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Effect of Self-Concept Upon Performance Following Failure Stress

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EFFECT OF SELF-CONCEPT UPON PERFORMANCE FOLLOWING FAILURE STRESS

BY

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PREFACE

The author would like to take this opportunity to thank the University of Baltimore for permission to use their students in this study. Also, deep thanks are extended to all those who have helped in the preparation of this thesis. Sincere appreciation to Dr. Kenneth A. Blick, Mrs. Jean N. Dickinson, and Mr. Frederick J. Kozub for all their help with this project. Last, but certainly not least, thanks to my wife for her diligent typing and many suggestions.

CHAPTER I

INTRODUCTION

Jahoda (1958) has summarized the thinking which has been done about a group of behaviors jointly labeled "positive mental health." After reviewing the conceptualizations of both phenomenologically and analytically oriented writers, Jahoda distilled six classes of responses which have been listed as representative of mental health. These general classes of responses include: (1) positive self-attitudes, (2) self-actualizing behavior, (3) integrative behavior, (4) autonomous behavior, (5) accurate perceptual behavior, (6) behavior by which the subject obtains mastery over his environment.

Of the six response classes listed, two were chosen for the present study. Specifically, the relationship between the general categories of positive self-attitudes and integrative behavior seems readily amenable to empirical investigation.

Self-Concept

Self-concept is a term which has frequently been used to denote positive self-attitudes, and the development of

self-concept is considered a correlate of normal growth. Jersild (1963) notes the important effects of the presence or absence of self-concept in the following quotation:

> "If a child is accepted, approved, respected and liked for what he is he will be helped to acquire...respect for himself. But if the significant people in his life... belittle him, blame him and reject him, the growing child's attitudes toward himself are likely to become unfavorable. Furthermore, according to this position, the attitudes concerning himself which he has thus acquired will, in turn, color the attitudes he has toward other persons. He...judges others as he judges himself (p. 122)."

Jersild's position, then, is that the extent to which an individual sees himself as worthwhile will determine the value which he ascribes to others, and presumably, will also influence his actions towards them. The implication is that level of self-concept may well be related to interpersonal behavior.

While most writers agree that the development of self-concept is a crucial part of normal growth, they differ in their ideas about the course of that development. For example, White's (1956) description of the development of self-concept differs somewhat from that of both Silverberg (1952) and Murphy (1947). The latter writers suggest that level of self-concept is strongly influenced by the evaluations of one's performance by significant others, but White implies that high performance levels lead, even without rewards, to increased self-concept. In order to facilitate the development of a learning theory conceptualization of

self-concept it is assumed throughout this investigation that increase in self-concept is a product of rewards which accompany behavior, rather than a product of the behavior itself.

Since one form of reward for humans is frequently some form of social approval, responses that are approved should be learned. The quotation from Jersild has suggested that persons with high self-concept have been approved (rewarded) more often than persons low in self-concept.

It is possible that task-orienting responses (coping responses) such as paying attention may have been some of the responses which have been more frequently rewarded for the high self-concept people. For example, the same amount of concentrated piano practice may be rewarded by some parents (i.e., "That's good. You're really working at it."), and punished by others (i.e., "You really should have practiced longer."). As a result of such differential reinforcement, it would be expected that a child of the rewarding parents would gain increased self-concept, while a child of the punishing parents would not.

Furthermore, the child who has not been rewarded for his work should lose interest in it (his task-orienting responses should extinguish). In fact, if he had been punished, like the second child in the example, the results of aversive conditioning studies suggest that subsequent presentation of the task cues would elicit a conditioned

fear response (Spence, 1956). The assumption that high self-concept persons have been reinforced for coping responses in task situations, while low self-concept persons have received occasional punishment, and little or no reward has important implications for the subsequent behavior of both kinds of persons in task situations.

If we conceive of behavior within a learning theory framework then it is consistent with the preceding discussion to postulate that the high self-concept person brings to any new task situation a response hierarchy in which coping responses are dominant, because they have been reinforced. Low self-concept persons, on the other hand, bring a strong internal fear response, which have been conditioned to the task cues by the association of those cues with previous punishment. In addition, the low self-concept individual brings the various withdrawal response tendencies which typically accompany fear. Finally, the coping responses of the low self-concept person are not dominant, because they have not been consistently reinforced previously.

The implications of the preceding formulation for the performance of high and low self-concept individuals in a task situation will be specified in the statement of the hypotheses for this investigation. First, it is necessary to consider the second class of responses thought to characterize mentally healthy individuals--integrative responses.

Integration

Integration is a rather nebulous concept and there is very little agreement concerning appropriate empirical referents. However, a variety of authors agree that resistance to stress is one appropriate characteristic of integration; and, furthermore, several of these authors indicate that frustration tolerance is a type of stress resistance particularly representative of general mental health (Cameron, 1963; White, 1956; Spitz, 1965; Hartman, 1964). In view of the fact that both self-concept and frustration tolerance are supposedly characteristics of mental health, it might be expected that a common process mediates the development of both.

The process which mediates the development of both self-concept and frustration tolerance may be the development of dominant coping responses to task cues. It has already been suggested that self-concept is a function of rewards. Some of those rewards might be provided for coping responses. If such responses were consistently rewarded, they would be expected to become the dominant responses to the task situation. These responses would develop as a correlate of developing self-concept.

Coping responses might also be conceptualized as developing with frustration tolerance. One of the generally agreed upon consequences of frustration is increased drive. However, according to Spence (1956), when the dominant

response in a complex learning situation is correct, increased drive simply increases the probability that the correct response will occur. Consequently, the development of a dominant coping response to task cues would be accompanied by an increased probability that the coping response would occur when additional drive, due to frustration, was added to the stimulus complex of the task situation. As the coping response became increasingly dominant, then the probability of its occurrence following the increased drive due to frustration would show a parallel increase. The preceding formulation, then, suggests that both self-concept and stress tolerance develop in relation to coping responses.

Since stress tolerance and self-concept are postulated to be separate outcomes of a common process, it seems reasonable to expect that they would be empirically related.

PROBLEM AND HYPOTHESES

The relationship between self-concept and performance following failure stress has not been conclusively established by previous research. The purpose of the present study is to test relevant hypotheses derived from the formulation presented in this text. The hypotheses follow:

1. There will be no significant difference between the mean scores of the high self-concept Ss and the low self-concept Ss on a one minute practice trial on an extended

version of the WAIS Digit Symbol subtest.

2. The low self-concept control Ss will have larger mean criterion scores on an extended version of the WAIS Digit Symbol subtest than will the low self-concept stress Ss.*

3. There will be no significant difference between the mean criterion scores of the high self-concept control Ss and the high self-concept stress Ss on an extended version of the WAIS Digit Symbol subtest.

4. The low self-concept control Ss will have larger mean criterion scores on an extended version of the WAIS Digit Symbol subtest than will the high self-concept control Ss.*

5. The high self-concept stress Ss will have larger mean criterion scores on an extended version of the Wais Digit Symbol subtest than will the low self-concept stress Ss.*

6. From the above, a significant interaction between self-concept and stress is predicted using the mean criterion scores.

*These hypotheses could be restated in the null form. However, directional hypotheses are used in the interpretation of the data from this study on the basis of previous data and for purposes of more meaningful discussion.

SURVEY OF THE LITERATURE

The Meaning and Importance of the Self-Concept

Shaffer and Shoben (1956) feel that the "self" is a conglomeration of learning experiences. These authors say that the self-concept is a pattern of attitudes that one holds about oneself, and that these attitudes are learned in the same way as other attitudes are learned. They feel that there is nothing basic or intrinsic about the self-concept. The person is not born with it but rather develops one through the integration of countless learning experiences. Furthermore, like other types of learned attitudes, the self-concept can and does influence perception and motivation in new situations.

Meyerwitz (1962) is a strong believer in the value of self-concept studies in the scientific investigation of personality functioning. In developing his own instrument to measure the child's self-concept, Meyerwitz adopted a working definition of the self-concept. Basically, this definition states that anything said about or attributed to one's self is part of one's self-concept. This definition not only has the advantage of describing an important manifestation of the self-concept, but it also lends itself to objective measurement, providing the appropriate instruments are used.

In discussing their own index of personal adjustment,

Bills, Vance, and McLean (1951) state that the concept of self may be defined as the traits and values which the individual has accepted as definitions of himself.

A study by Amos (1963) dealt with accuracy in self-concept evaluation. The author feels that a definition of self-concept should include the continuous and progressive derivation of meaning from the experience of various life situations. This includes beliefs, feelings, attitudes, codes, skills, values, and goals that the individual believes are characteristics of himself.

In this manner Amos agrees with Prescott (1957) who feels that concepts of self are always relational. By relational, Prescott means that the total sum of events that constitutes the self-concept are not just ideas about oneself, but rather ideas about oneself in relation to others. As a result of this, thoughts and feelings about others (concept of others) are included in one's own concept of self.

The Importance of "Significant Others"

Several writers have concerned themselves with the evaluation of the influence of "significant others" on the perception of oneself. White (1956) states that the "self", like everything in the human organism, develops and changes during the course of life. The differentiation of "self" from "non-self" is amplified and strengthened by learning. White feels that awareness of oneself, as well as knowledge of oneself, is heavily influenced by social interaction. A

child builds up his sense of self from the responses made to him by other people, especially the "significant others" in his life. Through the behavior and attitudes of others, the child learns how they perceive him and is influenced to perceive himself in a similar manner.

Videbeck (1960) agreed with the general view that self-conceptions are learned. Furthermore, he feels that the evaluative reactions of other people play a very significant role in this learning process. These conclusions came from a study using college speech students. In an attempt to validate the theories expressed by Videbeck, another study was attempted by Maehr, Mensing, and Nafzger (1962) using body concepts of adolescent boys. The results of this study tended to confirm the theory that evaluations expressed by others brings about a related change in the individual's own evaluation of himself. The results showed that the approving or disapproving reactions of certain "significant others" tended to produce a corresponding increase or decrease in the individual's own evaluation of himself.

Smith (1958) basically agrees that the child's ideas about and evaluation of himself are profoundly influenced by what he thinks to be the ideas held about him by the significant people in his life with whom he interacts.

The manner in which the opinions of others become intermeshed with the opinions we have about ourselves was the subject of a study by Gerard (1961). According to the

findings reported by Gerard, self-appraisal is influenced by directly comparing one's own performance with the performance of others. He says there seems to be two different types of social comparison that affect the self-evaluation. One of these, relevant to the present investigation, is that self-evaluation is influenced by the person's conception of how other people regard him. The other is a direct comparison of a person's standing on a given attribute with that of other people.

Manis (1955) agrees that what an individual sees and believes about himself (in essence, his self-concept) is to a certain extent determined by what other people believe him to be. He concluded that although a person's self-concept is definitely influenced by other's perceptions of him, there was no tendency for the self-estimates to affect the views of one held by these other people.

Rosengren (1961) basically agrees with the theories of Mead (1934) that our feelings about ourselves are mediated by how we think other people feel about us. The relationship between how we see ourselves, how we see others, and our impression of how others see us has important consequences in determining overt behavior. Rosengren states that the behavior of people becomes relatively stable and predictable only insofar as there is some convergence between how these people see themselves, how they see others, and how they think others see them.

Harry Stack Sullivan (1947) was one of the earliest writers to recognize the importance of the concept of "significant others" and its contributions toward behavioral determination. Sullivan stated that the perception of self is heavily influenced by "significant others" in the person's life. He feels that what we call the self is made up of reflected appraisals by others. Furthermore, he singles out the parents as the most important of the significant others who help determine the nature of the self-dynamism.

Others feel that parents are not the most important people in a child's life. Brookover (1959) mentions that significant others, particularly teachers, have important influences in the development of a student's self-concept. The author feels these influences are in the form of expectancies and that these expectancies in turn affect to some degree the student's ability to perform in an academic setting.

Payne and Farquhar (1962) agree that a student's self-concept can function to both limit and facilitate the student's academic performance. Other writers, such as Davidson and Lang (1960) and Roth (1959) found similar results.

Another study dealing with the influence of other's opinions on the person's self-evaluation was conducted by Jourard and Remy (1955). Although this study dealt with self-rated cathexis for the body, the authors concluded that self-appraisals may covary with a person's perception of, or

belief concerning, his parent's appraisal of him.

Self-Discrepancies and Psychological Adjustment

One of the most profound thinkers involved in self-theory is Carl Rogers (1951; 1954; 1959). Therefore, an early definition of psychological adjustment by Rogers (1947) is pertinent for this present investigation. He says that:

> "It would appear that when all of the ways in which the individual perceives himself--all perceptions of the qualities, abilities, impulses, and attitudes of the person, and all perceptions of himself in relation to others--are accepted into the organized conscious concept of self, then this achievement is accompanied by feelings of comfort and freedom from tension which are experienced as psychological adjustment (p. 364)."

With this as a guideline, other investigators have attempted to use the evaluation of the self-concept to discover and examine psychological maladjustment. Brownfain (1952) was one of the first investigators to use discrepancies on self-rating scales as an indication of the degree of behavior maladjustment. Brownfain concluded that his findings supported the theoretical prediction that people with smaller discrepancies in self-ratings are more stable and better adjusted than those people with larger discrepancies.

However, Brownfain warned that the investigator should be able to differentiate between the stability that is a function of defensive rigidity and the stability that is a function of psychological insight and adjustment. Although

this study was concerned with the importance of self-esteem and its stability, it nevertheless laid the groundwork for subsequent investigations of the self-concept by use of discrepancies in self-ratings.

Using the California Test of Personality and a Q-sort with 78 high school students, Hanlon, Hofstaetter, and O'Connor (1954) concluded that the congruence between the self-concept and the ideal self-concept could be used as a measure of adjustment with considerable confidence in a population whose members are not undergoing psychotherapy. Using self-ideal self-discrepancies among non-patients broadened the horizons established by Carl Rogers and his co-workers, who used this technique to evaluate progress in psychotherapy.

However, Hanlon et. al. (1954) found that self-ideal congruence and adjustment are not a function of intelligence. Another result mentioned by the authors includes the fact that the congruence between self-concept and ideal self-concept is a normally distributed trait.

Other writers have also dealt with the problem of the relationship between self-ideal discrepancies and behavior maladjustment. Chodorkoff (1954a) says that, in general, the greater the correspondence between the person's perceived and desired self, the more adequately adjusted the person will be. In one study dealing with perceptual defenses, Chodorkoff (1954b) found that the more inaccurate

and faulty the individual's perception of himself and his environment, the more inadequate was the personal adjustment.

Smith (1958) also found that people with high discrepancies also tended to have poor adjustment scores. He mentions that the seeds of self-concept are planted early in the life of the human being. Finally, Smith concluded that those people with high discrepancy scores tended to show very little insight into their own life situations, a conclusion highly congruous with Rogers' conception of the relationship among adjustment, self-awareness, and the discrepancy between "self" and "ideal self".

Block and Thomas (1955) believe that much of a person's behavior becomes meaningful when it is understood in terms of the ideal self toward which an individual aspires, as well as the person's own evaluation of how close he sees himself to this ideal. These authors found confirmation for Rogers' contention that a large discrepancy between a person's perceived self and ideal-self goes along with maladjustment. In this study, the writers were using the concept of maladjustment as defined on the conventional MMPI scales. However, Block and Thomas agree with Chodorkoff (1954b) that a high degree of self-satisfaction and a small discrepancy between ideal and real self may be due to the defensiveness and rigidity of the person.

In his studies dealing with fourth and sixth graders,

Perkins (1954a and 1954b) reveals similar findings as do other workers in the field that the individual's perception of himself is a central factor influencing his behavior. This suggests that a more adequate interpretation of behavior can only be achieved when the observer increases his knowledge and understanding of as much of the behaver's perceptual field as possible including, of course, his self-concept. Perkins feels that investigators can and should emphasize the self-concept when dealing with young children. In one study, Perkins (1954b) found that the sixth graders were more stable and more reliable in their self-estimates than the fourth graders. However, he does not claim that mental age alone is the central factor involved in these results, but rather the degree of personal adjustment.

In developing their own index of personal adjustment, Bills, Vance, and McLean (1951) dealt with the discrepancies between the concept of self and the concept of ideal self. From the phenomenological point of view of these writers, degree of maladjustment is defined as the amount of discrepancy between the concept of the self and the concept of the ideal self as obtained by self-ratings.

Brophy (1959), in discussing the importance of self-satisfaction (defined in the phenomenological sense of well-being in one's subjective experience) argues that congruence between a person's manifest and subliminal perceptions of himself, and his manifest and subliminal conception of his

ideal self, is necessary for maximum self-satisfaction. He found that general satisfaction was negatively related to the discrepancy between the person's concept of the ideal self and that of the imposed life role, as well as to the discrepancy between the self-concept (defined as the traits and values which the individual has accepted as definitions of himself) and the ideal self (defined as the traits and values that the individual would like to be characteristic of himself).

Brophy concluded that one of the most fundamental conditions for general happiness is a congruence in the intrapersonal relationship between the concept of self and the concept of the ideal self. In essence, Brophy feels that any analysis of human behavior is incomplete if it does not include considerations of the person's perception and evaluation of himself.

In his study dealing with adjusted and maladjusted hospital patients, Chase (1957) concluded that self-ideal discrepancies is one of several methods that can be used successfully to distinguish the maladjusted groups. However, he feels that when a rating scale is used as one of the methods of assessment, the measures must necessarily include the self as a referent. In other words, Chase feels that self-rating scales are an especially effective tool to use in distinguishing maladjusted groups.

An early study involving the relationship of self-rating

discrepancies and psychological conflict was reported by Cowen, Heilizer, and Axelrod (1955). The findings of this study indicate that the common assumption made concerning the relation between self-rating discrepancies, stability of self-concept, and amount of conflict, is a valid one. These authors found that the greater the discrepancy between the ratings, the less stable the self-concept was, as well as the greater amount of conflict connected with the specific trait being rated. It was also found that those individuals who were less well adjusted had greater discrepancies in their self-ratings.

Finally, it can be stated that Calvin and Holtzman (1953) agree with most of the other writers in the field that the discrepancy between the self-concept and the objective reality is a common feature of maladjustment.

However, not all investigators found similar results. For example, in an early investigation of self-concept and ideal self-concept discrepancy as a measure of conflict, Zimmer (1954) sought to test the hypothesis that the presence of conflict over a personality trait is associated with a discrepancy between the concept of self and concept of the ideal self. Interestingly, the results did not substantiate the above prediction and the author says that the discrepancy between self and ideal self is not necessarily a direct indication of conflict.

In a similar manner, Grigg (1959) found that large

discrepancies between self and ideal self were not indicators of maladjustment. However, Grigg stated that his sample, 40 college students, and his method of data collection, semantic differential, may have contributed to the surprising results.

Relationship Between Stress Tolerance and Self-Concept

The general effect of failure stress upon task performance will be considered before the one study which specifically related stress tolerance to self-concept is presented.

Weinberg (1960) has suggested that the effect of failure instructions depends upon the nature of the criterion task. This differential influence exists even if subject variables, such as manifest anxiety and self-concept, are not controlled. Thus verbal learning tasks usually show a decrement after failure (Eversmeyer, 1953; Farber, Russell, and Andreas, 1949; Russell, 1952; Russell and Farber, 1948; Smith, 1964; Sarason, 1956; and Zeller, 1950, 1951). On the other hand, failure stress often produces an improvement in performance on arithmetic or digit symbol tasks (Olsen, 1958; Steisel and Cohen, 1951; Truax and Martin, 1957; Williams, 1955). Weinberg attempted to determine whether the differential task performance was due to the presence of verbal material in the former group of tasks, or the presence of a speed set in the latter group. He assessed the performance of male and female college students on a speeded verbal task after failure stress. His results indicated that failed

men showed a significant increment in performance in comparison with the male control group. Weinberg concluded that the imposition of a speed set upon simple tasks leads to facilitated performance after failure stress, due to increased drive level. On the other hand, complex tasks, where the correct response has a comparatively low level of habit strength, often show a decline in performance after failure, due to the increased dominance of competing responses. These competing tendencies are given increased excitatory potential by the introduction of drive-producing failure instructions.

Weinberg's results suggest that the performance of male college students on some speeded tasks is enhanced following failure stress. These results would agree with the preceding formulation if it is assumed that college students generally have fairly dominant coping responses. Since they presumably have met with considerable academic success prior to entering college, it seems reasonable to expect that many college students can adapt effectively to stress. However, the argument presented in this paper suggests that groups initially chosen on extreme levels of self-concept would have shown differential performance following stress. That is, high self-concept Ss should show more marked improvement following stress than should low self-concept Ss.

One study which bears directly upon the present formulation was conducted by Goldfarb (1961). He found no

relationship between level of self-concept as measured by the Berger Scale of Self-Acceptance, and performance on the Wechsler-Bellevue Digit Symbol subtest following stress. Goldfarb's stress procedure, however, was rather extreme. His Ss were fraternity pledges who were likely under the effects of fatigue. Also, his stress combined failure instructions, threat of shock, and raters of both sexes, who took notes in the presence of the Ss. It might be hypothesized that the cumulative effects of the various stress conditions could have been so devastating as to obscure the effects of individual differences previously discussed.

Some evidence supporting the expectation that differences occur following apparently less severe types of stress has been supplied by Lazarus and Ericksen (1952). They found that following failure stress, Ss with high grade point averages improved performance on an extended version of the Wechsler-Bellevue Digit Symbol subtest, while students with lower grade points showed a performance decrement. Similarly, digit symbol differences were demonstrated for groups of high and low anxiety Ss (Mandler and Sarason, 1952). Since there is some evidence that manifest anxiety and grade point average are related to self-concept (Coopersmith, 1959; Cowen, Heilezer, Axelrod, and Alexander, 1957; Fitts, 1965), these results offer indirect support for the formulation presented in this investigation.

The preceding research, then, suggests that individual differences in degree of self-concept might influence performance following failure stress. The present investigation is being undertaken in order to explicitly test this implication.

The Importance of Social Desirability

The importance of the social desirability factor must enter into every investigation concerned with self-ratings and any other technique in which the individual is responding to questions about himself. Social desirability has been a topic of heated debate in the recent psychological literature, with as yet no definite conclusions stated that satisfy all concerned with the problem.

It seems fairly obvious that the factor of social desirability must be considered when the study involves self-ideal discrepancies. The question must be considered whether or not social pressure will cause a person to alter or disguise his responses to meet a real or perceived demand for conformity and face-saving.

In a study dealing with the difference between personal desirability and perceived social desirability, Rosen (1956) concludes that the statements a person makes about himself, his own behavior, and personality traits, are related to his perceptions of the desirability and acceptance of these behaviors and traits by other people.

In criticizing recent investigations using discrepancies

between self-ratings and ideal-ratings, Cowen and Tongas (1959) warn investigators using paper and pencil questionnaires and self-rating scales not to overlook the importance of social desirability and its effect on the endorsement of a particular item.

These writers suggest that quite often the large discrepancy between the self-concept score, as measured by various rating scales, and the ideal-self score can be attributed to the social desirability factor. Unlike Buss (1959) who suggests either a built-in validity check, such as the K Scale on the MMPI, or a forced-choice device, such as the Edwards Personal Preference Schedule, Cowan and Tongas do not have a solution for what they consider to be a serious drawback in using self-rating scales.

Although Buss (1959) feels that endorsement of personality inventory items can be affected by response set, acquiescence set, defensiveness, and social desirability, he also feels that the way in which the item is presented (the writing style) can affect both the social desirability of the item as well as the frequency of endorsement.

In one of the earliest studies concerning the correlation between probable endorsement of an item on a personality inventory and the degree of social desirability, Edwards (1953) found the product-moment correlation to be .871. Although he concluded that the probability of endorsement of an item is a linear function of the scaled

desirability of that item, Edwards says that the Ss are not necessarily misrepresenting themselves purposefully as Holt (1951) suggested.

Holt (1951), using Harvard undergraduates, feels that self-ratings are not very valid procedures to use in personality investigations because people are self-deceptive or very defensive. However, he did conclude that most intelligent Ss tended to know themselves best. Holt also mentions that social desirability played some role in his results. He found that people tended to overrate themselves on items they ranked as admirable and to underrate themselves on items ranked as less acceptable. The differences according to Holt were only slight.

In comparing personality questionnaires, rating scales and Q-sorts, Kenny (1956) found that social desirability affected these three personality techniques to about the same extent. The author cautions all examiners who use self-discrepancies as measures of psychological adjustment to be aware of the influences of this factor. He emphasizes that the control of social desirability is an indispensable aspect of any clinical study concerned with real and ideal-self discrepancies.

In a study which criticized previous investigations of social desirability, Taylor (1959) found a correlation of .79 between his study and others concerning social desirability. However, these studies were based upon group

norms, and Taylor felt that for the individual case, the results may be different.

In his study, Taylor used 70 male schizophrenics who rated 205 MMPI items for social desirability. When looking at each individual case, the social desirability factor was not very great. He concludes that one is not justified in assuming that social desirability accounts for much of the variance in any one individual case. However, Taylor cautioned against strict interpretation of his findings because the individual ratings were not as reliable as the group ratings.

Such writers as Block (1962) feel that it is wrong to be suspicious of, or to diminish the importance of a measure simply because this measure is correlated with a measure of social desirability. Although many writers try to separate social desirability from emotional adjustment, Block feels this is difficult to do, since he believes they are definitely related.

Heilbrun (1964) agrees with Block that the various dimensions of psychological health that we call adjustment and social desirability are, to a large extent, one of the same. In this way, a response that may appear to be strictly dictated by its social desirability, may actually be reflecting the degree of psychological insight and adjustment of a person.

CHAPTER II

METHOD AND PROCEDURE

INSTRUMENTS

Two psychological test scores were used in this investigation. The criterion variable used to test the experimental hypotheses was the number of correct responses on an extended form of the WAIS Digit Symbol subtest. The second variable, which was used as a definition of degree of self-concept, was the Total P (positive) Score of the Tennessee Self Concept Scale. Each of these variables will now be considered.

Digit Symbol

The digit symbol was chosen as the criterion measure for this investigation for two reasons. First, it was an easily administered task of short duration. The minimal time requirement permitted the administration of several trials within a convenient time period. However, the more important reason for the choice of the digit symbol was that it had been used as the criterion task in the pertinent research previously mentioned. Since the results of previous

research are applicable only insofar as the conditions under which they were obtained are duplicated, the use of the digit symbol seemed advisable.

The S was required, in the digit symbol task, to print symbols in boxes below their corresponding digits. The digits varied from one to nine and the symbols are various combinations of straight and curved lines. A key which contained each digit and its corresponding symbol was presented at the top of the page. The remaining digits, with blanks for the corresponding symbols, were randomly listed in rows across the sheet. S waited for a starting signal from E before beginning. After receiving the signal, S printed symbols in the appropriate boxes as rapidly and accurately as possible until told to stop. Before the standard administration, S received some practice to familiarize him with the task.

The standard WAIS digit symbol contains only 100 digit symbol pairs and has a 90 second time limit. However, the current study doubled the length of the scale. The modification was made in order to make more plausible the failure report which was administered to the experimental groups. Previous research (Goldfarb, 1961; Lazarus and Ericksen, 1952) has indicated that sufficient unfinished items will remain at the end of this time period to make a failure report possible.

Tennessee Self Concept Scale

The Tennessee Self Concept Scale consists of 100 descriptive statements each of which S rates on a five-point scale. The scale reflects the extent to which the S accepts the statements as characteristic of himself. The Total P Score, which is used as the definition of self-concept in this investigation, is the arithmetic sum of S's scores on 90 of the 100 items. (The other 10 items are taken directly from the L scale of the MMPI.) The 90 items are equally divided with respect to the direction of scoring. That is, for 50% of the items, the answer "completely false" receives a score of five, identical to S's rating. However, for the other 50% of the items, the scoring scale is reversed and a "completely true" response receives a score of five, even though S's corresponding rating is one.

The test-retest reliability coefficient reported in the manual, over a two-week interval, for an N of 60 college students was .92 for the Total P Score (Fitts, 1965). The manual also reported an earlier study (Congdon, 1958) which obtained an r of .88 using psychiatric patients and a shortened form of the original scale. The length of the test-retest interval used in the Congdon study was not indicated.

The manual's validity section reported a number of studies in which the Total P Score differentiated groups of patients, and various types of delinquents, from normals. While these studies do not unequivocally indicate that the

Total P Score is solely a measure of self-concept, they do demonstrate that the scale has been related to a number of important behavioral variables. Thus, there are some indications that the scale has potential usefulness. It was felt, in particular, that the scale had demonstrated sufficient validity to be utilized in further research.

SAMPLE

The Ss used in this investigation were males taking the introductory psychology course at the University of Baltimore. Males were used since Weinberg's (1960) results suggested that interaction between a male E and a female S confounds the effects of failure stress.

EXPERIMENTAL PROCEDURE

The Tennessee Self Concept Scale was administered with standard instructions to 200 male Ss in a group setting. Ss who were in the upper or lower 30% of the Total P Score distribution made up the high and low self-concept groups, respectively. The 60 high self-concept Ss were randomly assigned to either the experimental or control condition. The low 60 self-concept Ss were similarly distributed. Both groups then reported at a later date for individual administration of the digit symbol task in the

experimental situation.

After entering the testing room, S was seated at a desk. He was told that he was participating in a follow-up study on part of an intelligence test. Also, he was shown a standard WAIS record blank, in order to demonstrate that the digit symbol was, in fact, part of that longer test. The S was then told that E had administered the digit symbol to groups of high school students and was currently checking both the effect of repeated test administrations and the extent to which the performance of University of Baltimore students was typical. All Ss then received a 30 second practice trial on the digit symbol task before beginning the test trials. Each test trial lasted for 90 seconds. The standard instructions from the WAIS Digit Symbol subtest were used (Wechsler, 1955). Following the first test trial, E took the sheet from S and moved to the other side of the room to score S's performance. During the scoring for the control group, E gave no indication of the results. Following the scoring, E made general comments to the control group and then prepared for the second test trial. The purpose of presenting the neutral comments to the control group was to control for any effects due solely to E's verbalizations, regardless of their content.

For the experimental Ss, E shook his head and remarked that S had done poorly. E indicated to the experimental Ss that they must not have been trying and that he would

appreciate their cooperation on the following trials. E presented bogus results to the experimental Ss of 500 high school students on the digit symbol task (see Appendix A). E stated:

> "What! Did you understand what you were to do? You only did ___! Let me look that up." (The fictitious normative data sheet was procured.) "Look here, Mr. ___, this table shows the range of scores on this task of 500 high school students. Your score of ___ places you below the performance of a _____ (sophomore, junior, senior). That means about 75% of them did better on this task than you did. That's not a very impressive performance on your part, is it? What kind of grades do you get? Really? Well, I hope this isn't representative of the way you usually perform. Let's do it again."

Similar differences in procedure followed the second test trial, after which a similar set of failure results were delivered to the experimental Ss:

> "What is the matter with you, Mr. ___? Look at these results from the same high school students after two trials. You are still in the lower 25%. Did you really get those grades? Well, if you did, you sure aren't trying today. Let's try it once more and please try this time. Okay?"

The following remarks were made to the control Ss following the first and second test trials, respectively:

> "By the way, I forgot to ask you a few things when you came in. Who is your instructor? What days does the course meet? What time? Are you a sophomore? What college are you in? What is your intended major? Are you from Maryland?"

The pacing of the above remarks was arranged so that the time interval between test trials was approximately one

minute for all groups.

STATISTICAL ANALYSIS

The design used for evaluation of the hypotheses was a two-factor design (Winer, 1962), with stress and self-concept as the two factors and the difference score (digit symbol test trial 3 minus test trial 1) as the criterion.

Since the hypotheses, when considered in relationship to the statistical design used, predict a specific stress by self-concept interaction, the significance of that interaction was tested before any of the individual mean differences were evaluated by single-factor analyses of variance.

CHAPTER III

RESULTS

The mean test trial scores and mean criterion scores (test trial 3 minus test trial 1) are presented in Table 1. Before the analyses of the individual mean criterion scores was performed, an analysis of variance was conducted to determine whether the High Self-Concept and Low Self-Concept groups were similar in performance on test trial 1. The results are presented in Table 2. From these results, it can be concluded that the High Self-Concept and Low Self-Concept groups were similar in performance on the digit symbol task prior to the introduction of the stress variable.

Table 3 presents the results of the analysis of variance of the mean criterion scores of the Low Self-Concept Control and Stress groups. An F of 119.98 is significant beyond the .05 level. This result supports the hypothesis stated earlier that the Low Self-Concept Control Ss would have a larger mean criterion score than the Low Self-Concept Stress Ss.

An analysis of variance of the mean criterion scores of the High Self-Concept Control and Stress groups was performed.

The results of this analysis are presented in Table 4. The results support the hypothesis that there would be no significant difference between the High Self-Concept Control and Stress Ss.

Table 5 shows the results obtained from the analysis of variance of the mean criterion scores of the High Self-Concept and Low Self-Concept Control Ss. A significant F of 5.99 supports the hypothesis that there would be a significant difference between these two groups.

The mean criterion scores of the High Self-Concept and Low Self-Concept Stress groups were similarly analyzed. The results are presented in Table 6. The resultant F of 69.40 is significant at the .05 level. This result supports the hypothesis that there would be a significant difference between the two stress groups.

Table 7 presents the summary of the two-factor analysis of variance for the two levels of self-concept and the two levels of stress. These results indicate that there was a significant difference between the High Self-Concept and Low Self-Concept Ss on the mean criterion scores. Also, there was a significant difference on the mean criterion scores between the stress and no-stress groups. A significant F of 57.03 indicates that the predicted Self-Concept X Stress interaction was obtained. Thus, the final hypothesis of this investigation was supported.

TABLE 1

Mean Test Trial Scores and Mean Criterion Scores for Control and Stress Groups

Group	Trial 1	Trial 2	Trial 3	Criterion Score
High Self-Concept Control	58.10	64.39	71.23	13.13
High Self-Concept Stress	58.36	64.82	71.43	13.07
Low Self-Concept Control	58.97	66.59	74.37	15.40
Low Self-Concept Stress	59.17	63.47	64.77	5.60

TABLE 2

Analysis of Variance of First Test Trial Scores

Source	df	MS	F
High Self-Concept vs. Low Self-Concept	1	20.83	.5006
Error	118	41.61	

TABLE 3

Analysis of Variance of Criterion Scores of Low Self-Concept Control and Stress Groups

Source	df	MS	F
Low Self-Concept Control vs. Low Self-Concept Stress	1	1,440.60	119.98*
Error	58	12.007	

*p .05.

TABLE 4

Analysis of Variance of Criterion Scores of High Self-Concept Control and Stress Groups

Source	df	MS	F
High Self-Concept Control vs. High Self-Concept Stress	1	.07	.0054
Error	58	12.92	

TABLE 5

Analysis of Variance of Criterion Scores of

High Self-Concept and Low Self-Concept Control Groups

Source	df	MS	F
High Self-Concept Control vs. Low Self-Concept Control	1	77.06	5.99*
Error	58	12.87	

*p .05.

TABLE 6

Analysis of Variance of Criterion Scores of High Self-Concept and Low Self-Concept Stress Groups

Source	df	MS	F
High Self-Concept Stress vs. Low Self-Concept Stress	1	836.26	69.40*
Error	58	12.05	

*p .05.

TABLE 7

Analysis of Variance of Criterion Scores for Control and Stress Groups

Source	df	MS	F
Self-Concept	1	202.80	16.28*
Stress	1	730.13	58.60*
Self-Concept X Stress	1	710.54	57.03*
Error	116	12.46	

*p .05.

CHAPTER IV

DISCUSSION

INTERPRETATIONS RELATED TO PREVIOUS RESEARCH

The principal finding of the present study was that low self-concept Ss who have been subjected to failure stress show significantly less improvement on a digit symbol task than do low self-concept Ss who have not been stressed. These results contrast with Goldfarb's (1961) data, but agree with the general outcome of studies which related scores on the Taylor Manifest Anxiety Scale to verbal task performance following failure stress (Farber, Russell, and Andreas, 1949; Russell, 1952).

The discrepancy between Goldfarb's results and those of the present study might well be due to one or more of the numerous procedural differences between the two studies. For example, Goldfarb presented 11 digit symbol trials before administering stress, while the present study presented only two preliminary trials (sample trial and first test trial). The administration of stress at varying points on the learning curve for a given task might well have differential

effects on subsequent performance. In Goldfarb's study, for example, the fact that all Ss seemed to have reached a performance asymptote after the initial 11 trials reduced the likelihood of any subsequent performance improvement following stress. Additional differences between the procedure of this study and that of Goldfarb's concerned the test chosen as an operational definition of self-concept (Tennessee Self Concept Scale vs. Berger Scale), the type of stress employed (reported failure vs. report of failure, threat of shock, and presence of evaluating observers), and the subject population (introductory psychology Ss vs. fraternity pledges). Although the specific effects of these additional variations in procedure upon the results of the investigations are not readily predictable, it seems possible that any of the procedural differences between the two studies could have produced the different outcomes observed.

Although the present study's results do not agree with Goldfarb's findings, they do correspond to relationships observed between performance following failure stress and level of manifest anxiety. For example, Katchmar, Ross and Andrews (1958) found that following failure stress similar to that employed in the present study, high anxiety Ss took longer to finish a motor task than did low anxiety Ss. Similarly, Weiner (1959) found that when high anxiety Ss were presented with tasks that were described by E as extremely important, they did more poorly on complex items within the

task than did low anxiety Ss under the same conditions.

The results of the present study correspond exactly to those found by Katchmar et. al. and Weiner if a negative relationship is assumed between self-concept and manifest anxiety. Several researchers have, in fact, reported just such a relationship (Fitts, 1965; Bledsoe, 1964; Kinkler and Meyers, 1963, 1963), and the theoretical implications of the present results with regard to self-concept and manifest anxiety will be considered. First, however, the relationship between the results of the present study and Jahoda's formulation will be discussed.

INTERPRETATIONS RELATED TO THEORY

The findings of the present study offer support for Jahoda's (1958) hypotheses of a relationship between stress tolerance and positive self-attitudes. The results show that low self-concept Ss improve significantly more following the control than following the stress condition. Since the high self-concept stress and control groups did not differ significantly and since a significant interaction was observed between stress and self-concept, it may be tentatively concluded that the low self-concept Ss were more adversely affected by the stress than were the high self-concept Ss. The observed means, furthermore, suggest that high self-concept Ss improve more under the stress condition than do

the low self-concept Ss; whereas the relative positions of the two groups is reversed under the control condition. Although the differences observed between the two self-concept groups were statistically significant for both the control and stress conditions, additional research is needed before the conclusion can be unequivocally stated that low self-concept Ss perform more poorly following stress than do high self-concept Ss.

It has been observed that the present findings largely agree with the results of studies which have related manifest anxiety to performance following stress, if the inverse relationship demonstrated by several researchers between manifest anxiety and self-concept is assumed to be reliable. Consequently it is interesting to speculate about the possible course of development of each of these variables.

It has been previously assumed in this investigation that level of self-concept is directly proportional to the number or rewards which an individual has previously experienced. Actually, it may well be that some rewards (i.e., approval of significant others) increase self-concept more than others (such as eating when hungry). Since little is now known about such differential effects, however, it will be assumed for simplicity's sake that all forms of reward produce uniform increments in level of self-concept.

A related formulation, concerning conditional emotionality, has been presented by Spence (1958). He assumes,

when considering aversive conditioning, that a conditioned emotional response (r_e) develops as some function of the number of presentations of the unconditioned stimulus. In an earlier work, Spence (1956) indicated "that the basic mechanism determining the level of D in the case of aversive forms of stimulation is an internal, emotional state or response of the organism (r_e) (p. 180)." Spence's formulation, then, suggests that numerous punishments (noxious stimulations) lead to a high level of conditioned emotionality, which is represented by a high level of drive (manifest anxiety).

It is apparent that Spence's theoretical formulation concerning the development of manifest anxiety is similar to the present conceptualization of the course of development of self-concept. Self-concept is conceived as directly related to the number of rewards which S has received; manifest anxiety to the number of punishments. These rewards and punishments both produce internal responses which are reflected in external behavior by S's levels of self-concept and manifest anxiety.

The preceding comparison concerning the development of self-concept and manifest anxiety has demonstrated considerable logical similarity in the development of both presentations. However, the explanation for the high negative relationship generally observed between empirical definitions of the two concepts has not yet been presented. Such a

relationship would be expected if it were assumed that Ss who receive a large number of punishments, and consequently develop high anxiety levels, do not also receive numerous rewards. There is no logical reason to expect that Ss can not be rewarded for some activities and punished for others. In fact, they may be rewarded and punished for the same response. A simplifying assumption, however, would be that most individual responses are either rewarded or punished. It follows from this assumption that for a given total of responses, the more that are rewarded, the fewer remain to be punished, and conversely, the more that are punished, the fewer remain which can be rewarded. This formulation corresponds with the observed negative relationship between manifest anxiety and self-concept.

INTERPRETATIONS RELATED TO FUTURE RESEARCH

Additional research will be necessary before the hypotheses in the present study may be conclusively accepted or rejected. One possible study might replicate the present one, but use some modifications in experimental technique. It is possible, for example, that presentation of standardized instructions via tape recording might reduce error variance due to fluctuations of rate, pitch, or volume of E's speech. In addition, it might be desirable to remove E's physical presence from the stress presentation since it is

possible that physical characteristics of E (i.e., height and/or weight) interact with the effect of the stress instructions on a particular S. All of these suggestions could be incorporated by a study which used instructions presented to S through headphones. S would not be told that the instructions were tape recorded, or course, since such information would make it clear to S that the reported results were independent of his actual performance.

Finally, although the application of the present results to counseling have not been previously considered, they do seem pertinent. Specifically, since the results suggest that Ss with low self-concepts have little stress tolerance, and since one of the aims of counseling is to increase stress tolerance, it is plausible to suggest that the Tennessee Self Concept Scale might be an appropriate criterion for evaluating the effects of counseling.

LIMITATIONS OF THE STUDY

The major limitation of the present study is the highly specific population to which the results are referable. Since the experimental groups were selected from a specific population (college students), the conclusions which can be drawn from the results are not necessarily applicable to high or low self-concept Ss in general.

A further limitation of the present study concerns the

use of the criterion difference score. Use of this difference score allowed more specific predictions and consequently allowed the use of more powerful statistical tests. However, the use of the difference score employed in this investigation necessitates a somewhat less direct integration of the present findings with the work of previous investigators.

CHAPTER V

SUMMARY

The purpose of the present investigation was to determine the relationship between self-concept and performance following failure stress. Two psychological tests were used, the Tennessee Self Concept Scale and an extended version of the WAIS Digit Symbol subtest.

The Tennessee Self Concept Scale was administered to 200 introductory psychology students. Those Ss who scored in the upper 30% on the Total P scale were assigned to the High Self-Concept group, and those in the lower 30% to the Low Self-Concept group. All Ss were randomly assigned to either the experimental or control group when they arrived for individual testing on the digit symbol subtest. The experimental Ss received failure instructions from the E following the first and second test trials, whereas the control Ss received neutral comments. Bogus results from high school students on the digit symbol subtest were presented to the experimental Ss to give credence to the failure instructions.

The results of a two-factor analysis of variance

indicated a significant interaction between level of self-concept and stress. The results support the hypotheses stated by Jahoda of a relationship between integration (stress tolerance) and positive self-attitudes (self-concept). The major conclusion of this study was that low self-concept Ss who have been subjected to failure stress show significantly less improvement on a digit symbol task than do low self-concept Ss who have not been stressed.

APPENDICES

APPENDIX A

Results Of 500 High School Students On A Digit Symbol Test

First Test Trial	Range
Sophomores	87-90
Juniors	85-92
Seniors	89-94

Second Test Trial	Range
Sophomores	172-177
Juniors	171-179
Seniors	173-178

APPENDIX B

Extended Version of WAIS Digit Symbol

SAMPLES

2	1	3	7	2	4	8	1	5	4	2	1	3	2	1	4	2	3	5	2	3	1	4	6	3		
1	5	4	2	7	6	3	5	7	2	8	5	4	6	3	7	2	8	1	9	5	8	4	7	3		
6	2	5	1	9	2	8	3	7	4	6	5	9	4	8	3	7	2	6	1	5	4	6	3	7		
9	2	8	1	7	9	4	6	8	5	9	7	1	8	5	2	9	4	8	6	3	7	9	8	6		
2	1	3	7	2	4	8	1	5	4	2	1	3	2	1	4	2	3	5	2	3	1	4	6	3		
1	5	4	2	7	6	3	5	7	2	8	5	4	6	3	7	2	8	1	9	5	8	4	7	3		
6	2	5	1	9	2	8	3	7	4	6	5	9	4	8	3	7	2	6	1	5	4	6	3	7		
9	2	8	1	7	9	4	6	8	5	9	7	1	8	5	2	9	4	8	6	3	7	9	8	6		

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