegrative, and more disintegrative drawings after failure, i.e. 17.5% integrative and 82.5% disintegrative, the same distribution does not hold true for the combined male groups. The combined normal and psychoneurotic male groups did produce more disintegrative drawings after failure, i.e. 13.2% integrative and 86.8% disintegrative, but they did not produce more integrative drawings after success, i.e. 46.1% integrative and 53.9% disintegrative. The combined normal males and females and psychoneurotic males and females did follow the pattern, though, by producing more integrative drawings after success, i.e. 56.7% integrative and 43.3% disintegrative, and more disintegrative drawings after failure, i.e. 16.7% integrative and 83.3% disintegrative.

Table XXV. - A Comparison of Total Actual Aspirational Performance with Drawing Response of the Various Population Subgroups Expressed in Percentage.

Group	Performance	%	Drawing	
			Integra- tive %	Disinte- grative %
Normal and Psycho- neurotic Males	Success	13.6	46.1	53.9
	Failure	86.4	13.2	86.8
Normal and Psycho- neurotic Females	Success	16.7	68.7	31.3
	Failure	83.3	17.5	82.5
Combined Normal and Psychoneurotic Males and Females	Success	19.0	56.7	43.3
	Failure	81.0	16.7	83.3

The corresponding distributions to that discussed above, except for classification by subject ratings of aspirational success and failure, are shown in Tables XXVI, XXVII, and XXVIII. The ratings of the normal population, as shown in Table XXVI, indicate that more success than failure was experienced, i.e. 57% success and 43% failure. Both the male and female subgroups show consistency on this point here. As in the actual distribution, seen in Table XXIII, the tendency for the combined group was to produce more integrative drawings after success and more disintegrative drawings after failure. Also, the normal females again reflected this distribution more than the normal males who were consistent with the pattern for the failure-disintegrative relationship, but not for the success-integrative relationship.

From Table XXVII it can be seen that the psychoneurotic group rated themselves as experiencing failure more than success, i.e. 37.5% success and 62.5% failure. The distribution of integrative and disintegrative drawings is approximately the same as that classified by actual performance except that there is a greater tendency shown here to produce in greater number more disintegrative than integrative drawings after success though here, too, there were more disintegrative drawings after failure.

The data for the total combined normal and psychoneurotic groups for all the aspirational experiences

Table XXVI. - A Comparison of Total Rated Aspirational Performance with Drawing Response of the Various Normal Population Groupings Expressed in Percentage.

Group	Performance	%	Drawing	
			Integra- tive %	Disinte- grative %
Normal Males	Success	51.0	48.0	52.0
	Failure	49.0	17.3	82.7
Normal Females	Success	62.5	56.6	43.4
	Failure	37.5	44.4	55.5
Combined Normal Males and Females	Success	57.0	52.7	47.3
	Failure	43.0	29.2	70.8

Table XXVII. - A Comparison of Total Rated Aspirational Performance with Drawing Response of the Various Psychoneurotic Population Groupings Expressed in Percentage.

Group	Performance	%	Drawing	
			Integra- tive %	Disinte- grative %
Psychoneurotic Males	Success	42.0	30.0	70.0
	Failure	58.0	10.7	89.3
Psychoneurotic Females	Success	33.3	18.7	81.3
	Failure	66.6	10.3	89.7
Combined Psycho- neurotic Males and Females	Success	37.5	25.0	75.0
	Failure	62.5	10.0	90.0

classified by the subject's ratings are shown in Table XXVIII. From this table it can be seen that the combined groups rated slightly less success performances, i.e. 47.3% success to 52.7% failure. Unlike the distribution of actual experience in Table XXV, there is more of a tendency here to produce disintegrative drawings after success, i.e. 41.7% integrative and 58.3% disintegrative, though, like the actual grouping there are more disintegrative drawings than integrative drawings after failure, i.e. 17.8% integrative and 82.2% disintegrative.

In an attempt to evaluate the experimentally observed frequency incidence of integrative-disintegrative drawings, the data was submitted to the Chi-Square Test. The formula used for this test was  $\chi^2 = \sum \left[ \frac{(f_o - f_e)^2}{f_e} \right]$ . The results of this statistical procedure will be seen in Table XXIX through Table XXXVI.

The distribution for the normal population is shown in Table XXIX. From this table it can be seen that the male group was significant at the 1% level in all but the second aspirational experience which was at the 5% level. In comparison, the females were acceptably significant only on the first aspirational experience. The combined normal population was acceptably significant on all but the fourth aspirational experience.

Table XXVIII. - A Comparison of Total Rated Aspirational Performance with Drawing Response of the Various Population Subgroups Expressed in Percentage.

Group	Performance	%	Drawing	
			Integra- tive %	Disinte- grative %
Normal and Psycho- neurotic Males	Success	46.8	40.0	60.0
	Failure	53.2	13.7	86.3
Normal and Psycho- neurotic Females	Success	47.9	43.0	57.0
	Failure	52.1	22.0	78.0
Combined Normal and Psychoneurotic Males and Females	Success	47.3	41.7	58.3
	Failure	52.7	17.8	82.2

Table XXIX. - Reliability of the Distribution of Integrative-Disintegrative Drawings of the Normal Population Classified by Actual Outcome of Successive Aspirational Experiences Expressed by Percentage of Level of Confidence Derived By the Chi-Square Test.

Group	Aspirational Experience	X <sup>2</sup>	Level of Confidence
Normal Males	1st	15.99	1%
	2nd	3.32	5%
	3rd	21.99	1%
	4th	11.32	1%
Normal Females	1st	34.33	1%
	2nd	6.00	11%
	3rd	3.32	35%
	4th	1.99	58%
Combined Normal Males and Females	1st	45.68	1%
	2nd	9.68	3%
	3rd	19.01	1%
	4th	7.01	8%

From Table XXX the distribution for the psychoneurotic group can be seen. Both individual male and female subgroups and the combined grouping were significant at the 1% level in all but one instance, and that exception occurs at the 3% level.

The individual aspirational experiences were combined and the results of this combination for the psychoneurotic and normal populations are shown in Table XXXI. Here it can be seen that as a result of bringing the findings of the individual aspirational experiences together the various subgroupings and the combined groupings of both the normal and psychoneurotic populations are significant at the 1% level.

When the population groupings are combined slightly differently, as in Table XXXII, all the groups are significant at the 1% level.

The data relating to the incidence and distribution of integrative-disintegrative drawings classified by the subject's ratings of success and failure was also submitted to the Chi-Square Test. The results for the normal population are shown in Table XXXIII. Here, the distributions were found to generally occur at greater than the 5% level so that only the third experience for the males and the third experience for the combined normal male and female group might possibly be acceptably significant.

Table XXX. - Reliability of the Distribution of Integrative-Disintegrative Drawings of the Psychoneurotic Population Classified by Actual Outcome of Successive Aspirational Experiences Expressed by Percentage of Level of Confidence Derived By the Chi-Square Test.

Group	Aspirational Experience	$\chi^2$	Level of Confidence
Psychoneurotic Males	1st	34.33	1%
	2nd	25.99	1%
	3rd	34.33	1%
	4th	29.66	1%
Psychoneurotic Females	1st	15.66	1%
	2nd	8.66	3%
	3rd	16.66	1%
	4th	12.66	1%
Combined Psychoneurotic Males and Females	1st	39.11	1%
	2nd	23.01	1%
	3rd	44.34	1%
	4th	33.34	1%

Table XXXI. - Reliability of the Distribution of Integrative-Disintegrative Drawings of the Normal and Psychoneurotic Populations Classified by Actual Outcome of Aspirational Experiences Expressed by Percentage of Level of Confidence Derived By the Chi-Square Test.

Group	X <sup>2</sup>	Level of Confidence
Normal Males	41.45	1%
Normal Females	43.13	1%
Combined Normal Males and Females	65.57	1%
Psychoneurotic Males	55.06	1%
Psychoneurotic Females	41.78	1%
Combined Psychoneurotic Males and Females	133.87	1%

Table XXXII. - Reliability of the Distribution of Integrative-Disintegrative Drawings of the Combined Normal and Psychoneurotic Populations Classified by Actual Outcome of Aspirational Experiences Expressed by Percentage of Level of Confidence Derived By the Chi-Square Test.

Group	X <sup>2</sup>	Level of Confidence
Normal and Psychoneurotic Males	42.58	1%
Normal and Psychoneurotic Females	61.48	1%
Combined Normal and Psychoneurotic Males and Females	183.28	1%

Table XXXIII. - Reliability of the Distribution of Integrative-Disintegrative Drawings of the Normal Population Classified by Rated Outcome of Successive Aspirational Experiences Expressed by Percentage of Level of Confidence Derived By the Chi-Square Test.

Group	Aspirational Experience	X <sup>2</sup>	Level of Confidence
Normal Males	1st	1.99	78%
	2nd	2.66	48%
	3rd	7.99	4%
	4th	5.74	12%
Normal Females	1st	3.24	15%
	2nd	5.32	11%
	3rd	4.41	21%
	4th	3.24	15%
Combined Normal Males and Females	1st	5.48	11%
	2nd	6.64	6%
	3rd	8.32	3%
	4th	6.32	9%

The psychoneurotic population, which is shown in Table XXXIV, evidences similar unsatisfactory characteristics. The only acceptable aspect is the third aspirational experience which is at the 1% level in all three groupings.

As a result of combining the individual aspirational-drawing experiences, the data for most groups becomes acceptable. From Table XXXV it can be seen that the results of the normal males and the total psychoneurotic population are all acceptable at the 1% level. The results of the normal females under classification of subject's ratings does not occur at an acceptable level. However, the results for the combined normal male and female groups occur at the 3% level which is fairly acceptable.

The results of combining the data for the total aspirational experiences for slightly different population groupings are seen in Table XXXVI. Here it can be seen that the total of the distributions for all four aspirational experiences for the combined normal and psychoneurotic males, the normal and psychoneurotic females, and the combination of all of these, or the total population, all occur at the 1% level.

The relationship between aspirational success and failure and integrative and disintegrative drawings was established by use of the Tetrachoric Coefficient of

Table XXXIV. - Reliability of the Distribution of Integrative-Disintegrative Drawings of the Psychoneurotic Population Classified by Rated Outcome of Successive Aspirational Experiences Expressed by Percentage of Level of Confidence Derived By the Chi-Square Test.

Group	Aspirational Experience	X <sup>2</sup>	Level of Confidence
Psychoneurotic Males	1st	4.66	19%
	2nd	1.32	71%
	3rd	18.00	1%
	4th	6.66	6%
Psychoneurotic Females	1st	21.99	1%
	2nd	5.99	11%
	3rd	14.66	1%
	4th	3.32	32%
Combined Psychoneurotic Males and Females	1st	22.98	1%
	2nd	6.32	9%
	3rd	32.33	1%
	4th	7.98	3%

Table XXXV. - Reliability of the Distribution of Integrative-Disintegrative Drawings of the Normal and Psychoneurotic Populations Classified by Rated Outcome of Aspirational Experiences Expressed by Percentage of Level of Confidence Derived By the Chi-Square Test.

Group	X <sup>2</sup>	Level of Confidence
Normal Males	11.34	1%
Normal Females	4.54	21%
Combined Normal Males and Females	8.23	3%
Psychoneurotic Males	14.26	1%
Psychoneurotic Females	37.86	1%
Combined Psychoneurotic Males and Females	60.74	1%

Table XXXVI. - Reliability of the Distribution of Integrative-Disintegrative Drawings of the Combined Normal and Psychoneurotic Populations Classified by Rated Outcome of Aspirational Experiences Expressed by Percentage of Level of Confidence Derived By the Chi-Square Test.

Group	$\chi^2$	Level of Confidence
Normal and Psychoneurotic Males	30.57	1%
Normal and Psychoneurotic Females	17.25	1%
Combined Normal and Psychoneurotic Males and Females	46.60	1%

Correlation. While the formula  $\frac{ad-bc}{N^2zz'} = r + \frac{xx'r^2}{2}$  <sup>176</sup> may be used, the correlations shown here were derived through Thurstone's tables<sup>177</sup>.

The  $r_t$ 's for the normal population groupings are shown in Table XXXVII, while those for the psychoneurotic population groupings are shown in Table XXXVIII. An examination of these tables shows that there was a positive correlation for all the various population subgroups on the various aspirational experiences. However, there was a great deal of variation between the obtained correlations. Thus, for example, the correlations for the normals tended to be low to moderate, while those for the psychoneurotic groups were noticeably higher. In some cases the difference was almost fifty-seven points as in the third aspirational experience for the combined normals versus the combined psychoneurotics. The only exception to this pattern occurs in the first and second aspirational experience for the female populations when the normal females show a greater coefficient than the psychoneurotic females.

When the four separate aspirational experiences are combined into a single datum, as in Table XXXIX, some of the

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<sup>176</sup> Henry G. Garrett, Statistics in Psychology and Education, New York, Longmans, Green, 1947, p. 355.

<sup>177</sup> Leone Chesire, Milton Saffir, L. L. Thurstone, Computing Diagrams For the Tetrachoric Correlation Coefficient, Chicago, University, 1933, 58 p.

Table XXXVII. - Relationship of Actual Aspirational Performance of the Normal Population Subgroups on Successive Aspirational Experiences with Integrative-Disintegrative Drawings Expressed by Tetrachoric Correlation Coefficient.

Group	Aspirational Experience	$r_t$
Normal Males	1st	.60
	2nd	.20
	3rd	.50
	4th	.47
Normal Females	1st	.95
	2nd	.95
	3rd	.35
	4th	.42
Combined Normal Males and Females	1st	.64
	2nd	.53
	3rd	.38
	4th	.60

Table XXXVIII. - Relationship of Actual Aspirational Performance of the Psychoneurotic Population Subgroups on Successive Aspirational Experiences with Integrative-Disintegrative Drawings Expressed by Tetrachoric Correlation Coefficient.

Group	Aspirational Experience	$r_t$
Psychoneurotic Males	1st	.95
	2nd	.64
	3rd	.95
	4th	.95
Psychoneurotic Females	1st	.70
	2nd	.87
	3rd	.95
	4th	.95
Combined Psychoneurotic Males and Females	1st	.95
	2nd	.87
	3rd	.95
	4th	.95

Table XXXIX. - Relationship of Total Actual Aspirational Performance of the Various Population Subgroups with Integrative-Disintegrative Drawings Expressed by Tetrachoric Correlation Coefficient.

Group	$r_t$
Normal Males	.38
Normal Females	.70
Combined Normal Males and Females	.55
Psychoneurotic Males	.65
Psychoneurotic Females	.67
Combined Psychoneurotic Males and Females	.72
Normal and Psychoneurotic Males	.50
Normal and Psychoneurotic Females	.65
Combined Normal and Psychoneurotic Males and Females	.64

differences between the subgroups are minimized and a greater similarity appears. The combined normal population obtained a correlation of .55, the psychoneurotic population obtained a correlation of .72, and both these groups combined had a correlation of .64. The only divergence in this otherwise close pattern appears in the normal males where there is a correlation of .38.

While the findings discussed above concerned themselves with the data classified according to actual aspirational success or failure performance, the following discussion deals with the data classified by the subject's rating of aspirational success or failure.

In the discussion of the data under the classification described above, reference is made to the normal population shown in Table XL and the psychoneurotic population shown in Table XLI. For all the subdivisions of both the normal and psychoneurotic groups the correlations tended to be low and at several points, particularly with the normal females, was almost chance. On the whole, the correlations tended to be slightly better for the psychoneurotic males than for the normal males and for the psychoneurotic females than for the normal females.

In Table XLII the individual aspirational experiences are combined for the various population subgroups and combined groups to show the distribution of correlations for

Table XL. - Relationship of Rated Aspirational Performance of the Normal Population Subgroups on Successive Aspirational Experiences with Integrative-Disintegrative Drawings Expressed by Tetrachoric Correlation Coefficient.

Group	Aspirational Experience	$r_t$
Normal Males	1st	.42
	2nd	.23
	3rd	.25
	4th	.85
Normal Females	1st	.88
	2nd	.05
	3rd	.05
	4th	.45
Combined Normal Males and Females	1st	.35
	2nd	.20
	3rd	.20
	4th	.68

Table XLI. - Relationship of Rated Aspirational Performance of the Psychoneurotic Population Subgroups on Successive Aspirational Experiences with Integrative-Disintegrative Drawings Expressed by Tetrachoric Correlation Coefficient.

Group	Aspirational Experience	$r_t$
Psychoneurotic Males	1st	.50
	2nd	.05
	3rd	.90
	4th	.90
Psychoneurotic Females	1st	.90
	2nd	.15
	3rd	.40
	4th	.10
Combined Psychoneurotic Males and Females	1st	.70
	2nd	.15
	3rd	.10
	4th	.25

Table XLII. - Relationship of Total Rated Aspirational Performance of the Various Population Subgroups with Integrative-Disintegrative Drawings Expressed by Tetrachoric Correlation Coefficient.

Group	$r_t$
Normal Males	.50
Normal Females	.23
Combined Normal Males and Females	.35
Psychoneurotic Males	.45
Psychoneurotic Females	.10
Combined Psychoneurotic Males and Females	.30
Normal and Psychoneurotic Males	.53
Normal and Psychoneurotic Females	.41
Combined Normal and Psychoneurotic Males and Females	.57

the data classified according to the subject's rating of aspirational success or failure. From this table it can be seen that correlations ran higher for the normal males than for the normal females and for the psychoneurotic males than for the psychoneurotic females. While the correlation for the psychoneurotic females was negligible, that for the combined psychoneurotic males and females was slightly higher though still rather slight. The correlations for the combined normal and psychoneurotic males, normal and psychoneurotic females, and the combination of the total population were fairly substantial.

## 2.-Additional Findings

While the data in this section is not directly related to the hypothesis, it is of interest in the discussion of the findings since the presence of this matter elaborates on some experimental aspects deeply involved in testing the hypothesis.

The data under this section deals with the degree of agreement between actual aspirational performance and the subject's ratings of aspirational success or failure. The relationship between these two factors is shown first expressed in terms of percentage, as shown in Table XLIII, and then in terms of the Tetrachoric Correlation Coefficient, as shown in Table XLIV. From Table XLIII it can be seen

Table XLIII. - A Comparison between Actual Success or Failure Performance and Subject Ratings Expressed in Percentage.

Group	Actual Performance %	Rated	
		Success %	Failure %
Normal Males	Success 16.7	87.5	12.5
	Failure 83.3	52.5	47.5
Normal Females	Success 27.1	62.2	30.8
	Failure 72.9	40.0	60.0
Combined Normal Males and Females	Success 21.9	76.2	23.8
	Failure 78.3	46.7	53.3
Psychoneurotic Males	Success 10.4	80.0	20.0
	Failure 89.6	37.2	62.8
Psychoneurotic Females	Success 27.1	76.9	23.1
	Failure 72.9	22.9	77.1
Combined Psychoneurotic Males and Females	Success 18.6	77.8	22.2
	Failure 81.4	30.8	69.2

that for all the population subgroups and combined groups there was a definite tendency for the ratings to agree with the actual classification. This relationship can be seen clearly if the combined groupings are examined. Thus, for the combined normal males and females, for those who actually succeeded the corresponding subject ratings were 76.2% success and 23.8% failure, and for those who failed the corresponding subject ratings were 46.7% success and 53.8% failure. For the combined psychoneurotic population subject's ratings, after actual success the subject's ratings were 77.8% success and 22.2% failure, while after actual failure the subject's ratings were 69.2% failure and 30.8% success.

This relationship can be further seen in Table XLIV, where it is expressed in terms of a coefficient of correlation. The coefficient of correlation can be seen to be fairly substantially significant throughout. The point at which the relationship may be seen most clearly is for the combined male and female normal and psychoneurotic groups where the correlation is .55.

The presence and direction of shifting bids is shown in Table XLV. From this table it may be seen that the subjects showed a clear tendency to raise their bids after success and to lower or maintain them on the same level after failure. This pattern is embodied in the findings for

Table XLIV. - Relationship between Actual Success or Failure Performance and Subject Ratings Expressed in Terms of Tetrachoric Correlation Coefficient.

Group	$r_t$
Normal Males	.53
Normal Females	.45
Combined Normal Males and Females	.47
Psychoneurotic Males	.55
Psychoneurotic Females	.59
Combined Psychoneurotic Males and Females	.60
Normal and Psychoneurotic Males	.55
Normal and Psychoneurotic Females	.60
Combined Normal and Psychoneurotic Males and Females	.55

Table XLV. - The Distribution of Subsequent Aspirational Bids Following Actual Success or Failure Performance Expressed in Percentage For All Population Subgroupings.

Group	Aspirational Outcome	Direction of Next Bid		
		Up %	Down %	Same %
Normal Males	Success	83.3	0.0	16.6
	Failure	10.0	33.3	56.6
Normal Females	Success	57.1	14.2	28.6
	Failure	6.2	49.0	44.8
Combined Normal Males and Females	Success	69.2	7.7	23.0
	Failure	8.4	40.7	50.8
Psychoneurotic Males	Success	100.0	0.0	0.0
	Failure	18.1	30.3	51.5
Psychoneurotic Females	Success	44.4	11.1	44.4
	Failure	7.4	18.5	74.0
Combined Psychoneurotic Males and Females	Success	58.3	8.3	33.3
	Failure	13.3	25.0	61.7
Normal and Psychoneurotic Males	Success	88.8	0.0	11.1
	Failure	14.2	31.8	53.9
Normal and Psychoneurotic Females	Success	50.0	12.5	37.5
	Failure	7.1	33.9	58.9
Combined Normal and Psychoneurotic Males and Females	Success	64.0	8.0	28.0
	Failure	10.9	32.7	56.3

the combined normal and psychoneurotic males and females where it was found that after success 64% of the population increased their bid, while after failure 32.7% lowered the bid and 56.3% retained it at the same level. The reaction to success was found to have a  $X^2$  of 22.70 at 1% and the reaction to failure was  $X^2$  36.79 at 1%.

The reliability of the drawing evaluations is indicated by a comparison of the author's ratings (Rater I) with those of a second rater (Rater II) in Table XLVI. This table shows that the raters' evaluations agreed 80% with  $\zeta = .28$  at 1%.

Table XLVI. - Comparison of Drawing Evaluations  
by Two Raters On a Random Sample of Population Drawings.

Drawing Rating	Rater		Agreement Percentage	Disagreement Percentage
	I	II		
Integrative	6	10	10	5
Disintegrative	34	30	70	15

## CONCLUSIONS

The preceding chapter presented the statistical findings that were gathered in the course of the experimental phase of this study. In this chapter these figures are brought into relationship and attempts are made to give them meaning, research conclusions are presented, the study is summarized, and finally some implications for further research are given.

### 1.-Discussion of the Findings

A review of the data shows that throughout the experimental findings there was a pronounced tendency for the subjects to fail to reach their aspirational goals. Failure generally occurred four to five times as frequently as success. Where success did occur, it appeared much more often on the second and fourth trials which followed the experimental design of being "easier" situations. It is interesting to note that the females tended to succeed slightly more often than the males. Also, there was a tendency for the males to reach their greatest number of successes early and then decline or remain at about the same level. The females, on the other hand, tended to continue their strivings and maintain or elevate the number of successes as the study progressed. This tendency on the part

of the subjects seems to take on meaning when it is related to the drawings.

Before proceeding with a discussion of the drawings attention is drawn to two factors: (1) the presence of the self or ego factor in the aspirational experience and (2) the reliability of the drawing evaluations. The presence of the self factor in the aspirational situation was demonstrated by the subjects' aspirational behavior. It will be recalled that earlier the presence of this factor was identified with the subjects' handling of the aspirational bid. Child and Whiting<sup>178</sup>, and many others referred to earlier, observed that following success there was a rise in the level of aspiration, and following failure there was a lowering of the bid. If such observations are used to identify the self factor then the presence of this element is confirmed. From Table XLV it can be seen that there was a definite tendency on the part of the subjects to increase the bid after success and to remain on the same level or lower the aspirational bid after failure. As noted earlier, the aspirational behavior following both success and failure was found to be significant at the 1% level. The second factor deals with the reliability of the evaluations of the drawings. A second rater evaluated the drawings from the

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<sup>178</sup> Irvin L. Child and John W. N. Whiting, op. cit., p. 314.

criteria described in the experimental plan and the results of this procedure were compared to evaluations made by the author. Based upon a random selection of ten sets of five drawings each, there was found to be 80% agreement at the 1% level of confidence. This is the same as the findings of Fisher and Fisher<sup>179</sup> which were determined to be adequately reliable.

The overall pattern of distribution of integrative and disintegrative drawings as rated by actual performance shows that the tendency was for success to be followed by integrative drawings and for failure to be followed by disintegrative drawings. However, there were some exceptions to this pattern. In a comparison of Table XI with Table XII it can be seen that the normal males were either ambivalent about or could not produce an integrative drawing following success, while the integrative-success pattern is quite distinct among the normal females. If we combine this finding with the earlier one of the frequency of success, the immediate suggestion is that the normal male and female subjects in this study perceived and treated the attainment of success differently. However, a second digression from the success-integrative failure-disintegrative pattern was seen in the psychoneurotic group. Here, slightly more disintegrative than integrative drawings were produced

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179 Seymour Fisher and Rhoda Fisher, loc. cit.

following success. An examination of Tables XI, XII, XIV, and XV suggests that as the percentage of successes increased there was a greater tendency to produce integrative drawings. Some support for this can perhaps be obtained from the observation that the number of failures is quite marked and the percentage of disintegrative responses far outweighs the percentage of integrative responses.

It was stated initially that the actual aspirational performance outcome would be used in preference to the subjects' ratings of success and failure because the suspected protective role of defense mechanisms would cause them to misperceive their performance. This plan for evaluation of the experimental findings was substantiated. While the subjects felt that they had succeeded far more often than they actually had, by the definition of success used here, the distribution of integrative-disintegrative drawings showed that they generally reacted to both success and failure by producing disintegrative drawings. If it is assumed that the individual may have felt successful whether or not he actually attained his aspirational bid, then there is a lack of consistency in the response as measured by these tools. The suggestion is that under the pressure of having to evaluate their performance publically, the subjects tended to proclaim their performance a success while inwardly they reacted to failure with some degree of demoralization as might normally be expected. The differences between the

actual and rated statistics might further be interpreted as reflecting the presence of ego-involvement in the experimental situation.

In answer to the question as to how much confidence could be placed upon the distribution of integrative-disintegrative drawings in consideration of chance occurrence, the statistics dealing with the problem were submitted to the Chi-Square Test. While some individual aspirational experiences, particularly those in the normal group, were found to be outside the acceptable cut-off of the 5% level, as soon as the individual experiences were combined for each sub-group the 1% level was attained. The 1% level was maintained when the subgroups were combined ultimately to form one total group. It is thus felt that a great deal of confidence can be placed upon those findings which deal with the combined aspirational experiences for each subgroup and for the various combinations of subgroups, as well as the combined total group.

The relationship between aspirational success and integrative drawings, and failure and disintegrative drawings is shown by the Tetrachoric Correlation Coefficient. Using Garrett's<sup>180</sup> formula for determining the significance of coefficients, it may be seen from Table XXXIX that while the normal males alone showed but a slight relationship, all

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180 Henry E. Garrett, op. cit., p. 333.

other groups and groupings showed a substantial or marked to high relationship.

## 2.-Research Conclusions

This project was focused on trying to obtain empirical evidence of the theoretical and clinical percept that the self-concept undergoes change and that positive experiences will give rise to integrative processes in the self-concept, while negative experiences will give rise to disintegrative processes in the self-concept.

It was further felt that aspirational conditions of success or failure would produce these changes and that evidence of such changes could be obtained by measuring changes in the human figure drawing. In addition, by constructing a series of experimental situations for each subject, it was felt that a continuous "picture" of such changes would be observed.

The results of the experiment confirm the expectancy that the performance in the aspirational situation resulted in feelings of success or failure as reflected in the subjects' ratings of the success or failure evaluation of their performance in comparison to the drawings they produced. It is further felt that the emotional aspect was confirmed by the subjects' aspirational bid behavior. Furthermore, it is felt that the drawings were successful in

capturing the changes in self-feelings. This was shown by the clear relationship between success and integrative drawings and failure and disintegrative drawings.

The experimental situation was designed to show the continuous nature of integration and disintegration of the self-concept. The findings were such that there was some slight illumination of this process. However, the results on this level were too variable and insufficiently consistently reliable for valid assertion of this point as reflected by the obtained findings.

It is felt that within the limits of this study the principal hypothesis, that success would be followed by integration of the self-concept and failure by disintegration of the self-concept, was substantiated by the significant to high coefficients between aspirational performance and the appropriate drawings. Furthermore, it is recognized that the experimental task had limited ego-involvement attraction. Thus, there exists the suggestion that in situations bringing forth greater ego-involvement the relationship would be more profound.

### 3.-Summary

This research sought to provide an empirical study of the theoretical and clinical percept so popularly accepted that the self-concept undergoes integrative and

disintegrative processes as the individual experiences satisfaction from goal-directed activity and dissatisfaction from frustration of goal-directed activity. The research is needed since the concept is an essential element in a theory of personality so popular today and the only validating evidence offered to date exists in the form of case studies, clinical observations, or distinctly indirect empirical studies.

The principal hypothesis of this study was that if the theoretical formulations were correct and the self-concept does undergo integrative and disintegrative processes in accordance with the outcome of goal-directed activity, then such changes could be produced in a laboratory situation and the changes measured, thus providing more concrete evidence. It was further felt that satisfaction or dissatisfaction of goal-directed activity could be induced by producing success or failure outcomes in a level of aspiration situation. Recognition was given to the fact that the laboratory situation would be expected to produce only a relatively small movement since there are limits to the degree of ego-involvement a laboratory situation might be expected to produce.

In this study forty-eight subjects of whom twenty-four, twelve adult males and twelve adult females, were normal and twenty-four, again twelve adult males and twelve

adult females, were psychoneurotic. They were differentiated by the Minnesota Multiphasic Personality Inventory and matched on the Wechsler-Bellevue Adult Intelligence Scale and a standardized educational-socio-economic rating scale. While the subjects were to be brought together in one group for final statistical purposes, the population was so divided because theory of psychopathology indicated that the reactions of the psychoneurotics would be essentially like those of the normals, only slightly greater.

The subjects were asked to draw a person and then were given four aspirational experiences of three trials each at the Rotter Aspiration Board which had been slightly modified to increase anxiety, thus giving rise to greater sensitivity. After each aspirational experience, the subjects were asked to draw a person. The sequence of events was so arranged that a subject produced a drawing before starting, then experienced the aspirational situation, made a judgment of the performance, and then proceeded to draw the picture. The pictures were compared to the productions immediately preceding the aspirational experience and evaluated according to several criteria generally accepted for scoring the formal aspects of drawings. The drawings were then classified by actual aspirational performance outcome since it was felt that defense mechanisms would distort the true events.

The findings supported the valid nature of the tools. The results reflected the expected differences between the normal and psychoneurotic groups. Although they failed to provide sufficiently significant evidence in the individual situations, they did show a significant to high relationship between the success-integrative and failure-disintegrative factors to support the principal hypothesis.

#### 4.-Implications For Further Research

A) While the findings were of a positive nature, the level of aspiration situation was slightly too difficult which resulted in many more failures than successes. The statistics relating to success are thus not as clear as those dealing with response to failure. A repeat experiment which would give the subjects a greater chance to succeed would be appropriate.

B) A study which alternates the sequence of "easier" (success predisposing) and "harder" (failure predisposing) trials from the organization used here would be of interest for comparative purposes.

C) This study dealt only with normal and psychoneurotic adult males and females. It would be a contribution to compare these results to children, other personality groupings, and perhaps even to other national-cultural groups.

D) This research dealt only with the changes in the self-concept as a total element. There appears to be a need for a study which would investigate these processes microscopically to determine the degree of changes or resistance to change.

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This study demonstrates the subject's tendency toward aggressive physical outlet following stress. It thus supports some methodological theory relating the aspiration situation to the drawings in this project.

Child, Irvin L., and John W. M. Whiting, "Determinants of Level of Aspiration Evidence From Everyday Life", Journal of Abnormal and Social Psychology, Vol. 44, 1949, p. 303-314.

This study concerns itself with the effects on aspiration of success or failure. It also deals with the relationship of self confidence, hence self-concept, to the level of aspiration. This material deals with some primary concepts involved in this project and thus is of basic value.

Chodorkoff, Bernard, "Self-Perception, Perceptual Defense, and Adjustment", Journal of Abnormal and Social Psychology, Vol. 49, 1954, p. 508-512.

This paper points out some aspects of the fine relationship between self-concept and perception. It contributes materially to an understanding of these psychological factors.

Cohen, Louis D., "Patterns of Response in Levels of Aspiration Tasks", Educational Psychological Measurement, Vol. 10, 1950, p. 664-684.

This research deals with the methods of adjustment used by subjects after success and failure. Two factors in this study are felt to relate strongly to this project: (1) the isolation of traits which support the use of psychoneurotic subjects and, (2) the successful use of the Lotter Aspiration Board.

-----, "Level of Aspiration Behavior and Feelings of Adequacy and Self-Acceptance", Journal of Abnormal and Social Psychology, Vol. 49, 1954, p. 84-86.

An investigation into the role of some aspects of self regard in aspiration experiments. This research elaborates on the one aspect of self-concept thus providing background information to this study.

Diller, Leonard, "Conscious and Unconscious Self-Attitudes After Success and Failure", Journal of Personality, Vol. 23, 1954, p. 1-12.

The experimental findings show that covert personality changes may occur after failure in the absence of overt changes. This report contributes substantially to the support of some notions employed in this project.

Elkisch, Paula, "Children's Drawings In a Projective Technique", Psychological Monographs, No. 1, 1945, 58 p.

This report is a basic contribution to the psychological use of drawings. The scoring techniques are of primary significance.

English, O. Spurgeon, and Stuart M. Finch, Introduction to Psychiatry, Chicago, Norton, 1954, viii-621 p.

A comprehensive discussion of the ego which contributes materially to an understanding of the theory underlying this research.

Ericksen, Charles W., "Defense Against Ego-Threat in Memory and Perception", Journal of Abnormal and Social Psychology, 1949, p. 108-143.

A report dealing with individual differences in the perception-need relationship as it concerns ego-threat. It provides further background material which elaborates on the discussion of perception brought out in this thesis.

-----, "Perceptual Defense As a Function of Unacceptable Needs", Journal of Abnormal and Social Psychology, Vol. 46, 1951, p. 557-564.

This paper elaborates on some of the aspects of perception as ego defense referred to in Chapter I. It provides background information for this chapter.

Escalona, Sibylle K., "The Effect of Success and Failure upon the Level of Aspiration and Behavior in Manic Depressive Psychoses", University of Iowa Studies, Child Welfare, Vol. 16, No. 3, 1940, p. 199-302.

This research demonstrates the increased sensitivity to the outcome of level of aspiration tasks in psychopathology. It is one of the basic contributions to the problem and serves as background for the present use of the psychoneurotic population.

Fenichel, Otto, The Psychoanalytic Theory of Neurosis, New York, Norton, 1945, x-703 p.

The discussion of the nature of the ego in this work contributes to a basic understanding of the problem.

Filer, Robert J., "Frustration Satisfaction and Other Factors Affecting the Attractiveness of Goal Objects", Journal of Abnormal and Social Psychology, Vol. 47, 1952, p. 203-212.

This investigation demonstrates the role of ego-involvement in aspiration tasks by showing the relationship of performance results to goal attractiveness. This elaboration of ego involvement contributes to an understanding of the factor as used here.

Fisher, Seymour, and Rhoda Fisher, "Test of Certain Assumptions Regarding Figure Drawing Analysis", Journal of Abnormal and Social Psychology, Vol. 45, October 1950, p. 727-732.

This paper investigates two characteristics of drawings frequently used as diagnostic features. Although not directly related, the implications of this research are reflected in the present study.

Frank, Jerome D., "Individual Differences In Certain Aspects of the Level of Aspiration", American Journal of Psychology, Vol. 47, 1935, p. 119-128.

A discussion of need determinants in the level of aspiration study. This is a basic work in the understanding of level of aspiration studies.

-----, "Some Psychological Determinants of the Level of Aspiration", American Journal of Psychology, Vol. 47, 1935, p. 285-293.

This article is a continuation and elaboration of an earlier discussion by Frank of the role of ego and need determinants involved in the aspirational situation. It is of basic value by illuminating some operants in aspirational studies.

-----, "The Influence of the Level of Aspiration on Performance in One Task On the Level of Performance in Another", Journal of Experimental Psychology, Vol. 18, 1935, p. 159-171.

A background discussion of some experimental findings which demonstrate the positive relationship between performance and aspirational goal.

-----, "A Comparison of Certain Properties of Level of Aspiration and Random Guessing", Journal of Psychology, Vol. 3, 1936, p. 42-62.

A further contribution to the understanding of self-concept in the level of aspiration situation. The demonstration that self-assessment and not random guessing as the dynamic behind goal setting answers a primary question regarding this psychological approach.

-----, "The Relation of Certain Personality Variables to Level of Aspiration", Journal of Psychology, Vol. 9, 1940, p. 191-206.

A discussion of personality traits seen in level of aspiration research. It elaborates on some personality dynamics thus contributing to an understanding of some experimental constructs used here.

-----, "Recent Studies of the Level of Aspiration", Psychological Bulletin, Vol. 38, 1941, p. 218-222.

A review of the nature of level of aspiration studies with definitions of terms and various methodologies. The discussion of self-concept as it relates to aspiration studies was a determinant in the selection of this method for the present study.

French, Thomas M., The Integration of Behavior, Chicago, University Press, 1952, xi-271 p.

A comprehensive discussion of the effects of success and failure on the self-concept. This work is essential to understanding the problem.

Freud, Anna, The Ego and Mechanisms of Defense, New York, International University Press, 1946, x-197 p.

This work supports a theory that has the opposite stand from the hypothesis in this research, i.e. the flexibility of the self even under stress.

Gardner, Joan W., "The Use of the Term 'Level of Aspiration'", Psychological Review, Vol. 47, 1940, p. 59-68.

A historical review of level of aspiration studies from Dembo and Loppe on. Analysis of the classical experiments aids in the evaluation of this approach.

Gilchrist, Jack O., and Lloyd S. Nesberg, "Need and Perceptual Change in Need-Related Objects", Journal of Experimental Psychology, Vol. 44, 1952, p. 369-376.

A report upholding the relationship between perception and need-related objects. Further background material on perception and personality dynamics.

Gilliland, A. R., and Russel Colgin, "Norms Reliability, and Forms of the M.H.P.I.", Journal of Consulting Psychology, Vol. 15, October 1951, p. 435-438.

A study of the reliability of this instrument confirms its validity. This paper thus has value by contributing to the support of the use of this instrument.

Gilmore, James A., "Recall of Success and Failure As a Function of Subject's Threat Interpretations", Journal of Psychology, Vol. 38, 1954, p. 359-365.

An experimental demonstration of the relationship between recall and the degree of success. The positive nature of the findings supports the use of "actual" rather than "rated" results in this study. This report is felt to be distinctly significant for further reading.

Gould, Rosalind, "Factors Underlying Expressed 'Level of Aspiration'", Journal of Psychology, Vol. 6, 1938, p. 265-279.

The discussion of some differences in aspirational behavior between normals and neurotics provides some background to the use of such subjects in this research.

-----, "An Experimental Analysis of Level of Aspiration", Genetic Psychology Monographs, Vol. 21, No. 1, 1939, 115 p.

This rather elaborate report discusses not only the nature of some aspiration experiments but also contains a section on interviews with subjects about their feelings in relation to performance and the aspirational task. This section contributes significantly to an understanding of self-involvement in the situation.

-----, and N. Kaplan, "The Relationship of 'Level of Aspiration' to Academic and Personality Factors", Journal of Social Psychology, Vol. 11, 1940, p. 31-40.

An experimental report which shows a very high relationship between performance and aspiration thus contributing materially to the support of some concepts involved in this thesis.

-----, and Helen Block Lewis, "An Experimental Investigation of Changes in the Meaning of Level of Aspiration", Journal of Experimental Psychology, Vol. 27, 1940, p. 422-438.

This paper discusses the operation of external stimuli on the goal. The description of intra and inter individual differences provides an essential background.

Graham, Stanley R., "Relation Between Histamine Tolerance and Visual Autokinesis, Rorschach Human Movement and Figure Drawing", Journal of Clinical Psychology, Vol. 10, 1955, p. 370-373.

This report demonstrates the sensitivity of the Human Figure Drawing Test to changes within the individual. It thus lends basic support to this study.

Harvey, O. J., and Muzafer Sherif, "Level of Aspiration As a Case of Judgmental Activity in Which Ego-Involvements Operate As Factors", Sociometry, Vol. 14, 1951, p. 121-147.

A basic study showing the nature of ego-involvements in aspirational experiments which utilize paired subjects who reflect their own involvement by reacting to the other's performance.

Hausman, M. F., "A Test to Evaluate Some Personality Traits", Journal of General Psychology, Vol. 9, 1933, p. 179-189.

A report on an experiment showing how abnormal subjects respond to success and failure. While no conclusive relationships are drawn, the paper contributes materially to reflecting personality as related to aspiration.

Holt, Robert R., "Level of Aspiration As Ego Defense", Psychological Bulletin, Vol. 39, 1942, p. 457.

This is one of the essential proofs of the presence and nature of ego and self-concept in aspiration situations. The author studied a few cases intensively to determine defense patterns.

-----, "Level of Aspiration: Ambition or Defense?", Journal of Experimental Psychology, Vol. 36, 1946, p. 398-416.

A discussion of experimental findings upholding the concept of ego defense in aspirational situations. This study is of basic value as background for this research.

-----, "The Accuracy of Self-Evaluation: Its Measurement and Some of Its Psychological Correlates", Journal of Consulting Psychology, Vol. 15, 1951, p. 95-101.

An experimental demonstration of the positive relationship between performance and self-concept. This report provides useful background reading.

Holtzman, Wayne D., "The Examiner As a Variable In the Draw a Person Test", Journal of Consulting Psychology, Vol. 16, 1952, p. 145-148.

A report showing the relationship between subjects' sex and the sex of figures drawn. This is a basic contributing study.

Howie, Duncan, "Perceptual Defense", Psychological Review, Vol. 59, 1952, p. 308-315.

A review of some schools of thought on perception as a defense mechanism. This paper contributes to the background understanding of the discussion of perception by way of a critical survey of the topic.

Hunt, Howard F., et. al., "A Study of the Differential Diagnostic Efficiency of the Minnesota Multiphasic Personality Inventory", Journal of Consulting Psychology, Vol. 12, September-October 1948, p. 331-336.

The positive nature of the experimental findings leads to acceptance of this tool. This report supports use of this psychological instrument in the present project.

Johnson, Donald M., "How a Person Establishes a Scale for Evaluating His Performance", Journal of Experimental Psychology, Vol. 36, 1946, p. 25-34.

A study offering background information into how an individual determines his aspirational bid. The conclusions, which support present-day theory, are a result of an experiment with ten subjects who evaluate the dynamics behind their behavior.

King, Francis W., "The Use of the Human Figure As an Adjunct in Psychotherapy", Journal of Clinical Psychology, Vol. 10, 1954, p. 65-69.

This report discusses a single case in which the Human Figure Drawing Test was used. It strongly indicates self-identification, thus providing basic clinical evidence.

Klein, George S., and Herbert Schlesinger, "Where Is the Perceiver in the Perceptual Theory", Journal of Personality, Vol. 18, 1949, p. 32-47.

A discussion of the integration of perception as it relates to personality. This report is of background value to the problem of perception discussed here.

Klugman, Samuel F., "Relationship between Performance On the Rotter Aspiration Board with Various Types of Tests", Journal of Psychology, Vol. 55, 1942, p. 400-406.

A study which checks and validates Rotter's reports of the relationship of external factors with the Board. A basic study of this instrument.

-----, "Emotional Stability and Level of Aspiration", Journal of General Psychology, Vol. 38, 1948, p. 101-118.

A further study of the Rotter Board exploring the relationship between the Psychosomatic Inventory and the Board. Another basic study of this tool.

Lehner, George F. J., and Eric K. Gunderson, "Reliability of Graphic Indices In a Projective Test (Draw a Person)", Journal of Clinical Psychology, Vol. 8, 1952, p. 125-128.

This is a report of background value which demonstrates the reliability of various scoring aspects of drawings.

Levanway, Russell W., "The Effects of Stress on Expressed Attitudes Toward Self and Others", Journal of Abnormal and Social Psychology, Vol. 50, 1955, p. 225-226.

A demonstration of changes in the self-concept as a result of stress. This study contributes to the background understanding of this problem.

Levine, Richard, Isidor Chein, and G. Murphy, "The Relation of Need to the Amount of Perceptual Distortion. A Preliminary Report", Journal of Psychology, Vol. 13, 1942, p. 283-293.

A valuable contribution to the background for understanding the relationship of perception to personality and adjustment.

Lewin, Kurt, et. al., "Level of Aspiration", in Personality and the Behavior Disorders, A Handbook Based on Experimental and Clinical Research, J. McV. Hunt, editor, Vol. 1, New York, Ronald, 1944, p. 333-378.

A most complete review of the nature of aspiration studies giving historical and technological changes. The extensive bibliography is most helpful for follow-up studies on level of aspiration research.

Liss, Edward, "The Graphic Arts", American Journal of Orthopsychiatry, Vol. 8, 1938, p. 95-99.

A valuable contribution to the understanding of some formal scoring aspects of drawings.

Machover, Karen, "Human Figure Drawings: The Case of Gregor: Interpretation of Test Data: Symposium Presented to American Psychological Association Meeting, Denver, 1949", Rorschach Research Exchange and Journal of Projective Techniques, Vol. 13, December 1949, p. 447-450.

A clinical discussion of the use of the Human Figure Drawing Test which aids in the acceptance of the validity of the tool.

Machover, Karen, Personality Projection In the Drawing of the Human Figure, Springfield, Thomas, 1949, 181 p.

This is one of the basic works available on the use of drawings as a psychological tool.

-----, and Rochelle L. Wexler, "A Case of Manic Excitement", Rorschach Research Exchange and Journal of Projective Techniques, Vol. 12, No. 4, 1948, p. 179-201.

A demonstration of the psychological value of human figure drawings. Although clinical in nature, it lends support to the use of this instrument.

Margolis, Muriel Franklin, "A Comparative Study of the Human Figure Drawing at Three Points in Therapy", Rorschach Research Exchange and Journal of Projective Techniques, Vol. 12, No. 1, 1948, p. 94-105.

The sensitivity of this instrument is demonstrated by its detection of observable changes in the patient. This paper contributes substantially to the support of this method of evaluation.

McClelland, David C., and Alvin M. Lieberman, "The Effect of Need For Achievement on Need Related Words", Journal of Personality, Vol. 18, 1949, p. 236-251.

A study demonstrating the basic personality relationship between perception and needs. The study is significant for this project in that it lends support to one of the basic concepts.

McGinnies, Elliott M., "Emotionality and Perceptual Defense", Psychological Review, Vol. 56, 1949, p. 244-251.

The relationship of P.G.R. to charged and neutral words is used to support the theory of perception and ego defense. This study is of background value.

McKinley, J. C., S. M. Hathaway, and P. E. Neehl, "The Minnesota Multiphasic Personality Inventory: VI.-The K Scale", Journal of Consulting Psychology, Vol. 12, January-February 1948, p. 20-31.

A report offering validating evidence of some internal factors of this tool. The positive findings support the use of the tool in this research.

Miller, Daniel R., "Levels of Aspiration of Hysterics and Neuroasthenics", American Psychologist, Vol. 2, 1947, p. 406.

This report discusses differences in aspirational performance between subgroups of neurotic with some comparison with normals. This brief paper is of background value.

-----, "Responses of Psychiatric Patients to Threat of Failure", Journal of Abnormal and Social Psychology, Vol. 46, 1951, p. 378-387.

A discussion of how different diagnostic groups of abnormal subjects handle aspirations and failure. This research is of background value to understanding the use of psychoneurotic subjects in this study.

Monroe, Ruth L., "Three Projective Methods Applied to Sally", Journal of Abnormal and Social Psychology, Vol. 40, 1945, p. 215-227.

A report which compares the Human Figure Drawing Test to other psychological tools. The clinical findings support the sensitivity of the instrument.

Omwake, Katherine T., "The Relation between Acceptance of Self and Acceptance of Others Shown by Three Personality Inventories", Journal of Consulting Psychology, Vol. 18, 1954, p. 443-446.

A report of experimental findings which reflects the relationship between self-concept and expressive behavior. This paper is of background value.

Postman, Leo, and Donald K. Brown, "The Perceptual Consequence of Success and Failure", Journal of Abnormal and Social Psychology, Vol. 47, 1952, p. 213-221.

A study of the relationship between perception and personal needs with a critical review of some theory. This paper contributes to the background understanding of perception and personality.

-----, and Jerome S. Bruner, "Personal Values as Selective Factors in Perception", Journal of Abnormal and Social Psychology, Vol. 43, 1948, p. 142-154.

Further material demonstrating experimental evidence of perceptual selectivity and personality dynamics. An important background contribution.

Precker, Joseph A., "Painting and Drawing in Personality Assessment", Journal of Projective Techniques, Vol. 14 1950, p. 262-286.

This report is a general review of methodology in the evaluation of drawings and contributes heavily to the understanding of this method.

Preston, Malcolm G., James A. Bayton, and Elliott McGinnies, "Differential Effect of a Social Variable upon Three Levels of Aspiration", Journal of Experimental Psychology, Vol. 29, 1941, p. 351-369.

A study of the relationship between performance and goal. The positive findings are interpreted as defending the theory of needs. This report is of background value.

Roseman, Stanley, "The Multiplicity of the Normal Ego Structure", Journal of Psychology, Vol. 38, 1954, p. 389-419.

A report which provides an extensive discussion of ego and self-experiences which seek expression in behavior. This study is basic to the problem involved in this project.

Rosen, Alexander C., "Change in Perceptual Threshold As a Protective Function of the Organism", Journal of Personality, Vol. 23, 1954, p. 182-194.

An experiment supporting the notion that perceptual thresholds change in accordance with threat of protective needs. This study is of background value to the discussion of perception.

Rosensweig, Saul, "Preferences in the Repetition of Successful and Unsuccessful Activities As a Function of Age and Personality", Journal of Genetic Psychology, Vol. 42, 1933, p. 423-441.

This paper deals with individual differences of subjects in the level of aspiration situation. It thus provides further background material for an understanding of this approach in psychological evaluation.

Rotter, Julian B., "Level of Aspiration As a Method of Studying Personality: I - A Critical Review of Methodology", Psychological Review, Vol. 49, 1942, p. 463-474.

A critical review of methodology showing why a new method is needed for the evaluation of aspirational behavior. This, as well as the following report by Rotter, is important in understanding the concept of his Aspiration Board.

Rotter, Julian B., "Level of Aspiration As a Method of Studying Personality: II - Development and Evaluation of a Controlled Method", Journal of Experimental Psychology, Vol. 31, 1942, p. 410-422.

This report provides a complete description of the Rotter Board. The instrument itself as well as Rotter's method are described, thus proving of primary value in understanding this tool.

-----, "Level of Aspiration As a Method of Studying Personality: III - The Analysis of Patterns of Response", Journal of Social Psychology, Vol. 21, 1945, p. 159-177.

A discussion of the Board's ability to detect personality factors. This study is of background value.

-----, "Level of Aspiration As a Method of Studying Personality: IV - Group Validity Studies", Character and Personality, Vol. 11, 1943, p. 255-274.

This study elaborates on Rotter's research into personality characteristics while providing further information on the Aspiration Board. The paper thus is of background value.

Royal, Robert E., "Drawing Characteristics of Neurotic Patients Using a Drawing of a Man and Woman Technique", Journal of Clinical Psychology, Vol. 5, 1949, p. 392-395.

A report on the use of drawings with abnormal patients. The paper also discusses some scoring categories. In general it contributes much background information.

Ruesch, J., and J. E. Finesinger, "The Color Relation of the Rorschach Color Response to the Use of Color in Drawings", Psychosomatic Medicine, Vol. 3, 1941, p. 370-388.

This study compares certain similarities between the formal aspects of human figure drawings and the Rorschach. This research contributes to establishing the validity of the Human Figure Drawing Test as a measure of personality.

Schmidl-Waehner, T., "Formal Criteria For the Analysis of Children's Drawings", American Journal of Orthopsychiatry, Vol. 12, 1942, p. 95-104.

Another report which deals with some basic aspects of drawings. The discussion of scoring aspects is a basic contribution to understanding the evaluation of drawings since it contributes some experimental evidence.

Sears, Pauline S., "Level of Aspiration in Academically Successful and Unsuccessful Children", Journal of Abnormal and Social Psychology, Vol. 35, 1940, p. 498-536.

A basic study into the performance of normal and neurotic personalities in aspirational situations.

-----, "Level of Aspiration in Relation to Some Variables of Personality: Clinical Studies", Journal of Social Psychology, Vol. 14, 1941, p. 311-336.

A discussion of experimental findings showing how the level of aspiration situation involves and reflects self-concept. While different tools are used from those employed here, the relationship to this study is clear and basic.

Secord, Paul F., and Sidney M. Jourard, "The Appraisal of Body-Cathexis: Body Cathexis and the Self", Journal of Consulting Psychology, Vol. 17, No. 5, 1953, p. 343-347.

A study of some basic theory underlying the self and drawing as used here. This report is of prime value in contributing to the understanding of this project.

Sherif, Muzafer, and Hadley Cantril, The Psychology of Ego-Involvements, New York, Wiley, vii-524 p.

A thorough discussion of the self-concept as used in this research. This work was of prime value in defining this research problem.

Stersil, Iran M., and Bertram D. Cohen, "The Effects of Two Degrees of Failure on Level of Aspiration and Performance", Journal of Abnormal and Social Psychology, Vol. 46, 1951, p. 79-82.

A report of experimental findings demonstrating the positive relationship between performance and aspirational goal. This paper lends support to some basic concepts employed in this research and thus is of basic value.

Swensen, Clifford G., "Sexual Differentiation On the Draw-a-Person Test", Journal of Clinical Psychology, Vol. 11, 1955, p. 37-41.

An attempt to validate some aspects of this instrument. The positive findings support use of the tool in this research and is thus of basic value.

Waehner, F. S., "Interpretations of Spontaneous Drawings and Paintings", Genetic Psychology Monographs, Vol. 33, 1946, 70 p.

This paper seeks to describe the basic methodology in the use of figure drawings as a psychological tool. It contributes to the understanding of this method.

Wheeler, William Marshall, "The Internal Structure of Three Clinical Instruments", American Psychologist, Vol. 5, September 1950, p. 470.

This report is of significant value here in that it contributes to the support of the diagnostic validity claim of the M.M.P.I.

Yacorsynski, G. K., "Degree of Effect: III - Relationship to the Level of Aspiration", Journal of Experimental Psychology, Vol. 30, 1942, p. 407-413.

This paper casts some light on what might be considered the effect of outside variables. The demonstration of the operation of confidence and self-feeling rather than degree of effect relates directly to this study.

Zimmer, Herbert, "Predictions By Means of Two Projective Tests of Personality Evaluations Made By Peers", Journal of Clinical Psychology, Vol. 10, 1954, p. 352-356.

An experiment which compares personal evaluations of the subjects with personality diagrams obtained from drawings. The positive findings support the sensitivity claims of the instrument and thus contribute to the support of this project.

-----, "Self-Acceptance and Its Relation to Conflict", Journal of Consulting Psychology, Vol. 18, 1954, p. 447-449.

This report contributes materially to an understanding of the self-concept.

APPENDIX I

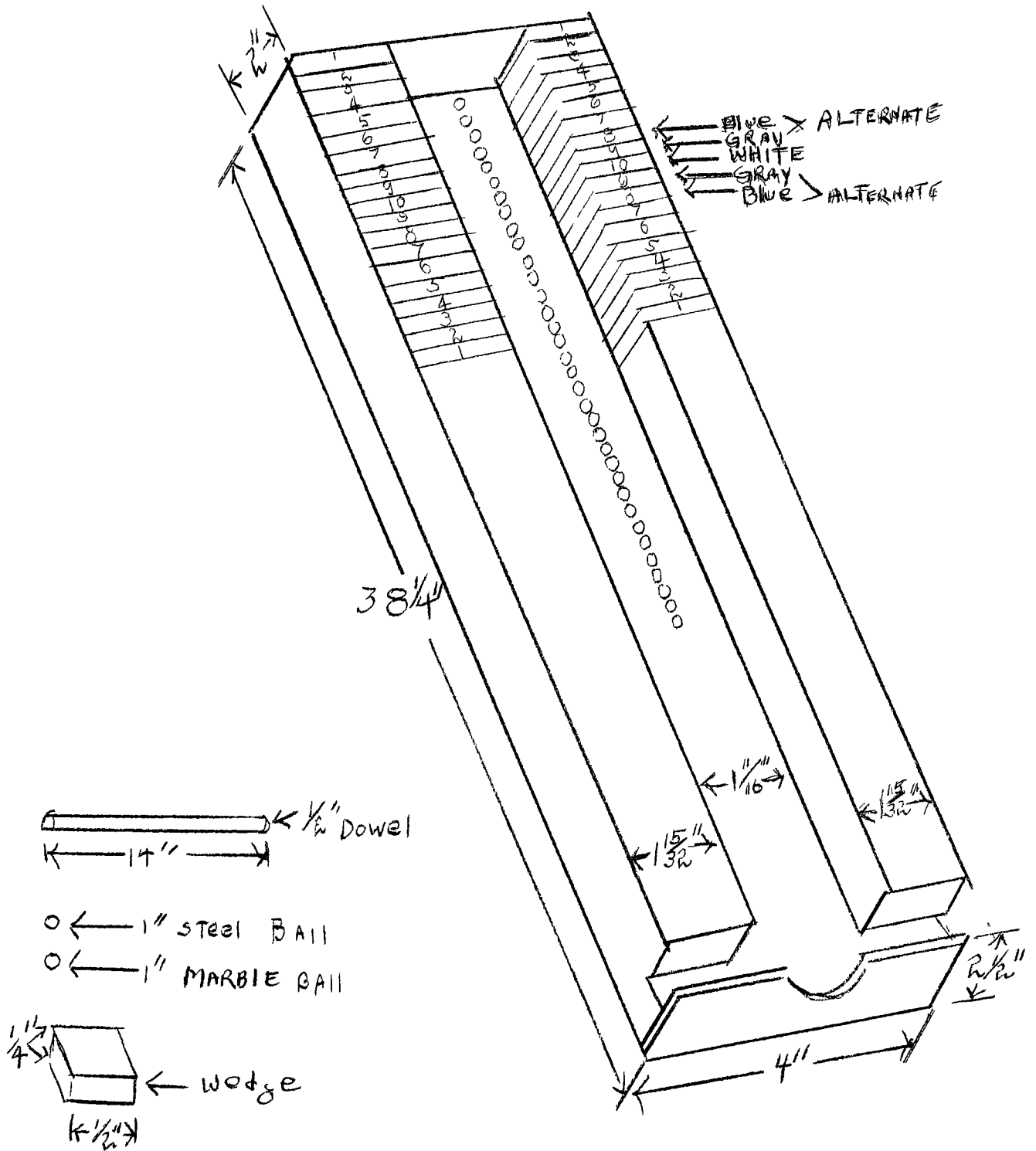


Figure 1.-Diagram, The Rotter Aspiration Board

## APPENDIX 2

### ABSTRACT OF

#### A Study of the Stability of the Self-Concept In a Level of Aspiration Experiment<sup>1</sup>.

A popular concept in current psychological theory utilizes the notion that the self-concept undergoes integrative and disintegrative processes as the individual experiences satisfaction or frustration of goal-directed activity. The evidence offered to date to support this concept has been in the form of case history reports, clinical observations, and distinctly indirect experimentation. The purpose of this research is an attempt to provide a more direct empirical study of this process than has been offered until now.

The population consisted of a group of forty-eight individuals. These subjects were divided into twenty-four normal adults and twenty-four psychoneurotic adults. Each of these subgroups consisted of twelve males and twelve females. The diagnostic classification was controlled by a clinical diagnosis made by a psychiatric team, and in addition the subjects were given the Minnesota Multiphasic Personality Inventory. The subjects were also given the Wechsler-Bellevue Adult Intelligence Scale, and they were

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<sup>1</sup> Ph.D. thesis presented by Murray Kent Teris, in 1956, to the ~~Faculty of Arts of~~ the University of Ottawa, xiii-171 pages.

classified on a standardized educational-socio-economic rating scale.

Each subject was given four aspirational experiences of three trials each with the Potter Aspiration Board and the performance was successful or unsuccessful in meeting the aspirational bid. Before starting and after each aspirational trial, the subject was asked to draw a person so that five drawings were obtained. Each drawing was compared to the production immediately preceding that aspirational experience and evaluated on six formal scoring categories as being integrative or disintegrative. The drawings were then classified by success or failure of aspirational performance and examined statistically.

The findings confirm the hypothesis that success leads to integration of the self-concept and failure to disintegration of the self-concept. The results for total groups or large groupings were more reliable than the results dealing with the individual aspirational experiences.

The recommendations for further research include varying the sequence predisposing the subject to success and failure, varying the subjects, increasing the opportunity for success, and examining changes in the self-concept ~~microscopically.~~

Third set  
of revisions

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S. Marie de S.-Therese-des-Anges  
Education

CUMULATIVE BOOK INDEX

the psychoneurotic group had 6 successes and 18 failures. The similarity of these two groups extends further. The normal males had a total of 8 successes and 40 failures and the psychoneurotic males had 5 successes and 43 failures. The normal females had 11 successes and 37 failures while the psychoneurotic females had 12 successes and 36 failures. Once again the slightly greater feminine achievement of success is pointed out.

Though the normal and psychoneurotic groups were seen to be quite similar in the distribution of aspirational successes and failures, the distribution of integrative and disintegrative drawings presents some differences. From Table VII it can be seen that the normal group produced a total of 13 integrative drawings and 6 disintegrative drawings in response to successful aspirational experiences and 21 integrative and 56 disintegrative drawings in response to failure aspirational experiences. In comparison, the psychoneurotic group produced a total of 8 integrative drawings and 10 disintegrative drawings in response to successful aspirational experiences and 5 integrative and 73 disintegrative drawings in response to failure aspirational experiences.

Table VIII was devised to make comparison of the various subgroups easier. Here the results of the individual experiences were combined since it was felt that while

Table VII. - Raw Frequency Distribution of Integrative-Disintegrative Drawings Classified by Actual Success or Failure of Aspirational Performance of the Normal and Psychoneurotic Populations.

Group	Success		Failure	
	Integra- tive	Disinte- grative	Integra- tive	Disinte- grative
Normal Males	4	4	9	31
Normal Females	9	2	12	25
Psychoneurotic Males	2	3	2	41
Psychoneurotic Females	6	7	3	32

Table VIII. - Raw Frequency Distribution of Integrative-Disintegrative Drawings Classified by Actual Success or Failure of Aspirational Performance by Various Subgroups of the Total Population.

Group	Success		$\bar{X}$	Failure		$\bar{X}$
	Int. f	Dis. f		Int. f	Dis. f	
Normal and Psychoneurotic Males	6	7	1.79	11	72	3.06
Normal and Psychoneurotic Females	15	9	7.52	15	57	3.45
Normal Males and Females	13	6	6.43	21	56	3.85
Psychoneurotic Males and Females	8	10	2.11	5 <sup>3</sup>	73	2.10
Normal and Psychoneurotic Males and Females	21	16	9.52	26	129	4.68

1 Int. = Integrative

2 Dis. = Disintegrative

3 Though  $N_q < 5$ , (4.88), it is included here to complete the table. However, caution should be used in the interpretation of the statistic.

the individual experiences permitted ready access to observation of dynamics, the larger numbers that result from combining the individual experiences would present a clearer more accurate picture of whatever trends may be present. Before this was done, however, the data was submitted to an analysis of variance. The F - Test which utilized the formula  $\sum (X - \bar{X})^2 = \sum (X - \bar{X}_k)^2 + n \sum (\bar{X}_k - \bar{X})^2$  showed no significant differences between the various aspirational experiences, between the sexes, and between the normal and psychoneurotic groups. The results disclosed that where the F had to equal or exceed 5.95 to be significant at  $\mathcal{P}.01$ , for the Success-Integrative category the F was 3.75 for the trials and 5.33 for sex and normal and psychoneurotic groupings. For the Success-Disintegrative category the F was 1.0 for the aspirational experiences and 3.1 for the normal and psychoneurotic groupings. The F for the aspirational experiences was 2.3 in the Failure-Integrative category. Here the F was 2.38 for the male-female and normal-psychoneurotic groupings. The Failure-Disintegrative category showed the F to be 1.44 for the aspirational experiences and 2.0 for sex and diagnostic groupings. The F was found to be 1.83 for interaction of these factors and this was below 3.78 at .01 level of significance. These findings of no significance indicated that any differences were due to chance and not to real differences between the

groups, thus permitting the various combined groupings.

Examination of Table VIII shows that except for the "reversed" distribution of scores in the success column of the normal and psychoneurotic males and the psychoneurotic males and females, success at aspirational performance was generally followed by an integrative drawing and failure at aspirational performance was followed by a disintegrative drawing. It should be noted that while the standard error of the frequency shows that chance fluctuation may nullify the drawing differences following successful aspirational performance, chance fluctuation is not great enough to cancel out the significance of the difference between the drawings following failure aspirational performance.

The comparative data to that presented above is given in Tables IX, X, and XI classified according to subject

ratings of success or failure. The following discussion of the data compares Table IX and Table X.

A breakdown of the drawings using the subject's rating as a classification criteria shows that on the first aspirational experience the normal group had a total of 12 successes and 12 failures while the psychoneurotic group had 7 successes and 17 failures. On the second aspirational experience the normal group had a total of 18 successes and 6 failures while the psychoneurotic group had a total of 11 successes and 13 failures. As a result of the third aspirational experience the normal group had a total of 12 successes and 12 failures while the psychoneurotic group had 7 successes and 17 failures. On the fourth aspirational experience the normal group had a total of 13 successes and 11 failures and the psychoneurotic group had the same number of successes and failures.

In a further comparison of the distribution of data for the normal group, given on Table IX, with that of the psychoneurotic group, given on Table X, attention is drawn to the following results. The distribution of integrative-disintegrative drawings classified by the subjects' ratings is distinctly different than the distribution classified by actual performance as described above. In the first aspirational experience the normal group produced a total of 8 integrative and 4 disintegrative drawings in response to

Table IX. - Raw Frequency Distribution of Integrative-Disintegrative Drawings Classified by Rated Success or Failure of Aspirational Performance on Successive Aspirational Experiences of the Normal Population.

Group	Aspirational Experience	Success		Failure	
		Integra- tive	Disinte- grative	Integra- tive	Disinte- grative
Normal Males	1st	4	4	1	3
	2nd	3	5	1	3
	3rd	1	3	1	7
	4th	4	1	1	6
Normal Females	1st	4	0	4	4
	2nd	5	5	1	1
	3rd	2	6	1	3
	4th	6	2	2	2
Combined Normal Males and Females	1st	8	4	5	7
	2nd	8	10	2	4
	3rd	3	9	2	10
	4th	10	3	3	8

Table X. - Raw Frequency Distribution of Integrative-Disintegrative Drawings Classified by Rated Success or Failure of Aspirational Performance on Successive Aspirational Experiences of the Psychoneurotic Population.

Group	Aspirational Experience	Success		Failure	
		Integra- tive	Disinte- grative	Integra- tive	Disinte- grative
Psycho- neurotic Males	1st	2	3	1	6
	2nd	2	4	2	4
	3rd	0	3	0	9
	4th	2	4	0	6
Psycho- neurotic Females	1st	1	1	0	10
	2nd	1	4	1	6
	3rd	0	4	0	8
	4th	1	4	2	5
Combined Psycho- neurotic Males and Females	1st	3	4	1	16
	2nd	3	8	3	10
	3rd	0	7	0	17
	4th	3	8	2	11

aspirational success and 5 integrative and 7 disintegrative drawings in response to aspirational failure. On the first aspirational experience the psychoneurotic group produced 3 integrative and 4 disintegrative drawings after aspirational success and 1 integrative and 16 disintegrative drawings after aspirational failure. As a result of success on the second aspirational experience the normal group drew 8 integrative and 10 disintegrative pictures while after failure they drew 2 integrative and 4 disintegrative drawings. On the second aspirational experience the psychoneurotic group drew 3 integrative and 8 disintegrative pictures after success and 3 integrative and 10 disintegrative drawings after aspirational failure. Following the third aspirational experience the normal group produced 3 integrative and 9 disintegrative drawings in response to aspirational success and 2 integrative and 10 disintegrative drawings after failure. The third aspirational experience for the psychoneurotic group resulted in 0 integrative and 7 disintegrative drawings after success and 0 integrative and 17 disintegrative after aspirational failure. Following the fourth aspirational experience the normal group made 10 integrative and 3 disintegrative drawings after success and 3 integrative and 8 disintegrative after failure. The psychoneurotic group produced 3 integrative and 8 disintegrative drawings after success and

2 integrative and 11 disintegrative drawings after failure on the fourth aspirational experience.

The differences between the distributions classified according to the actual performance criteria or the subjects' rating criteria may be more easily seen when Table XI is compared to Table VII which was described earlier. From Table XI it can be seen that there are generally more disintegrative than integrative drawings following both success and failure. It will be recalled that on Table VII after aspirational success the drawings were almost evenly divided between the integrative categories while there were definitely more disintegrative drawings after aspirational failure.

Analysis of variance showed that there was no significant difference between the various aspirational experiences or for the interaction of sex differences and aspirational experiences, permitting the rated results to be combined into various groupings as seen on Table XII. From this table it can be seen that except for the cells under the success column for the normal males and females where there are more integrative drawings than disintegrative drawings, regardless of whether aspirational performance in success or failure, the subjects produced disintegrative drawings. It should be noted that in Tables VIII and XII the failure-integrative cell for the combined

Table XI. - Raw Frequency Distribution of Integrative-Disintegrative Drawings Classified by Rated Success or Failure of Aspirational Performance of the Normal and Psychoneurotic Populations.

Group	Success		Failure	
	Integra- tive	Disinte- grative	Integra- tive	Disinte- grative
Normal Males	12	13	4	19
Normal Females	17	13	8	10
Psychoneurotic Males	6	14	3	25
Psychoneurotic Females	3	13	3	29

Table XII. - Raw Frequency Distribution of Integrative-Disintegrative Drawings Classified by Rated Success or Failure of Aspirational Performance by the Various Subgroups of the Total Population.

Group	Success		$\bar{X}$	Failure		$\bar{X}$
	Int. f	Dis. f		Int. f	Dis. f	
Normal and Psycho- neurotic Males	18	27	3.29	7	44	2.48
Normal and Psycho- neurotic Females	20	26	3.35	11	39	3.11
Normal Males and Females	29	26	3.70	12	29	2.91
Psychoneurotic Males and Females	9	27	2.60	6 <sup>1</sup>	54	2.32
Normal and Psycho- neurotic Males and Females	38	53	4.71	18	83	3.86

<sup>1</sup> Though Nq 45, (3.60), it is given here to complete the table. However, caution should be used in the interpretation of this statistic.

psychoneurotic male and female group had  $Nq45$  so that caution should be used in the interpretation of this statistic.

In an attempt to evaluate the experimentally observed frequency incidence of integrative and disintegrative drawings, the data was submitted to the Chi-Square Test of Significance. The hypothesis formulated was that there was no significant difference between the frequencies for integrative and disintegrative drawings and any difference was due to chance fluctuation. The formula used for this test was 
$$\chi^2 = \sum \left[ \frac{(f_o - f_e)^2}{f_e} \right]$$
. An examination of Table XIII shows that when the results are classified by actual outcome of aspirational performance the 1% level of probability is attained for all population groupings. Thus, here the Null Hypothesis is discarded and the concept of significant difference in integrative or disintegrative drawing frequencies following aspirational success or failure is established.

In Table XIV the raw frequencies are seen classified by subject's ratings of success or failure. In all but one cell the 1% probability level is attained. The exception is seen for the combined group of normal males and females. This group attains the 5% level of confidence which is generally considered unsatisfactory in studies of this nature.

As shown by the Chi-Square Test the distribution of integrative and disintegrative drawings following aspirational

Table XIII. - Reliability of the Distribution of Integrative-Disintegrative Drawings Classified by Actual Outcome of Aspirational Experiences Expressed by Percentage of Level of Confidence Derived By the Chi-Square Test.

Group	$\chi^2$	p
Normal and Psycho-neurotic Males	42.58	.01
Normal and Psycho-neurotic Females	61.48	.01
Normal Males and Females	65.57	.01
Psychoneurotic Males and Females	133.87	.01
Normal and Psycho-neurotic Males and Females	183.28	.01

Table XIV. - Reliability of the Distribution of Integrative-Disintegrative Drawings Classified by Rated Outcome of Aspirational Experience Expressed by Percentage of Level of Confidence Derived By the Chi-Square Test.

Group	$\chi^2$	p
Normal and Psychoneurotic Males	30.57	.01
Normal and Psychoneurotic Females	17.25	.01
Normal Males and Females	8.23	.05
Psychoneurotic Males and Females	60.74	.01
Normal and Psychoneurotic Males and Females	46.60	.01

success or failure performance were found to be significantly different beyond chance fluctuation. The results are presented in Tables XV and XVI for two purposes. The first and essential purpose is that of following up the results of the Chi-Square Test. This statistical analysis pointed out the overall significance of the statistics. Now the results are submitted to the t - Test for further isolation of significant differences. A second purpose may be obtained from these tables. It will be recalled that the combined groups represent different size N's when classified by different groupings. Thus, the first four categories of Tables VIII and XII represent ninety-six experimental (aspirational-drawing) experiences, while the fifth or last grouping represents 192 experimental experiences. In Tables XV and XVI the raw frequencies are presented as percentages and thus may be readily compared.

The most outstanding statistic is the D column which shows degree of difference between the integrative and disintegrative drawings following aspirational success or failure performance. Here it can be readily seen that the differences between the integrative and disintegrative drawings following success are distinctly smaller than the differences between these two drawing categories following failure. To further test the significance of these differences the t - Test was applied. The formulas utilized

Table XV. - Degree of Significance of Integrative-Disintegrative Drawing Response to Actual Success and Failure Aspirational Performance as Shown By the t-Test.

Group	A.P. <sup>1</sup>	%	Drawing		%	D	D%	t
			Int.	Dis.				
			%	%				
Normal and Psychoneurotic Males	S. <sup>2</sup>	13.6	46.1	53.9	13.87	7.8	19.61	.40
	F. <sup>3</sup>	86.4	13.2	86.8	3.71	73.6	5.24	14.05*
Normal and Psychoneurotic Females	S.	16.7	68.7	31.3	9.46	37.4	13.40	2.79
	F.	83.3	17.5	82.5	2.62	65.0	3.70	17.56*
Normal Males and Females	S.	19.8	68.4	31.6	10.66	36.8	15.07	2.44
	F.	80.2	27.3	72.7	5.07	45.4	7.17	6.33*
Psychoneurotic Males and Females	S. <sup>4</sup>	18.7	44.4	55.6	22.22	11.2	31.42	.35
	F.	81.3	6.4	93.6	2.77	87.2	3.91	22.30*
Normal and Psychoneurotic Males and Females	S.	19.3	56.7	43.3	8.14	13.4	11.51	1.16
	F.	80.7	16.7	83.3	2.99	66.6	4.22	15.78*

1 A.P. = Aspirational Performance

2 S. = Success

3 F. = Failure

4  $Nq < 5$

\* Significant at p .01

Table XVI. - Degree of Significance of Integrative-Disintegrative Drawing Response to Rated Success and Failure Aspirational Performance as Shown By the t-Test.

Group	A.P.	%	Drawing		%	D	D%	t
			Int. %	Dis. %				
Normal and Psychoneurotic Males	S.	46.8	40.0	60.0	7.30	20.0	10.33	1.94
	F.	53.2	13.7	86.3	4.81	72.6	6.18	11.75*
Normal and Psychoneurotic Females	S.	47.9	43.0	57.0	7.30	14.0	10.33	1.36
	F.	52.1	22.0	78.0	5.86	56.0	8.28	6.76*
Normal Males and Females	S.	57.0	52.7	47.3	6.73	5.4	9.51	.57
	F.	43.0	29.2	70.8	9.48	41.6	13.33	3.12*
Psychoneurotic Males and Females	S.	37.5	25.0	75.0	8.33	50.0	11.78	4.24*
	F.	62.5	10.0	90.0	3.87	80.0	5.47	14.63*
Normal and Psychoneurotic Males and Females	S.	47.3	41.7	58.3	5.17	16.6	7.31	2.27
	F.	52.7	17.8	82.2	3.81	64.4	5.39	11.95*

1 Nq : 5

\* Significant at p .01

to obtain this information were as follows:

$$\sqrt{q} = \sqrt{\frac{PQ}{N}}$$

$$\sqrt{Dq} = \sqrt{\sqrt{q_1^2} + \sqrt{q_2^2}}$$

$$t = \frac{D}{\sqrt{D}}$$

These findings show that only in the failure experiences did the statistics reach the 1% level of confidence in Table XV. It should be noted that the success experiences for the psychoneurotic male and female grouping have an  $Nq$  of less than five (actually 4.80) as indicated earlier and is given here only to complete the table. It is felt that inclusion is of academic interest only, since the  $t$  was decidedly below the established level of significance. The same results are seen in Table XVI except that for this same grouping the  $t$  was significant at the 1% level of probability. Since here  $Nq = 3.60$  extreme caution should be used in interpreting the findings. Attention is brought to the fact that these statistics are not used in the final analysis of results and appear here only for purposes of comparing the results by actual and rated categorizations.

The relationship between aspirational success and failure and integrative and disintegrative drawings was established by use of the Tetrachoric Coefficient of

of Correlation. While the formula  $\frac{ad - bc}{N^2zz'} = \frac{xx'r^2}{2}$  176 may be used to obtain this statistic, the correlations shown here were derived through Thurstone's tables<sup>177</sup>. The

formula for approximating the standard error of  $r_t$  is given

by McNemar<sup>177a</sup>. as 
$$\sigma_{r_t} = \frac{\sqrt{pq p' q'}}{2x2y\sqrt{N}} \sqrt{(1-r^2) \left[ 1 - \left( \frac{d_{10} - r}{q_{10}^2} \right)^2 \right]}$$

However, the data presented here for this statistic was obtained from Hayes<sup>177b</sup>. The significance of the Coefficient of Correlation was established by use of the F - Test based upon the following formula:

$$\sum (X - \bar{X})^2 = \sum (X - \bar{X}_k)^2 + n \sum (\bar{X}_k - \bar{X})^2$$

The population groupings classified by actual outcome of aspirational performance is shown in Table XVII. It may be seen from this table that the coefficients of correlation varied between .50 and .72. If the classification given by Garrett<sup>177c</sup> is applied here these correlations may be described as denoting a substantial or marked relationship. It should be noted that while the remaining

176 Henry E. Garrett, Statistics in Psychology and Education, New York, Longmans, Green, 1947, p. 355.

177 Leone Chesire, Milton Saffir, L. L. Thurstone, Computing Diagrams For the Tetrachoric Correlation Coefficient, Chicago, University, 1933, 58 p.

177a Quinn McNemar, Psychological Statistics, 2nd Ed., New York, Wiley, 1955, p. 200.

177b Samuel P. Hayes, Jr., "Tables of the Standard Error of Tetrachoric Correlation Coefficient", Psychometrika, Vol. 8, No. 3, September 1943, p. 193-203.

177c Henry E. Garrett, op. cit., p. 333.

Table XVII. - Relationship of Combined Actual Aspirational Performance with Integrative-Disintegrative Drawing Response Expressed by Tetrachoric Correlation Coefficient.

Group	$r_t$	$\sqrt{r_t}$	F	p
Normal and Psychoneurotic Males	.50	2.24	7.35	.05
Normal and Psychoneurotic Females	.63	1.98	14.48	.01
Normal Males and Females	.55	2.15	9.54	.01
Psychoneurotic Males and Females	.72	1.68	23.77	.01
Normal and Psychoneurotic Males and Females	.64	1.98	32.00	.01

groupings in this table are significant at the 1% level of confidence, the grouping of the normal and psychoneurotic males is significant only at the 5% level.

Table XVIII shows the same data classified according to the subject's rating of aspirational success and failure. It is interesting to note that the correlations here were substantially below those found in Table XVII. If Garrett's classification system were employed here the coefficients would be described as being generally low or slight. It is also interesting to notice that in only two instances did these correlations reach the 1% level of significance, the other cases occurring at the 5% level or greater.

## 2.-Additional Findings

While the data in this section is not directly related to the hypothesis, it is of interest in the discussion of the findings since the presence of this matter elaborates on some experimental aspects deeply involved in testing the hypothesis.

The data under this section deals with the degree of agreement between actual aspirational performance and the subject's ratings of aspirational success or failure. The relationship between these two factors is shown first expressed in terms of percentage, as shown in Table XIX, and then in terms of the Tetrachoric Correlation Coefficient,

Table XVIII. - Relationship of Combined Rated Aspirational Performance with Integrative-Disintegrative Drawing Response Expressed by Tetrachoric Correlation Coefficient.

Group	$r_t$	$\sqrt{r_t}$	F	p
Normal and Psychoneurotic Males	.53	1.72	8.61	.01
Normal and Psychoneurotic Females	.41	1.70	4.44	.05
Normal Males and Females	.35	1.47	3.07	>.05
Psychoneurotic Males and Females	.30	1.95	2.17	>.05
Normal and Psychoneurotic Males and Females	.57	1.48	22.25	.01

as shown in Table XX. From Table XIX it can be seen that for all the population subgroups and combined groups there was a definite tendency for the ratings to agree with the actual classification. This relationship can be seen clearly if the combined groupings are examined. Thus, for the combined normal males and females, for those who actually succeeded the corresponding subject ratings were 76.2% success and 23.8% failure, and for those who failed the corresponding subject ratings were 46.7% success and 53.3% failure. For the combined psychoneurotic population subject's ratings, after actual success the subject's ratings were 77.8% success and 22.2% failure, while after actual failure the subject's ratings were 69.2% failure and 30.8% success.

This relationship can be further seen in Table XX, where it is expressed in terms of a coefficient of correlation. The coefficient of correlation can be seen to be fairly substantially significant throughout. The point at which the relationship may be seen most clearly is for the combined male and female normal and psychoneurotic groups where the correlation is .55.

The presence and direction of shifting bids is shown in Table XXI. From this table it may be seen that the subjects showed a clear tendency to raise their bids after success and to lower or maintain them on the same level

Table XIX. - A Comparison between Actual Success or Failure Performance and Subject Ratings Expressed in Percentage.

Group		Actual Performance %	Rated	
			Success %	Failure %
Normal Males	Success	16.7	87.5	12.5
	Failure	83.3	52.5	47.5
Normal Females	Success	27.1	62.2	30.8
	Failure	72.9	40.0	60.0
Combined Normal Males and Females	Success	21.9	76.2	23.8
	Failure	78.3	46.7	53.3
Psychoneurotic Males	Success	10.4	80.0	20.0
	Failure	89.6	37.2	62.8
Psychoneurotic Females	Success	27.1	76.9	23.1
	Failure	72.9	22.9	77.1
Combined Psychoneurotic Males and Females	Success	18.6	77.8	22.2
	Failure	81.4	30.8	69.2

Table XX. - Relationship between Actual Success or Failure Performance and Subject Ratings Expressed in Terms of Tetrachoric Correlation Coefficient.

Group	$r_t$
Normal Males	.53
Normal Females	.45
Combined Normal Males and Females	.47
Psychoneurotic Males	.55
Psychoneurotic Females	.59
Combined Psychoneurotic Males and Females	.60
Normal and Psychoneurotic Males	.55
Normal and Psychoneurotic Females	.60
Combined Normal and Psychoneurotic Males and Females	.55

Table XXI. - The Distribution of Subsequent Aspirational Bids Following Actual Success or Failure Performance Expressed in Percentage For All Population Subgroupings.

Group	Aspirational Outcome	Direction of Next Bid		
		Up %	Down %	Same %
Normal Males	Success	83.3	0.0	16.6
	Failure	10.0	33.3	56.6
Normal Females	Success	57.1	14.2	28.6
	Failure	6.2	49.0	44.8
Combined Normal Males and Females	Success	69.2	7.7	23.0
	Failure	8.4	40.7	50.8
Psychoneurotic Males	Success	100.0	0.0	0.0
	Failure	18.1	30.3	51.5
Psychoneurotic Females	Success	44.4	11.1	44.4
	Failure	7.4	18.5	74.0
Combined Psychoneurotic Males and Females	Success	58.3	8.3	33.3
	Failure	13.3	25.0	61.7
Normal and Psychoneurotic Males	Success	88.8	0.0	11.1
	Failure	14.2	31.8	53.9
Normal and Psychoneurotic Females	Success	50.0	12.5	37.5
	Failure	7.1	33.9	58.9
Combined Normal and Psychoneurotic Males and Females	Success	64.0	8.0	28.0
	Failure	10.9	32.7	56.3

after failure. This pattern is embodied in the findings for the combined normal and psychoneurotic males and females where it was found that after success 64% of the population increased their bid, while after failure 33.7% lowered the bid and 56.3% retained it at the same level. The reaction to success was found to have a  $X^2$  of 22.70 at 1% and the reaction to failure was  $X^2$  36.79 at 1%.

The reliability of the drawing evaluations is indicated by a comparison of the author's ratings (Rater I) with those of a second rater (Rater II) in Table XXII. In this procedure ten sets of five drawings each were selected at random and evaluated by Rater II. The second evaluations were compared to the first evaluations and the results showed that there was 80% agreement at the 1% level of confidence.

Table XXII. - Comparison of Drawing Evaluations  
by Two Raters On a Random Sample of Population Drawings.

Drawing Rating	Rater		Agreement Percentage	Disagreement Percentage
	I	II		
Integrative	6	10	10	5
Disintegrative	34	30	70	15

## CONCLUSIONS

The preceding chapter presented the statistical findings that were gathered in the course of the experimental phase of this study. In this chapter these figures are brought into relationship and attempts are made to give them meaning, research conclusions are presented, the study is summarized, and finally some implications for further research are given.

### 1.-Discussion of the Findings

A review of the data shows that throughout the experimental findings there was a pronounced tendency for the subjects to fail to reach their aspirational goals. Failure generally occurred four to five times as frequently as success. Where success did occur, it appeared much more often on the second and fourth trials which followed the experimental design of being "easier" situations. It is interesting to note that the females tended to succeed slightly more often than the males. Also, there was a tendency for the males to reach their greatest number of successes early and then decline or remain at about the same level. The females, on the other hand, tended to continue their strivings and maintain or elevate the number of successes as the study progressed. This tendency on the part

of the subjects seems to take on meaning when it is related to the drawings.

Before proceeding with a discussion of the drawings attention is drawn to two factors: (1) the presence of the self or ego factor in the aspirational experience and (2) the reliability of the drawing evaluations. The presence of the self factor in the aspirational situation was demonstrated by the subjects' aspirational behavior. It will be recalled that earlier the presence of this factor was identified with the subjects' handling of the aspirational bid. Child and Whiting<sup>178</sup>, and many others referred to earlier, observed that following success there was a rise in the level of aspiration, and following failure there was a lowering of the bid. If such observations are used to identify the self factor then the presence of this element is confirmed. From Table XXI it can be seen that there was a definite tendency on the part of the subjects to increase the bid after success and to remain on the same level or lower the aspirational bid after failure. As noted earlier, the aspirational behavior following both success and failure was found to be significant at the 1% level. The second factor deals with the reliability of the evaluations of the drawings. A second rater evaluated the drawings from the

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<sup>178</sup> Irvin L. Child and John W. M. Whiting, op. cit., p. 314.

criteria described in the experimental plan and the results of this procedure were compared to evaluations made by the author. Based upon a random selection of ten sets of five drawings each, there was found to be 80% agreement at the 1% level of confidence. This is the same as the findings of Fisher and Fisher<sup>179</sup> which were determined to be adequately reliable.

The overall pattern of distribution of integrative and disintegrative drawings as rated by actual performance shows that the tendency was for success to be followed by integrative drawings and for failure to be followed by disintegrative drawings. However, there were some exceptions to this pattern. In an examination of Table V it can be seen that the normal males were either ambivalent about or could not produce an integrative drawing following success, while the integrative-success pattern is quite distinct among the normal females. If we combine this finding with the earlier one of the frequency of success, the immediate suggestion is that the normal male and female subjects in this study perceived and treated the attainment of success differently. However, a second digression from the success-integrative failure-disintegrative pattern was seen in the psychoneurotic group. Here, slightly more disintegrative than integrative drawings were produced

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<sup>179</sup> Seymour Fisher and Rhoda Fisher, loc. cit.

following success. A comparison of Tables V and VI suggests that as the percentage of successes increased there was a greater tendency to produce integrative drawings. Some support for this can perhaps be obtained from the observation that the number of failures is quite marked and the percentage of disintegrative responses far outweighs the percentage of integrative responses.

It was stated initially that the actual aspirational performance outcome would be used in preference to the subjects' ratings of success and failure because the suspected protective role of defense mechanisms would cause them to misperceive their performance. This plan for evaluation of the experimental findings was substantiated. While the subjects felt that they had succeeded far more often than they actually had, by the definition of success used here, the distribution of integrative-disintegrative drawings showed that they generally reacted to both success and failure by producing disintegrative drawings. If it is assumed that the individual may have felt successful whether or not he actually attained his aspirational bid, then there is a lack of consistency in the response as measured by these tools. The suggestion is that under the pressure of having to evaluate their performance publically, the subjects tended to proclaim their performance a success while inwardly they reacted to failure with some degree of demoralization as might normally be expected. The differences between the

actual and rated statistics might further be interpreted as reflecting the presence of ego-involvement in the experimental situation.

In answer to the question as to how much confidence could be placed upon the distribution of integrative-disintegrative drawings in consideration of chance occurrence, the statistics dealing with the problem were submitted to the Chi-Square Test. While some individual aspirational experiences, particularly those in the normal group, were found to be outside the acceptable cut-off of the 5% level, as soon as the individual experiences were combined for each subgroup the 1% level was attained. The 1% level was maintained when the subgroups were combined ultimately to form one total group. It is thus felt that a great deal of confidence can be placed upon those findings which deal with the combined aspirational experiences for each subgroup and particularly for the various combinations of subgroups, as well as the combined total group.

The relationship between aspirational success and integrative drawings, and failure and disintegrative drawings is shown by the Tetrachoric Correlation Coefficient. While the correlations were of a positive nature, the coefficients reached significance when all normals were grouped together and all psychoneurotics were grouped together. It is felt that the coefficient of .64 for the

total combined population is quite representative of the experimental outcome with <sup>due</sup> consideration of the t-Test findings.

## 2.-Research Conclusions

This project was focused on trying to obtain empirical evidence of the theoretical and clinical percept that the self-concept undergoes change and that positive experiences will give rise to integrative processes in the self-concept, while negative experiences will give rise to disintegrative processes in the self-concept.

It was further felt that aspirational conditions of success or failure would produce these changes and that evidence of such changes could be obtained by measuring changes in the human figure drawing. In addition, by constructing a series of experimental situations for each subject, it was felt that a continuous "picture" of such changes would be observed.

The results of the experiment confirm the expectancy that the performance in the aspirational situation resulted in feelings of success or failure as reflected in the subjects' ratings of the success or failure evaluation of their performance in comparison to the drawings they produced. It is further felt that the emotional aspect was confirmed by the subjects' aspirational bid behavior. Furthermore, it is felt that the drawings were successful in

*Second*

Revisions of

A STUDY OF THE STABILITY OF THE  
SELF-CONCEPT IN A LEVEL OF  
ASPIRATION EXPERIMENT

by Murray Kent Teris

Table XI. - A Comparison of Actual Aspirational Performance with Drawing Response of the Normal Male Group on Successive Aspirational Experiences Expressed in Percentage.

A.E. <sup>1</sup>	A.P. <sup>2</sup>	%	$\sigma_{\%}$	Drawing		$\sigma_{\%}$	D	$\sigma_{D\%}$
				Int. <sup>3</sup>	Dis. <sup>4</sup>			
				%	%			
1st	Success	16.6	10.74	50.0	50.0	14.43	0.0	20.41
	Failure	83.4		10.0	90.0	8.66	80.0	12.25
2nd	Success	25.0	12.50	66.6	33.3	13.59	33.3	19.65
	Failure	75.0		55.5	44.4	14.33	11.1	20.26
3rd	Success	8.3	7.95	0.0	100.0	0.00	0.0	0.00
	Failure	91.7		9.0	91.0	8.26	82.0	11.68
4th	Success	16.6	10.74	50.0	50.0	14.43	0.0	20.26
	Failure	83.4		20.0	80.0	11.54	60.0	16.32
Average Success		16.6	10.74	41.6	58.3	14.21	16.7	20.08
Average Failure		83.4		23.3	76.3	12.17	53.0	17.27

- 1 A.E. = Aspirational Experience  
 2 A.P. = Aspirational Performance  
 3 Int. = Integrative  
 4 Dis. = Disintegrative

Table XII. - A Comparison of Actual Aspirational Performance with Drawing Response of the Normal Female Group on Successive Aspirational Experiences Expressed in Percentage.

A.E.	A.P.	%	$\sqrt{\%}$	Drawing		$\sqrt{\%}$	D	$\sqrt{D\%}$
				Int. %	Dis. %			
1st	Success	0.0	0.00	0.0	0.0	0.00	0.0	0.00
	Failure	100.0		8.3	91.7	7.95	83.4	11.24
2nd	Success	25.0	12.50	100.0	0.0	0.00	0.0	0.00
	Failure	75.0		33.3	66.6	13.59	33.3	19.65
3rd	Success	25.0	12.50	66.6	33.3	13.59	33.3	19.65
	Failure	75.0		44.4	55.5	14.33	11.1	20.26
4th	Success	41.6	14.23	80.0	20.0	11.54	60.0	16.32
	Failure	58.4		57.0	43.0	14.29	14.0	20.20
Average Success		22.9	12.14	82.2	17.7	11.01	64.5	15.56
Average Failure		77.1		35.7	64.2	14.42	28.5	20.36

Table XIII. - A Comparison of Actual Aspirational Performance with Drawing Response of the Combined Normal Male and Female Groups on Successive Aspirational Experiences Expressed in Percentage.

A.E.	A.P.	%	$\sigma$ %	Drawing		$\sigma$ %	D	$\sigma$ D%
				Int. %	Dis. %			
1st	Success	8.0	5.54	50.0	50.0	10.20	0.0	14.42
	Failure	92.0		9.0	91.0	5.84	82.0	8.25
2nd	Success	25.0	8.84	83.0	17.0	7.66	66.0	10.82
	Failure	75.0		44.4	55.5	10.13	11.1	14.32
3rd	Success	17.0	7.66	50.0	50.0	10.20	0.0	14.42
	Failure	83.0		25.0	75.0	8.84	50.0	12.50
4th	Success	29.0	9.26	71.0	29.0	9.26	42.0	13.10
	Failure	71.0		35.0	65.0	9.73	30.0	13.76
Average Success		19.7	8.11	63.5	36.5	13.09	27.0	18.50
Average Failure		80.2		28.3	71.6	9.18	43.3	12.98

Table XIV. - A Comparison of Actual Aspirational Performance with Drawing Response of the Psychoneurotic Male Group on Successive Aspirational Experiences Expressed in Percentage.

A.E.	A.P.	%	$\bar{D}$	Drawing		$\bar{D}$	D	$\bar{D}_D$
				Int. %	Dis. %			
1st	Success	0.0	0.00	0.0	0.0	0.00	0.0	0.00
	Failure	100.0		8.3	91.7	7.95	83.4	11.24
2nd	Success	16.6	10.74	50.0	50.0	14.43	0.0	20.26
	Failure	83.4		10.0	90.0	8.66	80.0	12.24
3rd	Success	8.3	7.95	0.0	100.0	0.00	0.0	0.00
	Failure	91.7		0.0	100.0	0.00	0.0	0.00
4th	Success	16.6	10.74	50.0	50.0	14.43	0.0	20.41
	Failure	83.4		0.0	100.0	0.00	0.0	0.00
Average Success		10.3	8.76	33.3	66.6	13.59	33.3	19.65
Average Failure		89.6		4.5	95.4	5.97	90.9	8.44

Table XV. - A Comparison of Actual Aspirational Performance with Drawing Response of the Psychoneurotic Female Group on Successive Aspirational Experiences Expressed in Percentage.

A.E.	A.P.	%	$\sqrt{\%}$	Drawing		$\sqrt{\%}$	D	$\sqrt{D\%}$
				Int. %	Dis. %			
1st	Success	8.3	7.95	0.0	100.0	0.00	0.0	0.00
	Failure	91.7		27.0	73.0	12.82	46.0	15.16
2nd	Success	41.7	14.21	40.0	60.0	14.14	20.0	20.00
	Failure	58.3		0.0	100.0	0.00	0.0	0.00
3rd	Success	25.0	12.50	33.3	66.6	13.59	33.3	19.65
	Failure	75.0		0.0	100.0	0.00	0.0	0.00
4th	Success	33.3	13.59	75.0	25.0	12.50	50.0	17.68
	Failure	66.6		0.0	100.0	0.00	0.0	0.00
Average Success		27.0	12.78	37.0	62.9	13.92	25.9	19.66
Average Failure		72.7		6.7	93.2	7.21	86.5	10.19

Table XVI. - A Comparison of Actual Aspirational Performance with Drawing Response of the Combined Psycho-neurotic Male and Female Groups on Successive Aspirational Experiences Expressed in Percentage.

A.E.	A.P.	%	$\bar{U}$ %	Drawing		$\bar{U}$ %	D	$\bar{U}_D$ %
				Int. %	Dis. %			
1st	Success	4.0	4.00	0.0	100.0	0.00	0.0	0.00
	Failure	96.0		17.0	83.0	7.66	66.0	10.83
2nd	Success	29.0	9.26	43.0	57.0	10.14	14.0	14.34
	Failure	71.0		6.0	94.0	4.00	88.0	5.66
3rd	Success	17.0	7.66	25.0	75.0	8.84	50.0	12.50
	Failure	83.0		0.0	100.0	0.00	0.0	0.00
4th	Success	25.0	8.84	66.6	33.3	9.61	33.3	13.59
	Failure	75.0		0.0	100.0	0.00	0.0	0.00
Average Success		18.7	7.95	33.6	66.3	9.63	32.7	13.62
Average Failure		81.2		5.7	94.2	4.73	88.5	6.68

Table XVII. - A Comparison of Aspirational Performance Ratings of the Normal Male Group with Drawing Response on Successive Aspirational Experiences Expressed in Percentage.

A.E.	A.P.	%	$\sqrt{\%}$	Drawing		$\sqrt{\%}$	D	$\sqrt{D\%}$
				Int. %	Dis. %			
1st	Success	66.6	13.59	50.0	50.0	14.43	0.0	20.41
	Failure	33.3		25.0	75.0	12.50	50.0	17.68
2nd	Success	66.6	13.59	37.4	62.6	14.02	25.2	19.83
	Failure	33.3		25.0	75.0	12.50	50.0	17.68
3rd	Success	33.3	13.59	25.0	75.0	12.50	50.0	17.68
	Failure	66.6		12.5	87.5	9.54	75.0	13.49
4th	Success	42.0	14.25	80.0	20.0	11.54	60.0	16.32
	Failure	58.0		14.2	85.8	10.07	71.6	14.24
Average Success		52.1	14.43	48.1	51.9	14.42	3.8	14.42
Average Failure		47.8		19.1	80.8	11.34	61.7	16.10

Table XVIII. - A Comparison of Aspirational Performance Ratings of the Normal Female Group with Drawing Response on Successive Aspirational Experiences Expressed in Percentage.

A.E.	A.P.	%	$\sqrt{\%}$	Drawing		$\sqrt{\%}$	D	$\sqrt{D\%}$
				Int. %	Dis. %			
1st	Success	33.3	13.59	100.0	0.0	0.00	0.0	0.00
	Failure	66.6		50.0	50.0	14.43	0.0	20.41
2nd	Success	83.3	10.74	50.0	50.0	14.43	0.0	20.41
	Failure	16.6		50.0	50.0	14.43	0.0	20.41
3rd	Success	66.6	13.59	25.0	75.0	12.50	50.0	17.68
	Failure	33.3		25.0	75.0	12.50	50.0	17.68
4th	Success	66.6	13.59	75.0	25.0	12.50	50.0	17.68
	Failure	33.3		50.0	50.0	14.43	0.0	20.41
Average Success		62.4	13.94	62.2	37.5	13.94	24.7	19.71
Average Failure		37.4		43.7	56.2	14.30	12.5	20.22

Table XIX. - A Comparison of Aspirational Performance Ratings of the Combined Normal Male and Female Groups with Drawing Response on Successive Aspirational Experiences Expressed in Percentage.

A.E.	A.P.	%	$\sqrt{\%}$	Drawing		$\sqrt{\%}$	D	$\sqrt{D\%}$
				Int. %	Dis. %			
1st	Success	50.0	10.20	66.6	33.3	9.61	33.3	13.59
	Failure	50.0		41.6	58.4	10.06	16.8	14.23
2nd	Success	75.0	8.84	44.4	55.5	10.13	11.1	14.32
	Failure	25.0		33.3	66.6	9.61	33.3	13.59
3rd	Success	50.0	10.20	25.0	75.0	8.84	50.0	12.50
	Failure	50.0		16.6	83.4	7.58	66.8	10.72
4th	Success	54.0	10.17	76.9	23.1	8.60	53.8	12.16
	Failure	46.0		27.2	72.8	9.08	45.6	12.84
Average Success		57.0	10.14	53.2	46.7	10.17	6.5	14.38
Average Failure		43.0		29.6	70.3	9.31	40.7	13.16

Table XX. - A Comparison of Aspirational Performance Ratings of the Psychoneurotic Male Group with Drawing Response on Successive Aspirational Experiences Expressed in Percentage.

A.E.	A.P.	%	$\bar{U}$ %	Drawing		$\bar{U}$ %	D	$\bar{U}_D$ %
				Int. %	Dis. %			
1st	Success	42.0	14.25	40.0	60.0	14.14	20.0	20.00
	Failure	58.0		16.6	83.4	10.74	66.8	15.19
2nd	Success	50.0	14.43	33.3	66.6	13.59	33.3	19.65
	Failure	50.0		33.3	66.6	13.59	33.3	19.65
3rd	Success	25.0	12.50	0.0	100.0	0.00	0.0	0.00
	Failure	75.0		0.0	100.0	0.00	0.0	0.00
4th	Success	50.0	14.43	33.3	66.6	13.59	33.3	19.65
	Failure	50.0		0.0	100.0	0.00	0.0	0.00
Average Success		41.7	14.21	26.6	73.3	12.74	46.7	18.02
Average Failure		58.2		12.2	87.7	9.44	75.5	13.35

Table XXI. - A Comparison of Aspirational Performance Ratings of the Psychoneurotic Female Group with Drawing Response on Successive Aspirational Experiences Expressed in Percentage.

A.E.	A.P.	%	$\sqrt{U\%}$	Drawing		$\sqrt{U\%}$	D	$\sqrt{VD\%}$
				Int. %	Dis. %			
1st	Success	17.0	10.84	50.0	50.0	14.43	0.0	20.41
	Failure	83.0		0.0	100.0	0.00	0.0	0.00
2nd	Success	42.0	14.25	20.0	80.0	11.54	60.0	16.32
	Failure	58.0		14.2	85.8	10.07	71.6	14.24
3rd	Success	33.3	13.59	0.0	100.0	0.00	0.0	0.00
	Failure	66.6		0.0	100.0	0.00	0.0	0.00
4th	Success	42.0	14.25	20.0	80.0	11.54	60.0	16.32
	Failure	58.0		28.5	71.5	13.03	43.0	18.43
Average Success		33.5	12.98	22.0	77.0	11.88	55.0	16.80
Average Failure		66.4		10.6	89.3	8.76	78.7	12.39

Table XXII. - A Comparison of Aspirational Performance Ratings of the Combined Psychoneurotic Male and Female Groups with Drawing Response on Successive Aspirational Experiences Expressed in Percentage.

A.E.	A.P.	%	$\bar{U}$	Drawing		$\bar{U}$	D	$\bar{U}_D$
				Int.	Dis.			
				%	%			
1st	Success	29.2	9.28	42.8	57.2	10.19	14.4	20.19
	Failure	70.8		5.8	94.2	4.73	88.4	6.68
2nd	Success	46.0	10.17	27.2	72.8	9.08	45.6	12.84
	Failure	54.0		23.0	77.0	8.74	54.0	12.36
3rd	Success	29.0	9.26	0.0	100.0	0.00	0.0	0.00
	Failure	71.0		0.0	100.0	0.00	0.0	0.00
4th	Success	46.0	10.17	27.2	72.8	9.08	45.6	12.84
	Failure	54.0		15.3	84.7	7.34	69.4	10.38
Average Success		37.8	9.83	24.3	75.7	8.75	51.4	12.37
Average Failure		61.4		11.0	88.9	6.38	77.9	9.02

Table XXVIII. - A Comparison of Total Actual Aspirational Performance with Drawing Response of the Various Normal Population Groupings Expressed in Percentage.

Group	A.P. %	$\sqrt{\text{A.P.}}\%$	Drawing		$\sqrt{\text{D}}\%$	D	$\sqrt{\text{D}}\%$
			Int. %	Dis. %			
Normal Males	S. <sup>1</sup> 16.7	10.74	50.0	50.0	14.43	0.0	20.41
	F. <sup>2</sup> 83.3		22.5	77.5	12.05	55.0	12.05
Normal Females	S. 22.9	12.14	81.8	18.2	11.14	63.6	15.75
	F. 77.1		32.4	67.6	13.51	35.2	13.51
Combined Normal Males and Females	S. 19.8	8.11	68.4	31.6	9.49	36.8	13.42
	F. 80.2		27.3	72.7	9.09	45.4	12.86

1 S. = Success  
2 F. = Failure

Table XXIV. - A Comparison of Total Actual Aspirational Performance with Drawing Response of the Various Psychoneurotic Population Groupings Expressed in Percentage.

Group	A.P. %	$\bar{U}$ %	Drawing		$\bar{U}$ %	D	$\bar{U}_D$ %
			Int. %	Dis. %			
Psychoneurotic Males	S. 10.4	8.76	40.0	60.0	14.14	20.0	20.00
	F. 89.6		4.6	95.4	5.97	90.8	8.44
Psychoneurotic Females	S. 27.1	12.83	46.1	53.9	14.39	7.8	20.38
	F. 72.9		8.6	91.4	8.09	82.8	11.44
Combined Psycho-neurotic Males and Females	S. 18.7	7.95	44.4	55.5	10.13	11.1	14.33
	F. 81.3		6.4	93.6	4.99	87.2	7.06

Table XXV. - A Comparison of Total Actual Aspirational Performance with Drawing Response of the Various Population Subgroups Expressed in Percentage.

Group	A.P. %	$\bar{U}$ %	Drawing		$\bar{U}$ %	D	$\bar{U}_D$ %
			Int. %	Dis. %			
Normal and Psychoneurotic Males	S. 13.6	6.99	46.1	53.9	10.17	7.8	14.38
	F. 86.4		13.2	86.8	6.91	73.6	9.77
Normal and Psychoneurotic Females	S. 16.7	7.58	68.7	31.3	9.46	37.4	13.37
	F. 83.3		17.5	82.5	7.75	65.0	11.00
Combined Normal and Psychoneurotic Males and Females	S. 19.0	5.66	56.7	43.3	7.46	13.4	10.55
	F. 81.0		16.7	83.3	5.38	66.6	7.61

Table XXVI. - A Comparison of Total Rated Aspirational Performance with Drawing Response of the Various Normal Population Groupings Expressed in Percentage.

Group	A.P. %	$\bar{U}$ %	Drawing		$\bar{V}$ %	D	$\bar{V}_D$ %
			Int. %	Dis. %			
Normal Males	S. 51.0	14.43	48.0	52.0	14.42	4.0	20.39
	F. 49.0		17.3	82.7	10.91	65.4	15.43
Normal Females	S. 62.5	13.94	56.6	43.4	14.31	7.2	20.20
	F. 37.5		44.4	55.5	14.33	11.1	20.26
Combined Normal Males and Females	S. 57.0	10.14	52.7	47.3	10.19	5.4	20.19
	F. 43.0		29.2	70.8	9.28	41.6	13.12

Table XXVII. - A Comparison of Total Rated Aspirational Performance with Drawing Response of the Various Psychoneurotic Population Groupings Expressed in Percentage.

Group	A.P. %	$\bar{D}$	Drawing		$\bar{D}$	D	$\bar{D}$
			Int. %	Dis. %			
Psychoneurotic Males	S. 42.0	14.25	30.0	70.0	13.22	40.0	18.70
	F. 58.0		10.7	89.3	8.92	78.6	12.62
Psychoneurotic Females	S. 33.3	13.59	18.7	81.3	11.26	62.6	15.92
	F. 66.6		10.3	89.7	8.76	79.4	12.39
Combined Psycho-neurotic Males and Females	S. 37.5	9.88	25.0	75.0	8.84	50.0	12.50
	F. 62.5		10.0	90.0	6.12	80.0	8.65

classified by the subject's ratings are shown in Table XXVIII. From this table it can be seen that the combined groups rated slightly less success performances, i.e., 47.3% success to 52.7% failure. Unlike the distribution of actual experience in Table XXV, there is more of a tendency here to produce disintegrative drawings after success, i.e. 41.7% integrative and 58.3% disintegrative, though, like the actual grouping there are more disintegrative drawings than integrative drawings after failure, i.e. 17.8% integrative and 82.2% disintegrative.

To determine the stability of these percentages, the standard error of the percentage ( $\sigma\% = \sqrt{\frac{PQ}{N}}$ ) and the standard error of the difference ( $\sigma D\% = \sqrt{\sigma\%_1 + \sigma\%_2}$ ) were computed. The findings from these processes show that in most cases one might expect a great deal of fluctuation among subsequent samples. However, there is a tendency toward less fluctuation and greater stability as the subgroups are combined. Thus, in tables dealing with individual experimental experiences, as Tables XI, XII dealing with the normal population and XIV, XV dealing with the psychoneurotic population, it can be seen that the standard errors are greater than those dealing with combined groups, as Table XIII or XVI. As the population is further combined, the expected stability is much greater. This can be seen in Tables XXIII, XXIV, and XXV. Examination of those tables dealing with

classification of raw scores by subject's ratings (Tables XVII - XXII and XXVI - XXVIII) show the same tendencies as those described above.

The pattern seen so far in the findings indicates that the meaningfulness and stability of the findings increases directly as the size of the group increases. Thus, the combined population of forty-eight is felt to reflect the most meaningful findings, next is the group of twenty-four, then the group of twelve, and finally the group of twelve on the individual experimental experiences. In order to carry through this combining practice, the data was submitted to analysis of variance using the formula  $\sum (x - \bar{x})^2 = \sum (x - \bar{x}_k)^2 + n \sum (x_k - \bar{x})^2$ . The groups and experiences were found to be sufficiently homogeneous for legitimate combining.

In an attempt to evaluate the experimentally observed frequency incidence of integrative-disintegrative drawings, the data was submitted to the Chi-Square Test. The formula used for this test was  $X^2 = \sum \left[ \frac{(f_o - f_e)^2}{f_e} \right]$ . The results of this statistical procedure will be seen in Table XXIX through Table XXXVI.

In several of the theoretical frequency cells on the individual experiences the number falls below five. There is some controversy regarding the use of  $X^2$  with such

small frequencies. Some authors as Garrett<sup>175a</sup> and Rider<sup>175b</sup> uphold such usage. McNemar<sup>175c</sup> approved the use of these frequencies at first, but in later works questioned numbers less than five. More recent opinion seems to set the minimum at five. However, the  $X^2$  values are given for these frequencies for several reasons. Although there may be some possible error they provide some notion as to the significance. The fact that the values are inflated and still insignificant in many instances is meaningful, while those at 1% may be regarded with caution. There do not seem to be other readily available tests of significance that deal with such small frequencies. Finally, as already indicated, the most significant data appears to occur at levels using the total or large combined portions of the population and the final conclusions will be based on those findings so that the appearance of these figures serves largely for comparative purposes.

The distribution for the normal population is shown in Table XXIX. From this table it can be seen that the male group showed significant scores on the first and third

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<sup>175a</sup> Henry E. Garrett, Statistics in Psychology and Education, New York, Longmans, Green, 1947, p. 246-248.

<sup>175b</sup> Paul R. Rider, An Introduction to Modern Statistical Methods, New York, Wiley, 1939, p. 112.

<sup>175c</sup> Quinn McNemar, Psychological Statistics, New York, Wiley, 1949, p. 207.

experiences which were the failure-predisposed settings. The normal female scores were significant only on the first experience. The others fall below the 1% level of significance. The combined normal population, like the normal males, had significantly different scores only for the first and third experiences.

Table XXVIII. - A Comparison of Total Rated Aspirational Performance with Drawing Response of the Various Population Subgroups Expressed in Percentage.

Group	A.P. %	$\sqrt{J\%}$	Drawing		$\sqrt{J\%}$	D	$\sqrt{D\%}$
			Int. %	Dis. %			
Normal and Psychoneurotic Males	S. 46.8	10.19	40.0	60.0	10.00	20.0	14.14
	F. 53.2		13.7	86.3	6.99	72.6	9.89
Normal and Psychoneurotic Females	S. 47.9	10.20	43.0	57.0	10.14	14.0	14.34
	F. 52.1		22.0	78.0	8.46	56.0	11.96
Combined Normal and Psychoneurotic Males and Females	S. 47.3	7.49	41.7	58.3	5.03	16.6	7.11
	F. 52.7		17.8	82.2	5.52	64.4	7.81

Table XXIX. - Reliability of the Distribution of Integrative-Disintegrative Drawings of the Normal Population Classified by Actual Outcome of Successive Aspirational Experiences Expressed by Percentage of Level of Confidence Derived By the Chi-Square Test.

Group	Aspirational Experience	X <sup>2</sup> '	p
Normal Males	1st	12.35	.01
	2nd	1.60	.70
	3rd	17.66	.01
	4th	8.33	.05
Normal Females	1st	23.66	.01
	2nd	4.16	.30
	3rd	1.66	.70
	4th	.91	.90
Combined Normal Males and Females	1st	45.68	.01
	2nd	9.68	.05
	3rd	19.01	.01
	4th	7.01	.10

1 All X<sup>2</sup> where N = 12 have been corrected for continuity by the Yates method  $\left[ \frac{(fo - fe) - .5}{fe} \right]$

From Table XXX the distribution for the psychoneurotic group can be seen. While the male scores were significant at all four levels, as were the scores for the combined psychoneurotic male and female group, the females here were only found to show significant difference in the third experimental situation.

The individual aspirational experiences were combined and the results of this combination for the psychoneurotic and normal populations are shown in Table XXXI. Here it can be seen that as a result of bringing the findings of the individual aspirational experiences together the various subgroupings and the combined groupings of both the normal and psychoneurotic populations are significant at the 1% level.

When the population groupings are combined slightly differently, as in Table XXXII, all the groups are significant at the 1% level.

The data relating to the incidence and distribution of integrative-disintegrative drawings classified by the subject's ratings of success and failure was also submitted to the Chi-Square Test. The results for the normal population are shown in Table XXXIII. Here, the distributions occurred below 1% in all instances.

Table XXX. - Reliability of the Distribution of Integrative-Disintegrative Drawings of the Psychoneurotic Population Classified by Actual Outcome of Successive Aspirational Experiences Expressed by Percentage of Level of Confidence Derived By the Chi-Square Test.

Group	Aspirational Experience	$\chi^2$	p
Psychoneurotic Males	1st	13.66	.01
	2nd	12.32	.01
	3rd	13.66	.01
	4th	16.33	.01
Psychoneurotic Females	1st	9.58	.05
	2nd	6.24	.20
	3rd	12.98	.01
	4th	4.21	.30
Combined Psychoneurotic Males and Females	1st	39.11	.01
	2nd	23.01	.01
	3rd	44.34	.01
	4th	33.34	.01

Table XXXI. - Reliability of the Distribution of Integrative-Disintegrative Drawings of the Normal and Psychoneurotic Populations Classified by Actual Outcome of Aspirational Experiences Expressed by Percentage of Level of Confidence Derived By the Chi-Square Test.

Group	$\chi^2$	p
Normal Males	38.40	.01
Normal Females	21.06	.01
Combined Normal Males and Females	65.57	.01
Psychoneurotic Males	88.74	.01
Psychoneurotic Females	41.90	.01
Combined Psychoneurotic Males and Females	133.87	.01

Table XXXII. - Reliability of the Distribution of Integrative-Disintegrative Drawings of the Combined Normal and Psychoneurotic Populations Classified by Actual Outcome of Aspirational Experiences Expressed by Percentage of Level of Confidence Derived By the Chi-Square Test.

Group	$\chi^2$	p
Normal and Psychoneurotic Males	42.58	.01
Normal and Psychoneurotic Females	61.48	.01
Combined Normal and Psychoneurotic Males and Females	183.28	.01

Table XXXVIII. - Reliability of the Distribution of Integrative-Disintegrative Drawings of the Normal Population Classified by Rated Outcome of Successive Aspirational Experiences Expressed by Percentage of Level of Confidence Derived By the Chi-Square Test.

Group	Aspirational Experience	$\chi^2$	p
Normal Males	1st	.91	.80
	2nd	1.50	.70
	3rd	5.88	.20
	4th	3.66	.30
Normal Females	1st	2.32	.70
	2nd	3.00	.50
	3rd	2.91	.50
	4th	2.32	.70
Combined Normal Males and Females	1st	5.48	.20
	2nd	6.64	.10
	3rd	8.32	.05
	4th	6.32	.10

The psychoneurotic population, which is shown in Table XXXIV, evidences similar characteristics. Significant scores occur only once each in the male and female groups and twice in the combined group. In each case the occurrence is on a harder, first or third, experience.

As a result of combining the individual aspirational-drawing experiences, the data for the psychoneurotic group becomes acceptable as significantly different while the normal population still falls below the 1% level.

The results of combining the data for the total aspirational experiences for slightly different population groupings are seen in Table XXXVI. Here it can be seen that the total of the distributions for all four aspirational experiences for the combined normal and psychoneurotic males, the normal and psychoneurotic females, and the combination of all of these, or the total population, all occur at the 1% level.

The relationship between aspirational success and failure and integrative and disintegrative drawings was established by use of the Tetrachoric Coefficient of Correlation. While the formula  $\frac{ad-bc}{N\sqrt{zz'}} = r + \frac{xx'r^2}{2}$  176 may be used, the correlations shown here were derived through Thurstone's tables<sup>177</sup>. The formula for approximating the

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<sup>176</sup> Henry E. Garrett, op. cit., p. 355.

<sup>177</sup> Leone Chesire, Milton Saffir, L. L. Thurstone, Computing Diagrams For the Tetrachoric Correlation Coefficient, Chicago, University, 1933, 58 p.

Table XXXIV. - Reliability of the Distribution of Integrative-Disintegrative Drawings of the Psychoneurotic Population Classified by Rated Outcome of Successive Aspirational Experiences Expressed by Percentage of Level of Confidence Derived By the Chi-Square Test.

Group	Aspirational Experience	X <sup>2</sup>	p
Psychoneurotic Males	1st	4.91	.20
	2nd	.24	.98
	3rd	14.23	.01
	4th	4.24	.30
Psychoneurotic Females	1st	16.33	.01
	2nd	3.66	.30
	3rd	9.66	.05
	4th	2.99	.50
Combined Psychoneurotic Males and Females	1st	22.98	.01
	2nd	6.32	.10
	3rd	32.33	.01
	4th	7.98	.05

Table XXXV. - Reliability of the Distribution of Integrative-Disintegrative Drawings of the Normal and Psychoneurotic Populations Classified by Rated Outcome of Aspirational Experiences Expressed by Percentage of Level of Confidence Derived By the Chi-Square Test.

Group	$\chi^2$	p
Normal Males	3.45	.50
Normal Females	4.40	.30
Combined Normal Males and Females	8.23	.05
Psychoneurotic Males	21.74	.01
Psychoneurotic Females	34.74	.01
Combined Psychoneurotic Males and Females	60.74	.01

Table XXXVI. - Reliability of the Distribution of Integrative-Disintegrative Drawings of the Combined Normal and Psychoneurotic Populations Classified by Rated Outcome of Aspirational Experiences Expressed by Percentage of Level of Confidence Derived By the Chi-Square Test.

Group	$\chi^2$	p
Normal and Psychoneurotic Males	30.57	.01
Normal and Psychoneurotic Females	17.25	.01
Combined Normal and Psychoneurotic Males and Females	46.60	.01

standard error of  $r_t$  is given by McNemar<sup>177a</sup> as

$$\sigma_{r_t} = \frac{\sqrt{pq p'q'}}{\sum x^2 y \sqrt{N}} \sqrt{(1-r^2) \left[1 - \left(\frac{\sin^{-1} r}{90^\circ}\right)^2\right]}$$

The data for this statistic as presented here was obtained from Hayes<sup>177b</sup>. The F data was obtained from

$$\sum (X - \bar{X})^2 = \sum (X - \bar{X}_k)^2 + n \sum (\bar{X}_k - \bar{X})^2$$

The  $r_t$ 's for the normal population groupings are shown in Table XXXVII, while those for the psychoneurotic population groupings are shown in Table XXXVIII. An examination of these tables shows that there was a positive correlation for all the various population subgroups on the various aspirational experiences. However, there was a great deal of variation between the obtained correlations. Thus, for example, the correlations for the normals tended to be low to moderate, while those for the psychoneurotic groups were noticeably higher. In some cases the difference was almost fifty-seven points as in the third aspirational experience for the combined normals versus the combined psychoneurotics.

An examination of the probability findings shows that the correlations for the normal males on the individual trials are not significant, while those for the normal

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<sup>177a</sup> Quinn McNemar, Psychological Statistics, 2nd Ed., New York, Wiley, 1955, p. 200.

<sup>177b</sup> Samuel P. Hayes, Jr., "Tables of the Standard Error of Tetrachoric Correlation Coefficient", Psychometrika, Vol. 8, No. 3, September 1943, p. 193-203.

Table XXXVII. - Relationship of Actual Aspirational Performance of the Normal Population Subgroups on Successive Aspirational Experiences with Integrative-Disintegrative Drawings Expressed by Tetrachoric Correlation Coefficient.

Group	A.E.	$r_t$	$\sqrt{r_t}$	F	p
Normal Males	1st	.60	1.98	5.62	.05
	2nd	.20	2.55	.41	>.05
	3rd	.50	45.60	3.33	>.05
	4th	.47	2.46	2.83	>.05
Normal Females	1st	.95	4.94	92.56	.01
	2nd	.95	30.60	92.56	.01
	3rd	.35	1.95	1.39	>.05
	4th	.42	1.57	2.14	>.05
Combined Normal Males and Females	1st	.64	2.98	15.28	.01
	2nd	.53	4.47	8.61	.01
	3rd	.38	2.65	3.72	>.05
	4th	.60	1.76	12.41	.01

Table XXXVIII. - Relationship of Actual Aspirational Performance of the Psychoneurotic Population Subgroups on Successive Aspirational Experiences with Integrative-Disintegrative Drawings Expressed by Tetrachoric Correlation Coefficient.

Group	A.E.	$r_t$	$\sqrt{r_t}$	F	p
Psychoneurotic Males	1st	.95	4.94	92.56	.01
	2nd	.64	1.98	6.93	.05
	3rd	.95	1.66	92.56	.01
	4th	.95	.57	92.56	.01
Psychoneurotic Females	1st	.70	<u>1</u>	9.60	.05
	2nd	.87	.99	31.13	.01
	3rd	.95	.57	92.56	.01
	4th	.95	.71	92.56	.01
Combined Psychoneurotic Males and Females	1st	.95	4.94	205.11	.01
	2nd	.87	1.33	68.80	.01
	3rd	.95	.82	205.11	.01
	4th	.95	.71	205.11	.01

<sup>1</sup> The omittance of the standard error here is due to incompleteness of the tables which were based upon the tables given by Pearson for the volumn of a one cell tetrachoric table. This entry represents an extreme case which was omitted by Pearson and therefore not computed by Hayes.

Table XXXIX. - Relationship of Total Actual Aspirational Performance of the Various Population Subgroups with Integrative-Disintegrative Drawings Expressed by Tetrachoric Correlation Coefficient.

Group	$r_t$	$\sqrt{r_t}$	F	p
Normal Males	.38	2.65	1.68	>.05
Normal Females	.70	2.85	9.60	.05
Combined Normal Males and Females	.55	2.15	9.54	.01
Psychoneurotic Males	.65	2.98	7.31	.05
Psychoneurotic Females	.67	1.98	8.14	.05
Combined Psychoneurotic Males and Females	.72	1.68	23.77	.01
Normal and Psycho- neurotic Males	.50	2.24	7.35	.05
Normal and Psycho- neurotic Females	.63	1.98	14.48	.01
Combined Normal and Psychoneurotic Males and Females	.64	1.98	32.00	.01

females, as seen in Table XXXVII, are significant at the 1% level half the time. On the other hand, the findings for the psychoneurotics, Table XXXVIII, show the correlations to be more frequently significant. There is greater significance to the correlations when the groups are combined so that the normals show significant coefficients in all but one instance and the coefficients for the psychoneurotics are always significant.

When the four separate aspirational experiences are combined into a single datum, as in Table XXXIX, some of the differences between the subgroups are minimized and a greater similarity appears. The combined normal population obtained a correlation of .55, the psychoneurotic population obtained a correlation of .72, and both these groups combined had a correlation of .64. The only divergence in this otherwise close pattern appears in the normal males where there is a correlation of .38. The coefficients in this table were found to be at the 1% level of significance primarily when the groups had a population greater than twelve. The only exception seen is for the combined normal and psychoneurotic males which occurs at the 5% level of significance.

While the findings discussed above concerned themselves with the data classified according to actual aspirational success or failure performance, the following

Table XL. - Relationship of Rated Aspirational Performance of the Normal Population Subgroups on Successive Aspirational Experiences with Integrative-Disintegrative Drawings Expressed by Tetrachoric Correlation Coefficient.

Group	A.E.	$r_t$	$\sqrt{r_t}$	F	p
Normal Males	1st	.42	1.59	2.14	>.05
	2nd	.23	2.77	.55	>.05
	3rd	.25	2.82	.66	>.05
	4th	.85	.95	26.03	.01
Normal Females	1st	.88	1.04	34.32	.01
	2nd	.05	1.64	.02	>.05
	3rd	.05	2.28	.02	>.05
	4th	.45	1.46	2.53	>.05
Combined Normal Males and Females	1st	.35	1.59	3.07	>.05
	2nd	.20	1.69	.91	>.05
	3rd	.20	2.82	.91	>.05
	4th	.68	1.40	18.95	.01

Table XLI. - Relationship of Rated Aspirational Performance of the Psychoneurotic Population Subgroups on Successive Aspirational Experiences with Integrative-Disintegrative Drawings Expressed by Tetrachoric Correlation Coefficient.

Group	A.E.	$r_t$	$\sqrt{r_t}$	F	p
Psychoneurotic Males	1st	.50	1.72	3.33	>.05
	2nd	.05	1.98	.02	>.05
	3rd	.90	2.75	42.63	.01
	4th	.90	.62	42.63	.01
Psychoneurotic Females	1st	.90	.93	42.63	.01
	2nd	.15	2.96	.23	>.05
	3rd	.40	11.40	1.90	>.05
	4th	.10	3.21	.10	>.05
Combined Psychoneurotic Males and Females	1st	.70	1.68	21.21	.01
	2nd	.15	2.96	.50	>.05
	3rd	.10	19.82	.22	>.05
	4th	.25	2.82	1.46	>.05

Table XLIII. - Relationship of Total Rated Aspirational Performance of the Various Population Subgroups with Integrative-Disintegrative Drawings Expressed by Tetrachoric Correlation Coefficient.

Group	$r_t$	$\sqrt{r_t}$	F	p
Normal Males	.50	1.83	3.33	>.05
Normal Females	.23	1.66	.55	>.05
Combined Normal Males and Females	.35	1.47	3.07	>.05
Psychoneurotic Males	.45	2.46	2.53	>.05
Psychoneurotic Females	.10	1.88	.10	>.05
Combined Psychoneurotic Males and Females	.30	1.95	2.17	>.05
Normal and Psycho- neurotic Males	.53	1.72	8.61	.01
Normal and Psycho- neurotic Females	.41	1.70	4.44	.05
Combined Normal and Psychoneurotic Males and Females	.57	1.48	22.25	.01

discussion deals with the data classified by the subject's rating of aspirational success or failure.

In the discussion of the data under the classification described above, reference is made to the normal population shown in Table XL and the psychoneurotic population shown in Table XLI. For all the subdivisions of both the normal and psychoneurotic groups the correlations tended to be low and at several points, particularly with the normal females, was almost chance. On the whole, the correlations tended to be slightly better for the psychoneurotic males than for the normal males and for the psychoneurotic females than for the normal females. It should be noted that these coefficients of correlation, unlike those for the findings classified by actual performance outcome, are relatively rarely at the 1% level of significance.

In Table XLII the individual aspirational experiences are combined for the various population subgroups and combined groups to show the distribution of correlations for the data classified according to the subject's rating of aspirational success or failure. From this table it can be seen that correlations ran higher for the normal males than for the normal females and for the psychoneurotic males than for the psychoneurotic females. While the correlation for the psychoneurotic females was negligible, that for the combined psychoneurotic males and females was slightly

higher though still rather slight. The correlations for the combined normal and psychoneurotic males, normal and psychoneurotic females, and the combination of the total population were fairly substantial. However, it should be noted that only in two instances did the coefficients reach the 1% level of significance.

## 2.-Additional Findings

While the data in this section is not directly related to the hypothesis, it is of interest in the discussion of the findings since the presence of this matter elaborates on some experimental aspects deeply involved in testing the hypothesis.

The data under this section deals with the degree of agreement between actual aspirational performance and the subject's ratings of aspirational success or failure. The relationship between these two factors is shown first expressed in terms of percentage, as shown in Table XLIII, and then in terms of the Tetrachoric Correlation Coefficient, as shown in Table XLIV. From Table XLIII it can be seen

actual and rated statistics might further be interpreted as reflecting the presence of ego-involvement in the experimental situation.

In answer to the question as to how much confidence could be placed upon the distribution of integrative-disintegrative drawings in consideration of chance occurrence, the statistics dealing with the problem were submitted to the Chi-Square Test. While some individual aspirational experiences, particularly those in the normal group, were found to be outside the acceptable cut-off of the 5% level, as soon as the individual experiences were combined for each sub-group the 1% level was attained. The 1% level was maintained when the subgroups were combined ultimately to form one total group. It is thus felt that a great deal of confidence can be placed upon those findings which deal with the combined aspirational experiences for each subgroup and particularly for the various combinations of subgroups, as well as the combined total group.

The relationship between aspirational success and integrative drawings, and failure and disintegrative drawings is shown by the Tetrachoric Correlation Coefficient. While the correlations were of a positive nature, the coefficients reached significance when all normals were grouped together and all psychoneurotics were grouped together. It is felt that the coefficient of .64 for the

total combined population is quite representative of the experimental outcome.

## 2.-Research Conclusions

This project was focused on trying to obtain empirical evidence of the theoretical and clinical percept that the self-concept undergoes change and that positive experiences will give rise to integrative processes in the self-concept, while negative experiences will give rise to disintegrative processes in the self-concept.

It was further felt that aspirational conditions of success or failure would produce these changes and that evidence of such changes could be obtained by measuring changes in the human figure drawing. In addition, by constructing a series of experimental situations for each subject, it was felt that a continuous "picture" of such changes would be observed.

The results of the experiment confirm the expectancy that the performance in the aspirational situation resulted in feelings of success or failure as reflected in the subjects' ratings of the success or failure evaluation of their performance in comparison to the drawings they produced. It is further felt that the emotional aspect was confirmed by the subjects' aspirational bid behavior. Furthermore, it is felt that the drawings were successful in