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RISK TAKING -- RELATIONSHIP TO ANXIETY
AND CLOSED MINDEDNESS

by

Sister Mary Richard Herrmann, Ad.PP.S.

A Thesis Submitted to the Faculty of the Graduate School
of Loyola University in Partial Fulfillment of
the Requirements for the Degree of
Master of Arts

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1966

Vita

Sister Mary Richard was born in Kinsley, Kansas in 1929. After graduating from Sacred Heart Academy in Wichita, Kansas, she entered the Novitiate of the Sisters Adorers of the Most Precious Blood in Wichita. She obtained her Bachelor of Science Degree from Sacred Heart College, Wichita, Kansas, in 1958, and until 1963, taught in Kansas grade and high schools. Since 1963, sister has been pursuing graduate work at Loyola University, Chicago.

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Finally, sister is deeply indebted to the sisters of her community without whose help and sacrifices this work would not have been possible.

Table of Contents

Chapter	Page
I. Statement of Purpose	1
II. Review of Related Literature	4
III. Procedure	15
IV. Results	20
V. Discussion	28
VI. Summary	33
List of References	35

List of Tables

Table	Page
1. Anxiety, Dogmatism, and Risk-Taking Scores for the Total Group	20
2. Correlations between Dogmatism and the Various Anxiety Scales	21
3. Correlations of Risk Taking with the Various Measures of Anxiety and Dogmatism	22
4. Extreme Group Scores for the Various Measures of Anxiety, Dogmatism, and Risk Taking	23
5. Various Anxiety and Risk-Taking Scores in High and Low Dogmatic Groups	24
6. Correlations between Anxiety and Risk Taking in High and Low Dogmatic Individuals	25
7. Correlations between the Various Anxiety Scales and Dogmatism in Both High and Low Risk-Taking Individuals	26
8. Correlations between Dogmatism and Risk Taking in High and Low Measures of Anxiety	27

Chapter I

Statement of Purpose

Psychology recognizes that differences in behavior are in part, a function of the differences in the way an individual organizes and perceives his world. It is also assumed that an individual acts differently under stress. However, the respect in which differing perceptions and differing degrees of anxiety affect the way a person tends to meet various life situations has not been fully investigated.

In everyday life situations, decisive choices must be made; such choices may involve risk taking. In risk taking, an "individual perceives an environmental situation that requires a certain behavior to avoid failure. It is a condition of uncertainty about the probability of failure" (Rockwell, 1962). Researchers have long asked whether there is a motivational predisposition toward risk or conservatism in the personality. Is it more characteristic of certain kinds of people than of others? Can it be observed? (Kogan and Wallach, 1964).

Results in risk-taking experiments have been as varied as the studies but one consistent finding has been that the willingness to take risks is probably no general trait, but rather varies from situation to situation within the same individual (Kogan & Wallach, 1964; Slovic, 1962). It becomes necessary then, to define the kind of risk-

taking behavior that is being examined at any particular time. For this study "amount of risk" is defined as the amount of chance a subject is willing to take in a series of hypothetical life situations, e.g., what probability of success does a person require when risks involving income, defeat, marriage, etc., are faced? The extent to which the fear of failure deters a person and/or the hope of success spurs him on will greatly determine his chances of taking a risk.

Atkinson (1957) has proposed that high anxious subjects are primarily motivated by a "fear of failure" rather than a "striving for success." This leads them to prefer risks of extreme probabilities. It would seem especially true of the persons high in "type-0" anxiety as differentiated on the Nicolay-Walker Personal Reaction Schedule (PRS). "Type-0" anxiety is "characterized by concern that external demands and perceived expectancies may be overwhelming and one may suffer harm" (Walker & Nicolay, 1963).

In an attempt to control or reduce anxiety—the degree of subjective probability of failure—the individual restricts his psychological field to the point where he can master and control it. Through this repression or closing the mind to threatening ideas and activities the individual loses some of his intellectual flexibility and freedom (Eriksen & Eisenstein, 1953). According to Rokeach (1960) this defense against anxiety makes an individual more dogmatic as is measured by Rokeach's Dogmatism Scale. He refers to dogmatism as being "the closed cognitive organization of beliefs and disbeliefs

about reality" (Rokeach, McGovney & Denny, 1955). In this context a closed minded person could not so readily "receive, evaluate and act on relevant information viewed from the outside on its own intrinsic merits" (Rokeach, 1960).

It would appear then, that anxiety together with closed mindedness (dogmatism) would prevent an individual from evaluating and acting to the best of his interests. Then, according to Atkinson's theory, this should mean that he will take risks which tend to be impulsive and extreme rather than ones with moderate probabilities.

This study is a replication and an extension of part of Rokeach's work:

- 1) to measure the relationship between dogmatism and the various kinds of anxiety as determined by the differential anxiety scale (PRS), particularly "type-0."

- 2) to determine the relationship that may exist between anxiety and risk taking in both high dogmatic and low dogmatic individuals.

Chapter II

Review of Related Literature

Risk taking has long been studied from a broad range of approaches. Gamblers, economists, psychologists, as well as the average man, have been searching for answers from which risk-taking behavior can be predicted. Thus far, researchers have not been too successful in finding a way to measure and predict this variable. Slovic (1962) came to the conclusion, after assessing the current research, that there is a lack of convergent validity among risk-taking measures. He further stated that possibly risk taking was no general trait at all, but rather one which varies from situation to situation within the same individual. Risk-taking behavior appears to be multidimensional in nature. It seems to include a substantial subjective component and a variety of motivational and other influences. Very likely, this largely accounts for the contradictory results found in the research (Slovic, 1964). It therefore, becomes vastly necessary in future research, to adequately define the area of concentration.

Formerly, models of decision-making ignored personality variables, but this was found inadequate for predicting behavior. Scodel, Ratoosh, & Menas (1959) show the necessity of incorporating such variables into formal modes. They experimentally showed that 1) the expected

dollar value has negligible importance in determining betting preferences, 2) intelligence was not significantly related to degree of risk taking and 3) low pay off subjects displayed greater fear of failure than high pay off subjects.

Rockwell (1962) says that risk exists where the condition of uncertainty exists. It implies making a subjective judgment when the individual does not know, with a high degree of certainty that an action taken by him will have a favorable outcome. Risk is conceptual for it is a function of the person's perception both of his own capabilities and the requirements of the tasks. Ziller (1957) speaks of a "utility for risk" in decision making and Brim (1957) calls it "desire for certainty." Such "subjective probabilities" according to Suppes and Walch (1959) govern the estimation of a person's chances and his relative preferences which in turn determine the amount of risk he is willing to take.

In the study of vocational choices, Ziller (1957) found that decisions made about life choices are based on a model of risk. Mahone (1960) concluded from his study, that persons fearful of failure tended to be unrealistic in their vocational choice with respect to both ability and interest. This was due to a relative lack of relevant information about the kinds of interest satisfaction found in the various occupational areas.

Risk taking also varies with sex. When doing an item analyses of the chances taken in hypothetical situations, men and women varied

as to the situation and the degree of certainty required before making a risky decision (Wallach & Kogan, 1959, 1961; Slovic, 1964). Women were highly certain less frequently than men, but when they were very certain they were more willing to take large risks. It was also found that older persons of both sexes require higher probability of success before consenting to a risky act. It becomes evident, therefore, that risk-taking behavior is extremely specific as to kind, situation, age, and sex.

In this study risk-taking behavior will be examined as it is manifested by decisive choices in everyday life situations. This is a familiar area of experience, but an uncommon area to measure. Torrance and Ziller (1957) seem to be among the first to construct an inventory to assess risk-taking propensities from a knowledge of life experiences. Following this, Wallach and Kogan (1959, 1961) developed a questionnaire to obtain probability preferences in everyday life situations. This was called the "Dilemmas of Choice Questionnaire" in one study and the "Disutility of Failure Index" in another. This questionnaire is further described elsewhere in this paper.

In discussing the "disutility of failure" Wallach and Kogan (1959) assume that the extent to which the fear of failure deters us and the hope of success spurs us on will greatly determine our chances of taking risks. Emotional arousal--fear or hope--seems to be a prerequisite for excitation of risk-taking propensities. Feathers (1959)

used a model in which he assumed independence between utility and subjective probability of success or failure. But in studying risk taking more extensively (Wallach & Kogan, 1961) it was found that "disutility (deterrence) of failure is positively related to subjective probability of failure. This concept implies that risk taking is dependent on motivation.

Atkinson, in his studies with achievement and anxiety has set up a theoretical model whereby we can hypothesize about the various motivational factors affecting risk taking (Atkinson, 1957; Atkinson & Litwin, 1960; Atkinson, Bastian, Earl & Litwin, 1960). He distinguishes the "hope of success" person from the "fear of failure" person and finds that the relative strength of the motive influencing the subjective probability of the consequences is consistent with that motive. According to his theory, when an individual's motive to achieve success is stronger than his motive to avoid failure, it results in approach motivation, no matter what the level of difficulty of the task. This "hope of success" person is most attracted to tasks of intermediate difficulty where the subjective probability of success is .50. On the other hand if the motive to avoid failure--which is presumed to be a disposition to become anxious about failure under achievement stress--is stronger it results in avoidant motivation for all levels of difficulty. This "fear of failure" person finds all achievement tasks unattractive, particularly ones of intermediate difficulty. He prefers instead either very easy and safe undertaking

or extremely difficult and speculative undertaking; but he must select a task even though all the alternatives are threatening to him. This type of person sets his aspiration level either defensively high or defensively low.

Hancock and Teevan (1964) used Atkinson's model and found it predicts very well in a risk situation with actual monetary rewards. But slightly different from Atkinson's findings, their "fear of failure" subjects attempted to avoid failure by invariably choosing the difficult odds. This choice would not be cause for self-blame or embarrassment since failure can be viewed as a function of the difficult odds rather than personal failure. Likewise "fear of failure" subjects made more irrational decisions.

Brody (1963) also attempted to validate Atkinson's theoretical model which related individual differences in motivation to risk-taking behavior. His findings were in agreement with Atkinson and Litwin (1960) that high n Achievement, low anxious subjects tend to choose intermediate risks, but only when these risks were measured in terms of the median and not by subjective confidence statements.

Atkinson and Litwin (1960) confirmed their hypothesis that what has been called "test anxiety" is a disposition to avoid failure—following the work of Mandler and Sarason (1952, 1959). In risk taking (Rockwell, 1962), an individual perceives an environmental situation which he appraises, then makes a judgment relevant to his skill capabilities. Having done this, the person acts in order to avoid failure.

It would seem that the quality of the risk-taking behavior is in part a function of the degree of the disposition to avoid failure--anxiety.

In the literature there is much inconsistent and even contradictory findings regarding the effect of anxiety on behavior. There is reason to believe that the various measures of anxiety in current use are not all measuring the same thing and furthermore, there probably is no simple or general relationship. However, there may be various kinds of anxiety and a differential anxiety test is needed to measure it as Walker and Nicolay (1963) propose to do with the P&S. Taylor and Spence (1952) found high anxious individuals to have a performance decrement but that the disruptive effects of various responses to anxiety vary with the nature of the task. Mandler and Sarason (1952) saw the relationship as a little more complex--that high anxious persons have built up a different habit of responding to anxiety than low anxious persons. The high anxious respond to anxiety with various responses, internal and external, which are incompatible with the efficient pursuit of a complex task. The low anxious evidently lack this strong habit of responding to anxiety with task-irrelevant responses.

Another characteristic of the high anxious person's responses is that they are more ego-involved, more self-oriented and are more interfering when threat is perceived in the environment (Sarason, 1960). There is, however, negative correlation of test anxiety with most

measures of intellectual ability (Sarason, 1959). This kind of anxiety seems to correspond to that which Walker and Nicolay (1963) call "type-0". This subtype of anxiety is characterized by concern "that external demands and perceived expectancies may be over-whelming and one may suffer harm."

Researchers have approached the problem of anxiety from the standpoint of the defense mechanisms likely to be evoked. This is another, or possibly a better way of explaining individual differences due to anxiety. Sarason and Mandler (1952) supposed that high anxious subjects react differently because of the differences in the learned defense mechanisms that become manifest. The low anxious are not as likely to be in need of these defenses.

When the high anxious individual attempts to control and reduce his anxiety, he becomes rigid through repressing the threatening ideas. In this way his alternatives for acting are reduced and he loses much of his freedom and flexibility. It is as though he is unable to face ambiguities in this world and so he becomes more rigid--clinging to external stimuli--in order not to become completely overwhelmed. All ego-defense mechanisms produce some degree of unadaptive rigidity in the personality (Frendel-Brunswik, 1949; Eriksen & Eisenstein, 1953; Cattell, 1952; Perlin, 1960; Kogan & Wallach, 1964).

Eventhough we are not concerned in this paper with rigidity per se, but with a related phenomenon, dogmatism, there is relevance. Dogmatism is a higher order and more complexly organized form of inflexibility.

It is more concerned with ability to integrate "new sets" into a current belief system whereas rigidity deals with breaking down old patterns of behavior and sets (Rokeach, 1955). Rokeach, in his extensive work on the open and closed mind (Rokeach, 1960) defined dogmatism as a "closed cognitive organization of beliefs and disbeliefs about reality." He supposes that a person's belief system is open or closed, as indexed by the score on the Dogmatism Scale, and this is dependent upon the extent to which that individual "can receive, evaluate and act on relevant information viewed from the outside on its own intrinsic merits." He then proposes that perhaps "to the extent that a belief-disbelief system is closed it represents a cognitive network of defenses against anxiety."

Although dogmatism has been chiefly observed in the political and religious spheres, it is not impossible to find it in other realms of intellectual and cultural activity. An individual can be dogmatic in his own idiosyncratic way, evolving a unique integration of ideas and beliefs and reality (Rokeach, 1954). Objective reality is represented to him by certain beliefs or expectations that he accepts as true or false. Rokeach concludes that the more dogmatic a person's belief system is, the more subjected he is to continual stresses and strains from objective and social reality; the more isolation there is among the various parts of his belief system; the more will incoming information be seen as irrelevant; the more threatening will contradictory events be; the less readily will he be able to face the present

objective reality and evaluate it in order to be able to make a realistic judgment concerning it (Rokeach, 1954).

It can be surmised that it is not so much the anxiety itself that is responsible for the performance decrement as the result of the defense employed against the anxiety. This was also noted by Sarason and Mandler (1952) and by Stone (1964). When testing 6th grade boys Ruebush (1960) concluded similarly that the effect of anxiety on performance, whether facilitating or interfering, is mediated primarily by defensive reactions to the anxiety.

Some have wondered whether amount of risk could be a function of capacity factors. The general conclusion found was that risk does not correlate with intelligence or scholastic achievement to any significant degree (Stone, 1964; Ziller, 1957). It would seem more likely then, that risk-taking behavior depends on personality correlates.

Beier (1951) found the individual who is faced with threat and is in the state of anxiety shows a loss of "abstract" abilities or, more specifically, he experiences a loss in flexibility of intellectual function. This means that the person perceives and interprets each new set of stimuli in many different ways according to his needs. His ability to judge, to see essential relationships, to shift adequately has decreased. When asked to act he projects his own need-confusion onto the stimuli seeing it in terms of such conflicting needs that he cannot respond adequately. His perceptual field is narrowed. Most stimuli appear threatening because the individual cannot cope with

them, hence he is likely to limit his awareness of such experiences. His behavior will be characterized by rigidity and constriction.

Very differing results have been obtained in which no relationship was found to exist between anxiety and performance on either a rigidity or a perceptual task (Cowen, Heilizer, Axelrod & Alexander, 1957). This author wonders whether different results would have been obtained had a differential anxiety test been used.

Kogan and Wallach (1964) had expected anxiety and rigidity to be inversely related to risk taking, whereas impulsiveness would be positively associated with risk taking. They found no direct relationship of anxiety with risk taking. However, persons high in anxiety and also high in defensiveness tended to be more irrational in risk-taking decisions. Risk-taking behavior seems to be more a function of the self-image held by a defensive person. These effects are quite dissimilar across sex which led them to conclude that the implications of personality for risk-taking behavior are strongly sex-linked.

Fillenbaum and Jackman (1961) did a study which involved a replication and an extension of part of Rokeach's work on the relation of dogmatism and anxiety to performance in a problem solving task. They found 1) that in a problem solving task subjects low on dogmatism performed more efficiently than those high on dogmatism; 2) there is no relationship between generalized anxiety and a problem solving task and 3) that there is a definite relation between dogmatism and anxiety

scores ($r .49$). The 1st and 2nd conclusions coincide with Rokeach's (1960) findings stating that, to the degree that a person is open or closed depends on how that person views and can act upon relevant information viewed from the outside on its own intrinsic merits. There is no reason then, to think a person acts in such a way solely because of his position on a generalized anxiety dimension.

The present study is also a replication and extension of Rokeach's work, but with a few very specific differences. A differentiated anxiety scale (PRS) was used in an effort to clarify some of the confusing results found when a generalized anxiety scale was used. Another difference, which is also a variation from Millenbaum and Jackman's study, is the use of a situational-risk index rather than the problem solving task. This index appears to be a truer indicator of behavior patterns.

Chapter III

Procedure

A. Subjects:

A total of 92 male undergraduates from the freshman class in psychology class, 101, at Loyola University were tested. These subjects were given three tests (PRS, Dogmatism Scale, Choice Dilemma) each on different days during their regular psychology class period.

Extreme high and low groups were selected by using the upper 25% and the lower 25% of each set of scores. Each extreme group consisted of approximately 23 subjects.

B. Tests used:

1. To procure a measure of anxiety, a differential anxiety scale, the Nicolay-Walker Personal Reaction Schedule (PRS) was used. This relatively new measure of anxiety is similar to the older MAS (Manifest Anxiety Scale) in that it is a True/False questionnaire on which the subject attests to his subjective feelings of anxiety. It has however, important differences representing some unique innovations.

The PRS contains three subscales which corresponds to the three isolated factors representing three relatively "pure" types of anxiety. The three sub-scales are operationally defined as:

Anxiety Type M (Motor Tension)

Type M anxiety is characterized by concern with external achievements coupled with physical tension which acts as a defense against feelings of inadequacy. When frustration occurs, energy is channeled somatically instead of psychically. Type M anxiety results in hyper-activity, physical and mental restlessness, or jumpiness.

Anxiety Type O (Object)

Type O anxiety is characterized by concern that external demands and perceived expectancies may be overwhelming and one may suffer harm. It represents a projection or rationalization of one's possible personal inadequacy. It results in a magnification of personal problems out of proportion to objective reality. The emphasis here is on the external as a source of uncertainty or unrest.

Anxiety Type P (Personal Inadequacy)

Type P anxiety is characterized by concern that one may not be capable of meeting the difficulties of life. The person himself feels inadequate and the inadequacy lies within himself. There is a certain helplessness and self-evaluation which may give rise to guilt feelings. The focus of the uncertainty is on one's own inadequacy.

Total anxiety score is the sum of "type-M," "type-O," "type-P."

The total PRS consists of 87 anxiety items mixed with 30 K-scale items from the MMPI.

2. To obtain a measure of closed mindedness (dogmatism), Rokeach's Dogmatism Scale was used. The 40 items of Rokeach's last revision of the scale (Form E) plus the instructions were taken from The Open and Closed Mind by Milton Rokeach (1960). The items were mixed up well and padded with 22 statements from the Gough-Sanford Rigidity Scale. This latter scale is now included in the California Psychological Inventory where it is labeled Fx (Flexibility).

Subjects were asked to mark each statement according to their degree of agreement or disagreement:

plus 1	I agree a little	-1	I disagree a little
plus 2	I agree on the whole	-2	I disagree on the whole
plus 3	I agree very much	-3	I disagree very much

3. The amount of risk was determined by the amount of chance a subject was willing to take in a series of hypothetical life situations on the Choice Dilemma Procedure. This questionnaire was developed by Wallach and Kogan (1959, 1961) to obtain probability preferences in everyday situations. On this test each subject is presented with 12 hypothetical situations, each requiring a choice between a safe alternative and a more attractive but risky one. His task is to indicate the probability of success which would be sufficient for him to select the risky alternative.

As an example of the situations presented, the first item follows in its entirety:

Mr. A, an electrical engineer, who is married and has one child, has been working for a large electronics corporation since graduating from college five years ago. He is assured of a life-time job with a modest, though adequate, salary, and liberal pension benefits upon retirement. On the other hand, it is very unlikely that his salary will increase much before he retires. While attending a convention, Mr. A is offered a job with a small, newly founded company which has a highly uncertain future. The new job would pay more to start and would offer the possibility of a share in the ownership if the company survived the competition of the larger firms.

Imagine that you are advising Mr. A. Listed below are several probabilities or odds of the new company's proving financially sound.

Please mark in the appropriate space on the answer sheet the lowest probability that you would consider acceptable to make it worthwhile for Mr. A to take the new job.

- a. The chances are 1 in 10 that the company will prove financially sound.
- b. The chances are 3 in 10 that the company will prove financially sound.
- c. The chances are 5 in 10 that the company will prove financially sound.
- d. The chances are 7 in 10 that the company will prove financially sound.
- e. The chances are 9 in 10 that the company will prove financially sound.
- Leave all the spaces blank if you think Mr. A should not take the new job no matter what the probabilities.

The response categories were arranged from chances of one in ten upward for the odd items and from high probabilities down to chances of one in ten for the even items, thus counterbalancing for any order preferences in choice of probability levels. Refusal to recommend the risky alternative no matter what its probability of success was scored as ten. The larger the probability level selected, the greater the amount of conservatism.

C. Statistics Used:

- 1) Pearson Product Moment Correlations between dogmatism scores and each of the anxiety scales taken separately and together; correlations of risk taking with all the scales of anxiety and dogmatism.
- 2) t test for finding significance of difference between two r's not independently distributed but correlated.
- 3) Extreme group approach: correlations between the various scales

of anxiety, dogmatism and risk taking with the upper 25% and the lower 25% of scores. Significant difference between the extreme group correlations--tested by z test.

D. Specific hypothesis tested:

1) There is a significant positive relationship between scores on the dogmatism and anxiety scales (subtypes and total) based on total group of 92 Ss.

2) Anxiety of the "type-O" sort will be significantly more positively correlated to dogmatism than type-P or type-M anxiety in total group of Ss.

3) There will be a significant difference in the relationship between anxiety and risk taking for high dogmatic individuals as opposed to low dogmatic individuals in the extreme groups of 23 Ss each.

Chapter IV

Results

The results, in general, indicated that there was a significant positive relationship between closed mindedness and anxiety. There was also a significant relationship between anxiety and risk taking in the high dogmatic individuals but not in the low dogmatic subjects as these three variables were operationally defined and manipulated in this study.

Table 1 presents the means and standard deviations of the three subtests and total anxiety, dogmatism and risk-taking scores.

Table 1

Anxiety, Dogmatism and Risk-Taking Scores
for the Total Group
(N = 92)

Scale	Mean	S.D.
Type-M	9.22	3.62
Type-O	8.82	3.94
Type-P	8.68	3.74
Total M-O-P	26.72	9.33
Dogmatism	101.64	22.17
Risk Taking	68.52	14.30

Table 2 presents the correlations existing between dogmatism and the various sub-scales and total anxiety scale of the Nicolay-Walker Personal Reaction Schedule. All of the correlations differ significantly from zero. Correlation of "type-O" anxiety with dogmatism, however, does not differ significantly from "type-M" or "type-P" anxiety as was hypothesized. This latter was determined by using the t test for finding significance of difference between two r's which are not independently distributed, but correlated.

Table 2
Correlations between Dogmatism and the
Various Anxiety Scales

(N = 92)

Scale	Correlation Coeff.	Significance
Type-M	.26	sig. at .05
Type-O	.37	sig. at .01
Type-P	.29	sig. at .01
Total M-O-P	.37	sig. at .01

Table 3 presents the correlations between the measures of anxiety with risk taking as well as the correlation of dogmatism with risk taking. No one of the correlations differs significantly from zero. It is clearly evident that neither anxiety alone or dogmatism alone has any significant influence on risk taking when computed from the total group.

Table 3
Correlations of Risk Taking with the Various
Measures of Anxiety and Dogmatism
(N = 92)

Scale	Correlation Coeff.	Significance
Type-M	-.06	n.s.
Type-O	.05	n.s.
Type-P	.08	n.s.
Total M-O-P	.03	n.s.
Dogmatism	.04	n.s.

Table 4 shows the means and standard deviations for the extreme groups in anxiety, dogmatism, and risk taking. In each set of measures the high and low group means are at least two standard deviations in opposite directions from the total mean (Table 1). This amount would be sufficient to make significantly different groups.

Table 4
 Extreme Group Scores for the Various Measures
 of Anxiety, Dogmatism, and Risk Taking
 (N = 23)

Scale	High		Low	
	Means	S.D.	Means	S.D.
Type-M	14.09	2.02	4.96	1.02
Type-O	14.09	2.70	4.35	1.26
Type-P	13.61	2.97	4.57	1.32
Total M-O-P	39.22	5.79	15.91	2.72
Dogmatism	129.74	12.54	73.70	8.78
Risk Taking	85.74	7.37	51.09	6.79

Table 5 presents the means and standard deviations of the risk taking and various anxiety scores in both the high and the low dogmatic groups.

Table 5
 Various Anxiety and Risk-Taking Scores
 in High and Low Dogmatic Groups
 (N = 23)

Scale	High Dog.		Low Dog.	
	Means	S.D.	Means	S.D.
Type-M	10.26	3.56	7.78	3.22
Type-O	10.26	3.32	7.17	3.07
Type-P	9.78	3.77	7.26	3.35
Total M-O-P	30.30	8.62	22.22	6.76
Risk Taking	69.91	15.14	65.87	11.73

Table 6 shows the relationship between risk taking and anxiety in high dogmatic and low dogmatic individuals. Since high scores on risk-taking scale indicates conservatism, it should be remembered that a negative correlation indicates a relationship to various degrees of "riskiness." The marked correlations differ significantly from zero at the .05 level of confidence.

Correlations of the high dogmatic groups differ from correlations of the low dogmatic groups at the indicated levels of significance. These differences were found by using Fisher's statistical technique for finding differences between r 's through transformation to z 's and computing the standard error of difference between two z 's.

Table 6

Correlations between Anxiety and Risk Taking in

High and Low Dogmatic Individuals

(N = 23)

	High Dog.	Low Dog.	Difference between r 's
Type-M and Risk Taking	-.42*	-.12	sig. at .34 level
Type-O and Risk Taking	-.44*	.18	sig. at .02 level
Type-P and Risk Taking	-.22	.23	sig. at .07 level
Total M-O-P and Risk Tak.	-.44*	.14	sig. at .03 level

* significant at the .05 level of confidence

Table 7 presents the correlations between dogmatism and the various measures of anxiety in both high (conservative) and low (risky) risk-taking individuals. Significant correlations are indicated.

Table 7
Correlations between the Various Anxiety Scales
and Dogmatism in Both High and Low
Risk-Taking Individuals
(N = 23)

	High R.T. (Conservatism)	Low R.T. (Risky)
Type-M and Dogmatism	.39	.14
Type-O and Dogmatism	.08	.58**
Type-P and Dogmatism	.05	.38
Total M-O-P and Dogmatism	.24	.48*

* significant at the .05 level of confidence

** significant at the .01 level of confidence

Table 8 presents correlations between dogmatism and risk taking in various high and low measures of anxiety. No one of the correlations differs significantly from zero. All correlations however, follow the expected direction.

Table 8
Correlations between Dogmatism and Risk Taking in
High and Low Measures of Anxiety
(N = 23)

	High	Low
Type-M	.15	.27
Type-O	-.30	.26
Type-P	-.07	.001
Total M-O-P	-.22	.06

Chapter V

Discussion

The most clearly defined results of this study are those concerned with hypotheses one and two. Hypothesis one predicts relationship between dogmatism and anxiety following Rokeach's work. When testing groups in the United States and England he found dogmatism and anxiety to correlate from .36 to .64 (Rokeach, 1960). Although not as high (Table 2), this present study agrees with the previous research of Rokeach that anxiety is greater in a relatively closed system of belief. To say that this relatively closed system serves as "a tightly woven network of cognitive defenses against anxiety" (Rokeach, 1960) cannot be stated for certain, but it can be speculated that closed mindedness could be at least one means of defense against anxiety.

The need to defend against threat, an individual's degree of anxiety, seems to determine the extent to which a person is open or closed to reality. According to Rokeach's (1960) framework "thinking is not a private affair" and an open-minded person will more readily adjust to outside conditions because anxiety has not closed him off from the external stimuli that may be a threat. An open-minded, non-threatened individual has the freedom to socially orientated.

From the above and from Beier (1951) it would seem that the individual who uses closed mindedness to allay his anxiety would be the person who experiences external stimuli as threatening. He feels he cannot cope with the threat and consequently is likely to limit his awareness of such experiences, i.e. become closed minded.

Hypothesis two was an extension of the relationship found between dogmatism and anxiety with consideration given to types of anxiety. It was assumed by this author that anxiety stemming from any other source other than external demands would not so readily correlate with closed mindedness.

Table 2 affirms that "type-0" anxiety is numerically more positive, but not significantly closer related to dogmatism than "type-M" or "type-P." It does give evidence of the expected tendency. Tables 6, 7, and 8 all show like evidences and directional tendencies regarding "type-0" anxiety. It would seem plausible that anxiety related to objective and social reality (type-0) could interact more closely with closed mindedness in an individual and thus influences him more in his risk-taking behavior. Such a person would appear to be more closed to reality perhaps as a defense against the threat involved, and this would hinder his acting to his best advantage. It could be conjectured then, that an individual high in "type-0" anxiety who is also characterized by closed mindedness is not sufficiently free to say "yes" to the present reality so as to achieve optimal results in everyday life situations or decisions. He could not so readily

weigh, sift and evaluate to his greatest advantage. Further research is needed however, to affirm the effects of such a relationship. Eventhough the above is also true of "Total" anxiety, for purposes of this study it was chosen to concentrate more on "type-0."

Table 3 rather clearly points to the fact that neither anxiety alone or closed mindedness alone affect the types of risks an individual is willing to take. These results would be in harmony with hypothesis three stating that the two variables in combination affect an individual's behavior in a risk-taking situation. Kogan and Wallach (1964) also found no direct relationship of anxiety with risk taking, however, anxiety together with defensiveness was correlated with processes of risk taking.

Hypothesis three predicted that risk-taking behavior would be related to anxiety in the presence of closed mindedness only. The high negative correlations on Table 6 seem to support this and in the direction anticipated. One speculation for this rather high negative correlation is that when closed mindedness is used as a defense against anxiety it makes the individual less able to receive and evaluate relevant information coming in from the outside. Since he cannot readily integrate this new material into his ego system he is not able to make the most reasonable judgments that would give him the greatest probability of success. He acts more from a "fear of failure" motive in which risk-taking behavior in everyday situations would be more highly extreme and impulsive. For this reason he is not as able to withhold and control actions in order to achieve success.

This seems to coincide with Atkinson's theory regarding achievement motivation--that the individual least threatened and most intently striving for success will tend to take risks of moderate probabilities. This presupposes his ability "to receive, evaluate and act on relevant information" (Bokeach, 1960).

A negative correlation of $-.44$ (Table 6) between "type-0" anxiety and risk taking in the high dogmatic group and the correlation in the opposite direction for the low dogmatic group support Atkinson as well as hypothesis three. When dogmatism is present with anxiety it leads the individual in the direction of extreme and impulsive risks.

The conclusions, then, that can be drawn from this study are as follows:

- 1) In agreement with Bokeach's findings, anxiety is significantly correlated with dogmatism.
- 2) "Type-0" anxiety is numerically more positively related to dogmatism than "type-P" or "type-M." There is however, no significant difference among correlations.
- 3) "Type-0" anxiety and risk taking correlate significantly in the high dogmatic individuals, but not in the low dogmatic subjects. This suggests that an individual high in anxiety due to external objects who is also closed minded tends to act in a more risky manner, i.e., take more extreme and impulsive risks.

Although we can only speculate as to the meaning of the relationship between anxiety and closed mindedness, this study does indicate that closed mindedness and anxiety correlate more highly in individuals

who are extremely risky, i.e., take high risks. This could indicate that closed mindedness may be used as one defense against anxiety, and that when this occurs it does not lead to the most successful decisions in risk-taking behavior.

An alternate explanation which points to the inadequacy of closed mindedness as a defense against anxiety can also be speculated. The high negative correlation (Table 6) between "type-0" anxiety and risk taking in the presence of high dogmatic individuals can be used to wonder about behavior, if and when dogmatism is used as a defense against anxiety. It appears to be a very inadequate means of control. The resultant behavior of these high-dogmatic individuals tends to be more impulsive and extreme in risk-taking behavioral situations (-.44). On the other hand, when anxiety is defended against by another means other than closed mindedness--as appears to be the case with the low dogmatic group--it allows the individual to be freer, permitting him to more readily act according to his reason and his goals for success. If these assumptions can be shown to be valid--and this would be suggestion for further research--then closed mindedness, and probably also rigidity, are clearly maladaptive means of defense against anxiety.

Chapter VI

Summary

Among the things affecting a person's perception of the world is his "anxiety." When "fear of failure" is the primary motive for an individual's behavior, it raises that person's anxiety level (Atkinson, 1957). This would seem to be especially true of the "type-0" anxiety (on the Micolay-Walker differential anxiety scale, the Personal Reaction Schedule), which is due to uncertainty about external demands. According to Rokeach (1960) this heightened anxiety should make an individual more closed minded and may be a defense against anxiety. It would appear then, that anxiety together with closed mindedness (or dogmatism) would prevent an individual from evaluating and acting to the best of his interests. This would suggest a preference for extreme probabilities and extreme risks in life situations.

This present study, then, is a replication and an extension of part of Rokeach's work to discover the relationship existing between anxiety and closed mindedness and to find what effect these two variables combined have on risk-taking behavior in everyday situations.

92 male subjects were given the PRS, Rokeach's Dogmatism Scale and the Choice Dilemma Procedure from which were obtained an anxiety, a "closed mindedness" and a "risk taking" score for each subject.



Results from this study indicate that anxiety is significantly correlated with closed mindedness ($r .37$) from which it is speculated that the latter can be used as a defense against anxiety. "Type-0" anxiety, due to uncertainty about external objects, was found to be numerically more closely related to closed mindedness, than "type-P" or "type-M," yet not significantly so. Finally there was the most positive evidence that anxiety relates to "riskiness"--interpreted as the tendency to take more extreme and impulsive risks--in high dogmatic individuals and not so in the low dogmatic. This would seem to show that a person high in anxiety, especially "type-0," who is also characterized by "closed mindedness," tends to take more extreme risks in order to avoid failure. These risks do not so readily lead to actions with successful outcomes since they are performed from the motive to avoid failure rather than to achieve success.

An alternate explanation pointing to the inadequacy of dogmatism as a defense against anxiety is also speculated. This however, would be suggestion for further research.

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APPROVAL SHEET

The thesis submitted by Sister Mary Richard Herrmann, Ad.PP.S. has been read and approved by three members of the Department of Psychology.

The final copies have been examined by the director of the thesis and the signature which appears below verifies the fact that any necessary changes have been incorporated, and that the thesis is now given final approval with references to content, form and mechanical accuracy.

The thesis is therefore accepted in partial fulfillment of the requirements for the Degree of Master of Arts.

14 February 1966
Date

Robert C. Nicolay
Signature of Advisor