Southern Illinois University Edwardsville

SPARK

Theses, Dissertations, and Culminating Projects | Graduate School

1968

A study of the approach-avoidance motivation underlying the need-achievement scale of the Edwards' personal preference schedule

Susan Lee Saar
Southern Illinois University Edwardsville

Follow this and additional works at: https://spark.siue.edu/etd

Recommended Citation

Saar, Susan Lee, "A study of the approach-avoidance motivation underlying the need-achievement scale of the Edwards' personal preference schedule" (1968). *Theses, Dissertations, and Culminating Projects*. 36.
https://spark.siue.edu/etd/36

This Thesis is brought to you for free and open access by the Graduate School at SPARK. It has been accepted for inclusion in Theses, Dissertations, and Culminating Projects by an authorized administrator of SPARK. For more information, please contact magrase@siue.edu,tdvorak@siue.edu.

SOUTHERN ILLINOIS UNIVERSITY

THE GRADUATE SCHOOL

A STUDY OF THE APPROACH-AVOIDANCE MOTIVATION UNDERLYING THE NEED-ACHIEVEMENT SCALE OF THE EDWARDS' PERSONAL PREFERENCE SCHEDULE

by

Susan Lee Saar

A thesis submitted in partial fulfillment of

the requirements for the degree Master of Arts

Department of Psychology

Southern Illinois University

August, 1968

ACKNOWLEDGMENTS

The author wishes to acknowledge the tireless dedication of her committee for guidance given during the preparation of the thesis. Special thanks are afforded the thesis chairman, John McCall, Ph.D., who unselfishly donated his time and energy suggesting sources of information, evaluating investigative routines, methods, tests, and for giving advice on the preparation of the written material.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER I

INTRODUCTION

Psychologists typically assume that predictions of individual behavior in a task or skill situation are improved if motivation is considered in addition to aptitude. To a large extent, aptitude may determine achievement, but motivation is believed necessary if the individual is to make an effort and persist in striving for success.

Demonstrating the truth of this point has not been easy. The difficulty stems partly from the confusion which surrounds the meaning of many motive constructs in psychology. Occasionally different measuring or defining operations are not accepted as representing the same construct. At other times, the very same set of operations is interpreted differently by given psychologists. This state of affairs suggests the need for more research whereby different theoretical interpretations can be challenged and thereby clarified.

This study illustrates one such attempt to clarify the meaning of scores from a given test instrument. Specifically, the need-achievement scale (hereafter, n-ach) from Edwards' Personal Preference Schedule (hereafter, PPS) has been interpreted in somewhat contradictory fashion. Edwards, the author of the scale (1954, 1958) states that the n-ach scale measures the extent to which individuals strive to approach tasks for the sake of being successful. Conversely, Atkinson (1960) reasons that the same n-ach scale measures the extent to which individuals are motivated to avoid failure. These contra-

dictory interpretations, to approach and to avoid tasks which entail risk of success or failure, call for experimental testing. A suitably arranged empirical demonstration should indicate which interpretation warrants greater support.

Following is a more detailed account of the theories concerning risk-taking behavior in task situations. Included are Atkinson's views on the approach and avoidance motivation which is associated with task or risk situations. Considering the interpretations of what the n-ach scale actually measures in the way of approach or avoidance motives, hypotheses are presented which when empirically tested might resolve the contradictions.

The Role of Need-Achievement In Risk-Taking Behavior

Atkinson (1957) provides a theoretical model of risk-taking behavior which sheds light on the possible role of need-achievement motives. In this model, the subject approaches a new task with some ambivalence or conflict. On one hand, he wants to achieve success; while at the same time he wants to avoid failure in situations where performance is evaluated against some standard of excellence.

There is no real conflict for many subjects, where either the approach or avoidance motive far out-weighs the other. For such persons it is easier to predict risk-taking behavior. For example, Atkinson predicts that persons in whom the achievement motive is stronger should prefer intermediate risk, where the subjective probability of success is .50, while persons in whom the motive to avoid failure is stronger should avoid intermediate risk, preferring instead either

very easy and safe undertakings or extremely difficult and speculative undertakings where there is virtually no chance for success.

Atkinson's own research (Atkinson and Litwin, 1960) has provided some validity for this model. Measures of need-achievement and anxiety, or approach and avoidance motivation, were obtained for college students who participated in a ring toss game. These subjects could toss rings at a target from any distance away that they chose. They could also change their distance from the target after each trial or they could toss from the same position. Atkinson found that subjects high in need-achievement, as measured by Thematic Apperception Test, (hereafter, TAT) and low in test anxiety measured by the Mandler-Sarason Test Anxiety Questionnaire, (hereafter, TAQ) preferred an intermediate tossing distance. However, subjects low in n-ach and high in test anxiety preferred the closest and farthest distances from the target and also took more tosses at the target, thereby spending more time at the task.

In summary, Atkinson clearly identifies need-achievement as one of the major approach motives underlying behavior in a difficult task. His empirical research also provided positive support for this interpretation of the role of need-achievement when it was measured by the TAT.

Contradictory Interpretations of Need-Achievement Scores

There has been some confusion arising from different methods for measuring risk-taking motives. Atkinson, himself, has measured approach motives, or need-achievement, primarily using the TAT. He

argues that this is a more valid procedure than using the n-ach scale from the PPS. As evidence he cites Marlow (1959) who found that the Thematic Apperception measure of need-achievement was positively related to peer group ratings of related achievement behavior while the measure obtained from the PPS was not. Even more significantly, Atkinson and Litwin (1960) found the Edwards' n-ach scale to correlate low positive, .11, with the Mandler-Sarason TAQ for defensive test-taking anxiety. Finally, Birney (see McClelland, 1958a) found a zero correlation between the TAT and PPS need-achievement scores.

Atkinson's conclusion that the PPS n-ach scale measures avoidance motivation contrasts sharply with Edwards' statement (1954,1958) that the n-ach scale measures the approach motivation to succeed in difficult tasks, that is,

> "to do one's best, to be successful, to accomplish something of great significance, to do a difficult job well, to be able to do things better than others..."

However, we should question if there is yet sufficient evidence to discount Edwards' own interpretation of his n-ach scores. For one, Gebhart and Hoyt (1958) found that male over-achievers, that is, those that received higher than predicted grades, scored significantly higher on the Edwards' n-ach scale than did the under-achievers. Thus, Edwards' position is supported. Also, the reported correlation of .11 between n-ach and TAQ scores (Atkinson and Litwin, 1960) is too low to provide clearcut evidence of what the n-ach scores mean.

Finally, test anxiety measures, in the absence of appropriate research evidence, can be confusing with respect to their approach or avoidance character.

Approach-Avoidance Dimensions in Test-Taking

The possibility that felt tension or the anxiety associated with test-taking entails both a positive and a negative dimension is suggested by Alpert and Haber (1960). To test their hypothesis, these authors developed the Achievement Anxiety Test (hereafter, AAT) which contains subtests called Facilitating and Debilitating Anxiety. When correlated with the Mandler-Sarason TAQ scale, the Facilitating subtest correlated -.29, and the Debilitating subtest correlated .64 (Alpert-Haber, 1960). These data provide strong support for the positive-negative distinction made by Alpert and Haber. They also suggest that the AAT subtests provide a far more adequate basis for evaluating the approach-avoidance character of n-ach scores. Clearly, the TAQ deals only with the negative, or avoidant motive in test situations.

Of course, we must not expect to find a simple correlation between n-ach scores and either of the AAT scores for Facilitating and Debilitating Anxiety. Both motives may occur in a given person to an extreme degree, to a very limited degree, or to some degree in between. Or, either motive may far out-weigh the other. Considering the complexity of human motives, this much more complicated pattern should be expected in a typical student population.

The Problem

The present study seeks to clarify the meaning of n-ach scores from

the Personal Preference Schedule. The general problem stems from the contradictory approach-avoidance interpretations given by Edwards and by Atkinson. Two procedures which can be described as concurrent validation research are used. In the first approach, n-ach scores are directly correlated with independently standardized measures of approach and avoidance motivation, namely, the Facilitating and Debilitating Anxiety scales from the Alpert-Haber Achievement Anxiety Test. The second approach draws upon Atkinson's model for predicting risk-taking in terms of approach, or n-ach, and avoidance, or anxiety motives. With this approach we assume that Atkinson's model is a valid one and that the extent to which n-ach scores predict indices of risk-taking behavior should establish its underlying approach or avoidance character.

Risk-taking is operationally defined as the amount of guessing displayed and also the amount of voluntary time taken by students in a difficult ego-involving task. The task itself is a vocabulary test containing items which proved to be extremely difficult for college students. Consistent with Atkinson's model, we predict moderate risk-taking, or guessing and time scores for persons high on n-ach and low on Debilitating Anxiety. Conversely, persons low on n-ach and high on Debilitating Anxiety are predicted to show more varied and unrealistic risk-taking. That is, they will show greater variability in guessing and in the time taken with the vocabulary test. We assume Edwards' interpretation of n-ach scores as approach motivation is supported if n-ach scores correlate positively with Facilitating Anxiety and near zero with Debilitating Anxiety. He is

also supported if less variance in guessing and testing time are observed for subjects showing high n-ach and low Debilitating Anxiety, than for subjects showing low n-ach and high Debilitating Anxiety.

Hypotheses

The hypotheses investigated in this study are summarized as follows:

1. Scores on the Personal Preference Schedule, n-ach, scale will correlate positively with scores on the Achievement Anxiety Test, Facilitating scale.
2. Scores on the Personal Preference Schedule, n-ach scale will correlate zero with scores on the Achievement Anxiety, Debilitating scale.
3. The variance in guessing on the Walsh Verbal Utility (vocabulary) Test will be significantly greater for subjects who score low on the Personal Preference Schedule, n-ach scale and high on the Achievement Anxiety, Debilitating scale, than for subjects who score high on the Personal Preference Schedule, n-ach scale and low on the Achievement Anxiety, Debilitating scale.
4. The variance in test-taking time on the Walsh Verbal Utility (vocabulary) Test will be significantly greater for subjects who score low on the Personal Preference Schedule, n-ach scale and high on the Achievement Anxiety, Debilitating scale, than for subjects who score

high on the Personal Preference Schedule, n-ach scale and low on Achievement Anxiety, Debilitating scale.

CHAPTER II

METHOD

Data bearing on the interpretation of the Personal Preference Schedule, n-ach scores, were collected within a group testing situation, using introductory psychology students from the Edwardsville Campus, Southern Illinois University. The battery of tests was administered in a single session, lasting approximately two hours for most subjects. Included in the battery were the Achievement Anxiety Test, Walsh Verbal Utility Test, and the Edwards' Personal Preference Schedule, given in that order. As an incentive to cooperate, subjects were notified that the results of the study would be made available to each of them.

Each subject was given an identical packet of test materials and instructed:

> "Each of you has received an envelope containing 3 tests. All of the tests are untimed paper and pencil tests. Combined they should take around two hours to complete; however, you may take as much time as you need to complete them. Work at your own speed, but be accurate.
>
> We will all start together. Pull out the first test. It's on the top. Fill out the information on the top of this page, ie: name, age, sex, class, and school. I will read the test directions with you. When you have completed this test, place it in the back of your packet and wait. It's a short test and you will all finish about the same time. It's important that we start the second test together. Do not remove the second test from your envelope

until I tell you.

Please take out the second test. It's the one called the Walsh Verbal Utility Test. Notice the last item, #101, which reads, 'Indicate the time you completed this exam in the following space.' Use the wall clock when the time comes to answer this. Do not use your own watch. After we read the instructions, as before, you may begin. This time after you finish, place this second test in the back of your packet, pull out the third test, read the directions and begin immediately. We will not start this test together. When you finish, please return all the test materials and quietly leave."

Subjects

A total of 203 college freshmen and sophomores, 104 females and 99 males, completed the entire test battery. While essentially volunteers for this study, these students were expected to participate in several research projects as a normal requirement for the course in introductory psychology.

Tests and Related Measures

The motive, need-achievement, was measured for this study by using the n-ach scale from Edwards' Personal Preference Schedule (1954, 1958). For practical reasons, the entire Schedule was administered although only the n-ach scale was scored. The Personal Preference Schedule contains 225 items, each of which is made up of a pair of statements and the subject is required to choose which of these two is more preferable or accurate. The n-ach scores are based on the responses to 28 pre-selected items and high scores indicate a preference for achievement related activities. That is,

high scores are interpreted to imply a greater need to achieve than low scores.

Facilitating and Debilitating Anxiety are measured by the similarly named subtests from Alpert and Haber's Achievement Anxiety Test (1960). The former subtest contains nine items and the latter, ten items where both sets of items are randomly interspersed in one test. Each item contains a statement to which the subject responds by checking one blank under the alternative headings of: rarely, sometimes, frequently, generally, and almost always. For scoring, relative to each subtest, the responses to appropriate items are weighted from 1-5 points, indicating the relative frequency with which the item-event occured. When appropriate sums for each subtest are derived, high scores indicate a high degree of Facilitating or Debilitating Anxiety, whichever is the case.

Indices of risk-taking are derived from the amount of guessing displayed and the amount of voluntary time taken to complete the Walsh Verbal Utility Test (Walsh, 1961). The Walsh test is a 100 word vocabulary test, which contains a subset of 25 extremely difficult words for college students. Special instructions were given the subjects when taking this test in order to effect a more uniform motivation to try hard. As the following indicates, the subjects are led to believe that the test indirectly measures intelligence and that there will be a penalty for guessing. Specifically, the test instructions read:

> "On the following pages you will find a list of words, each followed by four choices. You are to go through this list underlining for

each word the choice which you feel is closest to its definition.

Vocabulary is an important part of academic success. First of all, a high vocabulary is usually found in people with high intelligence, while people of low intelligence usually have poor vocabularies. The test you are about to take will give us a rough idea of how intelligent you are.

In scoring there is a penalty for guessing. That is, for each item you mark correctly one point is added to your score. For each item you mark incorrectly, one point is subtracted from your score. Your final score is the number right minus the number wrong. Items left blank are not counted."

The guessing index of risk-taking is based on the responses to the special subset of 25 extremely difficult items. The specific definition of guessing, or risk-taking, is defined by the following formula (Ziller, 1957):

$$\text{Risk} = 4W/4W+U \text{ where,}$$

W= the number of items answered incorrectly

U= the number of items omitted

4= the number of alternative choices for each question.

The scores on this index constitute ratios and are interpreted as the ratio of attempted guesses to the total number of items not known by the subject. There is independent evidence (Ziller, 1957) that this risk index is reliable and also uncorrelated with intelligence. Test-taking time is simply the total number of minutes which each subject spent taking the 100-item Walsh Verbal Utility Test. All of the subjects began at the same time and each one recorded the time at which he had completed the test to his satisfaction. A

standard wall clock was visible to all of the students for this purpose. As already indicated, the time score is used as a second index of risk-taking behavior.

CHAPTER III

RESULTS

The research design, which tests hypotheses concerning the approach-avoidance character of n-ach scores, calls for a correlation and a variance analysis. Table 1 reports the Pearson Product-Moment intercorrelations between each pair of motive and risk-taking measures. These correlations are based on the entire sample of 203 male and female college students for whom complete scores were available. It should be noted that only one of the correlations is significantly different from zero.

TABLE 1

PEARSON PRODUCT-MOMENT CORRELATIONS BETWEEN EACH PAIR OF MOTIVATION AND RISK-TAKING VARIABLES (N=203)

	(1) n-ach	(2) Facilitating Anxiety	(3) Debilitating Anxiety	(4) Guessing	(5) Test-Time
(1).....		.23*	-.04	-.02	-.07
(2).....			-.08	-.03	.06
(3).....				.02	.08
(4).....					.01

*Significant at .01.

The first hypothesis, that n-ach correlates positively with Facilitating Anxiety, is supported by the positive correlation of .23. This value is sufficiently high to indicate a significant overlap between the two measures. The fact that it is not extremely high is acceptable since the two scales are not assumed to be interchangeable.

The second hypothesis is also supported. Here it was assumed that n-ach scores would correlate zero with Debilitating Anxiety. Table 1 shows a correlation of -.04, between these measures. This is obviously within the chance range of deviation about zero.

None of the remaining correlation coefficients is significantly different from zero. With one exception, this picture is what we expect to find in reference to Atkinson's model of the motives underlying risk-taking behavior. For example, Facilitating and Debilitating Anxiety correlate -.09, which reflects their essential independence. Neither guessing nor testing time shows a significant linear correlation with the motive variables. While the Atkinson model does point to a relationship between these variables, the relationship is more accurately described as curvilinear. The single disturbing result in Table 1 is the essentially zero (r=.01) correlation between guessing and testing time. Both measures are used to represent risk behavior and there is no obvious way to account for their clear-cut independence in this situation.

Table 2 reports the data used when testing the two hypotheses concerning differences in risk-taking behavior. Included are the means and variances in guessing and testing time for each sub-group

where subjects were classed by their high or low standing on the n-ach and Debilitating Anxiety scores. For this classification, the score distributions for n-ach and Debilitating Anxiety were dichotomized at the median. Only those subjects, male or female, are used who scored either high (above the median) on n-ach and low (below the median) on Debilitating Anxiety or vice-versa. This reduced the sample to 48 subjects in the former and 54 subjects in the latter group.

TABLE 2

MEANS AND VARIANCES IN RISK-TAKING SCORES FOR SUBJECTS CLASSED HIGH AND LOW ON NEED-ACHIEVEMENT AND DEBILITATING ANXIETY

	Risk-Taking			
	Guessing		Test Time	
Group	$\bar{X}$	s^2	$\bar{X}$	s^2
(1) High n-ach: low Deb. Anx. (N=48)	54.7	862.9	14.4	26.6
(2) Low n-ach: High Deb. Anx. (n=54)	55.5	805.0	18.8	145.54*

*Variance in test time between groups (1) and (2) differs significantly at a.=.01 level by the F_{max}.

From Table 2 it can be seen that the variance in guessing scores does not differ significantly between the two sub-groups. Thus, the third hypothesis that the variance in guessing on the Walsh Verbal Utility Test will be significantly greater for subjects

where subjects were classed by their high or low standing on the n-ach and Debilitating Anxiety scores. For this classification, the score distributions for n-ach and Debilitating Anxiety were dichotomized at the median. Only those subjects, male or female, are used who scored either high (above the median) on n-ach and low (below the median) on Debilitating Anxiety or vice-versa. This reduced the sample to 48 subjects in the former and 54 subjects in the latter group.

TABLE 2

MEANS AND VARIANCES IN RISK-TAKING SCORES FOR SUBJECTS CLASSED HIGH AND LOW ON NEED-ACHIEVEMENT AND DEBILITATING ANXIETY

	Risk-Taking			
	Guessing		Test Time	
Group	$\bar{X}$	s^2	$\bar{X}$	s^2
(1) High n-ach: low Deb. Anx. (N=48)	54.7	862.9	14.4	26.6
(2) Low n-ach: High Deb. Anx. (n=54)	55.5	805.0	18.8	145.54*

*Variance in test time between groups (1) and (2) differs significantly at a.=.01 level by the F_{max}.

From Table 2 it can be seen that the variance in guessing scores does not differ significantly between the two sub-groups. Thus, the third hypothesis that the variance in guessing on the Walsh Verbal Utility Test will be significantly greater for subjects

who score low on the Personal Preference Schedule, n-ach and high on the Achievement Anxiety, Debilitating scale, than for subjects who score high on the Personal Preference, n-ach and low on Achievement Anxiety, Debilitating scale is not supported. However, the significant difference between the sub-groups in testing time variance does support the fourth hypothesis, that: the variance in test-taking time on the Walsh Verbal Utility Test will be significantly greater for subjects who score low on the Personal Preference Schedule, n-ach and high on the Achievement Anxiety, Debilitating scale than for subjects who score high on the Personal Preference Schedule, n-ach and low on Achievement Anxiety, Debilitating scale.

CHAPTER IV

SUMMARY AND CONCLUSIONS

Several measures of motivation and risk-taking behavior were obtained with college students to test hypotheses about the meaning of n-ach scores from the Edwards' Personal Preference Schedule.

The research design took account of Atkinson's model of the approach-avoidance motivation which underlies risk-taking. Need-achievement, as a general construct, is assumed to represent a positive or approach motive. Coupled with low anxiety, or avoidant motives, high need-achievers are expected to take moderate or realistic risks. Conversely, persons with low need-achievement and high anxiety, i.e., avoidant motivation, are expected to take unrealistically low or high risks.

At issue here is whether or not n-ach scores actually constitute approach or avoidant motivation. Atkinson's interpretation in favor of avoidant motivation was not supported by the present study. Instead, Edwards' view that n-ach scores constitute a positive drive to achieve success was supported.

The specific positive findings were:

(1) n-ach scores correlated positively (r=.23) with a measure of Facilitating Anxiety.

(2) n-ach scores correlated zero with a measure of Debilitating Anxiety.

(3) Students classed as high n-ach, low Debilitating Anxiety showed significantly less variance in test-taking time than students classed as low n-ach, high Debilitating Anxiety.

The fact that Facilitating Anxiety scores correlated only -.09 with Debilitating Anxiety scores supports the Alpert and Haber position that test anxiety entails both positive and negative dimensions.

The main negative result in the study concerns the failure to predict guessing using n-ach and Debilitating Anxiety scores. Also, guessing and testing time correlated only .01. This raises a serious question about the suitability of guessing as an index of risk-taking. Perhaps the explanation lies in the fact that the guessing index measures behavior too indirectly. Also, it is based on just 25 difficult items out of the total set of 100 items in the Walsh Verbal Utility Test. This latter point suggests the index might have missed some behavioral trend which described test performance as a whole. However, previous evidence of the high reliability (Ziller, 1957) of this risk-index shows students are highly consistent in the guessing attempted.

In conclusion, the study succeeds in supporting Edwards' interpretation of n-ach scores as reflecting approach motivation. While these findings contradict Atkinson's opposite interpretation of n-ach scores, they do partially support his general model of risk-taking behavior.

REFERENCES

Alpert, R. and Haber, R. Anxiety in Academic Achievement Situations. J. abnorm. soc. Psych., 61, No. 2, 1960, 207-215.

Atkinson, W. and Litwin, H. Achievement Motivation and Test Anxiety conceived as Motive to Approach Success and Motive to Avoid Failure. J. abnorm. soc. Psych., 60, No. 1, 1960, 52-62.

Atkinson, J.W. Motivational determinants of risk-taking behavior. Psychol. Rev., 64, 1957, 359-372.

Atkinson, J.W. (Ed) Motives in Fantasy, Action and Society. Princeton: Van Nostrand, 1958.

Atkinson, J.W. Bastion, J.R., Earl, R.W. and Litwin, G.H. The Achievement motive, goal-setting, and probability preferences. J. abnorm. soc. Psych. 60, 1960, 27-36.

Haber, Ralph N. Current Research in Motivation. Anxiety in Academic Achievement situations. Holt, Rinehart and Winston, Inc. N.Y., 1966, 586-597.

Levitt, E.E. The Psychology of Anxiety. Bobbo-Merrill co., Inc., N.Y. 1967, 75-77.

Edwards Personal Preference Schedule Manual, N.Y.: Psychological Corp. 1954; 1958.

Gebhart, G. and Hoyt, D. Personality Needs of Under- and Overachieving Freshman. J. applied Psych., Vol. 42, 2, 1958.

McClelland, D.C. Methods of Measuring human motivation. In J.W. Atkinson, (Ed) Motives in Fantasy, Action, and Society. Princeton: Van Nostrand, 1958a.

McClelland, D.C., Atkinson, J.W., Clark, R.A. and Lowell, E.L. The achieveme nt motive. N.Y.: Appleton- Century-Crafts, 1953.

Mandler, G., and Cowen, J. Test anxiety questionnaires. J. consult, Psych., 22, 1958, 223-229.

Mandler, G., and Sarason, S.B. A study of anxiety and learning. J. abnorm. soc. Psych., 47, 1952, 166-173.

Sarason, S.B. and Mandler, G. Some Correlates of test anxiety. J. abnorm. soc. Psych., 47, 1952, 810-817.

Sarason, S. B., Mandler, G., and Craighill, P.G. The effect of differential instructions on anxiety and lg. J. abnorm. soc. Psych., 47, 1952, 561-565.

Walsh, R. Walsh Verbal Utility Test. mimeographed, 1961.

Ziller, R.C. Vocational choice and utility for risk. J. Coun. Psych., 1957, 4, 61-64.