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INDIVIDUAL CHOICE AS A FUNCTION  
OF INFORMATION PROCESSING

By

David C. Wheeler

B.A., Montana State University, 1972

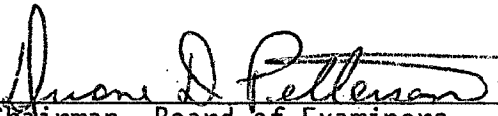
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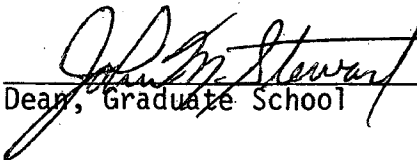
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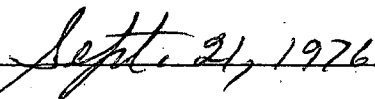
UNIVERSITY OF MONTANA

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## ABSTRACT

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In an attempt to study the effects of various levels of Information Processing on risky choice decisions, this study investigated the varied responses of four levels of Information Processing (high, medium high, medium low and low) in a ranking and choice paradigm. Subjects were placed into Information Processing (IP) quartiles according to their score on the Repertory Role Test (a low score placing an individual in the high IP quartile, a high score in the low IP quartile). The subjects ranked two sets of options according to the perceived riskiness of the options for the subject. The subject selected one option from each of the sets which they would prefer if they were in the hypothetical situation stated in the options. The variance in the riskiness of the choices or in the rankings would not warrant rejection of the null hypotheses. The study found a trend suggesting differences between the combined riskiness of the choices made by the high and low Information Processing subjects and the combined riskiness of the choices made by the medium high and medium low Information Processing subjects. A similar trend was also found on the relevancy scales of the MORS and the CRRS instruments. The trends indicated that the high and low Information Processors made more cautious choices and rated the options as less relevant than did the medium high and medium low Information Processors.

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CHAPTER I  
INTRODUCTION

There is seldom a day passes without an individual having to make a choice of some kind. These choice situations are usually filled with a plethora of options. Through some process the human organism sorts through the options and reaches some decision. The interesting event to be observed is the fact that different individuals reach different final choices, even though they have apparently received the same information. This is apparently why we have political parties, different religious organizations, different service clubs and other diverse means of attaining what, on the surface, appear to be the identical political, religious, social or humanitarian goals.

From the above observation three assumptions seem to be relevant considering human decision making or choice resolution. These assumptions have been taken from David W. Kale (1975) and modified to conform with the language and intent of this study.

Assumption #1: Each individual builds for himself a cognitive representation of what the world is like and this serves to organize and give meaning to his

experiences and the value of those  
experiences in future choice resolutions.

This cognitive representation is a most accurate schema of an individual's psychological make-up. It is also probably the best predictor of how an individual will behave in a given set of circumstances. This schema is viewed by Miller, Galanter and Pribram (1960) as a mediator in the perception of the world.

Any correlation between stimulus and response must be mediated by an organized representation of the environment, a system of concepts and relations within which the organism is located. (p. 7)

In essence this schema is an internal reality which the individual has put together to assist him in coping and adapting to the environment in which he is located.

Assumption #2: The input to a particular individual's cognitive system is directly related to its output in certain predictable and describable ways.

This assumption deals with the idea that it is possible to determine the behavior associated with certain input to a system by dealing with the strategies that a system will employ in the collection and management of input. More specifically, the strategies used by the system will be directly reliant on the internal schema of the individual. Thus, the internal schema of

the world not only affects the output strategies but the input strategies as well. This is what is put forth by Schroder, Driver and Streufert (1969) when they defined information processing as "the nature and interdependence of conceptual rules available for organizing dimensional values." More simply put, when a person is presented information, he categorizes that information according to his own internal set of rules or values and processes that information to fit with his schema of his world.

Assumption #3: The most important variable in understanding human information process may be the schema or structural system within which that information is being processed.

This assumption centers on the notion of the input content as not being as important as the process it goes through internally within the individual. A distinction must be made clear at this point. There are two ways of looking at input variables. The first is the content or the surface features of the input. The second is the way in which the input is processed through the individual's schema of the environment. It is more simply the distinction between what is being processed and how it is processed.

These assumptions suggest the idea that each individual has certain strategies for reaching a decision in processing information.

Thus, one might surmise that variance within a research paradigm may be accounted for by differences in the structures or schemas used by individual subjects in the research environment.

Based on these assumptions, Kale provides a three stage model used by individuals in processing information. An individual first pulls from his environment the information which is of relevance. This might be termed selective perception of the world. Secondly, the individual differentiates the selected information into categories available from his schema of the world. If the information does not fit into a present category, he can either discard the input, develop a new category, or distort the information to fit a given category. The final stage of the process is the judgment of the value of the input. This stage includes the when, where, why, and how of the use of the processed information.

All three of the above stages are influenced or directed by the internal schema the individual has of his world. In addition to the three stages there is an environmental factor which can affect the processing of information. This factor is the complexity/ simplicity of the environment. The effect of the environment can be due to the environment being so scarce in input elements that there is little or no relevant input for the individual. This could cause a withdrawal by the individual from the environment, i.e., elderly people in the sterile environment of a rest home. The other extreme

of environmental input is that the environment is so complex that the individual's perceptive, differentiating and judgment capacities are overpowered rendering the individual unable to process the input. This could also cause a withdrawal from the environment until coping powers return, or create a complete avoidance of the specific environment, i.e., an individual who has taken an hallucinogenic drug, or a student unable to progress in a given academic field.

In the present study, consideration of how individuals process given input from the environment is specifically related to the phenomenon of risk and perceptions of risk in an experimental paradigm. In the present study Information Processing will be related to the Choice Dilemma Questionnaire paradigm of choice shift. The nature of risk and perceptions of risk are subjective in nature, thus an investigation into the effects of various levels of information processing upon risk decisions appears to be relevant.

The subjective nature of risk in the choice shift paradigm is supported by recent studies in the area using the standard Choice Dilemma Questionnaires (CDQ) paradigm (Vinokur, 1971; Burnstein, Miller, Vinokur, Katz and Crowley, 1971). "Subjective expected utility" of the decision and its outcome was found to be important in both of these studies. Burnstein et al. states specifically the choice observed was epiphenomenal, i.e., the choice shift was a direct result of a change or reprocessing of the subjective expected

utility of the decision to be made within the CDQ item. The individual's personal schema of the world had been re-ordered, thus the decision was changed and the choice shift occurred.

The next chapter consists of three sections. The first section includes a review of the choice shift literature. The second section narrows the scope of the study to individual effects on choice resolutions. The third section provides an explanation of information processing and some of its possible implications for choice resolutions.

CHAPTER II  
REVIEWS OF LITERATURE

Review of Choice Shift Literature

The bulk of the choice shift research has been based on the use of the Choice Dilemma Questionnaire (CDQ) paradigm. The CDQ paradigm uses a series of hypothetical situations in which the central character is presented with a possibly risky choice. The subject is asked to choose the odds of success required before the subject would advise the central character to take the risky choice. The odds range from 1 chance out of ten of success (risky) to under no conditions should the central character take the risk (cautious). The odds scale consists of 1, 3, 5, 7, 9 chances out of 10 and no chance for success if the choice is made by the central character. The CDQ was developed by Kogan and Wallach (1964) to investigate the phenomenon of individuals making a riskier or more daring choice when in a group than when making the choice on their own.

From this paradigm three hypotheses have evolved to explain the phenomenon of choice shift from the individual choice to a group condition choice on the CDQ. The three hypotheses which seem to be gaining the most support in the literature are the diffusion of responsibility, the persuasive arguments and the cultural-values hypotheses.

The diffusion of responsibility hypothesis was first proposed by Wallach, Kogan and Bem (1964). The basis of this explanation is the idea that with shared responsibility a diffusion of the individual blame for negative consequences occurs. The decreasing amount of individual responsibility leads to reduction in the fear of failure, a reduction in anxiety level and an increase in the amount of risky action to which the individuals in the group are willing to be committed. Although this hypothesis has gained support from a number of studies (Secord and Backman, 1964; Pruitt and Teger, 1967; Kogan and Wallach, 1967), there are some recent studies which put this hypothesis into doubt. These studies raise significant questions in four areas: The effect of group size on the amount of choice shift, cautions shifts on certain items, effects on group cohesion on the amount of choice shift and the effects of leadership.

If the diffusion of responsibility hypothesis is an accurate explanation of choice shift group size should show a positive correlation with the amount of risk for which a group will take responsibility. If increased anonymity is the reason that fear of failure is reduced and the anxiety which accompanies that fear, then it should follow that the bigger the group, the more risk the group will take. Pruitt and Teger (1967) found just such a result. They found that there was a significant difference between a group



with three members and a group with four or five members. However, in a more recent study (Myers and Arenson, 1972) which systematically controlled for group size, it was found that there was no significant difference in the amount of risk groups of two, three, five or seven members would take. If group size does not affect the amount of risk a group will undertake, then a prime assumption of the diffusion of responsibility hypothesis is in doubt. This is particularly significant when it is considered that both studies used the same CDQ items.

One explanation of the Myers and Arenson (1972) results could be that the groups were too artificial, since the subjects were randomly assigned to a group size condition. It would then be surmised that the individuals in the groups did not have the trust needed in the group to make the bigger groups riskier than the smaller groups. The problem with this explanation is the effect that cohesion has on group choice shift. Dion, Miller, and Magnan (1971) found the more cohesion in the group, the less risky the shift. This was explained by the writers suggesting that affective bonds prevented the individuals from wanting the others in the group to share in any negative consequences of the decision, or having the others in the group becoming the cause of the failure in the perception of others or of self.

The area of cautious shifts in group decisions does not seem to support the diffusion of responsibility hypothesis. Cartwright (1971), Blank (1968), Myers and Bishop (1971), and Moscovici and Zavalloni (1968) all found a consistently cautious shift on certain items on the CDQ. The diffusion of responsibility hypothesis does not allow or explain a shift in the cautious direction. The shift in these studies promotes the idea that cautious shift may be due to the same process in the group as risky shift. The basis for this notion is the fact that the same items across studies were found to have a consistently cautious shift, just as certain items consistently evoked a risky shift. This finding further suggests that there may have been some unexpected subjective elements in the situations or the experimental condition which caused this consistency. There was quite possibly something the subjects consistently used on the various items which accounts for this consistency.

The second major problem with the diffusion of responsibility hypothesis is the effect of leadership on the group decision. Specifically, the leader persuades the individuals in the group to take a riskier or more cautious position (Boulanger and Fischer, 1971). In their study, an emergent leader from a group's first discussion was asked prior to a second discussion to take a risky position, cautious position or neutral position. It was found that the leader could move the group decision in a given direction. The

diffusion of responsibility hypothesis does not account for this because the decision is unilateral rather than multilateral in the group's acceptance of the consequences of the decision.

There are two studies in support of the persuasion hypothesis (Collins and Guetzkow, 1964; Marquis, 1962). This hypothesis stated that if there were no predominant leader, there would be no shift. Hoyt and Stoner (1968) used management trainees and graduate students in business administration in an attempt to nullify the effect of leader riskiness and persuasion. They found that the group decision was significantly riskier than the mean of the individual decisions. According to the theory, these individuals would be consistently more risky in their initial choices than would the average randomized group, thus less affected by a persuasive leader's risky arguments.

In the second study on the effect of leader influence in the group (Boulanger and Fischer, 1971), it was found that the leader did have a significant effect on the group's decision, although the effect was short-lived. The effect of the leader lasted only while the person was in that particular group. The cautious leaders and the neutral position leaders both produced cautious shifts in the group decision. The cautious leader produced a significantly greater cautious shift than did the neutral leader. The individual cautious position held through a post group individual decision. The risky leader did produce a risky shift in the group decision, but the

effect was transitory. When the member of the risky leader group responded in a post group individual decision, the members reverted to their initial cautious responses. Thus, the leader's effect on long-term commitment to risk is in doubt.

Another problem with the persuasive leader hypothesis is that it assumes that the leader is the individual in the group who takes the riskiest stance. There is no consistent support for this assertion in the literature. The hypothesis doesn't explain a choice shift on non-risk items (Moscovici and Zavalloni, 1969). The persuasive leader hypothesis can account for choice shift in only one direction, i.e., in the risky direction. The unidirectional nature of this hypothesis leaves too many questions to be answered for this explanation to be a valid explanation of the choice shift phenomenon.

The hypothesis which seems to be gaining the most support from recent investigations is the cultural-values hypothesis. This hypothesis has two underlying propositions. The first is the values proposition which states that under certain conditions the value of risky behavior is greater and more salient than the value of cautious behavior. This would provide an explanation for both cautious and risky shifts in the situations on the CDQ. It would also provide an explanation for consistently risky and cautious shifts on certain items on the CDQ. The second underlying proposition of this hypothesis is the relevant information proposition. This proposition

states that the values brought out and made salient through the group discussion influence the individual to reprocess the information in light of those values and relevant information of the choices and values involved.

Investigations of the first proposition show that risky shifts on certain items and in certain conditions do occur cross-culturally between English (Bateson, 1966), Israeli (Rim, 1963), Canadian (Vidmar, 1970), French (Kogan and Doise, 1969), and German (Lamm and Kogan, 1970) subjects. These studies found cross-cultural risky shift. Carlson and Davis (1971) found that Uganda subjects did not produce evidence of a risky shift as did American subjects in similar task conditions. This was interpreted as support for the cultural values proposition.

The cultural values proposition has two interrelated problems. The first is the methodological weaknesses of this proposition. The researchers in this area (Brown, 1965; Levinger and Schneider, 1969; Stoner, 1968; Morgan and Aram, 1975) have not put together what values they need to measure and how these values should be measured. They have yet to show that the values that are involved in the influencing of group decisions are measurable as of now. The methodological problems are intertwined with the conceptual problems of this proposition. This second problem is in the defining of the values involved

in the decision and the possible explanation of why those particular values seem to become consistently salient in some item situations and not in others. The values proposition can explain consistent risk/cautious shifts on certain items, but has problems explaining, conceptually, inconsistent shifts on other items. There has been no conceptual explanation of why cultural values come into play in artificial situations of questionable relevance for the subjects. Could it be that the artificiality of the situation is the factor which causes the subjects to rely on cultural values, as opposed to using individual values which may or may not be divergent from the values of the subject's culture? The question which needs to be considered is: How much of the decision is influenced by cultural values, and how much is influenced by individual values which may agree or disagree with the culture's values? How much is the decision influenced by other factors, i.e., chance, unrelated considerations, psychological state, perceived utility of the decision, involvement in the item? These questions would have to be answered by investigating the individual perceptions and processing of the information in each of the questionnaire items.

The relevant information proposition extends the cultural-values hypothesis to include the exchange of information, and, more importantly, the sensitizing of the individuals in the group to the saliency of certain values and information. This exchange and ordering

of the saliency of certain elements influences the individual to reprocess the item in a different fashion. This reprocessing in turn leads to a potential re-ordering with a different perception of the world and the item involved. This new and different schema may influence the differences between individual and group decisions.

The subjective nature of risk is important in light of two studies (Vinokur, 1971; Burnstein, Moller, Vinokur, Katz, and Crowley, 1971) where the subjective expected utility of the decision was seen as playing an important role in the decision. The subjective expected utility is considered as the sum of all the associated rewards of a decision and all the probabilities of success in the particular decision, or the action it calls for to gain the associated rewards. For example, if there are two alternatives to a certain situation for action and one of the alternatives has a sum of associated rewards of 8 and a probability of success of 3 out of 10, the subjective expected utility (SEU) of that alternative is 2.4 ( $8 \times .3 = 2.4$ ). The other alternative may have an associated rewards value of 12 and a probability of success of 2.5 out of 10, the SEU of this second alternative is 3 ( $12 \times .25 = 3$ ). The second alternative would be the more appealing of the two alternatives.

It must be remembered that the two elements of the SEU are very subjective in their nature. The associated rewards are the rewards for that individual. The rewards may include perceived honor, control,

success, acceptance or other rewards which may or may not be articulated or consciously formulated. In any case they influence a decision in conjunction with the individual's perceived probability of success in the decision of attaining the perceived associated rewards.

In light of the concept of subjective expected utility, the question arises as to whether subjects view the rewards and probabilities of success in a situation significantly different and process the available information differentially. Intuitively, the answer would be yes. It is apparent that individual perceptions and the effect of those individual perceptions need to be investigated. The next section of this paper will investigate the research and findings in the area of individual decision making and some of the factors influencing the ways persons make decisions.

#### Individual Choice Effects

Lerner (1965) investigated individual perceptions of a particular situation to take note of the variance of the individual explanations given for the situation. The situation involved two workers. One of the workers was rewarded with a sum of money through no effort or skill on his part. The subjects evaluated the rewarded worker as more capable than the unrewarded worker. This evaluation occurred in spite of the fact that the worker was rewarded fortuitously. In a



study by Lerner and Simons (1966), subjects witnessed a fellow subject receive presumably severe shocks for making minor errors in a learning task. The researchers found that the subjects rejected and devalued the apparently suffering victim to, in some way, make the negative consequences seem deserved by the individual. This was apparently an effort by the subjects to put things in a correct perspective, since they could do nothing to alleviate their peer's suffering. The correct perspective is that of a "Just World". That is to say that only bad things happen to bad people and good things always happen to good people. This hypothesis has received considerable support (Landy and Aronson, 1967; Lerner and Mathews, 1967; Rubin and Peplau, 1973; Shaw and Sklonik, 1971; Simmons and Piliavin, 1972; Walster, 1966). As Lee (1971) put it, "If our hero did not win (at poker) our estimate of him would decrease even though objectively we have to realize that getting four kings had nothing to do with any of his qualities." (p. 66)

With the Just World hypothesis in mind, let us examine the CDQ and see if this perception of the world could have a bearing on the responses by the subject. First it must be realized that individuals have negative and positive prejudices toward certain occupations and social or status positions. If the subjects consider a football player in a negative perspective, it is possible in the item on the CDQ which deals with the decision a football player has to make to win or lose the game that the subject would make a riskier than

average choice. The choice stemmed not from the situation in the item, rather the subject's perception that if the main character failed it was a deserved payment for playing "Mr. Big". Thus the choice made had little to do with the situation, rather it was influenced by a prejudice of a certain role position.

The same reasoning could hold in the positive direction. In the item on the CDQ concerning a successful businessman who is considering running for Congress on a minority party ticket, a subject may look at the item and evaluate it in the following manner: any minority party is the "good guys", the good guys always win. Even if they don't win the election, they will have been heard, thus the businessman should run no matter if his chances of winning are only 1 chance out of 10. This would be interpreted as a risky decision, although the level of risk had little to do with the decision. All of the twelve items on the CDQ could be processed or evaluated on criteria other than the level of risk involved in the alternative. That is to say that a personal prejudice of the subject could significantly affect the reason for the decision and the decision itself. These two examples show the effect of SEU on the particular items of the CDQ being used. This subjective effect is beyond the control of the experimenter, although the experimenter using the CDQ assumes that the subjects are going to process the items in a rational way according to level of perceived risk.

The variance in processing of the CDQ items has been tested using major field of study as a dependent variable. This study was based on the personality differences according to a major field of study found by Lehman (1965) and Sternberg (1955). These studies found that science majors have distinctively different personality characteristics, attitudes and ways of dealing with problems when compared with liberal arts and business majors. Sims, Harley and Weiner (1974), using the above studies, had subjects of various majors fill out a CDQ. All subjects showed a significant shift toward risk from individual decision to the group decision. Differences between initial scores failed to show significance; however, in the group condition there was a significant difference between liberal arts majors ( $M=4.95$ ) and the science majors ( $M=5.76$ ; Mann-Whitney  $U=2.5$ ,  $p .05$ ). In other words, the science majors, as a group, were more conservative than were the liberal arts majors.

In addition to the possible subjective individual effects already presented, there is some evidence to support the perceived locus of control as having some effect on the way in which a situation will be perceived by a subject (Cohen, 1964; Feather, 1969; Kelley, 1967; Streufert and Streufert, 1969; Weiner, Frieze, Kukla, Reed, Rest, and Rosenbaum, 1971; and Wortman, Costanzo, and Witt, 1973). These studies all discussed the attribution of desirable outcomes of an event to an internal quality of the individuals in the

situation, whereas, negative outcomes were attributed to an external factor. This might be seen as a variation of the Just World hypothesis. The "good guys" have the internal qualities considered important, thus they will always win. The "bad guys" are simply receiving their just reward for being bad guys. The difference is that the focus has switched from the situation or role to certain internal qualities of the individual described in the situation. For example, in the item which deals with the electrical engineer who has been offered a position with a new company which is less secure and more promising than his present position, the subject may process the information with regard to the ability of the engineer, although his ability was not explicitly stated in the item. The processing would work in this manner: the engineer must be particularly competent and able as an engineer for him to have been offered the position with the new company. If the company succeeds, he is in that much better a position; if the company fails, he should be able to market his skills and get into a position no worse (maybe better) than the position he is presently occupying.

This internal quality factor is of particular importance in light of a study by Jellison and Riskind (1971). In that study it was found that the subject's perception of the central character's ability correlated with their perception of the central character's risk taking. The researchers suggested that the risky shift or choice shift literature should be reinterpreted in terms of perceived ability of the central character in the item.

The above perception of ability factor relates to the notion of the central character exerting control over the situation. This notion of control has very little to do with the rational perception of the individual's control over the situation (Strickland, Lewicki and Katz, 1966; Langer, 1975). This notion of control could be manifested in any of a number of ways. It could be perceived as a need for competence (White, 1959), an instinct to master (Hendrick, 1943), a striving for superiority (Adler, 1930), or a striving for personal causation (deCharms, 1968). No matter how it is termed there is agreement that people are motivated to master their environment. This mastering may occur in any of a number of ways by a subject in evaluating or advising an individual in a situation.

This evaluation could involve the subjective utility of the decision which is to be made. That is the finding of two studies (Vinokur, 1971; Burnstein, Miller, Vinokur, Katz, and Crowley, 1971) using the CDQ paradigm. In fact, in the latter study (Burnstein et al., 1971), it was stated that the subjects made their decision of choice on the CDQ according to the subjective expected utility (SEU) of the decision. This study further suggested that changes in choice on the CDQ, i.e., choice shift, were epiphenomenal in that they were a direct result of changes in the SEU of the decision for the subject.

In light of the subjective effects that may be introduced into the CDQ paradigm, it is apparent that research needs to be done of the SEU effects on the CDQ and the interpretation of findings. This should be done with a control for experimenter bias and with regard for the reasons and processes used by the individuals in the paradigm. This is the direction of the present study.

In an effort to define and thus limit the scope of the investigation, the present study will be limited to the specific effects of the information processing level of an individual on a choice selection paradigm. Information processing (IP) and its effects will be discussed in the next section of this paper.

### Information Processing

Although there are several ways information processing (IP) has been defined and conceptualized (Schroder, Driver, and Streufert, 1969; Harvey, 1963, 1966), this study will center on Bieri's (1955, 1961) conceptualization and definition of IP or cognitive complexity/simplicity with reference to relevant findings from other conceptualizations.

There is a need at this point to define a number of terms that will be used in this section. Differentiation refers to the number of elementary dimensions (stable, unique orderings of stimuli) individuals use in their perceptions of the world. The uniqueness of

the dimension relates to the notion that the dimension must not have a strong correlation with another dimension for it to have an effect on the individual's perception of the world. For example, if two of the dimensions on the Repertory Role Test (see Appendix A) derived the same responses, these dimensions would not be considered unique and separate, rather they would be noted as one dimension or as parts of a third dimension. More specifically, if a subject rated the individual roles the same on two dimensions (outgoing-shy and happy-sad) it would be interpreted that these two dimensions were relatively the same dimension for that particular individual. An individual who uses several unique dimensions will be a more cognitively complex or of a higher IP level than an individual who uses fewer unique dimensions.

Articulation or discrimination refers to the number of gradations used to place stimulus objects along a unique dimension. For example, on the Repertory Test (see Appendix A), if an individual uses a dimension (outgoing-shy) uniquely and places the rankings of the roles on the 3 and 8, the individual is using a bipolar discrimination on that dimension. This bipolar discrimination would denote a low level of IP. If the individual uses all ten of the intervals on a unique dimension, the individual is using a wide variation discrimination on that dimension. Highly discriminated dimensions would denote a higher level of IP.

Integration refers to the way in which several unique dimensions are combined to derive the individual's perception of the world. If an individual relates all of the dimensions in his schema in a fixed or hierarchical pattern, the individual is of a low IP level. This integration has only the dimensions related directly to each other through a restricted pattern. As the integration level increases more alternative ways of relating various dimensions to various stimuli are possible, thus a greater complexity in the individual's perceptual evaluation scales. A high IP individual would use a number of intermediate combinations and flexible perspectives for organizing the several dimensions in a high IP individual.

High IP under all three of the above determinations deals with the abstractness of the organizational schema or structure of the individual. The higher the level of IP the more abstract the individual's schema for viewing his world and defining the elements within that world. In the other direction, the more concrete the individual's scheme of his world, the lower the IP level.

Bieri (1955, 1961) based his conceptualization of IP on Kelley's theory of personality constructs (1955) which focuses on the differentiation and discrimination used by an individual. This theory assumes each individual has a system of dimensions which he uses in the perception of his environment and that the characteristics describing the relations among these dimensions refer to a person's cognitive



schema of the world, thus a dimensional perspective of the individual's scheme of his world.

Information processing research opens the need to investigate how an individual makes certain choices in a given situation. This investigation could possibly explain why there is a difference in response in similar situations by different individuals even though they have apparently been given the same information from which to make their choices or why the same individual makes a different choice after the passage of time. We could take the stance of Greaves (1971), "to be purely colloquial about it, different people actually think differently, which, in turn, has a specific effect on the way they act." (p. 52) Although this statement has intuitive validity, it does nothing to control for individual variance effects, or help explain how these differences affect the various paradigms used in research, or help explain the differences in various individual processes for reaching different decisions in the same choice situations.

If there are differences among individual's cognitive schema of the world, how might these affect the individual's response to various situations or paradigms? Specifically, for each of the various research environments used we can only hypothesize the effect of IP level on the results achieved through a particular paradigm. These hypotheses would need to be based on the research which shows that different IP levels result in different outcomes on certain areas of investigation.

Bieri (1955) found that high IP individuals more accurately perceived differences between themselves and others. Low IP individuals, on the other hand, more often inaccurately perceived similarities between themselves and others. These differences were interpreted by Bieri as indicating that high IP individuals are more versatile in both the simple and complex realms of behavior. These conclusions supported the notion that high IP individuals are better able to accurately predict the behavior of others thus are better able to regulate their own behavior to reach desired goals. This predictability and perceived control may increase the SEU and lessen the risk of particular decisions for high IP individuals.

Higher level IP individuals perceived greater potential for conflict in relationships (Tripodi and Bieri, 1966). High IP individuals are more tolerant of change and conflict in their environment because of their versatility in the behavioral realms. Thus, it could be reasonably suggested that higher level IP individuals could more effectively deal with uncertainty in their environment, such as the uncertainty of a risky decision, than a lower level IP individual.

Lower level IP individuals are restricted in their adaptive behavior because of their inaccurate perceptions of similarities between self and other (Bieri, 1955) and the characteristic categorical (black-white) thinking behavior of low differentiating individuals (Schroder, Driver, and Streufert, 1969). This restriction in adaptive

behavior hinders the lower level processor in his attempts to deal with uncertain situations and decision resolution where the outcome is uncertain.

One point which has been overlooked in research is the notion that the experimenter has a certain IP system which influences his perception of the world. The importance of this observation is that the experimenter's IP level affects the way in which he approaches the experiment and the subjects, either of which influence the results of the research. Through the instruments the experimenter may inadvertently introduce restrictions on dimensions to the paradigm which influence the ways in which the subjects respond, i.e., on the CDQ, the subject may not relate one option, by itself, as being considered risky without a comparison of more than two options (status quo vs 1 alternative). It could be that the experimenter's conception of what the paradigm and its interpretation are revealing about human performance is unrelated to what the subjects actually perceived as their goal in the paradigm. This could lead to a comparison being made of perceptual "apples and oranges", so to speak.

In an attempt to test the variance between subjects' perception and the experimenter's perception in a choice paradigm, it would be necessary to provide a number of options in such a way that there is not a feature which would inherently make one option riskier than any of the other options presented. This would allow the subjects to respond

using their unique dimensional schema of the world for the sorting of the options. This could be compared with the experimenter's ranking and selection of the same options.

In this study the riskiness of the options has been defined as the uncertainty of the outcome and the amount of control which the individual could exercise over the outcome of the choice. That is not to say that these two factors are distinct entities which are mutually exclusive. It is realized in the context of what has been presented with regard to individual differences and the SEU concept that perception of uncertainty and control would have areas of mutual and undifferentiated effect. For the purposes of this study, perceived uncertainty and control are combined under the dimension of risk/caution. If there is perceived to be greater uncertainty and less control, then the condition is defined as increasing the riskiness of the option. If there is perceived to be less uncertainty and more control, then the condition is defined as decreasing the riskiness of the option.

The next chapter presents the specific rationales and hypotheses for researching the effects of individual information processing levels upon the ranking and selection of various options.

### CHAPTER III

#### HYPOTHESES AND RATIONALE

The thesis developed to this point, is that individuals differ in their perceptions of the world. These perceptions differentially affect behaviors exhibited by individuals. The task of this section is to delineate the specific hypotheses and rationale concerning the specific effects of individual levels of information processing.

The measurement instruments used for this research were developed to provide college students with a relevant instrument for ranking and choosing items with regard to the risk/caution dimensions of the item. Subjects ranked nine options of equal risk/caution quality, i.e., there is no feature of an option which makes it inherently riskier or more cautious than the other eight options listed. The self-ranking of the options helps to control for experimenter bias and allows for a more meaningful measure of individual perceptions of the risk in each item. It also provides a number of options rather than the binary condition of the CDQ options (see Methodology chapter for a further description).

$H_1$  : The four groups of information processing individuals (high, medium high, medium low and low) will rank choice options significantly different from each other.

If higher level IP persons form a more elaborate and multivariate personal impression of their world (Nidorff and Crockett, 1965; Rosenkrantz and Crockett, 1965), then it is reasonable to expect high IP individuals to rank the options in a multivariate way, i.e., there will be less ranking of the options through the exclusion or inclusion of a single common feature of the options. For example, it would not be expected that higher level IP persons would rank all of the options with a single feature in common in one of the individual sorting stacks (see Methodology). This would amount to high IP individuals using less "leveling" behavior in evaluating the options than lower IP persons (Lundy, 1956; Berkowitz, 1957; Bieri, 1955).

H<sub>2</sub> : Under content analysis, reasons for choices and rankings will be different between the four levels of information processing (high, medium high, medium low and low).

Given that higher level IP persons will glean more information from the options (Tripodi and Bieri, 1964), it is reasonable to assume that the reasons high IP individuals give will show more extension of information beyond that given in the options as listed on the instruments. High IP individuals would be expected to show a greater versatility in their conceptualization of the options and their reasons for ranking the options in the manner they did

(Tripodi and Bieri, 1966). This rationale in conjunction with the rationale for the first hypothesis provides the support for this second hypothesis.

The third and fourth hypotheses consider the option choices made by the individuals on the two instruments. On the first instrument, the Midterm Option Ranking Sheet (MORS), the subjects will choose the option they would prefer for taking a midterm examination worth 50% of their final grade in an elective class. On the second instrument, the Class Registration Ranking Sheet (CRRS), the subjects will choose a class format to register for in their major field of study.

$H_3$  : On the Midterm Options Ranking Sheet, high information processing individuals will significantly more often choose options requiring individual performance, while lower level information processing individuals will choose the group of own choosing options significantly more often than the randomly selected group or individual performance options.

$H_4$  : On the Class Registration Ranking Sheet, high information processing individuals will significantly more often choose the independent study options, while the lower information processing individuals will significantly

more often choose the lecture class options in the other option categories.

If high information processing individuals are more certain of their judgments than lower level information processing individuals (Tripodi and Bieri, 1966), it is reasonable to suggest that high information processing persons have a positive perception of their ability to make judgments and choices. This, coupled with the findings of Jellison and Riskind (1971) that individuals choose alternative on the basis of the perceived ability of the central character, would make it reasonable to assume that higher level information processing individuals would choose individual as opposed to group options. Lower level information processing individuals, on the other hand, would be expected to choose options with the most consistency in the elements of evaluation of their performance in a class, i.e., the objective test has only one criteria for evaluation (right or wrong) and known professor gives experimental certainty to the criteria of evaluation for the individual. The group of own choosing options and the known professor options would provide more certainty for the lower information processor because of his restricted adaptability to changes in the environment and relationships.

In the third and fourth hypotheses there is no predicted direction for the choices to be made by the middle two groups (medium high and medium low) of the information processing distribution. It has not been determined at this point whether these two



groups will produce a weaker effect in the predicted direction of choices of the two end groups (high and low) of the information processing distribution, or if the two middle groups (medium high and medium low) in the information processing distribution will produce an effect different from the two end groups (high and low) in strength and direction.

## CHAPTER IV

### METHODOLOGY

#### Subjects

Fifty subjects were drawn from an introductory course in interpersonal communication at the University of Montana during Spring quarter of 1976. The subject population was equally divided between males and females. The subjects were undergraduate students between the ages of 18 and 22 years old.

#### Procedure

The procedure consisted of two contacts with the subjects. The first contact was to collect information processing data on individual subjects. This contact was done in conjunction with data collection by Dr. Pettersen. The same information processing data was used for this study as well as for Dr. Pettersen's research. The second contact involved the collection of rankings and choice selections on the two instruments (Midterm Option Ranking Sheet, and the Class Registration Ranking Sheet) from the same subjects for which information processing data had been collected.

The first contact consisted of the subjects filling out a modified form of the Repertory Role Test (Rep Test). Dr. Pettersen collected this data. The instructions for this stage of data

collection are contained in Appendix E.

After the Rep Tests were completed and collected from the first contact, they were given to a trained work-study student for scoring and recording of information processing levels.

For the second contact, it was decided to offer the subjects a 15 cent token redeemable at the campus student center cafeteria. The reason for this token payment was to overcome some expressions of resistance to cooperating in further experimentation. This resistance was due to the number of other experiments in which individual class members had been asked to participate.

The second contact took place approximately one month after the first contact. This contact consisted of administering two instruments to subjects for their ranking of the options and their choice selection. The task consisted of having the subjects read the options and sort them according to a set procedure as set forth in Appendix F.

Following the second contact, the rankings and choices were recorded and sorted on a master record with individual information processing levels for later data analysis. The reasons for the rankings and choices were content analyzed after being placed into four (high, medium high, medium low and low) quartiles of information processing according to the individual subject's IP score on the Rep Test.

### Operationalizations

The rankings of the options are used to determine the risk/cautions of the individual's choice according to his own perceptions. The options in the first stacking (see Appendix F) are operationally defined as being risky options for that individual. The options in the second stacking are operationally defined as being the cautious options for that individual. The remaining options are defined operationally as that person's neutral options.

If an individual chooses an option from the first stacking, that will be considered a risky choice. If the person chooses an option from the second stacking, that will be considered a cautious choice. If the person chooses an option from the remaining stack, that will be considered a neutral choice. All of these definitions are made regardless of the actual option involved.

A risky option is defined as one in which the subject perceives that there is uncertainty with regard to the positive outcome of the option and the amount of perceived control the individual could exercise to influence the outcome. On the first instrument, the Midterm Option Ranking Sheet (MORS), the certainty variables are the type of test for a midterm examination (objective test, subjective test and class presentation). The perceived control variables on the MORS are the way in which the test is to be taken (individually, in a randomly selected group or a group of the subject's own choosing) (see Fig. 1).

		<u>Elements of Perceived Control</u>		
		Randomized Group	Own Group	Individual Performance
Criteria for Evaluation Elements (certainty)	Class Presentation	Option B	Option F	Option G
	Subjective Test	Option I	Option A	Option E
	Objective Test	Option D	Option H	Option C

Fig. 1. Matrix for Options on the Midterm Option Ranking Sheet (MORS).

On the second instrument, the Class Registration Ranking Sheet (CRRS), the certainty variables are the amount of knowledge available about the professor of a class (known professor, unknown professor, and a staff member). The control variables on the CRRS are the type of teaching method for the class (independent study, a lecture-discussion class and a lecture class) (see Fig. 2).

		Lecture Class	Lecture- Discussion	Independent Study
Criteria for Evaluation Elements (certainty)	Class Presentation	Option A	Option D	Option H
	Subjective Test	Option I	Option B	Option F
	Objective Test	Option E	Option G	Option C

Fig. 2. Matrix for Options on the Class Registration Ranking Sheet (CRRS)

The above variables were placed on a 3 x 3 matrix. This procedure generated nine options with regard to the two situations, i.e., the taking of a midterm examination worth 50% of the quarter's grade and registering for an elective class in the subject's major field of study. This provided two instruments in which there were no options which were inherently riskier or more cautious than the other eight options on the particular instrument. The instruments and their instructions contained all pertinent information concerning the respective set of options which was related to all of the options in the particular set (see Appendices B and C).

The IP level of the individuals was determined by the subject's score on the modified Rep Test. The modifications concerned the range of the scale and the positive/negative nature of the scale.

The range was increased from six (+3) to ten (1-10). The reason for this change was to allow for a broader range of responses and to allow for more discrimination and differentiation on the instrument. The second modification was the placing of the scale on the positive side of zero. This modification was to prevent the inadvertent narrowing of the scale's range because an individual refused to rate one or more of the roles on the negative end of the scale, which would functionally reduce the range or discriminatory use of the scales. This restriction of the instrument would influence the discrimination score on the instrument (see Appendix A).

The scoring of the modified Rep Test was done using the scoring procedure employed by Bieri, Atkins, Brian, Leaman, Miller, and Tripodi (1966).

Cognitive complexity is measured by comparing each rating in a row with the rating directly below it (i.e., for the same person) in the other rows on the matrix. In comparing any two construct rows, a score of one is given for every exact agreement of ratings on any one person. This matching is carried out for all possible comparisons, and the scores for each comparison are added to give one total score. Since there are 45 possible row comparisons in a 10 x 10 matrix, the highest possible score is 450. A score of 450 would indicate that the judge have the same rating on all bipolar constructs to all of the role types. This judge would be relatively simple because he is using his construct dimensions in an identical manner to construe all the individuals on the grid. On the other hand, a person with a score as low as 100 is presumed to be relatively cognitively complex because he uses constructs differently in discriminating among people (p. 190).

On the modified Rep Test used in this study, it would be expected that the overall distribution of scores would be lower than the distribution of scores on an unmodified Rep Test. The reason for this is simply that the scale has been moved downward to have the scale begin at zero rather than 45. A score of 450 would still be considered as the score of a relatively low information processing person. A score of 65 would be considered that of a relatively high information processing person. Since to this author's knowledge there has been no standardized range of scores or division of scores into levels, it is difficult to make an accurate comparison of ranges between the modified and unmodified Rep Test.

Subjects were placed into IP levels by dividing the total IP distribution into quartiles. The first quartile was considered the high IP group. The second quartile was considered the medium high IP group. The third quartile was considered the medium low IP group. The fourth quartile was considered the low IP group.

### Data Analysis

There were three analyses for the data which were collected in the study. The same analysis will be used on responses made on the Midterm Option Ranking Sheet and the Class Registration Ranking Sheet unless otherwise indicated.

The first hypothesis was analyzed by determining the correlation between the rankings and the IP level of the subjects making the



response. A Kendall coefficient of concordance:  $W$  was used for this analysis. A  $W = 0$  was expected on the rankings of each instrument. A  $W$  equal to 0 would show that the individuals with different IP levels were using significantly different perceptions and criteria sets to rank the options.

The analysis of the second hypothesis involved a content analysis of the reasons given for the rankings and the choice selections with regard to the IP level of the individuals making the responses. Difference in the reasons were expected in line with the rationale for this hypothesis.

The analysis of the choices made on each of the instruments by the various levels of IP employed an Extension of the Median Test. A high correlation was expected between IP level and the choices made as stated in the third and fourth hypotheses for two instruments, the MORS and the CRRS, respectively.

## CHAPTER V

### RESULTS

The present chapter will report the results of the completed analyses. Results are reported for each hypothesis in succession.

The range of the information processing distribution was 55-187 with a mean equal to 103.28 for the subjects responding to the Midterm Option Ranking Sheet (MORS) (N=50). The IP distribution for the subjects responding to the Class Registration Ranking Sheet (MORS) had a range of 55-187 with a mean equal to 102.80 (N=49). The same group of subjects responded to both instruments, but one of the subject's responses on the CRRS had to be eliminated because it was incomplete.

Information Processing levels were divided into four quadrants and designated: high IP; medium high IP; medium low IP; and low IP. Scores obtained from the Rep Test yielded ranges for the four levels as follows: 55-83, 85-95, 100-117 and 118-187 for high, medium high, medium low and low groups, respectively. The respective means were 70.31, 89.5, 108.5, and 139.92. It should be noted at this point that there appears to be a wide disparity in the ranges of the four IP groupings. This phenomena will be discussed later in the Discussion Chapter.

Hypothesis one states that the four groups of IP individuals will rank order the options on the instruments significantly different from each other. The hypothesis was statistically analyzed by the Kendall coefficient of concordance:  $W^1$  with an expected  $W = 0$ , or no statistically significant correlation. A significant correlation between the groups' rankings would indicate that the groups were using the same criteria in their ranking of the options.

On the MORS,  $W = .83$  ( $\chi^2 = 26.56$ ,  $df=8$ ,  $p < .001$ ) suggesting a significant correlation between the groups' rankings. On the CRRS,  $W = .83$  ( $\chi^2 = 26.7$ ,  $df=8$ ,  $p < .001$ ) again yielding a significant correlation between the four groups' rankings. These results did not support the first hypothesis because they showed a significant correlation between the rankings of the various IP groups. The significant correlation indicated that the various groups used basically the same criteria to rank the options on the two instruments.

The second hypothesis states that the reasons given for the rankings and choices will be significantly different from each of the four IP groups. This analysis consisted of a content analysis of the reasons given by the subject on the record sheets for each of the instruments.

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<sup>1</sup>Statistical analyses are taken from Nonparametric Statistics for the Behavioral Sciences by Sidney Siegel (1956).

On the MORS, the reasons for the various rankings did not vary greatly between the four levels of IP. The rankings were generally determined by the perceived effects of doing the work in a group of own choosing or individually. The reason centered around the perceived control which could be exerted in a group of own choosing and individual reward (grade) for individual effort (see Appendix G).

The reasons for the rankings on the CRRS generally dealt with the predictability of the professor and what could be expected in the particular class (see Appendix H).

The reasons for the choices on the MORS did show some trends between the four groups. The high IP persons gave more reasons which dealt with the individual control that could be exercised. Low IP persons dealt more with the security or pooling of knowledge for a better grade. The medium low persons dealt more with their perceived control in an option, while medium high IP individuals scattered their reasons equally over knowing the persons involved in the option, the amount of perceived control that they could exercise in the option and the particular type of test that would be involved (see Appendix I).

On the CRRS, the reasons for the choices were mainly influenced by what could be expected in the class. High IP persons referred to knowing the particular mode of the class or how the class would be taught as being their main factor for predictability. Medium high persons stated the reasons for their option choices had to do

with knowing the professor in relation to the particular way in which the class would be conducted. The medium low individuals gave reason for their choices which related to knowing the professor in the option regardless of the way in which the class was to be conducted, and the amount of perceived control which could be exercised. Low IP individuals referred to their "feeling less uncertain" in their choices than in the remaining options. In spite of the apparent variance in the reasons given for the choices, the vast majority of the option choices were in the Known Professor category of the options (see Appendix J).

Hypothesis three states that high IP individuals will more often choose the individual performance options on the MORS, while low IP individuals will more often choose the group of own choosing options (see Table 3). Seven of the thirteen high IP individuals chose the individual performance options, while five high IP individuals chose the group of own choosing options and one chose the randomly selected group options. Seven of the low IP persons chose the group of own choosing options, while four selected the individual performance options and one selected the randomly selected group options.

High IP individuals favored the class presentation options in their choices. Medium high IP individuals were the only other group which indicated a clear preference for a type of midterm test,

Table 1. The Distribution of Choices of the MORS Disregarding  
The Type of Test to be Given

	IP Group	Objective Test	Subjective Test	Class Presentation	Total
Individual Performance	High	2	1	4	7
	Medium High	2	4	1	7
	Medium Low	3	3	1	7
	Low	2	1	3	6
Own Group	High		1	4	5
	Medium High		3	2	5
	Medium Low	2	1	3	6
	Low	3	2	2	7
Randomized Group	High			1	1
	Medium High				
	Medium Low				
	Low			1	1

the subjective test. The medium low and low IP groups scattered their choices over the three types of midterm testing procedures (see table 4).

The fourth hypothesis states that high IP individuals will more often choose the independent study options on the CRRS, while low IP individuals will more often choose the lecture class options. This was not found in the data. Only four of the high IP individuals chose the independent study options, while six chose the lecture-discussion options and two chose the lecture class options. None of the low IP individuals chose the lecture class options, while nine

Table 2. The Distribution of Choices on the MORS Disregarding the Way in Which the Test is to be Taken

	IP Group	Individual Performance	Own Group	Randomized Group	Total
Objective Test	High	2			2
	Medium High	2			2
	Medium Low	3	2		5
	Low	2	3		5
Subjective Test	High	1	1		2
	Medium High	4	3		7
	Medium Low	3	1		4
	Low	1	2		3
Class Presentation	High	4	4	1	9
	Medium High	1	2		3
	Medium Low	1	3		4
	Low	3	2	1	6

chose the independent study options and three chose the lecture-discussion class options (see Table 3).

The choices on the CRRS were limited mostly to the Known Professor options. Only two individuals (one high IP and one low IP) in the total distribution chose the Unknown Professor options. No individuals chose any of the Staff Member options. This extremely uneven distribution reduced the elements influencing the subjects' decisions from the nine on the 3 x 3 matrix used to generate the options to three elements, i.e., independent study, lecture-discussion class and lecture class (see Table 4).

Table 3. The Distribution of Choices on the CRRS Disregarding Knowledge of the Professor

		Known Professor	Unknown Professor	Staff Member	Total
Independent Study	High	4			4
	Medium High	4			4
	Medium Low	3	1		4
	Low	9			9
Lecture- Discussion	High	6			6
	Medium High	6			6
	Medium Low	7			7
	Low	2	1		3
Lecture Class	High	2			2
	Medium High	2			2
	Medium Low	2			2
	Low				

An extension of the median test was used to test if there were any differences in the amount of riskiness, according to the subjects' own risk/caution scales, between the four IP groups. On the MORS this test showed no significant difference in the riskiness of the choices made by the four IP groups ( $\chi^2 = 2.09$ ,  $df=3$ ,  $p < .50$ ). There was a trend indicated in the data. This trend showed the two middle groups, medium high IP and medium low IP, made more choices below the median than the two end groups, high IP and low IP (see table 5). Choices below the median are riskier than those choices above the median.



Table 4. The Distribution of Choices on the CRRS Disregarding the Type of Class to be Taken

	IP Group	Independent Study	Lecture-Discussion	Lecture Class	Total
Known Professor	High	4	6	2	12
	Medium High	4	6	2	12
	Medium Low	3	7	2	12
	Low	9	2		11
Unknown Professor	High				
	Medium High				
	Medium Low	1			1
	Low		1		1
Staff Member	High				
	Medium High				
	Medium Low				
	Low				

Table 5. The Extension of the Median Test Data for the MORS

	High IP	Medium High IP	Medium Low IP	Low IP	Total
Above the Median	6	4	4	7	21
Below the Median	6	8	9	6	29
Total	12	12	13	13	50

The extension of the median test showed a significant difference ( $\chi^2 = 10.63$ ,  $df=3$ ,  $p < .02$ ) between the four IP groups with regard to the riskiness of their choices on the CRRS. Analysis showed there was a nonsignificant difference in the riskiness of the choices made by the high IP groups and the low IP group, also there was a nonsignificant difference between the riskiness of the choices made by the high IP group and the low IP group, also there was a nonsignificant difference between the riskiness of the choices made by the medium high IP group and the medium low IP group. A significant difference was found between the high IP group and the medium high IP group ( $\chi^2 = 6.18$ ,  $df=1$ ,  $p < .02$ ) and the high IP group and the medium low IP group ( $\chi^2 = 3.71$ ,  $df=1$ ,  $p < .10$ ). A significant difference was found between the low IP group and the medium low IP group ( $\chi^2 = 3.71$ ,  $df=1$ ,  $p < .10$ ) and between the low IP group and the medium high IP group ( $\chi^2 = 6.18$ ,  $df=1$ ,  $p < .02$ ). The difference between the two high IP groups, medium high IP and high IP, and the two low groups, medium low and low, was nonsignificant (see table 6).

An extension of the median test showed a significant difference ( $\chi^2 = 9.00$ ,  $df=1$ ,  $p < .01$ ) between the riskiness of the choices of the two end, high and low, IP groups and the riskiness of the choices of the two middle, medium high and medium low, IP groups.

Table 6. The Extension of the Median Test Data for the CRRS

	High IP	Medium High IP	Medium Low IP	Low IP	Total
Above the Median	8	2	4	8	22
Below the Median	4	10	9	4	27
Total	12	12	13	12	49

In other words, the two middle IP groups made riskier choices, according to their own scale, than did the two end groups. The choices of the two end groups were more cautious than the choices made by the two middle groups (see Table 7).

Table 7. The Extension of the Median Test Data for the Combined Groups on the CRRS

	High-Low	Medium High-Medium Low	Total
Above the Median	16	6	22
Below the Median	8	19	27
Total	24	25	49

## CHAPTER VI

### DISCUSSION

The purpose of this chapter is to first discuss the results with regard to the test of the hypotheses. The second goal will be to draw conclusions from the findings of the research. The chapter will conclude with a section on the implications of the present research and some possible direction for future research.

#### Test of Hypotheses

The first hypothesis states:

The four groups of IP individuals (high, medium high, medium low and low) will rank the options of the instruments significantly different from each other.

The Kendall coefficient of concordance:  $W$  was too large with a probability level which would not allow the null hypothesis to be rejected. The analysis for this hypothesis showed that all four of the IP groups were using essentially the same criteria to rank the options on the Midterm Option Ranking Sheet and the Class Registration Ranking Sheet, thus the null hypothesis was not rejected.

The second hypothesis states:

Under content analysis, reasons for the choices and rankings will be significantly different between the four levels of IP (high, medium high, medium low and low).

The reasons given for the rankings broke into three basic categories. The three categories were (1) the other persons involved in the options, (2) the mode of the class or test, and (3) the amount of perceived individual control which could be exercised over the outcome of the particular options. The predicted rejection of groups of options by low IP individuals was observed, but this means of ranking the options was used by all of the levels of IP with equal frequency. It was also expected that high IP individuals would show more extension of reasons beyond the information in the options, i.e., include other related information or information other than that explicit in the options in their reasons for the rankings. This addition of information was not observed in the reasons given by any of the four IP groups.

The reasons given for the choices did show some interesting trends. On the MORS, high IP individuals gave more reasons which related to the amount of personal control and individual reward for individual effort than to the other persons involved in the options or the particular way of taking the midterm examination. Low IP individuals gave more reasons which related to the effects of a number of people pooling their information and knowledge of a test with many reasons including the aspect of the amount of control that could be exercised in a group of their own choosing. These reasons were consistent with the trends indicated in the choices that were

made by these two groups. The reasons given by the medium high and medium low IP groups were scattered over the three categories. There was no consensus in the reasons given for their choices. The trends in the reasons for the choices were consistent with the trends in the choices made by each group.

The reasons for choices made on the CRRS indicated that high IP individuals were more concerned in their decisions with the particular mode of the class, while the low IP persons responded that they felt less certain in their choices. Medium high individuals gave reasons for their choices which related more often to the particular professor. Medium low IP persons produced a scattered set of reasons over the three categories.

Hypothesis two was not supported, although there were some general trends in the reasons given for the various choices. There was no statistical test for the minor differences that were observed because of the small number of subjects which were involved in the majors reasons.

The third hypothesis states:

High IP individuals will significantly more often choose options requiring individual performance, while low IP individuals will choose the group of own choosing options significantly more often than the randomly selected group or individual performance options.

Although there was a trend of choices in the direction of the hypothesis, the null hypothesis for the MORS could not be rejected. As can be seen on Table 1, the options of individual performance and group of own choosing were overwhelmingly the choice of individuals in all four IP groups. This phenomenon did not provide the predicted results according to the third hypothesis. The third hypothesis was not supported by the results.

The fourth hypothesis states:

High IP individual will significantly more often choose the independent study options, while low IP individuals will significantly more often choose the lecture class options than the other option categories.

The null hypothesis could not be rejected for the fourth hypothesis. The results showed that low IP persons more often chose the independent study options than did the high IP persons. The high IP individuals chose the lecture-discussion options more often than either of the other options. The low IP individuals chose the independent study option over the lecture-discussion option by 9 to 2 with the other three IP groups choosing the lecture-discussion option over the independent study option (high IP group, 6-4; medium high IP group, 6-4; medium low IP group, 7-3, respectively).

### Conclusions

This section will take the findings of the present research and

apply them to the choice shift phenomenon and the proposed explanations for that phenomenon.

The first explanation of the choice shift phenomenon was the diffusion of responsibility (Kogan and Wallach, 1964). This explanation states that individuals in a group will make a riskier choice as a function of the decrease in the fear of individual failure. The more people who share in the risky decision or the course the more diffuse will be the blame for failure. As applied to this study, it should have been seen that all of the individuals in their choices would have chosen group options as the cautious option, even over individual performance on the MORS and the independent study options on the CRRS. This did not prove to be true. In fact the low IP group which should have been more oriented toward familiar group situations chose independent study options on the CRRS far more often than did any of the other IP groups. This would lead one to theorize that maybe the familiarity of the situation is more important in the group decision action than the real or imagined sharing of the responsibility for the decision.

This idea of the importance of the situation gains more credence in light of the fact that the CRRS was reduced from nine options to three by all of the subjects, less two, choosing options which dealt with the known professor or the professor with whom they were familiar (see Table 3). The importance of the familiarity of the situation can also be seen in the responses to the MORS (see Table 1)



where all of the responses, less two, were in the individual performance options or the group of own choosing. On both instruments where there was uncertainty of the other individuals who would be involved in the option (the randomized group options) or who would be evaluating the subject's performance (staff member and unknown professor options), there were only two responses on each instrument. All of these findings indicate that the riskiness in a group decision making situation may be due, not to the diffusion of responsibility for the decision, rather, to the individuals being more familiar, thus, more at ease, than in the individual situation. The fact that there are, in essence, familiar people to interact with and receive feedback from, the individual may feel more adept at dealing with the situation or the choices being made. It must be understood that this is not saying that there is a diffusion of responsibility, it is that the individual has another person with which to interact, someone else to be used for whatever purposes, be it to blame, get feedback from, hurl obscure comments at or defend, to name only a few of the purposes. The basic notion here is that the interaction itself assists in the choice shift behavior. The direction of the shift would be dependent on a variety of aspects which should be investigated through further research using individual perceptions of the phenomenological aspects of the situation.

With the theoretical basis laid in the above paragraphs, the other two explanations of choice shift come into play. The relevant

information or arguments comes from the interaction which takes place and all of the subtle verbal and nonverbal cues which influence all oral communications. The cultural values explanation has as its cornerstone the exchange of information which influences the saliency of certain shared pieces of cognitive, affective and moral factors. All of this involves the interaction of participants with a common purpose. Although the goals within the attainment of that purpose may be varied, the interaction is a prime factor.

For the relevant information explanation of choice shift to hold there would have been a need for a difference in the reasons given for the various choices, particularly with high IP individuals showing more extension of information in their reasons. Since high IP individuals glean more information from a situation (Tripodi and Bieri, 1964), it is reasonable to expect that if more information alone produced risky choices, then high IP individuals should have given more reasons which provided added information into the situations on the instruments. Since the high IP individuals added no information in their reasons for their choices than did the other three IP groups, it can be assumed that the addition of information would not have played a more important role than would the actual interaction necessary to gain that additional information.

In light of the afore stated results with regard to the reasons given for the choices and the apparent importance of the familiarity

of the situation to the subject when making a risky decision, I believe there is need and tentative support for a fourth explanation of the choice shift phenomenon. The fourth explanation would state that because the individual has someone to interact with in the particular situation which decreases the unfamiliarity of the situation. This could explain shifts in either the risky or cautious directions and be parsimonious with previous research results in the area of choice shift. A risky shift could be explained by saying that the situation was familiar to the individual because there was and would be a familiar interactant in the situation. A cautious shift could be explained either as the result of group cohesion or other culturally determined values or role images.

The major contribution of this study to the choice shift research deals with the effect of relevancy of the hypothetical situations used in the choice shift research. In light of the findings in this research, one of the major points of criticism of the Choice Dilemma Questionnaire (Belovicz and Finch, 1971; Blascovich, Beach and Ginsburg, 1973; and MacKenzie, 1971) must be reconsidered. That criticism has to do with the hypothetical nature of the items on the CDQ. The criticism states that because the items are hypothetical, the subjects are not reacting to them in a typically normal way, i.e., the subjects will be more risky than normal. This criticism makes the basic assumption that individuals tend toward

cautiousness in their decision making. In this study there was a relevancy scale on which the subjects indicated how relevant they felt the options were, in particular if they thought they would encounter the options during their college career. An extension of the median test on the relevancy scales on both the CRRS and the MORS indicated that the groups which made the riskier decisions (medium high IP and medium low IP groups) on both of the instruments also rated the options as being more relevant, although significance was only seen on the MORS (see Tables 8 and 9). On the relevancy scale on the MORS, the difference was nonsignificant ( $\chi^2 = 4.99$ ,  $df=3$ ,  $p < .20$ ). The difference between the two middle groups (middle high and medium low) and the two end groups (high and low) indicated a significant difference ( $\chi^2 = 4.16$ ,  $df=1$ ,  $p < .02$ ) (see Table 8).

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Table 8. The Extension of the Median Test Data for the Relevancy Scale on the MORS

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	High	Medium High	Medium Low	Low	Total
Above the Median	8	4	3	6	21
Below the Median	4	8	9	6	27
Total	12	12	12	12	48

On the CRRS, the same trend in the difference between the ends of the distribution and the middle groups was found, although it was not significant. The overall difference on the CRRS was nonsignificant ( $\chi^2 = 1.25$ ,  $df=3$ ,  $p < .80$ ). When the relevancy scores for the high and low IP groups were combined and contrasted to the combined relevancy scores of the medium high and medium low IP groups the difference came closer to an acceptable level of significance ( $\chi^2 = 1.05$ ,  $df=1$ ,  $p < .50$ ) (see Table 9).

---

Table 9. The Extension of the Median Test Data for the Relevancy Scale on the CRRS

---

	High	Medium High	Medium Low	Low	Total
Above the Median	5	3	3	4	15
Below the Median	7	9	10	8	34
Total	12	12	13	12	49

---

When the above relevancy data is coupled with the findings on the riskiness data (see Tables 5 and 6), it becomes apparent that those groups which saw the items to be more relevant also made

riskier decisions. This is totally contrary to the previously mentioned criticism of hypothetical items. The hypothetical nature of the items on the CRRS and the MORS is quite easy to see in light of the class schedules of the university. Midterm examinations had been held three weeks or more before the MORS was administered to the subjects, thus there would be no expectation that the subjects would think that it was a "real" situation in preparation for upcoming examinations. The scheduling for classes had been completed for the regular school year and only the few going to summer school would be concerned in the near future with registering for classes, as on the CRRS. These events in the university's schedule are supplemented by the fact that the subjects were never told that the instruments' results would be used for any purpose other than the stated purpose of data collection for a thesis.

The first conclusion of this study is that there is a trend in the responses as a function of information processing, but the difference in riskiness of choices and relevancy is between the ends of the IP distribution and the middle of the IP distribution. These differences are a function of information processing as measured by the Repertory Role Test.

The second conclusion is that there needs to be a rethinking of the effects of relevancy on decision making. If increasing the relevancy promotes riskier behavior, as in this study, the measurement of relevancy needs to be reconsidered. This study provided

some unexpected results with regard to the effects of relevancy on a sorting paradigm.

There are two possible factors that influenced the curvilinear results that were produced on the option choices. The first is the fact that the procedure forced the subjects to differentiate the options more than they may have under normal conditions. The subjects were asked to rank all of the options regardless of how pertinent the options were to the actual selection of an option. Under normal conditions, the subjects may have excluded groups of options and ranked only the remaining options which they felt were pertinent in their perception of the situation. Or they may have made an "impulsive" selection without any type of ranking procedure.

The second factor was the fact that the IP instrument used may not have measured the full range of IP. There is a criticism of the Rep Test (Schroder, Driver and Streufert, 1969) that it does not measure the full range of IP levels. If the range of the Rep Test is from 0 to 450, what are the consequences with regard to the present study since the IP distribution of subjects was in the lower third of the total possible IP range? Would this placement and distribution account for the curvilinear relationship that was found in the data? There is the possibility that the IP distribution in this study was too narrow to fully measure the differences which influence choice decisions. There is also the possibility in sorting procedures, as

used in this research, the subjects used differentiation, discrimination and integration, not just the differentiation feature IP. In this case another IP measure which combines measures of differentiation, discrimination and integration on separate scales may provide more crucial data to the furthering of IP research and conceptualizing.

There are four possible explanations of why the curvilinear results were obtained in this study. The first explanation has to do with the narrow and shrewd range of the IP scores of the subjects used. The second explanation deals with the fact that the Rep Test measures only the differentiation of the individual, when there may have been more involved in certain segments or throughout the sorting and decision making process. The third explanation deals with the methodological considerations of measuring IP with a paper and pencil test and observing other behavior in the experimental paradigm. The final explanation introduces the effects of environmental complexity and its influence on the behavior observed in the experimental paradigm.

The third and final conclusion from the present study's results is the need in future research in the area of information processing to report the responses of the total range of the IP distribution. At this point in the IP literature the vast majority of the studies using the Rep Test report only the difference in responses between the lower half of the IP distribution and the upper half of the IP distribution. The present study found no difference between the upper and lower halves



of the IP distribution, yet difference was found between the quartile responses with regard to riskiness and relevancy.

### Implications

There are several questions which need to be investigated before IP as determined on the Repertory Role Test, or other IP instruments, can be considered a viable means of controlling or accounting for variance in the results from experiment to experiment. The first question would deal with the distribution of the IP scale. What would be considered a "normal" distribution for research purposes? What would be the effects in various paradigms of a distribution which is unbalanced in a particular direction?

The next question deals with the norms for the various levels of IP and where are the distinctive levels of IP located in the various distributions. What is a truly high (above a normal score) IP score or a truly low (below a normal score) IP score? How many points need to separate the levels of IP before the levels become unique? How many unique levels of IP are there on a particular instrument? Is it possible that there are more than four unique levels of IP in a distribution? If so, what are the effects of each of these levels in various behavioral situations?

There is also a methodological question which needs to be researched. What are the effects on the validity and reliability of the IP instruments when the experimental behavior is not the same as the IP determining behavior? For example, if the IP levels is determined on a paper

and pencil test and the behavior in the research paradigm in verbal behavior, i.e., the number of verbal responses in a group discussion, is it conceptually reasonable or valid to say the measured level of IP influenced the behavior in the paradigm significantly? There may be a need for another means of measuring IP other than the presently used paper and pencil IP instruments.

## CHAPTER VII

### SUMMARY

In investigating human responses to certain events, the subjective nature of the individual's behavior has become more and more apparent. This is particularly true when one is investigating phenomenological features and factors, i.e., decision making in particular environments.

With the above notion in mind, the present study investigated risky choices made by subjects. The unique feature of this investigation was that of having the subjects rank two sets of nine options according to riskiness. The riskiness of the subject's choice decision was then determined by the subject's own individual scale of the perceived riskiness of the choice. This procedure allowed for a more accurate and meaningful measurement of the risk/caution nature of the choice according to the particular subject.

The results indicated several interesting ideas, although none of the four null hypotheses were rejected. The first significant result was the fact that the rankings of the options by the four Information Processing (IP) groups showed no significant difference. In other words, the subjects did not vary in the choices because of a difference in the way that the options were ranked. The choice decision was relatively unaffected by the way in which the options were ranked.

The second idea which gained support was that different individuals can make different choices or participate in different behavior for essentially the same reasons. In the present investigation, no difference was found in the reasons for the particular choice decisions.

The statistical analysis of the riskiness of the choices made and the relevancy of the options on the two instruments did indicate variance as a function of IP but not in the hypothesized directions. It was hypothesized that there would be a significant difference in the riskiness of the choices made by the high and low IP individuals with a linear relationship moving from the high IP individuals being riskiest to the low IP individuals being most cautious. The results showed that the two end groups (high IP and low IP) were more cautious in their choices than the two middle groups (medium high IP and medium low IP). It was also found that the two middle groups (medium high IP and medium low IP) saw the options as being more relevant with regard to what could be expected in typical college situation. Thus the difference that was found showed that the high IP and low IP groups were more cautious in their decisions and they saw the options as being less relevant to their situation. The medium high and medium low IP groups made riskier choices on options which they saw as being more relevant to their situation.

The results provided three conclusions with regard to information processing as measured by the Rep Test, the effects of relevancy in a

situation and the direction for future research. The first conclusion was that there are differences in human responses as a function of IP, but the differences occurred in a curvilinear fashion with the high IP and low IP groups being more cautious and considering the options less relevant than did the medium high IP and medium low IP groups.

The second conclusion dealt with the need for a rethinking of the effects of relevancy on decision making. Theoretically, those subjects who saw the options of being more relevant (medium high and medium low IP groups) should have made more cautious decisions. The subjects who saw the options as being less relevant (high and low IP groups) should have made riskier choices. The results did not show this. In fact, the results showed the reverse of the theoretical effects of relevancy.

The third conclusion presented the need for future research in the area of information processing to report the effects of IP over more than the differences between high and low IP groups. There was no difference found between the high 50 percent and low 50 percent of the IP distribution in this study.

This paper closed with several research questions for future investigation. These questions centered on the need for norms for the IP instruments before they can be used to effectively control for variation from one experimental group to another, and the effects of the various levels of IP in various paradigms. The second center for

future research questions was the methodological considerations of testing for IP through one behavior and having the behavior in the experimental paradigm be different. In particular, what are the effects of measuring IP on a pencil and paper test and observing another behavior in the paradigm, i.e., a paper and pencil test with verbal activity being observed in the paradigm.

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APPENDIX A  
REPERTORY ROLE TEST AND  
INSTRUCTIONS

REMEMBER: PLEASE FILL-IN ALL THE SQUARES WITH A NUMBER FROM THE SCALES BELOW. THANK YOU.

NAME \_\_\_\_\_

Close friend-same sex \_\_\_\_\_  
 Person you dislike \_\_\_\_\_  
 Mother \_\_\_\_\_  
 Person you'd like to help \_\_\_\_\_  
 Yourself \_\_\_\_\_  
 Friend-opposite sex \_\_\_\_\_  
 Person you feel most uncomfortable with \_\_\_\_\_  
 Teacher \_\_\_\_\_  
 Person difficult to understand \_\_\_\_\_  
 Father \_\_\_\_\_


- 10 9 8 7 6 5 4 3 2 1
- Outgoing \_\_\_\_\_ Shy
- Honest \_\_\_\_\_ Dishonest
- Strong \_\_\_\_\_ Weak
- Responsible \_\_\_\_\_ Irresponsible
- Interested in others \_\_\_\_\_ Self-Interested
- Happy \_\_\_\_\_ Sad
- Independent \_\_\_\_\_ Dependent
- Sensitive \_\_\_\_\_ Insensitive
- Interesting \_\_\_\_\_ Boring
- Complex \_\_\_\_\_ Simple

### Instructions for Role Evaluation

The following evaluation exercise asks you to evaluate individuals who play familiar roles. Behind each role (in the space provided) place the initials of a person you know who fits the described role. Write the initials of a different person for each role.

On another side of the 10 x 10 matrix on the next page is a list of ten scales. Each scale consists of a pair of adjectives with opposite meanings. You are asked to place one of the ten numbers which best describes the person in that role on the scale.

For example:

10	9	8	7	6	5	4	3	2	1
Good									Bad

10 would be super good; 9 would be quite good; 8 would be good; 7 would be somewhat good; 6 would be not good; 5 would be not bad; 4 would be somewhat bad; 3 would be bad; 2 would be quite bad; and 1 would be super bad.

Rate all of the individuals presented on one scale before rating the roles on the next scale. All of the roles should be rated on the outgoing/shy scale before any are rated on the honest/dishonest scale. Please place a rating in each square of the matrix.



Any questions? If not, please place your name on the next page where indicated and begin filling out the matrix. Thank you for your cooperation.

APPENDIX B

MIDTERM OPTION RANKING SHEET  
AND INSTRUCTIONS

### Midterm Option Ranking Sheet

- Option A - For the midterm, the class will be divided into groups of 3-4 members of your own choosing to work through a subjective test as a group. The grade earned by the group will be the grade for the individuals.
- Option B - For the midterm, the class will be divided into groups of 3-4 members by random selection to give a class presentation. The grade earned by the group will be the grade for the individuals.
- Option C - For the midterm, each individual will take an objective test.
- Option D - For the midterm, the class will be divided into groups of 3-4 members by random selection to work through an objective test. The grade earned by the group will be the grade for the individuals.
- Option E - For the midterm, each individual will take a subjective test.
- Option F - For the midterm, the class will be divided into groups of 3-4 members of your own choosing to give a class presentation. The grade earned by the group will be the grade for the individuals.
- Option G - For the midterm, each individual will make a class presentation.
- Option H - For the midterm, the class will be divided into groups of 3-4 members of your own choosing to work through an objective test. The grade earned by the group will be the grade for the individual.
- Option I - For the midterm, the class will be divided into groups of 3-4 members by random selection to work through a subjective test. The grade earned by the group will be the grade for the individuals.

## Midterm Option Ranking Sheet Instructions

In addition to the information contained in the options, you are to consider the options as if they were options for taking a midterm in a class in your major field of study. The midterm is to be worth 50% of your final grade in the class.

The options all have a maximum time limit of one class period (50 minutes). The tests will all be closed book with notes being allowed for the class presentations. All of the tests and presentations will be scored or graded by the instructor who is teaching the course. This instructor will also write the tests.

Make sure you have read all of the options and understand what they require. You will be asked to rank order the options by how certain you feel that you would do well if you were to take the suggested midterm using one of the options you have in the envelope. Listen to the directions and if you have a question or something is unclear, ask the researcher.

Don't be concerned with ranking these options in a particularly right or correct order. There is no right or correct order. I am only interested in how you perceive the options. Be sure to fill the record sheet out completely.

APPENDIX C  
CLASS REGISTRATION RANKING SHEET  
AND INSTRUCTIONS

## Class Registration Options

- Option A - You may register for a class which is primarily lecture being taught by a staff member.
- Option B - You may register for a class which is primarily lecture-discussion being taught by a professor who is unknown to you.
- Option C - You may register for a class which is primarily independent study being taught by a professor who is known to you.
- Option D - You may register for a class which is primarily lecture-discussion being taught by a staff member.
- Option E - You may register for a class which is primarily lecture being taught by a professor who is known to you.
- Option F - You may register for a class which is primarily independent study being taught by a professor who is unknown to you.
- Option G - You may register for a class which is primarily lecture-discussion being taught by a professor who is known to you.
- Option H - You may register for a class which is primarily independent study being taught by a staff member.
- Option I - You may register for a class which is primarily lecture being taught by a professor who is unknown to you.

## Class Registration Ranking Sheet Instructions

In addition to the information contained on the options you are to consider the options as if you are trying to decide on a class for which you are registering. The classes are elective in your major field of study. All of the classes listed in the quarter bulletin would be of value to you. You notice that for some of the classes you know the professor teaching the class, for other classes you don't know the professor and still others are listed as being taught by "staff". You do know that all of the professors in the department have been on campus for at least two years. You also notice that some of the classes are listed as independent study courses, some are listed as lecture courses and others are listed as lecture-discussion courses.

You must decide which classes would be most uncertain for you in terms of how well you would do. Be sure to read all of the options and understand what they require. Listen to the directions and if you have any questions or something is unclear, ask the researcher to clarify the item.

Don't be concerned with ranking these options in a right or correct order. There is no right or correct order. I am only interested in how you perceive the options. Be sure to fill the record sheet out completely.

APPENDIX D  
RECORD SHEET FOR  
RANKING AND CHOICE DECISIONS



## Record sheet for ranking and choice decisions

Name \_\_\_\_\_

RISK: Please write two or three sentences explaining why you consider these options to be risky (uncertain) for you.

1. \_\_\_\_

2. \_\_\_\_

3. \_\_\_\_

NEUTRAL: Please write two or three sentences explaining why you consider these options to be neither risky or cautious for you.

1. \_\_\_\_

2. \_\_\_\_

3. \_\_\_\_

CAUTIOUS: Please write two or three sentences explaining why you consider these options to be cautious (certain) for you.

1. \_\_\_\_

2. \_\_\_\_

3. \_\_\_\_

Please give an indication on the scale below as to how relevant these options were in your perception of the options available in the given situation.

relevant 1 2 3 4 5 6 7 8 9 10 irrelevant

circle one

Do you have some other options which would have been more relevant?

If so, write them on the back of this record sheet.

The option I would prefer under the conditions stated on the instruction sheet is option \_\_\_\_.

Please write two or three sentences explaining why you would prefer this option if you were in the situation described.

APPENDIX E

INSTRUCTIONS GIVEN TO  
THE SUBJECT TAKING THE REP TEST

Instructions given to the subject taking the Rep Test.

I am Duane Pettersen - Course Administrator for the 110 sections. I originally developed the course in 1968. For two years, I offered one section per year. With limited staff members, we can only offer eight sections a year and one section during the summer.

Every two or three years, I have tried to evaluate the 110 course. What are students learning? Does what they learn have any effect on out-of-class relationships? Are there any long-range effects? Does what one learns in this class have any effect on other areas of learning and other aspects of individual and personal development?

This quarter, three other staff members are teaching 110 and I am taking a vacation. Thus, I felt this would be a good quarter for experimental and controlled course evaluation.

I am asking you as students in INCO 110 to help me and the 110 staff in our continued development and improvement of the 110 course.

I am asking you to participate by doing three things:

- 1 - Complete one form for me now during class. It will take about a half hour.
- 2 - I will be giving you a take-home questionnaire to be completed and returned on Wednesday of this week.

3 - Complete some forms for me near the end of this quarter.

All three 110 sections are participating in this most recent 110 evaluation. In addition, there is a control group of students not involved in 110 this quarter not having ever had 110 in the past.

On these course evaluation forms I will be asking for your name. That is only done in order to be able to correlate the data on all forms. Once the information is taken off your form and put on computer cards, the original forms with your names will be destroyed.

Also your instructor (Barb, Leslie or John) will not see your forms. The results of the course evaluation will be made available to you if you so desire. More details will be provided at the end of the quarter.

Are there any questions about what I'm doing or why?

(Rep Test was given to the students.)

In this form I am looking at relationships which you have with specific individuals.

(The directions on the Rep Test were read to the subjects. The subjects were instructed to begin filling out the Rep Test. After the Rep Test had been completed, the subjects were given a Personal Orientation Inventory to take home as part of Dr. Pettersen's research.)

In the take-home course evaluation forms, I am looking at a set of specific evaluations of yourself and others. This form looks at your assumptions about yourself and others.

Remember: there are no right or wrong answers on either of these course evaluation forms. Also, the information you put on these forms is confidential and your instructor will not have access to the information.

APPENDIX F

INSTRUCTIONS GIVEN  
TO SUBJECTS SORTING OPTIONS

Instructions given to subjects sorting options.

I am David Wheeler. I am a graduate student in INCO. For my thesis, I am investigating the different ways people handle the same information, particularly when they are going to make a risky choice or decision.

I am going to need a half hour of your time to rank some options and make a choice selection for me. I know you have been hit a number of times to help in research. I know you are tired of researchers coming into your class and having you fill out forms. I need your help and to show my appreciation for your help I have arranged to give those who help me a chit worth 15 cents over at the UC. I know it is not much. It is to show you that I would appreciate your help.

I will be asking you to rank order nine options and give your reasons for the way you ranked them. Then I am going to ask you to make a choice of one of the options and give your reasons for your choice. I am interested only in how you rank the options and your reasons. There is no right or wrong way to rank the options.

Are there any questions as to what I need you to do? Is there anyone who does not want to take part in this study?

(The envelopes containing the first set of options, instructions and record sheet were distributed to the subjects who volunteered.)

In the envelope you will find nine options, a record sheet and an instruction sheet. I want you to take a few minutes and read the instruction sheet and all nine options.

Now that you have read the instructions and the options, I would like you to select the three options which you feel are the most uncertain as to outcome if you were to take a midterm (class) using those options. These are your risky options. Place these options on the left side of your desk.

Next select the three options which you feel would provide the most certainty with regard to outcome if you were to take a midterm (class) using these options. These are your cautious options. Place these on the right side of your desk.

The remaining stack of three options are your neutral options. Leave them in the center of your desk.



Take the stack on the left side of your desk (the risky options) and sort these options according to their riskiness. The riskiest option of the three will be number one and the least risky option will be number 3. Record this sorting on the record sheet under the risk category and write your reasons for these options being risky for you.

Next, sort the stack on the center of your desk (the neutral options) according to their riskiness. The riskiest of the three options will be number 1 and the least risky will be number 3. Record this sorting on the record sheet under the neutral category and write your reasons for these options being neutral for you.

Finally, sort the stack on the right side of your desk (the cautious options) according to their riskiness. The riskiest of the three options will be number 1 and the least risky option will be number 3. Record this sorting on the record sheet under the cautious category and write your reasons for these options being cautious for you.

Now that you have rank ordered the options, I would like you to select one of the options and give your reasons for selecting that option. Also complete all of the record sheet.

When you have completed the record sheet, place the options, instructions and signed record sheet in the envelope and hand it in to me and pick up the second set of options and sort them the same way you sorted this set of options. Remember to read the instructions, and all of the options first, then sort the options and fill out the record sheet. Please remember to sign both answer sheets.

When you have completed the second set of options, hand in the options, instruction sheet and record sheet in the envelope and I will give you the chit for 15 cents.

Thank you for your time and cooperation.

APPENDIX G

REASONS FOR THE RANKING  
OF OPTIONS ON THE MORS

The general content analysis categories will be shown followed by a numerical count on the reasons which were considered in that category. These categories will be followed by general examples of the reasons taken from the subjects' records for the MORS.

### RISKY REASONS

#### High IP -

Don't or can't trust others	13
Rejection of group of options	9
Need for individual reward for individual effort	6

#### Example statements:

"I don't want to risk a bad grade on people I don't know."

"You don't know how well you can trust others."

"The main reason I rated these risky is the words 'random selection.'"

"If I chose a group they would be my friends and we get side tracked."

"(groups are) unfair to certain students because some will end up doing most of the work."

#### Medium High IP -

Don't or can't depend on others	14
Rejection of group of options	14

#### Example statements:

"You don't know how the others think or act, a random group would be chaos."

"You could have someone who wouldn't contribute anything."

"These all would be risky because of the group work."

"Teacher can grade a subjective test according to personal opinions and feelings."

## Medium Low IP -

Don't want to depend or trust others	12
Reject a group of options	11
Dislike a group of options	5

## Example statements:

- "Groups often contain an apathetic member."
- "Don't want to work on grade and have someone ride along."
- "I hate to give group presentations, especially by myself."
- "I don't like subjective tests."
- "I don't feel objective tests are a learning experience."
- "The group potential may be lower than your own individual one."

## Low IP -

Don't want to depend on others	14
Rejection of a group of options	13
Little experience with type of test.	4

## Example statements:

- "Must depend on people involved in test, the chance of a bad partner."
- "In random group, one person, me, might end up doing all of the work."
- "I have had little experience with the test."
- "You can get stuck with people that won't work, you wind up doing everything, yet everyone gets the grade."

## NEUTRAL REASONS

## High IP -

Don't know if can trust others	15
Others might be able to help	13
A little more control	9
Generally the same as "Risky" options	4

## Example statements:

"The randomly picked ones sluff (sic) off or didn't do their share, sometimes."

"These items all have the uncertainty of group work."

"I'd be working with people and it wouldn't be too hard."

"These options I feel the same as above (risky)."

## Medium High IP -

Might get more out of the option	14
The way of taking the test makes it better.	11
The type of group (own choosing) better.	6

## Example statements:

"I consider these neither safe or risky because they are the kinds of situations which could go one way or the other, but the experience would be neat."

"We might get more knowledge out of the group."

"Subjective test would make a little better."

"It can go good or bad depending on the rest of the group."

"These are neutral because I consider a subjective test neutral."

## Medium Low IP -

More people to pool knowledge.	16
All are the same, in this set.	12
Cautious of others.	5

## Example statements:

"Because a pool of people can group their knowledge."

"You could possibly pick on the same level as you are."

"Though I am confident in my abilities and am cautious of others."

"2 heads are better than 1."

"They all seem to have advantages and disadvantages."

"Get ideas brought in that you just didn't think about."

## Low IP -

The options don't bother subject.	15
The possibility of a little more control.	10
The options are rejected.	6

## Example statements:

- "Subjective test doesn't bug me."
- "These don't make much difference."
- "It's a cop-out."
- "If I can choose the people...maybe I can get them interested enough to help."
- "There is at least some control."
- "Certain people don't have to function."

## CAUTIOUS REASONS

## High IP -

Individual reward for individual work.	17
Control.	13
Rejection of a group of options.	9

## Example statements:

- "People get a grade for their work."
- "I like working by myself. I have total control."
- "You get exactly what you earn."
- "In all these you are forced to learn the material yourself."
- "I'm putting into the test, no one else is."
- "None of these involve the element of random selection."

## Medium High IP -

Individual reward for individual effort.	16
Control.	12
Rejection of a group of options.	5

## Example statements:

- "I would do it myself except when it comes to objective tests."
- "You got out the work and get a better grade."
- "We'd be able to combine our knowledge with direction."
- "Any group you pick wouldn't be too bad because you could control it."
- "It is all up to you to perform or not."

## Medium Low IP -

Individual reward for individual effort.	15
Rejection of a group of options.	9
Control.	6

## Example statements:

- "You can let the instructors know what you know."
- "I have confidence in my ability."
- "This way you get the grade your deserve."
- "I hate presentations."
- "I know I can control a group if I choose the people."

## Low IP -

Individual reward for individual effort.	16
Pooling for knowledge.	12
Control.	12

## Example statements:

- "I have confidence in myself as far as taking a test in my major field."
- "The grade is up to me - reflecting what I know about the material."
- "If I am not certain of one thing, the others in the group can straighten me out."
- "I would choose who I work with thus I control the direction of the group."



APPENDIX H  
REASONS FOR THE RANKING  
OF OPTIONS ON THE CRRS

The general content analysis categories will be shown followed by a numerical count on the reasons which were considered in that category. These categories will be followed by general examples of the reasons taken from the subjects' records for the CRRS.

### RISKY REASONS

#### High IP -

Must know the professor.	19
Can't know what to expect.	6
Problems with "Staff" options.	6
Rejection of a group of options.	6

#### Example statements:

- "If I don't know the professor, it is harder to get what he wants you to know."
- "Staff members are less well prepared academically."
- "I like to be familiar with the professor."
- "I really like to know the teacher because I can then determine how they test and run the class."
- "I don't like independent study."

#### Medium High IP -

Must know the professor.	20
Rejection of a group of options.	14
Problems with "Staff" options.	10

#### Example statements:

- "Because I don't like independent study courses."
- "Professors are usually more interesting than staff."
- "I don't really like taking courses - independent study of lecture - by someone I don't know."
- "Dislike when "Staff" is written in course catalog(sic)."
- "If I didn't know the professor I would be jumping into something."

## Medium Low IP -

Must know the professor	18
Rejection of a group of options.	16
Problems with "Staff" options.	9

## Example statements:

"When they list staff they are usually trying to shove the \_\_\_\_\_ of department on you."

"The difference between staff and unknown is insignificant."

"I don't like to take classes from staff."

"I prefer unknown professor because I know what to expect."

"The staff could be someone I knew, but it could also be someone I disliked."

## Low IP -

Must know instructor.	16
Wary of staff classes.	12
Rejection of a group of options.	12

## Example statements:

"I like to know who is teaching classes -- especially independent study."

"Wary of staff members especially in independent study."

"Staff members generally don't have a rounded out education enough to be knowledgeable on technical questions."

"Not knowing who the professor will be will make the nature of the class uncertain."

## NEUTRAL REASONS

## High IP -

No explicit reasons given.	16
Can depend on self.	5
Know what to expect.	4

## Example statements:

- "Don't know.
- "Gut feeling."
- "When all the positive options run out, I'll resort to these."
- "Independent study, you are usually on your own."
- "I really have no particular interest in this staff teaching in this school."

## Medium High IP -

- Not too risky, not too safe. 14
- Know what to expect. 12
- Can depend on self. 10

## Example statements:

- "These would be in the middle of the road because they are not too risky, but yet, not as certain as the ones below."
- "If I know and like the instructor, I will take any class from him."
- "...I would have a lot of control over the material and get a lot of feedback."
- "Knowing the professor gives more of an idea of what to expect and how well you will do."

## Medium Low IP -

- Known professor. 15
- Feedback in class. 13
- Not risky or cautious. 10

## Example statements:

- "I know the professor and what he wants and expects."
- "I get more feedback from a discussion class and can express myself."
- "Lecture classes are pretty neutral, no matter who teaches it."
- "Pretty well structured, yet some uncertainty."
- "The lecture-discussion with an unknown prof would be alright - not great, but not bad."

## Low IP -

Unknown professor.	7
Lecture-discussion interesting.	5
Don't like lecture.	5

## Example statements:

"Discussion makes it a bit better in that I get to know the person better."

"Lecture-discussion has always proved more interesting and helpful than just lecture."

"I dislike straight lecture."

"No real risk in independent study under staff member but no challenge either."

"Impartial to staff members, would rather take a course from a professor."

## CAUTIOUS REASONS

## High IP -

Know the professor.	21
Know what to expect.	15
Individual control	6

## Example statements:

"I would know what he would like and the speed I would have to work at."

"I feel more confident in nearly all cases with professors whom I know."

"In independent courses I feel I can be the instructor."

"If the teacher is known to you, you have an idea if course is interesting or not and what is expected."

"You know what to expect from class and professor."

## Medium High IP -

Known Professor.	19
Know what to expect.	15
Individual control	5

## Example statements:

"I know who I am working with and they hopefully know you."

"I would know the professor and what he/she expects of me. - a comfortable situation."

"I like discussions because can pick up more info to help on the tests."

"Independent study courses seem cautious because I would have a lot of control over the material and get a lot of feedback."

"Usually you can find out who is teaching a class that is listed as staff from your Dept. Sec."

## Medium Low IP -

Known Professor.	17
Know what to expect.	13
Individual control.	7

## Example statements:

"I know a couple of real good teachers that I wouldn't mind taking any class from."

"I know the prof and what he wants and expects, and so I know how to react to him."

"Good situation know what to expect."

"I would feel fairly safe because I would have an agreement with the supervisor as to what exactly has to be done."

"How he grades, whether or not I can handle him."

## Low IP -

Known professor.	26
Individual control.	4
Know what to expect.	4

## Example statements:

"I like to know who the professor is."

"Know the personality of instructor, what they want and where they are coming from."

"While doing independent study the course is entirely in my hands and my grade is not affected by test scores or curves - just a paper saying everything I learned."

"You can personally relate and learn from a prof you know when doing independent study."

"There is a chance for feedback in class and the risk is in knowing the professor...."

APPENDIX I  
REASONS FOR THE CHOICES  
ON THE MORS



The general content analysis categories will be shown followed by a set of sample statements of the reasons given by the particular IP group.

High IP -

Individual control.	13
Perceived ability.	12
Individual reward.	10

Example statements:

- "Because I feel I have the most control."
- "I could do my part and have quite a bit of control."
- "Each individual should be given the right to his own grade."
- "If I do good it is because I deserve it, if I do poorly I have no-one to blame but myself."
- "I think in most classes I could do a suitable presentation."
- "I can express myself orally better than on paper."

Medium High IP -

Individual control.	13
Can get group help.	10
Can control the group's direction.	10

Example statements:

- "Because then you could control the grade you would get." (in a group of own choosing)
- "I take mostly essay tests and I am geared to perform better on them."
- "Where I am in doubt I can ask someone else who knows."
- "I could make sure the group got the right answer."

## Medium Low IP

Individual Control.	13
Better learning.	10
Pooled knowledge better.	10

## Example statements:

"2 heads are better than one if I can select the heads."

"I would rather do a test by myself."

"Can do own work with time to prepare."

"I feel if I should earn a grade, I should do the work."

"I could study and be totally prepared."

## Low IP -

Pooled knowledge.	13
Individual control.	12
A better learning experience.	10

## Example statements:

"Variety of backgrounds makes class presentation in random different people will work harder to get something meaningful together."

"It would represent what I have gotten out of the class, my own ideas and feelings about the subject matter."

"If I could choose my own group members to partake in an objective test, I would no doubt get an A. Believe me."

APPENDIX J  
REASONS FOR THE CHOICES  
ON THE CRRS

The general content analysis categories will be shown followed by a set of sample statements of the reasons given by the particular IP group.

#### High IP -

Know what to expect.	6
Know the professor.	3
Like discussion.	3

#### Example statements:

"Because if I know the professor, I know what is expected, I can discuss with him better."

"I'm more secure if I know the instructor."

"You know what is expected and how to deal with the instructor."

"If I know the professor I know better what he wants and what he will consider a good worker."

#### Medium High IP -

Professor's expectations are known.	5
Control.	4
Better learning.	3

#### Example statements:

"You can also get involved in the class."

"First, you can finish it up faster, also I always prefer to know the professor."

"I'd be in control more than in other options."

"I feel you learn more when it is a lecture-discussion especially by a teacher you know...."

"Obviously if you know what to expect already from a professor and from previous experience know you can do well as you have the advantage of the professor already knowing you."

## Medium Low IP -

Professor is known.	8
Know what the professor expects.	4
Better Learning experience.	3

## Example statements:

"You have good idea of what he'll want and how he tests, etc."

"I would get more out of an independent teaching situation."

"I like independent study because I can do the work on my own time and what I learn or don't learn depends upon me."

"Under this option I will know what to expect from the class and the instructor. It helps me to plan my quarter's work."

## Low IP -

Professor is known.	4
Learn more.	3
Less uncertain or more predictable.	4

## Example statements:

"I am taking an independent class right now and enjoy it immensely - I'm learning what I want to learn and not what the teacher wants me to learn."

"I learn more from independent study."

"I learn from some professor because they are predictable."

"Confident that I would get the most I can from the class and learn a lot. This all assumes I like the professor and his method of teaching."