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The Admired Choice In The Context Of Group-shift Effects: A Relevant Arguments Explanation

Nelson Albert Heapy

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receives information pertaining to a CD problem that is more important than information previously available.

Four experiments were undertaken to evaluate the implications of this formulation of the admired choice.

The first experiment revealed that the average importance of arguments favouring the already preferred alternative of CD problems increases following group discussion and that the admired choice shifts in a direction consistent with the increase in importance ratings of arguments following discussion.

The second experiment showed that, at least with risky problems, admired choice was affected by the receipt of information which is relatively important whereas personal choice was affected by amount of information.

The third experiment indicated that subjects attribute fewer arguments to an admired person making a decision on a CD problem than they do to themselves and these fewer arguments are, on average, rated as more important than those attributed to oneself.

The fourth experiment demonstrates that the degree of admiration attributed to a decision-maker is dependent upon the proportion of important to relatively unimportant arguments perceived to have been used in arriving at a CD decision.

The implications of these findings are discussed in relation to relevant arguments theory and other areas of social psychology.

THE ADMIRABLE CHOICE IN THE CONTEXT OF GROUP SHIFT
EFFECTS: A RELEVANT ARGUMENTS EXPLANATION

by

Nelson Albert Heapy

Department of Psychology

Submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy

Faculty of Graduate Studies
The University of Western Ontario
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ABSTRACT

A problem of considerable interest to social psychologists has been the finding that individuals endorse more extreme decisions on CD problems following group discussion of these problems than would be predicted on the basis of average risk levels preferred by group members prior to discussion. Two explanations of this phenomenon have attracted considerable research attention. One of these suggests that individuals make decisions on CD problems in terms of some widely held cultural value. During discussion of these problems some group members are presumed to discover that a number of their co-participants have made a decision that is more closely aligned with a standard of comparison implied by the salient cultural value than they expected. In light of this discovery, these group members are assumed to re-evaluate their initial decisions. This social comparison explanation of group shifts in decision competes conceptually in the literature with another view of group process referred to as the relevant arguments position. Researchers advocating this type of group mechanism argue that the presentation of arguments, the content of the arguments and the number of arguments favouring each

alternative comes to have a persuasive impact upon some group members.

Although there is considerable support for the relevant arguments explanation of group shift effects, there are a number of findings related to a variable which is of some importance to the social comparison position that seem difficult to account for from an informational influence point of view. This particular variable is called the admired choice. It plays an important role in operational definitions of cultural values, relevant to CD problems, and is viewed by some researchers as the salient comparison level used by group members during group interaction. Of particular interest are the findings that the admired choice is more extreme than personal choice, that the admired choice is highly correlated with personal choice and that the admired choice shifts in a similar manner as personal choice following group discussion. The thesis of this dissertation is that these findings can be explained in terms of the assumptions underlying the relevant arguments account of group shift effects. It is hypothesized that the admired choice is premised upon a subset of the considerations used by individuals in making personal decisions. This subset is viewed as consisting of the relatively more important reasons that a person uses in arriving at a personal decision. Changes in admired choice are expected to occur when a person

receives information pertaining to a CD problem that is more important than information previously available.

Four experiments were undertaken to evaluate the implications of this formulation of the admired choice:

The first experiment revealed that the average importance of arguments favouring the already preferred alternative of CD problems increases following group discussion and that the admired choice shifts in a direction consistent with the increase in importance ratings of arguments following discussion.

The second experiment showed that, at least with risky problems, admired choice was affected by the receipt of information which is relatively important whereas personal choice was affected by amount of information.

The third experiment indicated that subjects attribute fewer arguments to an admired person making a decision on a CD problem than they do to themselves and these fewer arguments are, on average, rated as more important than those attributed to oneself.

The fourth experiment demonstrates that the degree of admiration attributed to a decision-maker is dependent upon the proportion of important to relatively unimportant arguments perceived to have been used in arriving at a CD decision.

The implications of these findings are discussed in relation to relevant arguments theory and other areas of social psychology.

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CHAPTER I

INTRODUCTION

Consider for the moment that you are a member of an investment club. The membership of your group must decide either to buy shares in a new mining company or to invest in a 'blue chip' organization. The mining company at the moment is a risky choice given that little exploration has been carried out. If preliminary reports prove true, the group can expect to double its money in a short time; if false, the stock will become worthless. The blue chip investment virtually guarantees a moderate return. Each member has been asked to consider this choice before the club meeting but now the group must unanimously decide on which stock to buy. Would you expect yourself, following group discussion of this problem, to endorse a group decision that differed significantly from your initial preference? Would you expect the group decision to be more or less in favour of the risky mining stock than were the initial decisions of your group members? Although questions have been raised in terms of a hypothetical situation, the elements of this example are not unlike those faced in many real life circumstances. First, there is an individual faced with the problem of forming a preference

in a situation that presents two courses of action. One alternative of the problem can lead to a highly desirable outcome, but the probability of this occurring is quite low whereas the other alternative is likely to lead with greater assurance to a moderately desirable outcome.

After having made a personal decision on the problem, the individual goes into a group where the concern of the group discussion is to reach a decision that is acceptable to the group as a whole. The important question posed by this sequence of events is whether or not the group decision would tend to be more in favour of the risky alternative than would the decision of an individual faced with the same problem. The answer to such a question is important inasmuch as many decisions in business and government take place in groups and many of the problems they face involve uncertain outcomes.

In an attempt to answer this question, Stoner (1961, as cited in Brown, 1965) brought what appeared to be the essential ingredients of this problem into the laboratory. He devised an experiment which compared group decisions to individual decisions on problems that involved uncertain outcomes. The task in Stoner's experiment involved twelve problems comprising an instrument called the Choice Dilemma Questionnaire (CDQ, Wallach & Kogan, 1959). Each problem portrays a fictitious individual faced with the dilemma of choosing between two alternative courses of

action. One of the alternatives, if chosen, is described as eventuating in an almost certain outcome. The other alternative involves risk. If this risky alternative is successful, its outcome is the most attractive, but if it is unsuccessful, the outcome is the most undesirable. An example of one of these problems is the following:

Mr. C is currently a college senior who is very eager to pursue graduate study in chemistry leading to the Doctor of Philosophy degree. He has been accepted by both University X and University Y. University X has a world-wide reputation for excellence in chemistry. While a degree from University X would signify outstanding training in this field, the standards are so very rigorous that only a fraction of the degree candidates actually receive the degree. University Y, on the other hand, has much less of a reputation in chemistry, but almost everyone admitted is awarded the Doctor of Philosophy degree, although the degree has much less prestige than the corresponding degree from University X.

Imagine that you are advising Mr. C. Listed below are several probabilities or odds that Mr. C would be awarded a degree at University X, the one with the greater prestige. Please check the lowest probability that you would consider acceptable to make it worthwhile for Mr. C to enroll in University X rather than University Y.

Place a check here if you think Mr. C should not enroll in University X, no matter what the probabilities.

The chances are 9 in 10 that Mr. C would receive a degree from University X.

The chances are 7 in 10 that Mr. C would receive a degree from University X.

The chances are 5 in 10 that Mr. C would receive a degree from University X.

The chances are 3 in 10 that Mr. C would receive a degree from University X.

4

The chances are 1 in 10 that Mr. C would receive a degree from University X.

The lower the probability of success considered acceptable by an individual, the more he is presumed to favour the risky alternative. If a person demands a high probability of success, he is assumed to be supporting the cautious alternative.

The experimental procedure required subjects to first make individual decisions on the problems while working alone. Following the individual decisions, subjects were assembled into 6-man groups and told to reach a unanimous group decision on each of the problems. After group discussions and decisions, subjects again made a private decision on each of the dilemma problems.

Stoner found, after summing over items to obtain an overall risk score, that group decisions were more risky than the average of the risk levels preferred by the group members prior to discussion. It was also found that individual decisions following group discussion had changed towards greater risk. This finding of a 'risky-shift' following group decision-making aroused considerable interest among social psychologists inasmuch as it seemed at variance with popular conceptions concerning the effects of group discussion on decisions. It had been influentially argued by Whyte (1965) that group decision-making would lead to more conservative decisions when choices had to be made between risky and cautious alterna-

tives. Literature in the area of group problem-solving (Barnlund, 1959) also suggests that on logic tasks, groups are more careful than individuals. As further research was done comparing individual and group decisions on the CDQ, however, it became apparent that group decisions on at least two of the Choice Dilemma (CD) problems shifted in a cautious direction (Pruitt & Teger, 1967). Subsequent research showed that it was, in fact, possible to write CD problems that consistently evoked group shifts toward caution (Nordhoy, 1962; Rabow, Fowler, Bradford, Hofeller and Shibuya, 1966).

To the extent that there was evidence for cautious as well as risky shifts, it became apparent that an empirically derived answer to Stoner's initial question concerning individual and group decision-making was not going to be easily obtained. The practical implications of the group induced choice shift become even more obscure when one considers the somewhat artificial nature of the CD decision task. Subjects are being asked to give advice to a fictitious protagonist in a hypothetical dilemma. This decision task is quite different from that faced by a group of people trying to reach a unanimous decision on whether to bet on the long-shot or to pick the favourite at the race track. In this situation, the decision has consequences for the group members,¹ whereas with Stoner's

¹ In fact, a study by McCauley, Stitt, Woods, and

paradigm the group members do not gain or lose anything in the end.

While Stoner's procedure might not be adequate enough to answer the practical question he set out to answer, the discovery of risky and cautious shifts on CD problems has become an important challenge to social psychology theory. Attempts to explain the problem have drawn on concepts from the areas of group dynamics, individual decision-making and from the field of attitude change research. The literature relating to the choice shift now involves well over 300 research articles and review papers, and yet the theoretical controversy continues unabated.

The complexity of the controversy can perhaps be better appreciated when one recognizes that at times as many as eight different explanations have been advanced to explain the choice shift. While it is important to acknowledge the diversity of theoretical orientations that have been brought to the task of explaining the choice shift (see Pruitt, 1971), it is clear that by far the greatest volume of research related to this phenomenon takes as its starting point one or the other of two explanations suggested by Brown (1965). Underpinning both of positions is the assumption that most individuals make

Lipton (1973) did create a situation where decisions had consequences for participants and discovered a shift toward more cautious decisions.

initial decisions in accordance with widely held cultural values. Brown maintained that with CD problems either a culturally endorsed value of moderate risk or caution is engaged. If a particular CD item typically evokes the value of risk, then an individual's decision will represent a probability level that is felt to be at least as risky as those chosen by similar others. In like manner, certain problems are expected to make salient a value of caution. Persons making decisions on these problems presumably will see their choices as representing positions which are at least as cautious as the majority of their peer group. Brown views the unanimous group decisions as choices that are more extreme in the direction of the value engaged by a CD problem than are average individual choices. In order to account for this, Brown offers two possible reasons.

One is that the value engaged will bias the flow of information such that more relevant arguments are brought out during discussion supporting the value than oppose it. Presumably, no one member in a group has all the relevant information bearing on a decision and hence a number of members can be expected to receive information that argues for them moving closer to the salient value.

The second reason offered by Brown to explain why group decisions move in the direction of engaged values is described in terms of a social comparison mechanism.

Since most people view themselves as being as close or somewhat closer to the cultural ideal elicited by a CD problem than the majority of their peer group, a number of subjects in the group situation are bound to find they are less in the direction of the cultural ideal than they thought. These subjects presumably have to alter their estimate of where the majority of other people stand and in an effort to appear at least as close to the cultural ideal as others, they change their response to a more extreme position in the valued direction. In effect, Brown has posed two empirically answerable questions. The first is whether or not values of risk and caution play a role in determining individual decisions on CD problems. The second challenge is to determine the extent to which group shifts in decision can be attributed to either a social comparison mechanism or an exchange of new information within the group.

On the basis of a detailed review of the literature addressing these issues, it will be argued that Brown's view of individual decision-making, as it relates to CD problems, is incomplete and that an alternative conception of CD decision-making is more parsimonious with the existing research to date. The hypothesis to be preferred, given the preponderance of evidence, is that individuals approach a CD item as a problem-solving task. As such, they weigh the information available to them in terms of

the pros and cons of each alternative. This information is not seen as being concerned with values of risk or caution but rather is concerned with the utility or importance of the potential implications of each alternative of a CD problem.

Further, it will be shown that this alternative view of individual decision-making is entirely compatible with Brown's notion that group shifts in CD decisions come about because of an exchange of arguments by group members substantively related to the content of each CD problem. The weight of evidence, however, will make it clear that the nature of the information exchanged by group members is not concerned primarily with values of risk or caution but rather is focused upon the importance of the consequences associated with the alternative of each CD problem.

The research of the present dissertation attempts to add further support to the proposition that decisions on CD problems are a function of information available to individuals and that changes in decisions, following group decision-making, result from an exchange of relevant information during discussion. This view of group shift effects serves as a basis to account for a number of findings that have been interpreted as supporting Brown's view of individual decision-making and his explanation of group shifts in terms of social comparison. The particular findings of interest are those that relate to a variable

called the admired choice. A number of researchers (Levinger & Schneider, 1969; Pruitt, 1971) suggest that an important implication of Brown's value hypothesis is that an individual will indicate admiration for a choice of odds that is more extreme in the direction of the valued alternative than is the actual personal choice made by that person. Presumably, the admired choice represents to a person the choice that would be considered ideal if his behaviour was consistent with the cultural value engaged by a CD problem. This variable is seen by a number of authors in this field as playing an important role in both individual decisions on these problems and in the dynamics of group process. A number of findings related to this variable do in fact appear to be embarrassing to the view that individuals make initial decisions on CD problems by reflecting upon the information available to them and that group shifts in decision result from an exchange of relevant information. The thesis of this dissertation is that the admired choice can be reconciled to the assumptions of the informational influence view of the choice shift.

What follows are eight chapters. The first two are concerned with a review of literature dealing with decision-making on CD problems. The first of these presents and evaluates research relevant to individual decision-making on CD problems. Of particular interest here is the controversy between advocates of a value

explanation of decision-making and those researchers who account for CD preferences in terms of a problem-solving approach. The major goals of this chapter are to present a basis for arguing in favour of the problem-solving approach, and to draw attention to the difficulty posed this explanation by the admired choice variable.

The second chapter of the literature review focuses on group decision-making on CD problems. Here, the major interest is to isolate those factors that lead to changes in individual decisions as a result of group interaction. Social comparison processes and information exchange during discussion are both examined, in terms of the relevant research, as possible explanations of why changes in decision on CD problems occur following group decision-making. The major conclusion of this chapter is that the exchange of information by group members appears to be the important determinant of group shift effects on CD problems.² It is acknowledged, however, that certain findings regarding the admired choice are not readily accounted for by this account of shift effects.

The next chapter attempts to integrate the conclusions of the previous two, and suggest that findings associated with the paradigm of the choice shift can be

² "Choice shift" will frequently be used, henceforth, as a phrase to refer to the phenomena of group induced shifts in decisions on CD problems. This phrase has achieved almost universal usage in describing this phenomena since it was first introduced by Pruitt (1971).

readily accounted for by the view that both individual decisions and changes in these decisions are a function of information available to an individual that is considered relevant to a particular CD item. The problematical findings related to the admired choice are shown to be readily reconciled to this proposition with the aid of a few assumptions.

Four experiments that were designed to evaluate the assumptions that link the admired choice to the proposed explanation of the choice shift are presented in the next four chapters. The following, and last chapter, summarizes the findings of the research and considers implications that these results suggest for future research related to the relevant arguments explanation of the choice shift and the admired choice.

CHAPTER II

THE INDIVIDUAL DECISION

The Values of Risk and Caution

Although Brown has proposed two possible mechanisms that could account for group shifts in decision, it is clear that the fundamental assumption underlying each explanation is that individuals make decisions on CD problems in terms of values of either risk or caution. Perhaps the most frequently cited evidence (Pruitt, 1971) in support of this contention is the finding that individuals take an initially riskier position on items that shift towards risk than they do on problems that move towards caution following group discussion. Consistent with these findings are the results of a study by Madaras and Bem (1968). These authors found that fictitious individuals who endorsed low probability choices on CD problems which shift in the risky direction received more favourable ratings than persons who endorsed cautious choices on these same problems.

Somewhat similar evidence comes from a reported experiment undertaken by Levinger and Schneider (1969). These researchers reasoned that adherence to a value by an individual leads to two consequences. The first is that

the person will view his behaviour as being at least as consistent with important values as is the behaviour of the majority of one's peers. The second implication is that one's behaviour is never quite as worthy of admiration as the ideal of behaviour suggested by cherished values. More particularly, on items that evoke risky shifts, it was expected that people would view their own choice as being at least as, if not more risky than, the majority of similar others. The second hypothesis stated that the choice of odds most admired by a person would represent an even riskier choice than the individual would personally endorse. These authors in fact stressed that the existence of a discrepancy between the most admired choice and personal choice would provide direct evidence in support of the assumption that risk is a value on those items that shift risky. Levinger and Schneider found that personal choice did indeed fall between scores obtained on a measure of most admired choice and estimates of the perceived majority choice, with the scores on both of these latter variables being more extreme than personal choice in the directions predicted. Heapy (1975) has also found that with problems which consistently shift cautious the admired choice is more cautious than personal choice, whereas the majority estimate is perceived as more risky. Given this sort of evidence, Levinger and Schneider conclude that personal decisions reflect compromises between

two conflicting pressures: "one, what the individual values or desires; and the second what he considers realistic or reasonable" (Levinger & Schneider, 1969).

On the basis of this conclusion, Heapy (1975) reasoned that if a measure of admired choice reflects the value orientation and a measure of the majority choice mirrors what is considered reasonable, then each of these variables should independently account for variation in individuals' personal choices. Ambivalent support was found for this prediction. A multiple correlation analysis, where admired choice and majority estimate were predictors and personal choice was the criterion, revealed that admired choice received a highly significant weighting whereas the beta weight associated with the majority estimate variable was nonsignificant. These findings are somewhat similar to those reported by Lamm, Schaude and Trommsdorf (1971) who also found the admired choice to be better correlated with personal choice than the majority estimate. The significant relationship between admired choice and personal choice is at least consistent with Levinger and Schneider's view that the admired choice reflects the value orientation of a CD item; "admiration is likely to be an unalloyed expression of the dominant value engaged by the decision". (Burnstein, Vinokur & Pichevin, 1974, p. 430).

The relatively poor relationship found between

personal choice and majority estimate can perhaps be explained in light of a study by Burnstein, Vinokur and Pichevin (1974). These authors argue that the majority estimate bears no causative relationship to personal choice but rather each of these choices has distinct causes which have nothing to do with value adherence. They account for the discrepancies found between personal choice and majority estimate in terms of the confidence associated with each of these decisions. Their prediction is that personal choice is made more confidently than the perceived majority choice. Since confident choices tend to be more extreme than less confident ones (Suchman, 1950), personal choices on CD problems are always expected to be more extreme than estimates of majority choice. Burnstein et al.'s research did show that personal choices are made more confidently than choices attributed to others. This lack of confidence in ascribing a choice to one's peers might result in greater variability being associated with scores on the majority estimate variable than is the case with personal choices. This might in part account for the low correlation between majority estimate and personal choice. There might also be, as Burnstein et al. argue, no causative relationship between these variables.

Although a number of the studies reviewed present findings which tend to be consistent with Brown's value

notion, it is clear they demonstrate only that with various CD problems there tends to be an initial consensus as to which alternative of the problem is most attractive. It would require very little ingenuity to suggest a number of reasons as to why a particular alternative of a CD problem would elicit consensual appeal without having to refer to values of risk or caution. What is required is evidence that suggests people intend to be risky on CD problems shifting risky and that they mean to be cautious on items that shift cautious. A study by Pruitt (1969) bears on this question. Subjects were asked to rate the various probability options made available with a risky CD problem as to whether they should be viewed as being risky or cautious choices. Following this, subjects then made a probability choice under typical instructions. It was found that the respondents tended to choose probabilities that they had previously rated as being cautious. These results are extremely difficult to reconcile with Brown's hypothesis that subjects will view their choices on problems which shift risky as initially representing a risky choice.

The apparent weakness of evidence in support of the hypothesis that values of risk and caution determine initial CD choices has led a number of researchers to speculate that a risky or cautious choice of odds might represent behaviour that is instrumental to the satis-

faction of cultural values other than risk or caution.

The Value of Ability

Risk and caution are not the only values that have been used to explain why one alternative or another of a CD problem appears to be consensually attractive. Jellison and Riskind (1970) have postulated that the relevant value affecting choices on CD problems is ability. Their position derives directly from Festinger's theory of Social Comparison (Festinger, 1954). Festinger stated that people wish to see themselves as having slightly more ability than other people with whom they compare themselves. Jellison and Riskind go on to suggest that the risk level chosen by an individual represents how he sees himself with regard to ability. The higher the risk level endorsed, the more ability an individual presumes himself to have. A person is also expected to see himself as having more ability than the majority of other people. In support of these assumptions, Jellison and Riskind have shown that: (a) risk taking in others is taken as an indication of ability, (b) people who are high in ability are also seen as willing to take risks, and (c) people tend to view themselves as having more ability than others.

Cautious individual decisions and cautious group decisions, however, pose a problem for this theory. To account for these data, Jellison and Riskind have hypothesized that individual and group decisions are influenced

by item specific values such as the value of appearing responsible. They have offered no evidence, however, to support such a contention. Furthermore, their data point merely to the fact that risk taking and ability are perceived as being correlated in our society.

Item Specific Values

Another view of CD decision-making which resorts to the importance of item specific values has been proposed by Stoner (1968). He argues that each item engages problem specific values which are assumed to be implicit within the outcomes associated with each alternative. The particular value that is considered most important to the individual is expected to sway the decision in the direction of the alternative which gives rise to a consideration of this particular value. The individual is also expected to view his probability choice as reflecting a closer adherence to the dominant value than would be the case with other people similar to himself. As a first step toward testing this view, Stoner wrote phrases which described, in general terms, the alternative outcomes implicit in each of the twelve CD problems he used. These statements were then matched to the CD items by six independent judges and there was found to be substantial agreement as to which problem the statements referred. Subjects were set the task of ranking the importance to them of each of the value statements and as well made

personal choices on each of the twelve problems. Stoner found that those subjects who rated the value statement associated with the risky alternative as more important than the caution-associated value statement preferred more risky courses of action than those subjects who ranked the caution-associated statement as more important. This led Stoner to conclude that the difference in importance to subjects of the values associated with the risky and cautious alternatives is predictive of initial choice on CD problems. Pruitt and Cosentino (1975) in a reanalysis of Stoner's data found that if one subtracted subjects' rankings of the value statement associated with the risky option and then correlated this index with the level of risk taken on each item, a somewhat different conclusion emerged. Pruitt found that the correlation coefficient for the twelve items ranged from $-.01$ to $.30$ with a median of $.12$. These data can hardly be construed as strong support for Stoner's contention that the difference in value rankings associated with a CD problem are predictive of personal choice.

A study recently published by Pruitt and Cosentino (1975) tends to cast a degree of doubt on any position which argues that values play an important role in directing choices on CD problems. Most of the research discussed so far has involved attempts to verify some particular researcher's view as to what values are important in

influencing an individual's choices on CD problems. Pruitt and Cosentino's study involved a quite different strategy. They constructed CD problems in which it was extremely clear that successful risk-taking would lead to satisfaction of a widely held value. Their question was whether or not an individual who endorsed the value in question would choose the risky course of action on the relevant CD item. In other words, if a person holds some value dearly, is that person willing to take risks in order to satisfy that value. In effect, this is what all other proponents of value theory have maintained in one form or another; people will decide upon a choice of odds that is perceived to be instrumental in satisfying the dominant value elicited by a CD problem. The study involved two new CD problems. In one of these, successful risk-taking clearly leads to the satisfaction of the value of freedom whereas in the other the willingness to choose a risky course of odds could lead to the satisfaction of the value of equality. The extent to which subjects in the experiment valued freedom and equality was measured by means of the Rokeach Value Survey (1970). This task requires subjects to rank in importance eighteen values, including freedom and equality. The important analysis involved the calculation of the correlation between the rankings of freedom and equality and the choices made on each of the two CD problems. The correlation between the

ranking of freedom and personal choices on the freedom-CD items was .34, whereas the correlation between the rank of equality and personal preference on the equality-CD problem was .37. In both cases, these correlations are significant; however, with correlations of this magnitude one must be concerned with the extent to which method variance can account for the relationship. Regardless of the basis for these correlations, these figures do suggest that a considerable proportion of the variability in responses to the CD problem is left unaccounted for. These concerns recommend that even if it were clear what value was dominant for each of the CD problems previously discussed, there is good reason to believe that other factors beyond the dominant value play a role in determining CD responses.

Another aspect of this study which is of interest is that measures of admired choice and majority estimate were administered to subjects as well as the other measures described. If, as Pruitt and Consentino point out, the discrepancy between personal choice and admired choice and the discrepancy between personal choice and majority estimate are supposed to reflect the extent to which a subject endorses the value implied in a CD problem, then one would expect a high correlation between each of these discrepancy measures and the ranking of the value implied in each of two CD problems. There was no significant correlation

between the self-admired discrepancy measure and the rank of the value relevant to each CD problem. The majority estimate-personal choice discrepancy was found to be related to the relevant values only by virtue of one of its components, personal choice. These results lead one to once again question the importance of the majority estimate variable in relation to personal choices. They also suggest the rather paradoxical conclusion that the admired choice no longer seems to have the conceptual foundation of values to support it and yet it must be remembered that this variable is one of the better predictors of personal choice. Even if values do not play as important a role in determining personal choices as initially believed, one is still left with the residual issue of the admired choice; why does it relate to personal choice and why is it discrepant from personal choice? Shortly, it will become apparent that this variable poses a problem not only for value explanations of CD decisions but also for views of the individual decision that are offered as alternatives to value theories.

The Alternative to Values

It would seem reasonable at this point to conclude that the evidence adduced to support the notion that culturally shared values influence CD decisions is at best marginal. This lack of definitive empirical support for a value conception of individual decision has prompted a number of researchers to explore an alternative view of the individual decision on CD problems. The most

sustained program of research developed to evaluate an alternative to value explanations of CD decisions comes from the endeavours of a number of researchers often referred to as the "Michigan Group" (Burnstein & Vinokur being the most prominent in terms of authorship). These researchers have proposed that decisions on CD items represent the end result of problem solving rather than the reflection of widely held values. Their conjecture is "that choosing a minimum acceptable probability of success requires the individual to organize the facts regarding the alternative courses of action, to weigh their importance, and even to make some inferences based on these facts and on his familiarity with similar situations" (Vinokur & Burnstein, 1974, p. 306). It is expected that with any CD problem where there is an average initial choice which clearly favours one alternative over another, most individuals will have more information and better quality information in favour of the preferred alternative. As well, this information is presumed to focus on the consequences that each alternative of a CD problem suggests to decision-makers.

In recent years, a considerable amount of research has been undertaken in an effort to support the Michigan Group's conceptions of the individual choice on CD problems. A study by Vinokur and Burnstein (1974) asked subjects, after they made a personal decision on a CD problem, to write down arguments that they felt would

justify the choice of a low probability of success in the situation the problem described and all the relevant reasons that would argue in favour of demanding a high probability of success in the situation depicted.

Subjects were also asked to rank all the arguments they listed, both pro and con risk, as to how important they were to them. It was found that the relative frequency and importance of pro-risk to pro-cautious arguments correlated with subject's initial choice of risk level and the overall initial mean choice on the dilemmas. It was also found that the arguments most important to individual decision-makers were also considered as very persuasive to individuals who were asked to evaluate the arguments generated in this study.

Given the correlational nature of their study, one can only argue that Vinokur and Burnstein have enhanced the plausibility of their view as to how decisions are made on CD problems. However, Ebbesen and Bower (1974) offer experimental support for the relative proportion of arguments hypothesis. These authors wrote twenty risky and twenty cautious arguments for each of five CD problems. Pre-test subjects in their experiment rated the persuasiveness of each of the 200 arguments so generated. On the basis of these ratings, the nine most persuasive risky and the nine most persuasive conservative arguments relevant to each CD problem were selected. This pool of

arguments for each CD problem made it possible to systematically vary the proportion of risky to conservative arguments made available to subjects. Five experimental conditions were created each of which involved presenting ten different arguments to subjects. The proportion of risky arguments in one condition was .90; for another .70; for the third .50; for the fourth .30 and the last .10. Each proportion was paired with each CD item. Subjects in each condition made CD decisions both before and after exposure to the proportion of arguments relevant to the particular condition. The results clearly showed that regardless of CD item, post-treatment decisions were a direct linear function of the proportion of risky to cautious arguments. This would seem to be strong support for the view that subject's decisions on CD problems are dependent upon the amount of information available to them in support of each of the two alternatives a problem provides.

Attempts have also been made to inquire about the nature of the information individuals bring to bear upon the CD problems. A rather ambitious study by Vinokur, Trope and Burnstein (1975) required subjects to generate arguments that were favourable towards each alternative of a CD problem. A content analysis of the arguments revealed that slightly over seventy percent of all the arguments pertained to the utilities of the outcomes

associated with each alternative course of action available. It was further found that virtually none of the arguments examined revealed content that suggested people should choose a course of action because risky or cautious behaviour is inherently valuable or rewarding. This last finding would seem to further argue against the proposition that subjects make decisions on CD problems in terms of values of risk or caution.

In summary, it would appear that the weight of current evidence supports the view that individuals make decisions on CD problems in terms of the relevant information or arguments available to them. The one point that remains a curiosity, however, with regard to the individual decision is the finding that the admired choice is a very good predictor of personal choice. It is not immediately clear how a relevant argument position could account for this finding or explain why the admired choice is typically more extreme than personal choice. It will be recalled that the admired choice is a variable that derives from theories which suggest that choices on CD problems are caused by the interplay of widely held values. It is in fact one of the few variables associated with value theories that relates to personal choices on CD problems in the manner predicted by these theories. The credibility of the relevant arguments position would be considerably enhanced if the admired choice could be

accounted for in terms of the concepts associated with this position. One attempt has been made by the Michigan Group to account for this variable in relation to CD decisions from the point of view of the persuasive arguments hypothesis. Burnstein, Vinokur and Pichevin (1974) speculate that one of the reasons why an extreme choice is admired is because it indicates to an observer that there must be a large number of persuasive arguments in support of such a preference. In other words, an extreme choice, regardless of its direction, is likely to be admired, since it is a sign of confidence. A further reason for admiring a particular choice relates to the basis for one's own choice. When an individual makes a decision, he is likely to be aware of which alternative has the most supportive information. An indication of preference for this alternative by another person suggests they are aware of what is the correct choice to make. Burnstein et al. are suggesting then that admiration for a choice depends upon the independent effects of direction and correctness (as they say "a special sense of correctness") of a choice. In an experiment designed to support these views, evaluative ratings of hypothetical individuals making choices on CD problems indicated that both the direction of choice and the confidence with which the fictitious individual made a decision did have the predicted effects. On the evaluative ratings, analysis of variance revealed

that there was a significant main effect for confidence and in interaction between item type (risky or cautious items) and direction of choice. These findings are consistent with the expectation that high confidence choices will be more admirable than low confidence ones, as will be risky choices on risky items compared with cautious choices, and cautious choices on cautious problems as contrasted with risky choices. Although these findings are consistent with a persuasive arguments account of the admired choice, they are not compelling support for the assumptions linking persuasive arguments to the admired choice. There was no attempt to determine whether subjects viewed high confidence choices as being premised upon a large number of persuasive arguments. Also, there was no effort to determine whether individuals view their own decisions as being "correct" in any sense of the word. Of further interest is the finding that a confident, cautious choice on a risky item was not rated as highly as a low confidence risky choice on a risky item. Similar findings are found with cautious items, inasmuch as highly confident, risky choices on cautious problems are not viewed as positively as low confidence, cautious choices on these items. This suggests that the direction of choice made on a particular CD problem is of more importance in affecting how admired it will be than is the expression of confidence indicated by the decision-maker.

It might well be that a decision-maker who is confident receives admiration somewhat independent of choice made; however, whether confidence bears upon the decision processes leading a person to make an admired choice, is an open question. It would appear that the relationship between personal choice and admired choice is still unclear.

Keeping the loose end of the admired choice in mind, the focus of this literature review will now turn to the research concerned with group decision-making on CD problems.

CHAPTER III

THE GROUP DECISION

Certainly the greatest volume of research concerned with the topic of the choice shift concentrates on explanations of why individual decisions change during group decision-making. In part, this is understandable. It is, in fact, as a result of group interaction that a shift in decisions occurs. Very often, however, the impression gained from this literature is that an understanding of group process can always proceed without an understanding of individual decision-making. Certainly there are many instances where group process does not relate to the basis for arriving at decisions prior to a group experience. Conformity in a group setting is but one example. What is intriguing is that very often when the nature of group process is unrelated to the process of decision-making used by a person in an insulated situation, the decision or behaviour indicated by the individual in the group is not likely to endure following the interaction with others. A person might conform in a group, but that altered behaviour does not necessarily endure outside the collective. The shift in decisions following group discussion, however, involves an enduring change (Wallach &

Kogan, 1965). The new decisions persist as long as six weeks. This would suggest that what happens during group discussion might well be affecting the decision process used by an individual prior to group discussion. An understanding of group process might well benefit from an understanding of the important variables affecting individual decisions. The two explanations of group shifts to be discussed in this chapter rely to different extents upon the nature of the individual decision-making process. Social comparison theories, as one type, do not have to relate to the individual decision-making process prior to group discussion at all. Although some do (Levinger & Schneider, 1969), it is not a necessary relationship. Relevant arguments theory, however, relies quite heavily on the proposition that decisions made by persons in groups are affected by much the same factors as those made individually. A review of the literature relating to these divergent theoretical positions should underline the importance attached to carefully examining individual decision-making prior to undertaking an attempt to understand group process, especially if the outcomes of group interaction are long lasting. It might be the case, more often than not, that the nature of the individual decision-making process places necessary constraints upon the possibilities that can be entertained with regard to group process.

Social Comparison and Persuasive Arguments

As has been stated, the preponderance of literature dealing with attempts to abstract the essential elements of group process that can account for the choice shift, takes as its starting point one of two group mechanisms formulated by Brown (1965). One broad class of theories argue that the crucial function of group discussion is to reveal the distribution of individual members' initial decisions. This exchange presumably leads to comparison between a member's initial choice and choices made by other participants. It is expected that some individuals will discover that a number of their co-participants will have made a decision that is more closely aligned with a salient social standard and that there will then be pressure on the individual to re-evaluate the initial decision in light of this discovery. These social or interpersonal comparison theories compete conceptually in the literature with another view of group process which might best be described as the relevant arguments position. Researchers advocating this type of mechanism argue that the presentation of arguments, the content of the arguments and the number of arguments favouring each alternative comes to have a persuasive impact upon some group members. Each of these positions will be discussed in turn.

is challenged, however, by the finding that both admired choice and the normative estimate are predictors of decisions following an exchange of initial positions without discussion. It will be recalled that one of the assumptions of social comparison theories (of all varieties) is that the necessary and sufficient condition for group shift effects is the exchange of initial positions or decisions between members without discussion. If Pruitt were correct about the mechanism of social comparison, then one would expect only the admired choice and not the normative estimate to be significantly related to personal choice. A further problem for Pruitt's view was the finding that the admired choice shifted following group discussion in a manner similar to the personal choice shift. One would expect, given Pruitt's account of the admired choice, that the ideal decision would remain stable; that it represents some enduring standard. It would appear that clear support for either Levinger and Schneider's or Pruitt's view of social comparison mechanisms is at present either lacking, or at best, ambiguous.

The admired choice once again appears as a variable importantly related to personal decisions. The admired choice is found, following group discussion, to be as highly related to personal choice as was found to be the case when individual decisions preceded group discussion. The emerging ubiquity of this variable is as difficult to

ideal in relation to the value engaged by a particular CD problem, but nonetheless the decision is more in the direction of what would be considered an admired choice than is the case with the majority of one's peers. This is, of course, reminiscent of Levinger and Schneider's (1969) explanation of how individual decisions are made on CD problems. No doubt, these authors are attempting, understandably, to account for the initial individual decision on CD problems and the change in decision following group discussion with an elegant economy of variables. Even though there is at best ambivalent support for their view that both the admired choice and the estimate of majority opinion are causative factors in relation to personal choice, one cannot dismiss the possibility that these judgements become relevant events as a result of cultural values becoming salient during group interaction. It is certainly conceivable that initial individual decisions might result from a weighing of information in a problem-solving sense, and yet the dynamics of the shift effect result from a re-evaluation of one's opinion in terms of social standards or comparison levels made salient during group discussion. Although social comparison theorists appear to agree that a perceived ideal choice and an anticipated peer choice become relevant concerns to group members, disagreement exists as to which of these potential comparison levels is the one responsible

for change. Levinger and Schneider, for instance, argue that a group member is likely to change an initial decision in a group if it is discovered that a number of other participants endorse probability levels closer to the admired choice than had been anticipated. In order to avoid negative evaluation, the group member picks a new choice that allows for the continued self-perception of being at least as close to one's admired choice as are the choices of one's peers. Clearly, the estimate of majority choice serves as the important comparison level in this version of social comparison theory, when predicting how individual decisions will change. Pruitt (1971), however, argues that the choice most admired by an individual serves as a far more important comparison position if one's concern is to predict how personal changes in preference on CD problems come about. Pruitt maintains that group members are likely to be desirous of making a decision that accords with their ideal choice but they anticipate the normative constraints of their peers' decisions. Change in personal decisions, is expected to occur if some one individual in a group endorses a position that epitomizes the admired choice of another group member. This admired individual is assumed to release a group member from a perceived majority opinion.

A third, and common assumption of social comparison theories is that information about the initial risk levels

chosen by other members of the group is all that is necessary to bring about the shift in individual decisions which ultimately eventuates in a group shift in decision. Whatever comparison level is hypothesized as being used by subjects, it is assumed to be inferred from the risk preferences of other group members.

In evaluating the social comparison explanations of the choice shift, the research related to each of the three basic assumptions will be discussed in turn.

Values in the Group

The most prevalent strategy used in an attempt to establish the salience of values during group discussion has been to show that groups of subjects who place great importance on the cultural value presumably engaged by a CD problem manifest larger choice shifts than groups characterized by less adherence to the particular value (Clark, Crockett & Archer, 1971, Lamm, Schaudt & Trommsdorf, 1971). A study by Pruitt and Cosentino (1975) used a similar strategy to directly confront the proposition that values are causative factors influencing decisions during group discussion. These researchers constructed CD problems where it was patently clear that choice of risky odds would be instrumental in promoting a widely held social value. Subjects rated how much they endorsed the value clearly implied in the description of the dilemma of each particular problem. Groups were then created which

consisted of either members who highly ranked the value implicit in a particular problem or individuals who rated the relevant value very low. The hypothesis stated that if the value imbedded in a CD problem became salient, then groups composed of subjects who favoured the value would shift more in the risky direction than would groups who attached little importance to that value. The findings indicated that both groups shifted in the risky direction and further there was no difference in the degree of shift shown by either high value or low value groups. This evidence would seem to be very difficult to reconcile with the contention that values supply the energy for the choice shift.

The Standard of Comparison

The next issue is whether the admired choice or the estimate of majority opinion serves as the comparison level in bringing about the choice shift. Evidence consistent with the view that changes in personal choice following group discussion are contingent upon revisions in the estimate of normative opinion comes from a study by Ferguson and Vidmar (1971). It was found that shifts in personal choice following group decision-making were paralleled by shifts in the estimate of majority opinion. The authors point out that this change in perceived norms in itself does not substantiate the notion that changes in the normative estimate will cause changes in personal

preferences. They found, however, that the change in majority estimate was more robust than the change in preference following discussion, and hence the reasonable assumption that the change in normative estimate is the more basic phenomenon. They further cite an unpublished study by Steiner (1970) where subjects supplied with false norms about how others responded to CD items were found to shift their preferences in a direction consistent with the supplied norm. Weideman (1972) has since replicated these findings.

• Although these experiments demonstrate that it is possible to change personal decisions in some situations by manipulating norms, and that changes in normative estimates correlate with changes in personal decisions, certain critical evidence is lacking. Can it, for instance, be clearly established that perceived changes in norms accompanying group discussions of CD problems change personal decisions? Even though changes in normative estimate correlate with changes in personal choice, does personal choice in fact correlate with the estimate of normative opinion following group interaction? These questions would have to be answered in the affirmative if the version of social comparison under discussion is correct. Unfortunately, the evidence which relates to these questions appears to answer both questions in the negative. Baron, Dion, Baron and Miller (1971) reasoned that if a

group member's estimate of the typical choice made by his peers in a group was confirmed, then a social comparison view would predict there would be little, if any, change in the individual's personal choice. What was found, was that an individual faced with a majority choice in the direction expected, actually shifted in the direction of the consensus. In other words, even though there was no shift in the normative estimate, there was a choice shift; an outcome clearly contrary to a notion of social comparison which relies upon shifts in normative estimate to explain shifts in personal choice.

With regard to normative estimates relating to personal choices following discussion of CD problems, the evidence is equally discouraging. A study (Heapy, 1975) which required subjects to indicate admired choices and perceived normative choices as well as personal choices on CD problems following group decisions found that the normative estimate variable was not a significant predictor of personal choices, whereas the admired choice was. This result does not appear to be an artifact of overlapping method variance between the two predictor measures given the outcomes associated with another condition in this particular experiment. A second condition did not allow subjects to discuss each CD problem until unanimous agreement was reached; however, subjects were instructed to make each other aware of their initial

decisions. Following this, subjects made admired choices, personal choices and selected estimates of majority preference. In this condition, both the admired choice and the normative estimate received significant beta weights in a regression equation used to predict personal choices. The finding that the normative estimate can be a significant predictor in some situations suggests that substantive importance should be attached to the discovery that this variable does not receive a significant weighting following full group discussion. The most obvious meaning to attach to this finding is simply that the estimate of majority opinion does not play a role in determining decisions following group discussion. Why does the admired choice turn out to be such a good predictor of decisions following group discussion? This finding could be construed as evidence in support of Pruitt's contention that the admired choice, not the normative estimate, is the relevant comparison level during group interaction. In fact, this is one of the few studies that offers evidence that directly relates to the hypothesis that the admired choice when represented by someone in a group "releases" group members from normative constraints. If the admired choice becomes salient during group discussion and this variable does serve as a comparison level, then one would expect personal decisions to be highly related to admired choice following the group experience. This interpretation

is challenged, however, by the finding that both admired choice and the normative estimate are predictors of decisions following an exchange of initial positions without discussion. It will be recalled that one of the assumptions of social comparison theories (of all varieties) is that the necessary and sufficient condition for group shift effects is the exchange of initial positions or decisions between members without discussion. If Pruitt were correct about the mechanism of social comparison, then one would expect only the admired choice and not the normative estimate to be significantly related to personal choice. A further problem for Pruitt's view was the finding that the admired choice shifted following group discussion in a manner similar to the personal choice shift. One would expect, given Pruitt's account of the admired choice, that the ideal decision would remain stable; that it represents some enduring standard. It would appear that clear support for either Levinger and Schneider's or Pruitt's view of social comparison mechanisms is at present either lacking, or at best, ambiguous.

The admired choice once again appears as a variable importantly related to personal decisions. The admired choice is found, following group discussion, to be as highly related to personal choice as was found to be the case when individual decisions preceded group discussion. The emerging ubiquity of this variable is as difficult to

understand, in the context of group process as it was to appreciate its role in discussing individual decisions in relation to CD problems. This variable's theoretical significance in the discussion of group process was as a comparison level. Once again, however, its theoretical underpinnings seem in jeopardy and yet the variable remains robust. In the discussion of individual decision-making, in relation to CD problems, it was concluded that an adequate explanation of the decision-making process should be able to account for the relationship between admired choice and personal choices. Now it appears that a successful account of how group process leads to changes in individual decisions must be able to explain how the relationship between admired choice and personal choice is sustained following group interaction..

The Distribution of Initial Choices

The last aspect of social comparison views to be evaluated is the assumption that information about the initial risk levels chosen by other group members is all that is necessary to bring about the change in individual decisions (an assumption briefly alluded to in the foregoing discussion of comparison levels). This issue in many ways has been the central focus of the controversy between advocates of a social comparison process and the supporters of a "relevant arguments" position. The problem comes down essentially to one of trying to determine

whether it is the revealed initial preferences, or the content of the arguments brought out during group discussion, that produce the choice shift. A study frequently cited in support of a social comparison position (Teger & Pruitt, 1967) involved one experimental condition where subjects in groups were not allowed to discuss their initial decisions. Rather, group members exchanged information about their initial positions by holding up cards stating their desired probability levels. Groups in this condition showed a choice shift. However, the magnitude of the shift was less than that following full group discussion. St. Jean (1970) undertook a similar experiment with the addition of a condition called an "arguments-only" condition. In this condition, subjects were allowed to discuss only "the pros and cons attached to the risky action without revealing their own risk preferences." Groups in this condition showed almost as strong a shift on CD problems as that following full group discussion of the same problems. A number of studies have followed the example of St. Jean in the sense that they have attempted to determine whether or not choice shifts occur when either exchange of arguments or exchange of initial positions is prevented from occurring. The most tenable conclusion to be drawn from these experiments (Burnstein & Vinokur, 1973; Burnstein et al., 1973; Clark et al., 1971; Wallace & Kogan, 1965) is that when an exchange of

arguments is permitted, but social comparison opportunities are minimized, one reliably obtains choice shifts. If the opportunity for interpersonal comparison is optimized with an attendant restriction upon the exchange of arguments, then choice shifts rarely occur. If they do occur (Clark & Willems, 1969), they are usually not as large as those following group discussion. These findings would seem to argue strongly against social comparison of initial choices being the exclusive cause of the choice shift. Pruitt (1971) attempts to salvage the social comparison notion by proposing a two process account of the choice shift. He suggests that social comparison accounts for a portion of the shift, and that the social comparison process is augmented by the exchange of relevant arguments. Pruitt argues that in experiments where groups are not allowed to reveal their initial choices and only arguments are allowed to be exchanged, it is still possible that social comparison can take place. If one assumes that group members can accurately infer each other's initial risk preferences from the arguments they present during the group interaction, then the information available to members is exactly the same as that available during full group discussion. Support for Pruitt's compromise comes from an experiment by Clark, Crockett and Archer (1971). A condition in their experiment restricted subjects to exchanging arguments without revealing their

initial choices. It was found that subjects in this condition were as accurate as those subjects in a full group discussion condition in estimating the choice of odds picked by other group members. Given that it can be shown that groups change their decisions after members reveal their initial choices, and that it is possible for group members to infer initial choices from only the arguments presented, it appears tenable to argue that at least some portion of the choice shift can be attributed to a form of social comparison. This conclusion is severely challenged, however, by a recent experiment (Burnstein & Vinokur, 1975) which makes it possible to account for both of the above findings from a relevant arguments point of view. The authors of the research argue that knowledge of other's choices leads a group member to think of reasons others might have had for the unexpected choices they made. These reasons are assumed to be ones which ordinarily would not come to mind without this knowledge. These new arguments cause the group member to persuade himself that the perceived majority choice suggests the already favoured alternative has greater merit than was granted originally. The experiment designed to test this analysis consisted of three conditions. Subjects in all conditions initially made personal choices on CD problems. Following this, subjects in one condition learned one another's preferences on a specific CD problem and were then required

to generate arguments in favour of each alternative involved in that CD problem. Subjects in a second condition learned other's preferences on one CD problem and were then asked to generate arguments in support of the alternatives associated with a different CD problem. The last condition of this study involved subjects who knew only their own preference on a CD problem. Without any knowledge of the preference of others, these subjects wrote reasons in favour of each alternative of the particular CD problem. After the writing of arguments, subjects in all conditions again made choices on the CD problems.

The first prediction was that shifts in decision would occur in condition one but not in the other two conditions. In the first condition, it is expected that knowledge of others' choices serves as an incentive to generate arguments that are relevant to the problem involved. In the second condition, Burnstein and Vinokur argue that subjects are prevented from generating arguments that are relevant to the problem for which they received knowledge of others' choices. In the third condition, it is of course expected that no new arguments will be generated by an individual given there is no knowledge of others' choices.

The second prediction is that more arguments will be generated in support of alternatives suggested by the choice of others, when knowledge of others' choices is

made available than is the case when this knowledge is not made available.

Both of the predictions of the Burnstein and Vinokur experiment were supported inasmuch as shifts in decisions occurred only in what has been described as condition one, and there were also more arguments generated in this condition in support of the preferred alternative than was the case when subjects had no knowledge of others' choices.

This study offers a strong support for the conjecture that knowledge of others' choices leads to a revision of initial choices only to the extent that an opportunity exists to think of arguments in support of the choices others have selected and that these arguments had previously not come to mind. It would appear in fact that all the major predictions advanced by social comparison theories can be readily accounted for by research predicated upon the view that shifts in decision occur as a result of receiving new information or arguments in the context of group interaction. The one finding that has not been accounted for is the significant relationship between personal choice and admired choice following group discussion. Attention will be turned to this problem once a discussion of research dealing directly with the "relevant arguments" hypothesis has been completed.

Relevant Arguments Theory

The research described in the discussion of social comparison theories would appear to greatly enhance the credibility of the view that shifts in decision on CD problems are a result of group members receiving new information supporting their already preferred alternatives. The research described, however, was concerned primarily with challenging the assumptions of social comparison theory. It is necessary now to discuss research which attempts to examine more directly the notion that arguments brought out during group discussion effect shifts in individual decisions on CD problems.

The first researcher in the area of the choice shift to look at the nature of the discussion during group decision-making was Nordhoy (1962). His findings indicated that the weight of arguments brought out during group discussion favoured the direction in which change was found to occur. These early findings of Nordhoy's are consistent with more recent literature (Ebbesen & Bowers, 1974) which demonstrates that the magnitude of the shift to risk or caution correlates with the proportion of prorisk³ to precaution arguments brought out during group

³ Writing on the topic of the choice shift often presents stylistic problems. Phrases like "the risky alternative of risky problems" very often lead to cumbersome sentences. In an attempt to bring conciseness to some sentences and also to, at times, avoid redundancy, the risky alternative will be referred to as risk and the cautious alternative as caution. Arguments that are

discussion.

Nordhoy's findings have also been replicated and extended in a study undertaken by Silverthorn (1971). This research found that a content analysis of arguments following group discussions of CD problems revealed a larger number of arguments favouring the risky alternative than there were supporting the cautious alternative on problems that shifted risky and vice versa on problems that led to group induced shifts to caution. Silverthorn also created conditions where group members were essentially instructed to bias the flow of discussion. In one condition, group members presented more arguments in favour of the risky alternative of CD problems; in another condition the preponderance of arguments was in favour of caution, and in yet another, group members were to present an equal number of arguments in favour of each alternative associated with the CD problems discussed. As was predicted, these three conditions led, respectively, to risky, cautious and no shifts in decision regardless of CD problem discussed. These findings can be considered as only suggestive, however, given the potential artifact of

prorisk is intended to mean that the arguments are in favour of the risky alternative; they are not arguments favouring, simply riskiness. Any such confusion is not likely to occur in future, since the context of discussion will make the use of terms like risk and caution clear. The research literature will also make it clear that risk and caution per se have little to commend them in the context of the choice shift.

demand characteristics in this study. Subjects in each of the conditions described might conceivably be tailoring their decisions to accord with the balance of arguments they were instructed to present in an effort to please the experimenter.

A more compelling study regarding the importance of information exchange during group discussion has been undertaken by Vinokur, Trope and Burnstein (1975). For the purposes of their experiment, two sets of arguments were collected. One set was produced by individuals privately. Subjects in this condition were asked to list all the arguments they felt would justify the choice of a low probability of success on a particular CD problem as well as those arguments that would justify the acceptance of a high probability of success.

The other set of arguments analyzed in this study came from the group discussion of CD problems. These arguments were those produced by group members during group decision-making.

Both sets of arguments were subjected to a rather extensive content analysis. The results of this analysis justified the authors in drawing a number of conclusions. One of these conclusions was that the majority of arguments produced both privately and during group discussion were concerned with the utilities of the particular outcomes specified in the CD problems. Very few of the

arguments were concerned with the utility of risk or caution per se. Of further interest was the finding that the proportion of arguments directed towards the various possible outcomes specified in a CD problem was the same for arguments produced individually and those produced during group discussion. This argues strongly for the view that all the arguments possessed by group members prior to group decision-making are brought out during group discussion of the various CD problems. A last, and important conclusion was that in both sets of arguments, as well as being primarily concerned with the utilities of outcomes, the content was such as to make the risky alternative highly attractive on items shifting towards risk and the cautious alternative attractive on items shifting towards caution. There is of course a difference between trying to make an issue attractive to someone and it being perceived as persuasive. Vinokur and Burnstein (1974) do demonstrate, however, that the average argument in favour of the risky alternative of risky problems is perceived as more persuasive than the typical argument favouring the more certain alternative. The converse was found to be true for cautious CD problems. These findings, together with evidence that a considerable proportion of the information brought out during group discussion is non-overlapping (Vinokur & Burnstein, 1974) in content, would seem to satisfy important conditions that have to be met if the

exchange of arguments position is to be considered viable. During group discussions, more information is brought out in favour of the alternative of a CD problem towards which group decisions move. This information is such as to enhance the utilities of the outcomes of the favoured alternative, and further much of the information will be new and persuasive to individual group members.

In summary, the majority of research which has been viewed as support for a social comparison explanation of group shift effects, appears to be accountable for in terms of the assumptions of a "relevant arguments" position. Further, the research which attempts to evaluate the implications of the information exchange view has been largely supportive of its original assumptions. To the extent that this research has essentially gone unchallenged, it would seem reasonable to conclude that the currently more credible account of group process, in relation to CD decision-making, is the relevant arguments position.

CHAPTER IV

AN INTEGRATED VIEW OF INDIVIDUAL AND GROUP DECISIONS ON CHOICE DILEMMA PROBLEMS

So far, the present review of the choice shift literature has focused separately upon individual and group decision-making on CD problems. In light of the evidence related to each of these facets of the choice shift, it is now possible to advance, with some confidence, an explanation of the phenomenon that integrates individual decision-making with group process.

Brown. (1965) in his attempt to account for group shift effects was able to relate individual and group decision-making on CD problems by means of the concept of cultural values. The values of risk or caution directed individual decisions and they formed the backdrop against which group decisions emerged. The research relevant to individual and group decision-making has been thoroughly examined and in each case the role of values seems to be obscure. Parsimony would be well served if the void left by cultural values could be filled with a construct which is of equivalent conceptual power and also better embraces the research findings reviewed. All too often, however, Occam's razor is a double-edged sword. The urge to

integrate different frames of reference in terms of some unifying construct can lead to a premature striving for theoretical elegance in the absence of empirical justification. Happily, this is not the case with regard to the choice shift phenomena. A considerable amount of excellent research has focused on both individual and group decision-making on CD problems since the time of Brown's speculations. The findings of this extensive literature in large part support a hypothesis which, with considerable conceptual economy, links individual decision-making on CD problems with an explanation of how group shifts in decisions on these problems come about. This hypothesis (Vinokur, 1971) states that a person, either alone or in a group, makes decisions on CD problems in terms of the information available and considered relevant.

Given this hypothesis, it is now possible to advance an overall account of the choice shift which is consistent with the conclusions put forward with regard to both individual and group decision-making on CD problems and which can account for the controversial admired choice variable.

The Choice Shift

When confronted with a CD problem, it is assumed that an individual becomes involved in problem-solving, in the sense that this term is traditionally employed (Thor-dike, 1938). A person is expected to formulate arguments

in favour of each alternative of the problem. The minimum probability decided upon reflects the difference in the number and importance of the arguments supporting each alternative. Problems which have been termed risky are those which elicit more arguments in favour of the uncertain alternative. The arguments favouring the risky alternative are also, on average, more important to the decision-maker. The situation is reversed with so-called cautious items: More, and more important arguments favour the certain alternative.

During a group discussion of these problems, members advance to each other the arguments that were used in making individual decisions. During the discussion of a risky problem, for example, most of the arguments put forth are in support of the risky alternative. A considerable number of these arguments are non-overlapping and hence most group members will be exposed to new information favouring their already preferred alternative. This new information in support of the risky alternative is also more persuasive, on the average, than is the information favouring the cautious alternative. This new, persuasive information leads many group members to change their decisions to a choice of odds that is more risky than initial preferences. The situation with cautious problems is the complete reverse of that discussed in relation to risky problems. Group discussion of cautious

items brings out more new information in favour of the cautious alternative and these arguments are likely to be highly persuasive. Revised personal decisions are likely to be even more in favour of a cautious decision than initially. These revised individual decisions on risky and cautious problems lead to the endorsement of group decisions that are more risky and cautious, respectively, than would be predicted on the basis of the average initial preferences of group members.

The explanation offered above reveals a certain elegance in the sense that individual decisions and group decisions are both seen to rely on the information available in support of the alternative of a CD problem. Arguments can be personally generated or individuals can communicate arguments to each other. In each case, decisions are a function of the information considered relevant by the individual. In spite of this elegance, there are a few findings related to the choice shift which appear to be embarrassing. In relation to the individual decision, the admired choice was found to be a good predictor of personal choice and further it was discovered that the admired choice is more extreme than personal choice in its support of the preferred alternative. It was also found that these relationships between admired choice and personal choice are sustained following group discussion. Admired choices shift in the same direction and tend to be

more extreme than personal choices following group discussion. The admired choice is also as good a predictor of personal decisions following discussion as it is prior to group interaction. Although advocates of a relevant arguments position have attempted in part to account for the admired choice, their efforts have not been entirely satisfactory. If the challenge posed by the admired choice can be met, the credibility of the relevant arguments account of the choice shift would be greatly enhanced. What follows is a new attempt to account for the curious relationships between admired choice and personal choice from a relevant arguments point of view.

The Admired Choice and Relevant Arguments

When a subject is asked to make his most admired choice on a CD problem, he is in effect being requested to indicate a preference that he would admire the central figure in the problem for choosing. In order to better understand the basis for this admired choice it will be of value to examine why an individual is admired in a more general sense. McGuire (1968), commenting on a study by Berlo and Lement (1961), has suggested that an admired person is likely to be a person with whom one shares one's most important beliefs. This implies that admiration is not contingent upon a complete congruence of beliefs but rather a sharing of the most important beliefs within a

belief system. There is in fact considerable evidence to indicate that the sharing of one's most valued beliefs is an important precursor to the attribution of positive characteristics to a person (Newcomb, 1953; Byrne, 1961; Rokeach, 1960). It has further been shown that the degree of admiration felt for the source of a persuasive communication varies with the rated importance to the audience of the issues being advocated by the source (Byrne and Nelson, 1964). One facet of the admired person, then, is that he is perceived as holding a set of beliefs that are viewed as being among the most important to oneself; in a sense a subset of one's own.

The sharing of valued beliefs, however, is not the only characteristic associated with the admired person. A person is also regarded very highly if his behaviour is consistent with the beliefs he holds as important, and, if he is also seen as successful acting in terms of these beliefs (Kulp, 1934). These characteristics lead to an intuitively compelling conception of the admired person. He is someone who holds the same important beliefs as oneself; his behaviour is consistent with those important beliefs, and one tends to think of him as successful in so acting. More briefly, the admired person is someone who is viewed as behaving consistently in terms of considerations that are very important to an observer. If one is posed the task of trying to imagine the behaviour of an

admirable person, it would seem reasonable to suggest that one would attempt to construct a response in the particular situation that is consistent with the considerations that are among the most important to oneself. How does this contrast with the behaviour one would imagine oneself engaging in given the same situation? It has already been suggested that the admired person is viewed as behaving in terms of a subset of the considerations that are available to an observer. This is entirely consistent with literature concerned with attribution processes. The causes attributed to an admired person are those that would be rated by an observer as being very important (Regan, Strauss, and Fazio, 1974). The behaviour of the observer, however, is attributed not only to these important causes but also to constraints that in themselves would be evaluated as less important than the factors viewed as influencing the admired person's behaviour (Burnstein & Vinokur, 1974). One's own behaviour, then, is seen as being affected by considerations that would not influence the behaviour of an admired person, and these considerations would individually be evaluated as being of somewhat lesser importance than those attributed to the admired person. Perhaps an example might clarify this attempt to distinguish between how one would imagine an admired person behaving and how one would see oneself acting in the same situation.

Consider that one admires Bertrand Russell. This admiration derives from Bertrand Russell holding beliefs one considers important as well as perceiving him as someone who acts consistently in terms of those beliefs. Bertrand Russell was someone who didn't believe in war and who went to jail rather than go to war. If one is faced with the requirement of going to war, does it necessarily follow that one will not go to war even if one admires Bertrand Russell, and considers his action in that similar situation admirable? Not at all. There might be a number of reasons which contribute to the decision to go to war, each reason in and of itself not that important, but nonetheless relevant, and given enough such reasons, they come to have an impact on one's decision. One would expect someone to avoid conscription only if there were more, and more important arguments available to oneself supporting the alternative of avoiding war. In fact, one would usually expect a discrepancy between one's own behaviour and the behaviour of an admired individual. All our important reasons are attributed to the decision processes of the admired person. Our behaviour, however, mirrors the compromise between the important and the not so important. This distinction between the causes of one's own behaviour and the perceived causation of the acts of an admired person can now be applied to personal and admired choices on CD problems.

Recall that personal choice on a CD problem reflects all the reasons that an individual considers relevant to making a decision as to choice of odds. Each of these reasons can be rank ordered as to their importance to the individual. Some of the relevant reasons in favour of the alternative will be weighted much more in terms of importance than will others. The same will be true, of course, for the reasons favouring the cautious alternative. Simply stated, the reasons favouring each alternative will differ as to their importance in influencing the final decision. The suggestion has been made that the admired person is someone who is viewed as acting consistently in terms of reasons that one views as most important to oneself. In effect, the considerations that are most important to a person are projected into the decision process of the admired person. One is likely to imagine an admired individual faced with the same decision problem as oneself making a decision only on the basis of the reasons rated as very important to oneself. An individual then makes a personal choice on a CD problem in terms of all the reasons considered relevant to the actual CD problem. The admired choice attributed to the central figure in a CD problem, however, reflects only a subset of these relevant reasons which consists of the relatively more important arguments.

One is now in a position to offer answers to the

questions posed by the admired choice. The first question was: Why are the most admired choice and personal choice highly correlated? To facilitate the effort to answer this question, only risky items will be considered for the moment. With a risky item, it is known that there are usually more arguments in favour of risk than there are in favour of caution and that the average argument in favour of risk is more important to the individual making the decision than the arguments in favour of caution. The important arguments are also the ones which serve as the basis for making the most admired choice. Given this, it is expected that the arguments favouring the risky alternative are the primary bases of the most admired choice, whereas the arguments favouring both alternatives together form the basis for personal choice. One can now relate most admired choice to personal choice using a common element analogy of the correlation coefficient. This interpretation suggests that the degree of correlation is a function of the number of elements common to the two variables. If the most admired choice derives primarily from the arguments favouring the uncertain alternative, and personal choice results from the arguments favouring both alternatives, then the common elements of these two variables are the arguments primarily favouring the risky choice. The greater the proportion of arguments in favour of risk relative to those favouring caution, the higher the

correlation between most admired choice and personal choice to be expected. Most CD items that show shifts following group discussion are expected to have more arguments in favour of one alternative, and hence a high correlation with most admired choice.

It is also possible to explain the reason why the most admired choice tends to be more extreme than personal choice by referring to the same notions that were used to explain the correlation. As previously suggested, personal choice will depend upon the number of reasons favouring each alternative and the importance of these reasons. This decision will tend to favour the risky alternative to the extent that there are more important arguments favouring that alternative. With risky items, it has in fact been shown that there are both more and more important arguments favouring the risky alternative. The most admired choice would reflect predominantly the reasons offered to support the risky alternative, inasmuch as these are typically considered to be more important and persuasive to individuals making their decisions. This would lead to a more extreme position in favour of the risky alternative than personal choice since there would be few arguments in favour of caution considered in making the most admired choice.

The next question to be answered is: Why does the most admired choice shift as a result of group discussion?

The answer to this depends upon whether or not the information which leads to shifts in personal choice following group discussion is viewed by the group member as more important than some of the reasons used to make an initial decision. If some of the arguments which are accepted during group discussion come to be seen as important arguments, then the group member will have a larger number of relatively important arguments than previously and hence a different basis for making an admired choice. To elaborate, personal choices shift because the individual is exposed to more information relevant to the alternative that initial choice favoured. With a risky item, for example, there are more arguments brought out in favour of the risky alternative and only thirty percent (Vinokur and Burnstein, 1974) of these arguments are likely to overlap among group members. These arguments are also likely to be considered more persuasive than the arguments brought out in favour of caution. If these persuasive arguments come to be considered as very important considerations, then an individual would have more important arguments favouring the risky alternative than previously held. The increase in the number of important arguments favouring this alternative would lead to a more extreme admired choice as well as personal choice if such responses were solicited following group discussion. The pivotal assumption here is that arguments perceived as persuasive come

to be assimilated as relatively important in the hierarchy of reasons relevant to a particular CD problem. Indirect support for this contention comes from the results of a study by Leventhal & Niles (1964). It was found that information which was highly persuasive was assessed as being more important to later decisions where this information was relevant than information considered less persuasive.

The above attempt to link the findings related to the admired choice with the relevant arguments position is in effect proposing that the admired choice, personal choice and shifts in these choices contingent upon discussion are a function of various types of arguments or information available to individuals. Admired choice itself is not seen as a factor directly affecting personal choice, nor is a change in admired choice seen as directly leading to changes in personal choice. The findings related to admired choice are seen as artifacts of the conditions that lead to personal decisions and changes in these decisions, following group discussion. This view is completely at variance with that held by researchers who view the admired choice as a basis of personal evaluation and hence a determinant of personal decisions, both individually and in the context of group discussion. It is also a different conception than that put forth by other adherents of the relevant arguments position. Burnstein

et al. (1974) suggest that an admired choice of an individual is premised on an assumption that an admired person has more arguments (not less, as is being argued) than oneself in defense of the favoured alternative, and hence the admired choice reflects the anticipated disparity between one's own arguments and those of an admired person. Given these differing conceptions of the relationship between admired choice and personal choice on CD problems, it is clear that empirical validity must be attached to the present explanation, if it is to attain credibility.

The Research

Each of the assumptions relating the admired choice to personal decisions, both before and after group discussion of CD problems, will be examined experimentally. In particular, these assumptions are:

(1) the admired choice is premised upon a subset of the reasons leading to personal choice,

(2) this subset consists of the more important considerations a person uses in making personal decisions,

(3) changes in personal choice accompany the acquisition of new information considered relevant to a decision on CD problems,

(4) changes in admired choice are contingent upon receiving new information which is not only relevant but relatively important, and

(5) admiration for a particular choice is not a function of extreme decisions or a large number of arguments supporting a particular CD alternative, but rather is a function of the proportion of important to less important arguments supporting the alternative of a CD problem.

Four experiments are presented in the following chapters, each of which bears upon at least one of these assumptions.

Experiment I attempts to examine the hypothesis that, following group discussion of risky problems, the average importance of arguments available to individual members, favouring the risky alternative, increases. As well, a similar increase in the importance of arguments associated with the cautious alternative of cautious problems is expected to occur, following group decision-making. Given the present conception of the admired choice, such shifts in the average importance of arguments are expected to be a necessary correlate of the reported shifts in admired choice on risky and cautious CD problems, following group decision-making. Shifts in personal preferences, admired decisions, and the number of arguments favouring the alternatives of CD problems are also examined in this study.

Experiment II assesses more directly the hypothesis that personal decisions and admired choices are influenced

by different facets of information made available to individuals. The experiment was designed to demonstrate that personal decisions on CD problems are contingent upon the proportion of arguments favouring a particular alternative of a CD problem, whereas the admired choice is affected by the proportion of information favouring a particular CD alternative that is rated as important.

The third experiment is concerned with testing the hypothesis that the arguments attributed to a hypothetical admired person, making a decision on a CD problem, will be fewer in number than those an individual would assign to himself when making the same decision. Even though fewer arguments are expected to be associated with the decisions of an admired person, they are predicted to be those typically rated as important by decision-makers.

The fourth, and last, study is concerned with testing the proposition that the degree of admiration accorded an individual is dependent upon the ratio of relatively important to unimportant arguments used by that person in arriving at a decision on a CD problem.

Before proceeding to a detailed presentation of each experiment, an issue relevant to the analyses of each experiment must be considered. In each experiment, hypotheses have been formulated which make specific predictions about the behaviour of subjects when faced with risky and cautious CD problems. As such, the design of

Each experiment has included the type of CD problem presented to subjects as an independent variable. The effects of this variable upon the dependent measures relevant to each experiment have been assessed by means of analysis of variance. Item type, in each such analysis, is included as a factor involving two levels; risky problems and cautious problems. In order to create the appropriate levels of this factor, two risky and two cautious problems were used in each experiment. Since individual problems can be considered as sampled from their respective populations, it is not unreasonable to expect that they will vary, in terms of their effects upon any particular dependent measure. Hence, the variance due to problems is not likely to be zero. This suggests that the individual CD problems should also be included as a factor in any analysis of variance involving item type. In being sampled, however, a specific item factor must be included in the analysis as a random factor, whereas item type can be considered a fixed factor. Since each analysis of variance will include at least two random factors (subjects in the experiments are always a random factor), it was not possible to construct F ratios for a number of main effects and interactions, involving variables of substantive interest, by direct application of the rules (Winer, 1971) based upon expected values of mean squares. Quasi F ratios (F'), however, which have the proper

structural requirements, in terms of expected values of mean squares, can be constructed to test the effects requiring evaluation. Although the sampling distribution of the F' ratio is not the usual F distribution, the latter distribution may be used as an approximation if appropriate degrees of freedom, associated with each effect, are used. These are calculated using a formula suggested by Satterthwaite (1946; as cited by Winer, 1971).

The inclusion of item type and specific items in the designs of each experiment is a novel feature of this research, given the usual techniques of analysis in this area. Items are often treated in a somewhat cavalier fashion in choice shift studies. Either ratings on items are averaged across or are analyzed separately. Coleman (1964) and Clark (1973) argue that similar approaches in the area of verbal learning often lead to misleading conclusions. Even if the inclusion of specific items requires the use of an unfamiliar statistic (F'), the approximation of the quasi F ratio is so close to a true F ratio (Clark, 1973) that its use is seen as preferable to other procedures which either ignore specific items as a source of variation or treat them as levels of a fixed factor.

In turning now to the research, the presentation of each experiment will follow much the same format. An

introduction to each study will detail the rationale and specific hypotheses. This will be followed by a description of the methodology, the presentation of analyses and results, and finally a discussion specific to each study.

CHAPTER V

EXPERIMENT I

Advocates of a relevant arguments explanation of the choice shift presume that during group discussion more arguments come out in favour of one alternative of a CD problem because most members begin with more information favouring that alternative. Changes in personal decision occur since some of the information is new, resulting in group participants ending up with more information favouring the preferred alternative than initially. A direct implication of this is that the majority of group members should have more reasons supporting their desired alternative following group discussion than could be articulated prior to collective decision-making. The argument of this present study goes further; not only should group members have more information to support their favourite alternative but also there should be more important information favouring this alternative. The average importance of the arguments supporting the preferred alternative should increase. This, of course, is the explanation for why admired choice changes following group discussion. If admired choice shifts, a person is expected to be in possession of new arguments that are considered relatively

more important than some previously considered relevant.

The specific hypotheses of this study are that:

(1) group members will have more arguments favouring the alternative originally preferred, following group discussion, than were available to them prior to the group decision,

(2) the average importance of the arguments in favour of the preferred alternative will increase,

(3) the admired choice will shift in the same direction as personal choice following discussion of CD problems that are known to give rise to group-induced shifts in decision.

Method

Overview

Subjects in this experiment were randomly assigned to one of three different conditions, each of which involved a pretest, a group phase and a posttest. In two of these conditions, the pretest required the completion of the same four tasks. Subjects indicated their personal choice of minimum odds on four CD problems, listed the arguments they considered in making each of these choices, rated the arguments as to how important they were in influencing personal choices and also estimated their most admired choice on each problem. This initial phase in both conditions preceded subjects being brought together to form four-person groups. In one condition, the groups

engaged in discussion relevant to each of the four CD problems and had to reach a unanimous group decision as to what would be the best choice of odds with regard to each. In the second condition, the four individuals in each group sat around a table and were instructed to write individual essays on how university education might be improved. These groups were not to engage in any discussions. For both of the conditions so far described, the posttest involved exactly the same tasks as the pretest.

In the third condition, the pretest phase required subjects to indicate only personal choices with regard to each of the four CD problems. Following this, groups of four were created and each group was instructed to reach a unanimous decision on each item. The last phase in this condition required subjects to again make personal choices on each of the four CD problems. This third condition was included in order to evaluate whether or not the addition of a number of measures in the pretest phase of the typical paradigm, as is the case in previously described conditions, alters the usual shift phenomena.

Subjects

One hundred and thirty-three students took part in this experiment. The data obtained on one hundred and twenty of these were retained for analysis (Appendix A). Ninety-four of the subjects were students whom the present author was teaching in a Social Problems course, twenty-

four were students taking a sociology course being given during the same term, and the remaining fifteen students were volunteers who were enrolled in a Physical Education course, also being given during the same term.

Materials

CD Problems. A set of four CD problems was used that included two items known to yield reliable risky shifts and two problems which typically shift in the cautious direction (Appendix A).

Dependent Measure Booklets. In conditions one and two, each subject was initially given four dependent measure booklets. Each of the booklets related to one of the four different CD problems. Each of the four booklets was divided into four sections. One section involved instructions that requested the subject to make a personal choice on a CD problem. Another section required subjects to indicate an admired choice on the same CD problem. A third set of instructions required subjects to list the arguments that they felt were relevant in making a personal decision on the CD problem. In order to do this, subjects first read the CD problem and then turned to a new page. This page was divided into two columns with headings in the left and right column reading "Risky Alternative" and "Cautious Alternative," respectively. Each column was further divided horizontally into small boxes. It is in these boxes that subjects wrote their

relevant arguments. Following the listing of arguments was the next task related to a particular CD problem. The instructions of this section began by asking subjects to rip off the page of instructions and to turn back to the page on which they listed their arguments. The instructions then went on to describe how subjects should rate the importance of each of their relevant arguments. The instructions presented a seven-point bipolar scale which ranged from "very important" to "not at all important," and how this scale was to be used to rate each of their already written arguments. For each of their own arguments, subjects were asked to choose a number, from the scale described, that best reflected the importance of a particular argument and then write that number beside the argument listed. As a result, each argument listed ended up accompanied by an importance rating. Of necessity, the importance rating always followed the listing of arguments. These two sections will be referred to hence as the arguments-importance section. The arguments-importance section, the personal choice section, and the admired choice section were randomly arranged within any one dependent measure booklet. This was the case with each of the four dependent measure booklets. Each of the four dependent measure booklets was made available to a subject in a pile that was also arranged in a random order.

In condition three the instructions requested only

that subjects make a personal decision on each of the four CD problems.

Procedure

Subjects were assigned to one of five experimental sessions on the basis of timetabling convenience for the students. Four of the one-hour sessions were held at different times in one day, and the fifth was scheduled a week later.

Before each session, dependent measure booklets were set out on desks in front of the available chairs in the experimental room. One third of the desks were randomly assigned the dependent measure booklet which required only personal choices with regard to each of the CD problems. The remaining desks were assigned all four booklets.

When subjects appeared for a session, they were randomly assigned to a desk. When all subjects were seated, they were instructed to complete the booklets on their desk. After the initial tasks were completed, the subjects were divided into four-person groups and assigned to separate cubicles. The subjects who completed only the personal choice booklet were in groups with subjects who had completed the same task. This was similarly the case with subjects who had been assigned all four dependent measure booklets. Half of the groups, comprised of subjects who initially completed the four dependent measure booklets, were then given fresh copies of the four CD

problems and asked to arrive at unanimous group decisions on each of the items. The remaining half of these groups were instructed to write an essay on how they felt university education could be improved.

All groups whose members initially indicated only personal choices with regard to the four problems were requested to reach unanimous decisions on each of the four problems, having been given new copies of each when they arrived at their cubicles. After the group discussions and essay writing had been completed, all subjects returned to the large experimental room and were given the same number of booklets they were initially assigned. They were then asked to complete these tasks a second time.

Results

This experiment involves six dependent measures. They are personal decisions, admired choices, the number of arguments in favour of the risky alternative, the number of arguments favouring caution, the average importance of risky arguments, and the average importance of cautious arguments. The scores on these measures were analyzed using a six-way analysis of variance, in each case. One factor is the group condition factor. The first level of this variable involves group discussion, to consensus, of the CD problem in the study, and the second requires subjects to work at an extraneous control task in the same setting as subjects in level one of this variable.

In the analysis this is treated as a fixed factor.

The second factor is called the decision factor, the two levels of which are the individual decisions made prior to the particular group condition subjects find themselves in, and the personal choices made after being in one of the two group settings. This is also a fixed factor in the analysis.

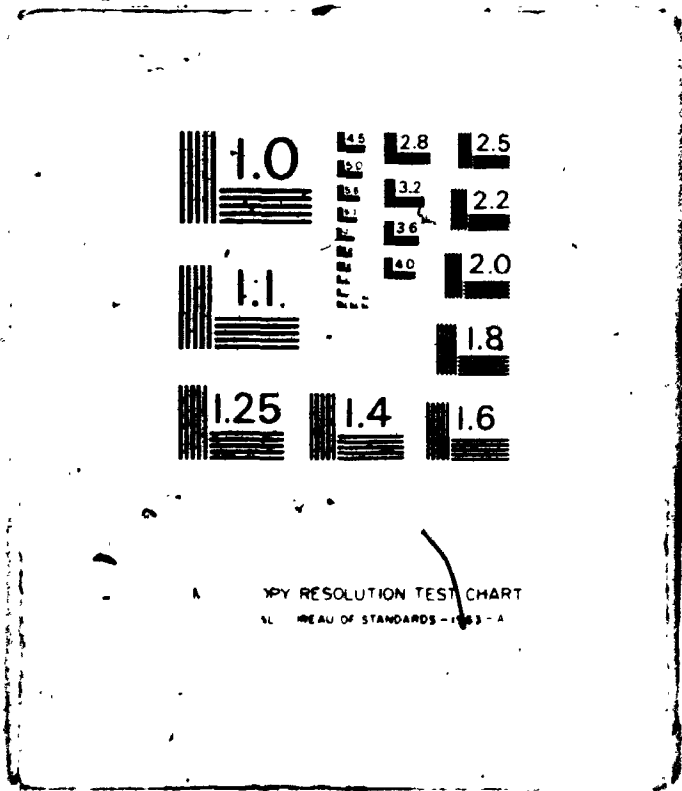
Item type is a factor, involving the levels of risky and cautious CD problems. This fixed factor is created using two risky and two cautious problems. These items, as a specific item factor, are nested within their respective item type. The factor of specific problems is treated as a random factor.

Since groups are composed of four individuals in each of the group conditions of the experiment, one can expect that there will be variance associated with each particular group. Individual groups, then, are included as a random factor, consisting of ten levels, and are nested within group condition. The final factor in the analysis is the random factor of subjects. They are nested within group condition and groups.

The Minimum Probability Choice

In order to discuss the analyses of personal decisions (as is also the case with the other dependent measures in this experiment), a stylistic problem of scale must be faced. There are six main effects, eleven two-way

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interactions, and five three-way interactions which could be statistically significant. Any attempt to explain twenty-two potentially significant effects is at best likely to be cumbersome, if not counter-productive. Recall that the factors of specific items, groups, and subjects are included as control or methodological factors. Any significant effects involving these factors justifies the inclusion of these factors in the design, in the sense that the assumption of null variation associated with these factors is unwarranted. Their significance, however, does not detract from the interpretation of effects related to the substantive factors included in this analysis, these being decisions, group condition, and item type. These methodological factors are included in the analysis, in fact, to guard against alternative interpretations which refer to factors such as groups, specific items or individual differences in subjects, in order to account for significant effects, involving substantive factors.

In an effort to promote economy in the presentation of results, only the significant findings involving group conditions, decisions and item type will be specifically discussed. All significant effects involving subjects, groups and specific items will be clearly indicated as such in the appropriate analysis of variance tables. They will be discussed only to the extent that they aid in the

FIGURE 2

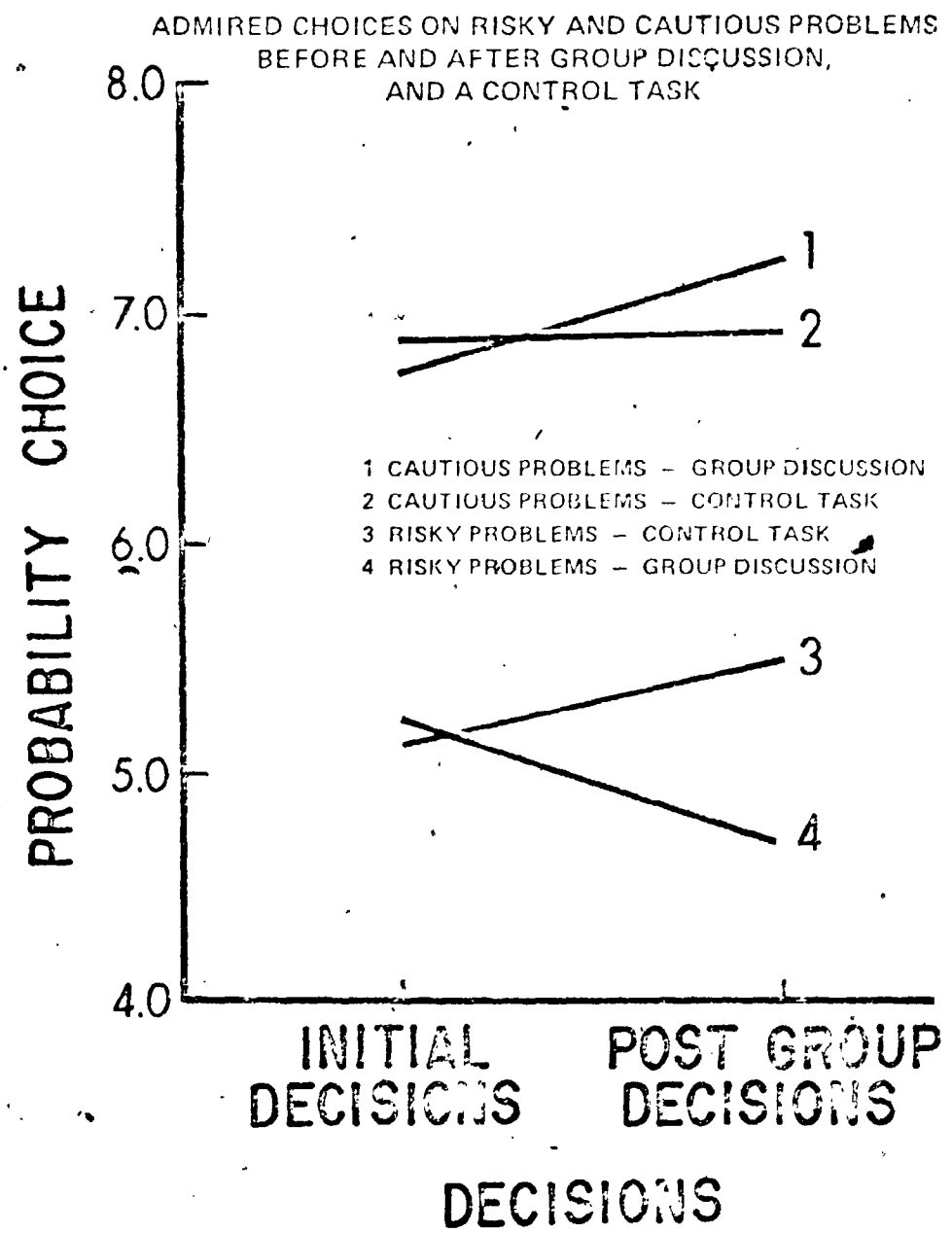


TABLE 1

Analysis of Variance Summary Table
for Personal Choices

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Group (G)	18	4.36	.85
Item Type (T)	1	389.0	40.22*
Decision (B)	1	3.45	6.57*
Group Condition (A)	1	7.01	6.66*
G X T	18	2.13	.35
G X B	18	1.06	1.15
T X B	1	9.26	9.44*
T X A	1	.97	1.45
G X T X B	18	.72	.87
B X A	1	.35	.20
T X B X A	1	7.87	5.43*
			<u>F</u>
Item Level (L)	2	5.87	.99
L X A	2	2.60	.44
L X B	2	.64	.55
L X B X A	2	1.88	1.63
Subjects (S)	60	2.40	.75
S X T	60	3.24	1.01
G X L	36	5.94	1.85
S X L	120	3.19	
S X B	60	1.05	.80
S X T X B	60	.97	.75
G X L X B	36	1.15	.90
S X L X B	120	1.28	

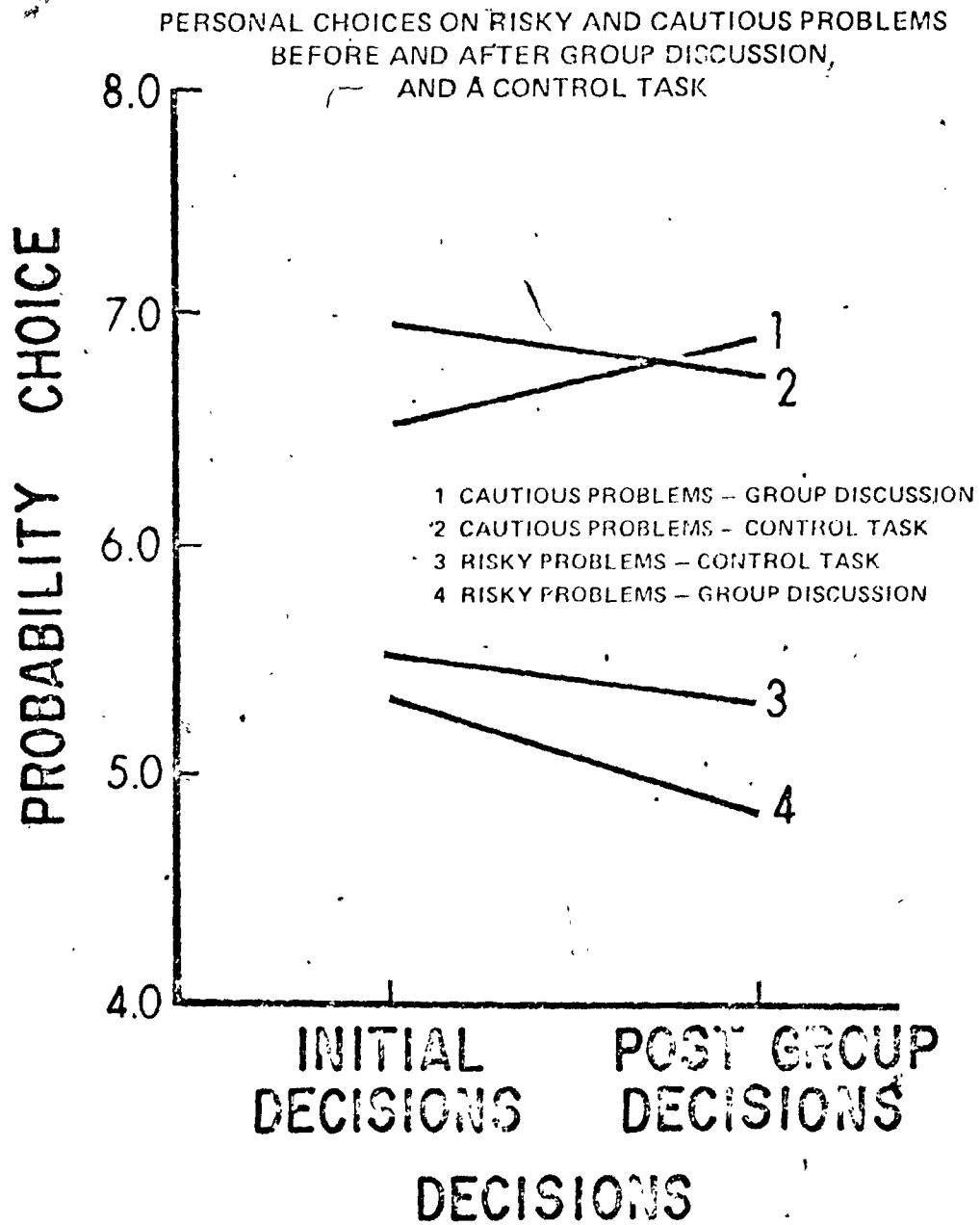
* p < .05

TABLE 2

Personal Choices on Risky and Cautious
CD Problems Before and After Two
Levels of Group Condition

<u>Condition</u>	<u>Problem Type</u>	<u>Specific Problem.</u>	<u>Decisions</u>	
			<u>Initial</u>	<u>Final</u>
Group Discussion	Risky	1	5.15	4.63
		2	5.60	5.00
		<u>Mean</u>	<u>5.38</u>	<u>4.81</u>
	Cautious	1	6.50	7.03
		2	6.60	6.80
		<u>Mean</u>	<u>6.55</u>	<u>6.91</u>
Control Task	Risky	1	5.50	5.00
		2	5.48	5.55
		<u>Mean</u>	<u>5.49</u>	<u>5.28</u>
	Cautious	1	6.80	6.50
		2	7.10	7.05
		<u>Mean</u>	<u>6.95</u>	<u>6.78</u>

FIGURE 1



The significant decision by item type interaction reveals that decisions on risky problems are more risky, and choices on cautious problems more cautious, in the post decision conditions, than those in the pregroup decisions.

All the significant effects, so far described, can be better understood on the basis of an interpretation of the significant three-way interaction which involves group condition, item type and decisions. This interaction is accounted for by the findings that decisions on risky problems become more risky, and choices on cautious problems more cautious following group discussion, compared with the changes in choice following the extraneous group activity in the control group. These shifts to risk and caution on risky and cautious problems, respectively, explains why post manipulation decisions are more risky on risky problems, and more cautious on cautious items, following group manipulation, than are those found with initial decisions.

The further finding that shifts to risk on risky problems, following group discussion, are greater than the cautious shifts on cautious problems, explains why the scores in the experimental group are less cautious than those in the control group. This fact, however, must be considered in conjunction with the previously discussed result indicating that the initial control group means, on

risky and cautious problems, were more cautious than those found in the experimental group.

The greater shift to risk on risky problems also explains why post manipulation decisions are more risky than those made initially.

The Admired Choice

The analysis of scores on the measure of admired choice revealed four significant effects of interest. The F' ratios associated with item type, group condition, group condition by item type, and the three-way interaction involving conditions, decisions and item type all exceeded the critical F ratio established for each using an alpha level of .05 (Table 3).

The significant item type effect (Table 4, Figure 2) reflects the finding that before and after group manipulation, and in the experimental and control group conditions, risky CD problems receive riskier choices than do cautious problems.

The significant condition effect results from the mean choices in the experimental group being more risky than those in the control condition.

The interaction between group condition and item type is significant due to risky problems receiving more risky choices, in the experimental group, than are indicated in the control group. The choices on cautious problems are also more cautious in the experimental group

TABLE 3

Analysis of Variance Summary
Table for Admired Choices

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F'</u>
Group (G)	18	3.68	.41
Item Type (T)	1	514.80	81.84*
Decision (B)	1	1.06	1.20
Condition (A)	1	2.03	3.11*
G X T	18	3.91	.53
G X B	18	4.15	.82
T X B	1	3.90	1.73
T X A	1	11.03	4.96*
G X T X B	18	5.54	1.22
B X A	1	2.03	1.55
T X B X A	1	16.19	6.17*
			<u>F</u>
Item Level (L)	2	11.29	1.26
L X A	2	.16	.02
L X B	2	1.83	.36
L X B X A	2	2.31	.45
Subjects (S)	60	7.25	1.02
S X T	60	6.28	.89
G X L	36	8.93	1.26
S X L	120	7.09	
S X B	60	3.64	.97
S X T X B	60	3.18	.97
G X L X B	36	5.12	1.37
S X L X B	120	3.74	

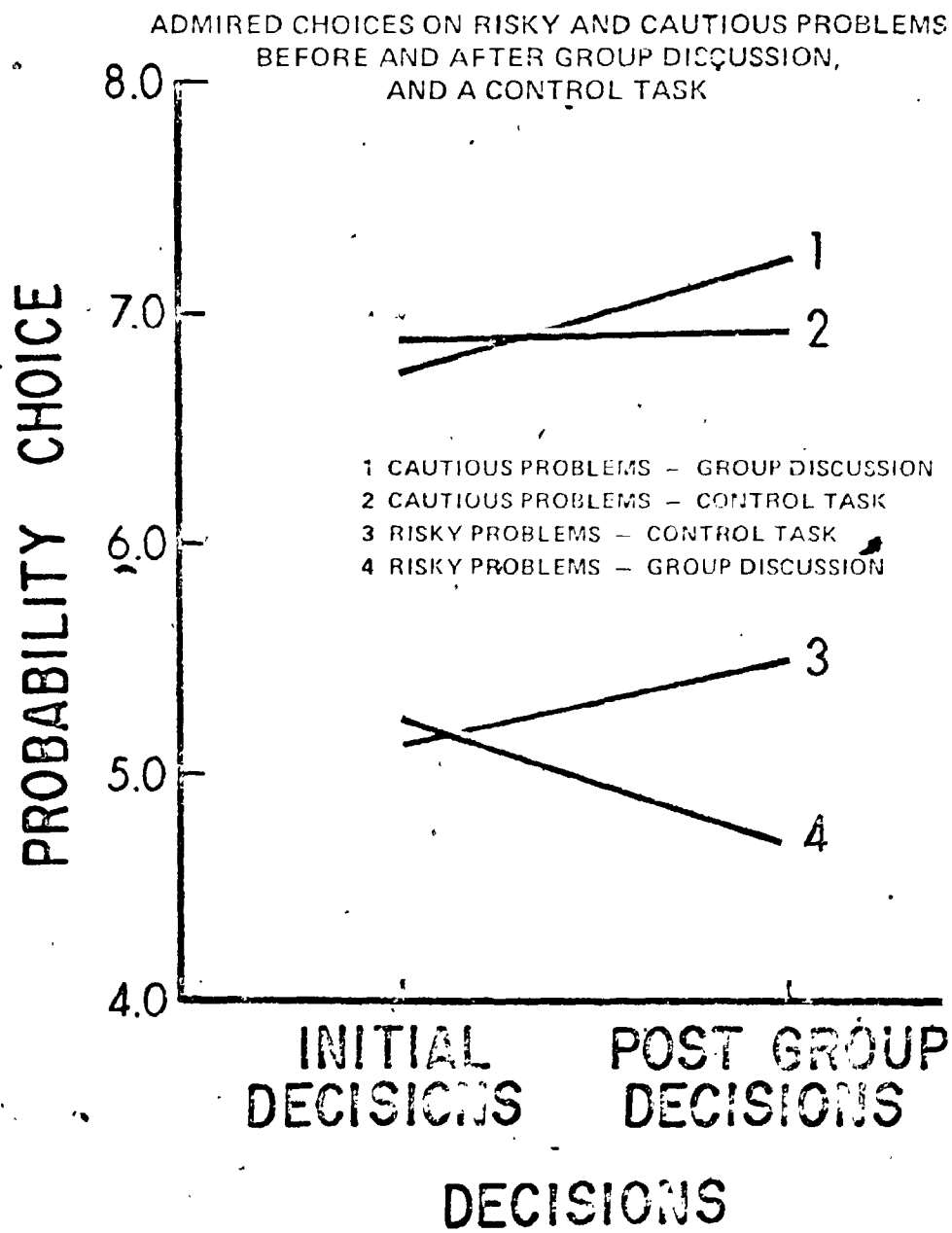
* $p < .05$

TABLE 4

Admired Choices on Risky and Cautious
CD Problems Before and After Two
Levels of Group Condition

<u>Condition</u>	<u>Problem Type</u>	<u>Specific Problem</u>	<u>Decisions</u>	
			<u>Initial</u>	<u>Final</u>
Group Discussion	Risky	1	5.48	4.95
		2	4.95	4.45
		<u>Mean</u>	<u>5.21</u>	<u>4.70</u>
	Cautious	1	6.80	7.03
		2	6.75	7.45
		<u>Mean</u>	<u>6.78</u>	<u>7.24</u>
Control Task	Risky	1	5.60	5.58
		2	4.70	5.45
		<u>Mean</u>	<u>5.15</u>	<u>5.51</u>
	Cautious	1	6.78	6.88
		2	6.93	6.88
		<u>Mean</u>	<u>6.85</u>	<u>6.88</u>

FIGURE 2



than those in the control group.

Again, the significant effects described above are better understood in light of the mean differences which lead to the significant item by decision by condition interaction. This three-way interaction results from admired choices on risky problems becoming more risky, and choices on cautious problems shifting cautious, following group discussion in the experimental group, whereas the shifts on CD problems, in the control condition, are of small magnitude. These differences also explain the conditions by item type interaction. It is the finding that choices on risky problems are riskier following group discussion than they are after the control task which leads to decisions on risky problems being more risky in the experimental group than in the control group. Similarly, the fact that more cautious choices on cautious problems follow group discussion, accounts for the more cautious decisions on cautious problems in the experimental as opposed to control group conditions.

A further examination of the means associated with the three-way interaction indicates that the shifts to risk on risky problems, following group discussion, are greater than the cautious shifts on cautious problems, in the same condition. These riskier post manipulation choices on risky problems, in the experimental group condition, account for the finding that the experimental

TABLE 7

Analysis of Variance Summary Table for Number
of Arguments in Favour of Caution

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F'</u>
Group (G)	18	1.68	.94
Item Type (T)	1	111.38	28.80*
Decision (B)	1	.26	1.57
Condition (A)	1	1.50	.87
G X T	18	2.74	1.89*
G X B	18	.72	1.89
T X B	1	.56	1.44
T X A	1	1.21	1.22
G X T X B	18	.57	1.83
B X A	1	.69	1.87
T X B X A	1	.08	.40
			<u>F</u>
Item Level (L)	2	2.58	1.76
L X A	2	.05	.04
L X B	2	.38	.77
L X B X A	2	.13	.27
Subjects (S)	60	1.76	1.24
S X T	60	1.40	.99
G X L	36	1.47	1.03
S X L	120	1.42	
S X B	60	.66	.85
S X T X B	60	.61	.78
G X L X B	36	.49	.63
S X L X B	120	.77	

* $p < .05$

TABLE 5

Analysis of Variance Summary Table for
Number of Arguments in Favour of Risk

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F'</u>
Group (G)	18	1.65	1.04
Item Type (T)	1	342.22	72.30*
Decision (B)	1	.10	1.58
Condition (A)	1	1.06	.45
G X T	18	2.57	1.59
G X B	18	.14	.47
T X B	1	4.56	21.10*
T X A	1	1.60	.77
G X T X B	18	2.37	1.20
B X A	1	2.25	.53
T X B X A	1	4.56	8.52*
			<u>F</u>
Item Level (L)	2	3.49	2.62
L X A	2	.83	.62
L X B	2	.02	.11
L X B X A	2	.43	3.09
Subjects (S)	60	1.48	1.15
S X T	60	1.57	1.22
G X L	36	1.33	1.04
S X L	120	1.28	
S X B	60	.28	1.60*
S X T X B	60	.23	1.35
G X L X B	36	.14	.81
S X L X B	120	.17	

* $p < .05$

TABLE 6

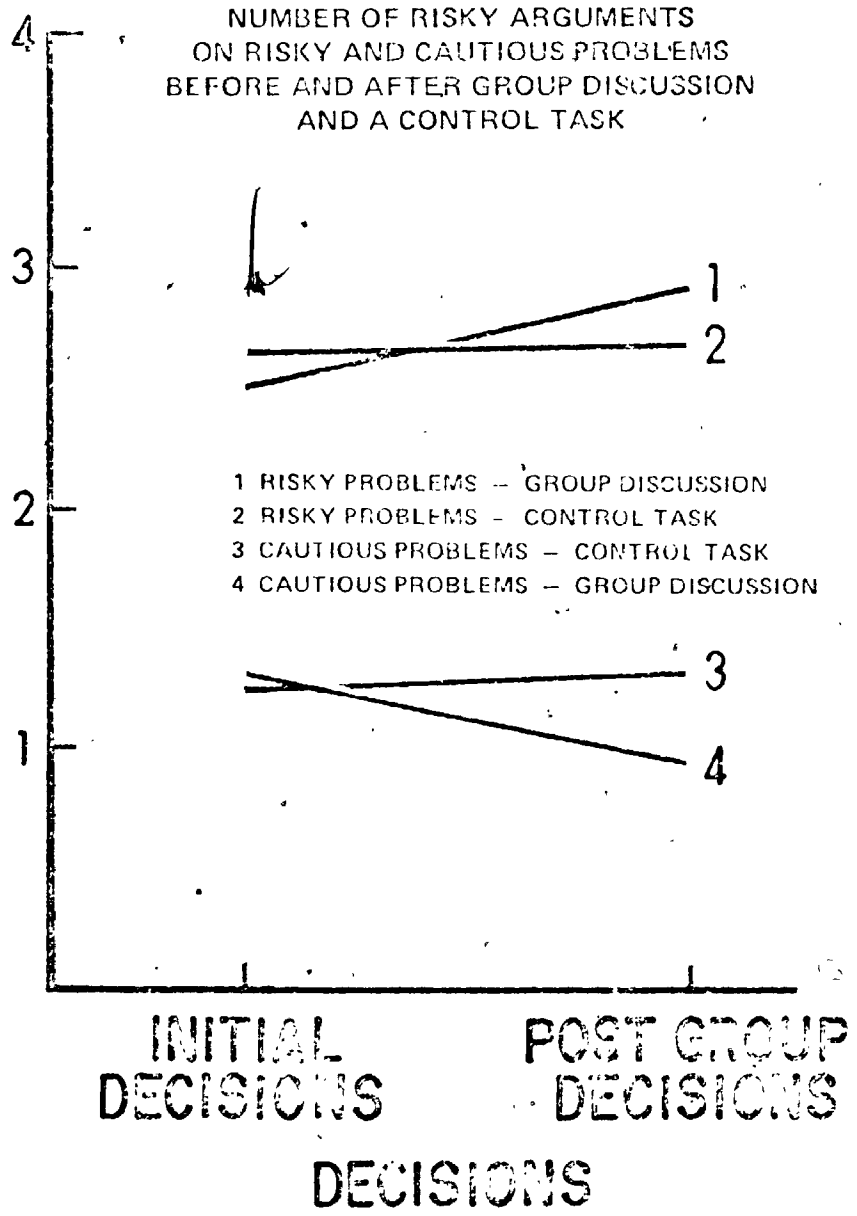
Number of Arguments Favouring Risk on Risky
and Cautious CD Problems Before and After
Two Levels of Group Condition.

<u>Condition</u>	<u>Problem Type</u>	<u>Specific Problem</u>	<u>Number of Arguments Initial</u>	<u>Final</u>
Group Discussion	Risky	1	2.55	2.80
		2	2.53	2.93
		<u>Mean</u>	<u>2.54</u>	<u>2.86</u>
	Cautious	1	1.43	1.03
		2	1.20	.90
		<u>Mean</u>	<u>1.31</u>	<u>.97</u>
Control Task	Risky	1	2.65	2.83
		2	2.65	2.60
		<u>Mean</u>	<u>2.65</u>	<u>2.71</u>
	Cautious	1	1.48	1.58
		2	1.10	1.13
		<u>Mean</u>	<u>1.29</u>	<u>1.35</u>

FIGURE 3

NUMBER OF ARGUMENTS FAVOURING RISK

NUMBER OF RISKY ARGUMENTS
ON RISKY AND CAUTIOUS PROBLEMS
BEFORE AND AFTER GROUP DISCUSSION
AND A CONTROL TASK



risky alternative of cautious problems, however, declines, following group discussion, relative to the change in number of arguments favouring the risky alternative of these problems, following irrelevant group activity. These outcomes are consistent with the finding of a significant item type by decision by condition interaction.

It is the increase in arguments favouring risk on risky problems, following group discussion, that results in the overall mean number of risky arguments on risky problems being greater in the post decision conditions than is the case with initial decisions. As well, the decline in these arguments relevant to cautious problems in the post decision condition of the experimental group accounts for there being an overall lower number of arguments on cautious problems in the second, post manipulation condition as compared to those in the first level of the decision factor. This details the basis for the significant decisions by item type interaction.

Number of Cautious Arguments

The only significant effect of interest with regard to the "number of cautious arguments" dependent variable is item type (Table 7). Table 8 indicates that this is due to more arguments being written in favour of the cautious alternative of cautious problems than is the case with risky problems.

TABLE 7

Analysis of Variance Summary Table for Number
of Arguments in Favour of Caution

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F'</u>
Group (G)	18	1.68	.94
Item Type (T)	1	111.38	28.80*
Decision (B)	1	.26	1.57
Condition (A)	1	1.50	.87
G X T	18	2.74	1.89*
G X B	18	.72	1.89
T X B	1	.56	1.44
T X A	1	1.21	1.22
G X T X B	18	.57	1.83
B X A	1	.69	1.87
T X B X A	1	.08	.40
			<u>F</u>
Item Level (L)	2	2.58	1.76
L X A	2	.05	.04
L X B	2	.38	.77
L X B X A	2	.13	.27
Subjects (S)	60	1.76	1.24
S X T	60	1.40	.99
G X L	36	1.47	1.03
S X L	120	1.42	
S X B	60	.66	.85
S X T X B	60	.61	.78
G X L X B	36	.49	.63
S X L X B	120	.77	

* $p < .05$

TABLE 8

Number of Arguments Favouring Caution
on Risky and Cautious CD Problems
Before and After Two Levels
of Group Condition

<u>Condition</u>	<u>Problem Type</u>	<u>Specific Problem</u>	<u>Number of Arguments</u>	
			<u>Initial</u>	<u>Final</u>
Group Discussion	Risky	1	1.88	1.75
		2	1.60	1.78
	Mean	<u>1.74</u>	<u>1.76</u>	
	Cautious	1	2.50	2.68
		2	2.30	2.50
	Mean	<u>2.40</u>	<u>2.59</u>	
Control Task	Risky	1	1.90	1.80
		2	1.675	1.65
	Mean	<u>1.79</u>	<u>1.73</u>	
	Cautious	1	2.80	2.78
		2	2.55	2.60
	Mean	<u>2.68</u>	<u>2.69</u>	

The Importance of Arguments Favouring the Risky Alternative

Item type, and the interaction between decisions, conditions and item type led to statistically significant effects upon the importance ratings of arguments favouring the risky alternative (Table 9).

The significant item type effect reveals that the arguments favouring the risky alternative of risky problems were rated as more important (Table 10, note that a rating of 1 indicates high importance) than those favouring the same alternative of cautious problems.

The three-way interaction results from arguments favouring the risky alternative of risky problems being rated as more important following group discussion than they were initially whereas the ratings of these arguments following the control task decrease in importance compared with initial decisions.

The Importance of Arguments Favouring the Cautious Alternative

With this dependent measure item type, conditions by item type, and the interaction involving decisions, conditions and item type were all significant, using an alpha level of .05 to establish the critical F ratios (Table 11).

The item type effect indicates that the importance of arguments favouring a cautious choice on cautious problems is greater than the importance of arguments attached to the cautious alternative of risky problems (Table 12).

TABLE 9

Analysis of Variance Summary Table for Importance
of Arguments in Favour of Risk

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F'</u>
Group (G)	18	3.13	1.16
Item Type (T)	1	280.37	15.04*
Decision (B)	1	.77	1.56
Condition (A)	1	.26	.17
G X T	18	3.06	.99
T X B	18	.61	.78
T X B	1	1.64	2.27
T X A	1	.59	.41
G X T X B	18	.81	1.03
B X A	1	.90	2.20
T X B X A	1	2.24	11.60*
			<u>F</u>
Item Level (L)	2	17.45	9.32*
L X A	2	.27	.14
L X B	2	.63	.84
L X B X A	2	.14	.19
Subjects (S)	60	2.87	1.54*
S X T	60	3.09	1.66
G X L	36	1.87	1.01
S X L	120	1.86	
S X B	60	.60	1.06
S X T X B	60	.60	1.04
G X L X B	36	.75	1.32
S X L X B	120	.57	

*p < .05

TABLE 10

Importance of Risky Arguments on Risky
and Cautious CD Problems Before
and After Two Levels of
Group Condition

<u>Condition</u>	<u>Problem Type</u>	<u>Specific Problem</u>	<u>Importance of Arguments Initial</u>	<u>Final</u>
Group Discussion	Risky	1	1.84	1.62
		2	2.22	1.72
	Mean	2.03	1.67	
	Cautious	1	2.77	2.90
		2	3.37	3.40
Mean	3.08	3.15		
Control Task	Risky	1	1.70	1.77
		2	1.94	1.91
	Mean	1.82	1.84	
	Cautious	1	2.81	2.91
		2	3.63	3.50
Mean	3.22	3.21		

TABLE 11

Analysis of Variance Summary Table for Importance
of Arguments in Favour of Caution

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F'</u>
Group (G)	18	1.11	.25
Item Type (T)	1	217.97	58.00*
Decision (D)	1	1.02	5.10
Condition (A)	1	.36	.78
G X T	18	1.03	.65
G X B	18	.44	.27
T X B	1	.43	1.82
T X A	1	2.34	6.61*
G X T X B	18	.24	.41
B X A	1	.35	.88
T X B X A	1	3.44	17.15
			<u>F</u>
Item Level (L)	2	4.20	2.81
L X A	2	.84	.57
L X B	2	.25	.52
L X B X A	2	.45	.92
Subjects (S)	60	1.58	1.15
S X T	60	1.47	1.07
G X L	36	1.49	1.09
S X L	120	1.37	
S X B	60	.41	1.38
S X T X B	60	.40	1.35
G X L X B	36	.49	1.65*
S X L X B	120	.30	

*p < .05

TABLE 12

Importance of Cautious Arguments on
Risky and Cautious CD Problems
Before and After Two Levels
of Group Condition

<u>Condition</u>	<u>Problem Type</u>	<u>Specific Problem</u>	<u>Importance of Arguments Initial</u>	<u>Final</u>
Group Discussion	Risky	1	2.90	3.10
		2	2.87	3.00
		<u>Mean</u>	<u>2.89</u>	<u>3.05</u>
	Cautious	1	2.01	1.64
		2	1.59	1.49
		<u>Mean</u>	<u>1.80</u>	<u>1.57</u>
Control Task	Risky	1	2.87	2.52
		2	2.96	2.86
		<u>Mean</u>	<u>2.91</u>	<u>2.69</u>
	Cautious	1	1.94	1.91
		2	1.60	1.57
		<u>Mean</u>	<u>1.77</u>	<u>1.74</u>

The interaction between conditions and decisions is accounted for by the importance of arguments favouring the cautious alternative of risky problems becoming less, and the importance of the arguments advanced in favour of a cautious choice on cautious problems becoming greater in the second decision condition compared with initial decisions. If one looks, however, at the post decision means in both the experimental and control group conditions, it is apparent that the above pattern of results is due almost entirely to the shifts in importance ratings following group discussion. The importance of arguments favouring the cautious alternative of cautious problems increases more, following group discussion, than these same ratings following the control task, in the second group condition. Further, the importance of these arguments, relevant to risky problems, declines more following group discussion than it does after the control task. These findings account not only for the conditions by item type interaction, but also are consistent with the significant three-way interaction indicated.

The Problem of Multiple Measures

A concern that might be voiced, with regard to the study described, is that the inclusion of four specific tasks both before and after group interaction might alter the usual choice shift phenomenon. The typical paradigm requires subjects to complete only one task (personal

decisions) before and after group discussion of a CD problem. A third condition was included in this study to evaluate this hypothesis. Subjects in this condition made personal decisions on each of the four CD problems, discussed each problem in a group and then made individual decisions once again. It is possible, given this condition, to assess whether the multiple measures used in the previous design in any way affect the phenomenon. What is necessary is a comparison between the personal choice made before and after group discussion of CD problems in the previous analysis and the individual decisions made prior to and following group discussion, when there are no other potentially distracting tasks required of subjects (condition three described in the method section of this experiment).

The Analysis

One factor in this analysis was the number of tasks undertaken prior to group discussion. One level of the variable⁴ includes four tasks, one of which is personal decisions. The other level involves only the task of personal decisions. A second factor is the decision factor which includes two levels. This is the "decisions before and after group discussion" variable described in the previous analysis. Item type, specific items and

⁴ The data collected in group condition one of the previous analysis will be used in the present analysis.

groups are also included in this analysis.

The dependent measure which is being evaluated is the minimum probability choices made by subjects. A six-way analysis of variance was performed on these scores. The factors include the five described above and the factor of subjects.

The Results

The analysis (Table 13) revealed that there was a significant decision by problem type interaction. This reflects the finding (Table 14, Figure 4) that personal decisions become more risky on risky problems and more cautious on cautious problems following group discussion. The lack of a significant decision by task number by item type interaction suggests that there is no basis to reject the hypothesis that there is no difference between the two levels of task number in their effects upon shifts in CD decisions.

Discussion

The findings of this experiment, on the whole, are consistent with the stated hypotheses. Personal choices, admired choices and number of arguments favouring the risky alternative of problems were all affected by group discussion as anticipated. The number of arguments favouring the cautious alternative, however, did not show the predicted consequences of discussion. What is of

TABLE 12

Analysis of Variance Summary Table for Personal
Choices Versus Multiple Measures

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F'</u>
Group (G)	18	4.49	1.83
Item Type (T)	1	2.76	30.31*
Decision (B)	1	486.51	2.08
Condition (A)	1	1.06	1.22
G X T	18	5.80	1.25
G X B	18	.74	.63
T X B	1	35.16	75.31*
T X A	1	1.81	.30
G X T X B	1	.73	.61
B X A	18	.06	1.25
T X B X A	1	.01	1.21
			<u>F</u>
Item Level (L)	2	13.82	3.88*
L X A	2	1.33	.37
L X B	2	.73	.76
L X B X A	2	.07	.07
Subjects (S)	60	2.39	.68
S X T	60	4.60	1.31
G X L	36	3.56	1.02
S X L	120	3.50	
S X B	60	.98	1.29
S X T X B	60	.99	1.31
G X L X B	36	.96	1.27
S X L X B	120	.76	

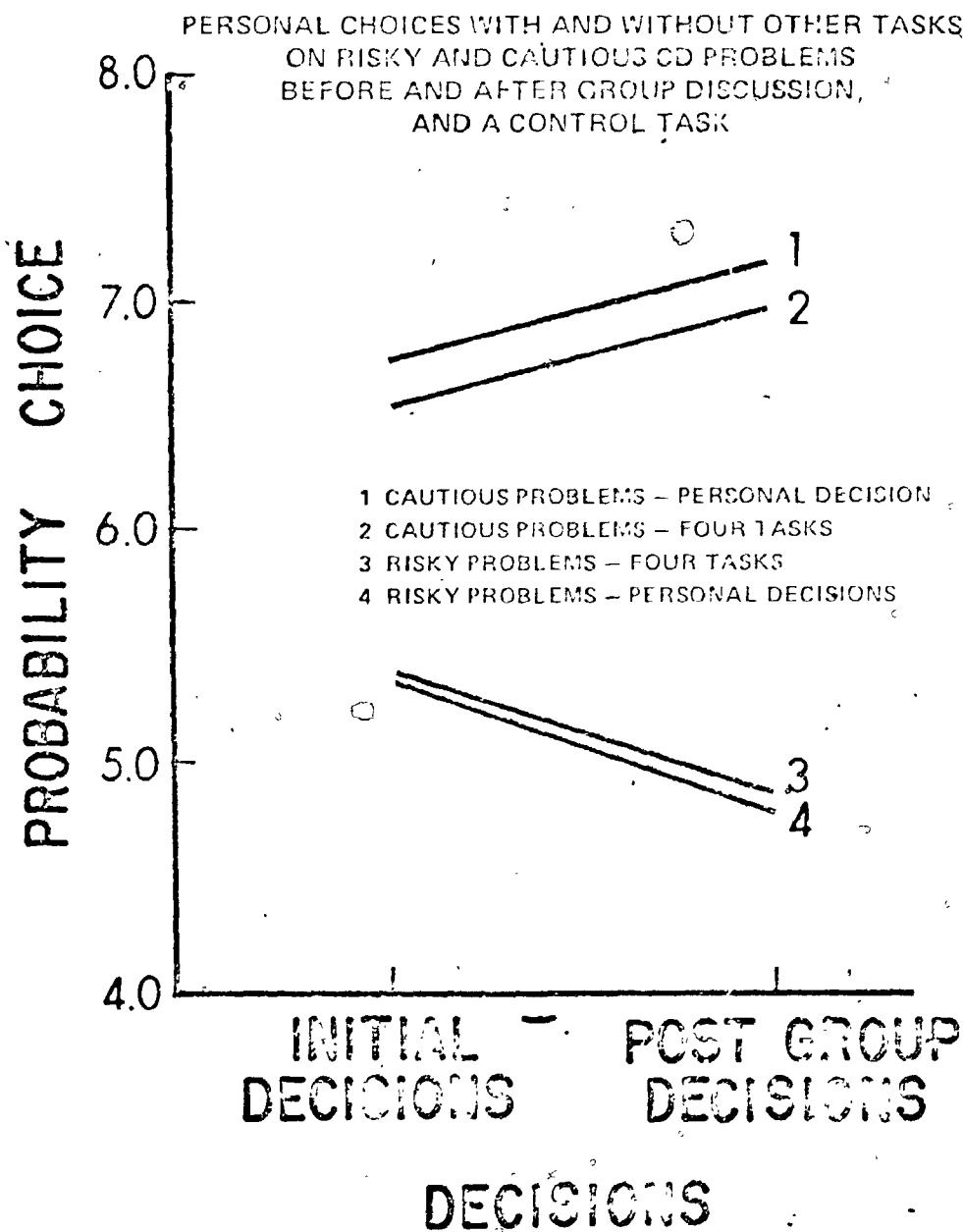
* $p < .05$

TABLE 14

Personal Choices with and without Other
Tasks on Risky and Cautious CD
Problems Before and After
Group Discussion

<u>Condition</u>	<u>Problem Type</u>	<u>Specific Problem</u>	<u>Decisions</u>	
			<u>Initial</u>	<u>Final</u>
Personal Decisions Only	Risky	1	4.98	4.50
		2	5.80	5.20
		Mean	5.39	4.85
	Cautious	1	6.70	7.20
		2	6.83	7.15
		Mean	6.76	7.18
Personal Decisions Plus Three Other Tasks	Risky	1	5.15	4.63
		2	5.60	5.00
		Mean	5.38	4.81
	Cautious	1	6.50	7.03
		2	6.60	6.80
		Mean	6.55	6.91

FIGURE 4



interest in relation to this, is that the average importance of cautious arguments increased following discussion of cautious problems. This suggests that even if there was not a substantial increase in the number of arguments favouring the cautious alternative of cautious problems, there is still a basis to argue that personal choices and admired choices would change on these problems given the increased importance attached to the arguments available to decision-makers. The average importance of arguments favouring the risky alternative also shifted following group discussion as expected.

On the basis of these results, it appears that the conception of the admired choice being proposed, and the overall explanation of the choice shift have both received support. Of critical importance to the account of the admired choice is the finding that the average importance attached to risky and cautious arguments shifts in a manner entirely consistent with shifts in admired choice.

It must be recognized, however, that the shifts recorded lend only correlational support to the view that changes in admired choices are contingent upon changes in the number of important arguments associated with CD alternatives. The following experiment involves an attempt to manipulate the arguments made available to subjects in such a manner as to affect personal choice and admired choices in predictably different ways.

CHAPTER VI

EXPERIMENT I-I

Since it has been suggested that most admired choice and personal choice on CD problems reflect different aspects of the same decision process, it follows that it should be possible to devise a manipulation that differentially affects most admired choice and personal choice. It has been suggested that the most admired choice is a function of the number of relatively important arguments supporting either the risky or cautious alternatives of a CD problem. This suggests that one can alter most admired choice by changing the number of important arguments favouring either alternative of a CD problem. Personal choice, however, is a function of both the relatively important and the relatively unimportant arguments favouring each alternative. Personal choice then will change to the extent that one changes the number of arguments that a person considers relevant to either alternative of a CD problem. This suggests that it is not possible to change most admired choice without changing personal choice. If a person accepted arguments which favoured one alternative and the individual felt these arguments were important, then both personal choice and most admired choice would

move in the direction of that alternative. If, however, one created a situation where an individual came to accept a number of relatively unimportant arguments, then it would be expected that personal choice would move in the direction advocated by these arguments, but most admired choice would not likely be affected. It appears that the best way to demonstrate that one can differentially affect most admired choice and personal choice is to create a situation where an individual accepts a large number of arguments in favour of the least preferred alternative of a CD problem.

Once again, it would seem feasible to take advantage of the fact that the arguments supporting the risky and cautious alternatives of risky and cautious items tend to differ in their relative importance to the decision-maker. The rather overworked example of the risky item can be used to illustrate this. It will be remembered that an individual usually has more arguments supporting the risky alternative for such an item and that the average argument supporting the risky alternative is considered more important to the individual than the average argument supporting the cautious alternative. Consider that one presents to a given individual a number of arguments in favour of the risky alternative that other people say they have used in making their decision on CD items. Since such arguments are rated as important to the people that generate

them (Vinokur & Burnstein, 1974) and are considered persuasive by individuals who rate them (Vinokur & Burnstein, 1974), it is likely that the person they are presented to will accept a good proportion of the arguments and also consider them important to his decision (Ostrom, 1966). The person now has more arguments in favour of the risky alternative and it is likely the new arguments would be considered important. One would then predict that personal decision would shift towards the risky alternative because there are now more arguments favouring this alternative. One would also predict that the most admired choice would become more extreme inasmuch as the new arguments accepted would be considered important.

In a similar way, it should be possible to show that most admired choice and personal choice diverge as a result of presenting arguments in favour of the cautious alternative that other people have used in making their decisions on the same risky item. Such a speculation derives from the following reasons:

(1) If one presents enough arguments in favour of the cautious alternative, the persuasion literature suggests that personal decision would be expected to move in the cautious direction (Goldberg, 1954; Anderson, 1971).

(2) The arguments people have supporting the cautious alternative are usually considered by them to be less important than the reasons supporting the risky

alternative.

(3) People usually rate the reasons supporting the cautious alternative as less persuasive than the reasons supporting the risky alternative.

(4) It would be expected then that even though the reasons supporting the cautious alternative will have an impact on personal decisions, they would have little, if any, impact on most admired choice because of their lesser importance.

Given these considerations, it is possible to devise an experiment which can test the hypothesis that most admired choice and personal choice diverge under appropriate circumstances.

In summary, the predictions of this experiment are as follows:

(1) Personal choices of odds on CD problems will be an inverse function of the proportion of arguments supporting the risky alternative of a particular CD problem. The higher the proportion of arguments in favour of the risky alternative, the lower the probability choice made by subjects personally.

(2) The admired choice of odds will be dependent upon both the type of CD problem being responded to and the proportion of arguments in favour of the risky alternative. With risky problems, a high proportion of arguments in favour of the risky alternative will lead to an

even riskier choice of odds than is found with personal choice under the same conditions. If a preponderance of arguments are presented in favour of the cautious alternative of a risky problem, however, personal choice will be much more in favour of the cautious alternative than is the admired choice. The rate of change of admired choice is lower than that of personal choice, the lower the proportion of arguments in favour of a risky choice.

(3) If a high proportion of cautious arguments are presented in relation to a cautious alternative, admired choice will be more cautious than personal choice given the same circumstances. Presenting a preponderance of arguments in favour of the risky alternative of a cautious problem will change admired choice much less in the direction of a risky choice than is the case with personal choice.

One further point must be raised before going on to the experiment itself. An important assumption made in a number of statements being advanced concerning the admired choice is that new arguments considered persuasive by a decision-maker are likely to become relatively important considerations in the hierarchy of reasons considered relevant to a CD problem. In order to evaluate whether the arguments used, in this and subsequent studies, do differ in the importance individuals attach to them, the arguments used to construct stimulus materials were

independently rated as to how important they would be in decisions on CD problems where the arguments are relevant. These ratings, in effect, constitute a manipulation check. It is of some interest to determine whether the arguments presented to subjects in various experimental conditions differ with regard to perceived importance as predicted. The results of this manipulation check are detailed in Appendix B and are summarized under the heading of Materials in the Method section which follows.

Method

Overview

Subjects were asked to read a CD item. After having read the problem, a list of fourteen arguments relevant to the problem were handed out. The proportion of these fourteen arguments that supported the risky alternative were varied. Subjects were told that an average student at the University of Western Ontario used these arguments to arrive at his decision. Instructions then went on to require subjects to read the arguments and to seriously consider them before arriving at a decision on a CD item. Following a reading of the arguments, half the subjects were asked to choose a probability level that they would most admire the figure in the problem for choosing. The remaining subjects were requested to indicate their personal preference of minimum odds. This procedure was repeated four times, once for each of four CD problems

used in the experiment.

Subjects

Sixty students were recruited to take part in this experiment from the Introductory Psychology course at Huron College. Thirty volunteers were accepted from each of the two sections which made up the course.

Materials

CD Problems. The same four CD problems were used in this experiment that were used in the previous study. Depending upon which experimental condition a subject was in, a subject responded to the minimum probability scale with instructions to make a choice that he would most admire or was asked to indicate a personal preference. The instructions appropriate to these conditions are to be found in Appendix B. A subject responded to each of the four problems in terms of only one instructional set.

List of Arguments. The arguments required for the various conditions in this experiment and for the subsequent two studies to be reported were derived from the arguments solicited from eighty subjects who took part in the previously discussed experiment. These subjects were those that took part in the two conditions of the previous study which required a listing of arguments, personal choices and admired choices both before and after a group condition. The actual arguments used to create a pool

were those obtained from these eighty subjects prior to the group phase in each condition. The arguments from these subjects were formed into a pool of arguments favouring both the risky and cautious alternative of each CD problem. For each problem, twenty arguments were randomly drawn from the pool favouring the cautious alternative and twenty arguments were randomly selected from the available arguments supporting the risky alternative. The forty arguments now available for each CD problem served as the basis for all subsequent stimulus construction involving arguments.

As was indicated in the Introduction to this study, these arguments were rated by an independent group of subjects as to how important they would be in making decisions on CD problems to which they were relevant. These ratings (Appendix B) indicated that, with the two risky problems, the average importance of arguments favouring the risky alternative was greater than the average importance associated with the reasons supporting the cautious alternative. On cautious problems the opposite pattern was observed. The mean importance of the twenty arguments selected in favour of caution was significantly greater than those written in favour of the risky alternative of these same problems.

In the present experiment, subjects were randomly assigned to one of three different argument conditions.

One condition involved ten arguments favouring the risky alternative and four supporting the cautious alternative of each of the four CD problems. The second condition included seven risky and seven cautious arguments, whereas the third level of this variable required four risky and ten cautious arguments for each CD problem. The arguments used in each condition for each problem were randomly selected from the twenty arguments pro risk and the twenty arguments favouring the cautious alternative available for each problem.

As a result of this selection procedure, each of the four CD problems had three different lists of arguments that could be associated with it, each list equal in the number of arguments, but varying in proportion of arguments favouring each alternative of the problem.

Depending upon which of the three argument conditions a subject was in, he received the same number of arguments favouring the risky alternative and the cautious alternative for each of the four problems used in the experiment.

Stimulus Booklets. This experiment involved two important independent variables--proportion of arguments, which included three levels, and instructional set requiring two levels. As a consequence, there are six different conditions with each necessitating a unique stimulus booklet. In all conditions, the first page of the stimulus

booklet was a general description of CD problems. Following this, subjects in all conditions were asked to tear the first five sheets from their booklet. These sheets consisted of one CD problem and a list of appropriate arguments. The proportion of risky to cautious arguments depended upon the level of the proportion variable assigned a particular subject. The instructions then went on to request subjects to read the problem and the arguments. Subjects were also told where the arguments came from, i.e., they were told that an average student at the University of Western Ontario used these arguments when making his personal decision on the particular CD problem. Depending upon the instructional set condition a subject was in, the instructions then asked subjects to indicate their personal choice on the minimum probability scale under the problem or they were asked to indicate the choice they most admired. Subjects were also told that they should seriously consider the arguments accompanying the problem before making their decision. The instructions then went on to request that subjects repeat the above procedure for the next three problems. In each booklet, in each condition, the order to the four problems with their associated arguments was randomly determined.

Procedure

When a subject arrived to take part in the experiment, he was given one of the six stimulus booklets.

These booklets were handed to subjects from a single pile, the order of the booklets in the pile being randomly prearranged.

Subjects were then seated, read the instructions and completed their particular booklet. After all subjects had completed their booklets, they were told the purpose of the experiment.

Results

There is one dependent measure in this study, and that is the minimum choice of odds selected on the CD problems in each condition. The scores on this measure were analyzed using a five factor analysis of variance. One factor is the proportion of arguments supporting the alternatives of the CD problems. There are three levels of this factor and it is treated as fixed. The decision set given subjects is also a fixed factor, which consists of two levels. The third factor is the type of CD problems decisions are made upon. This variable is fixed since the only two levels of interest are risky and cautious problems. The two risky and two cautious problems used to create the item type factor are themselves a factor in the analysis. The two levels of this specific item factor are nested within the item type variable. This factor is considered random. The subjects, as a random factor in this analysis, are nested within proportions of arguments and decision set.

The Minimum Choice of Odds

The analysis of variance summary table is found in Table 15. The significant findings in this experiment were the main effect due to item type, the main effect of proportion of arguments, the proportion of arguments by decision interaction, and the decisions by item type interaction.

The main effects due to item type, and proportion of arguments indicate that risky problems receive riskier choices than do cautious problems, and that the higher the proportion of arguments in favour of risk, the riskier the decision.

The significant effect that is of critical importance to the hypotheses of this experiment is the proportion of arguments by decision type interaction. Examination of the means of the various conditions related to proportion of arguments, decisions, and item type (Table 16, Figure 5) reveals that personal choices become riskier as the proportion of arguments presented in favour of risk increases, regardless of item type. Admired choices, although they change in a similar manner as personal decisions, do not vary as much across the various argument conditions, with both risky and cautious problems. This is consistent with the hypotheses of this experiment, in the sense that personal choices and admired choices were expected to respond differently to the proportion of

TABLE 15

Analysis of Variance of Personal and
Admired Choices under Different
Proportion of Arguments

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F'</u>
Arguments (A)	2	30.72	18.95*
Decisions (B)	1	.15	.06
Item Type (T)	1	60.07	12.73*
A X B	2	7.85	7.27*
A X T	2	.22	.15
B X T	1	24.07	9.90*
A X B X T	2	.32	.35
			<u>F</u>
Subjects (S)	54	2.92	1.15
Item Level (L)	2	4.81	1.89
S X T	54	2.77	1.09
A X L	4	1.26	.50
B X L	2	2.21	.87
A X B X L	4	.71	.28
S X L	108	2.55	

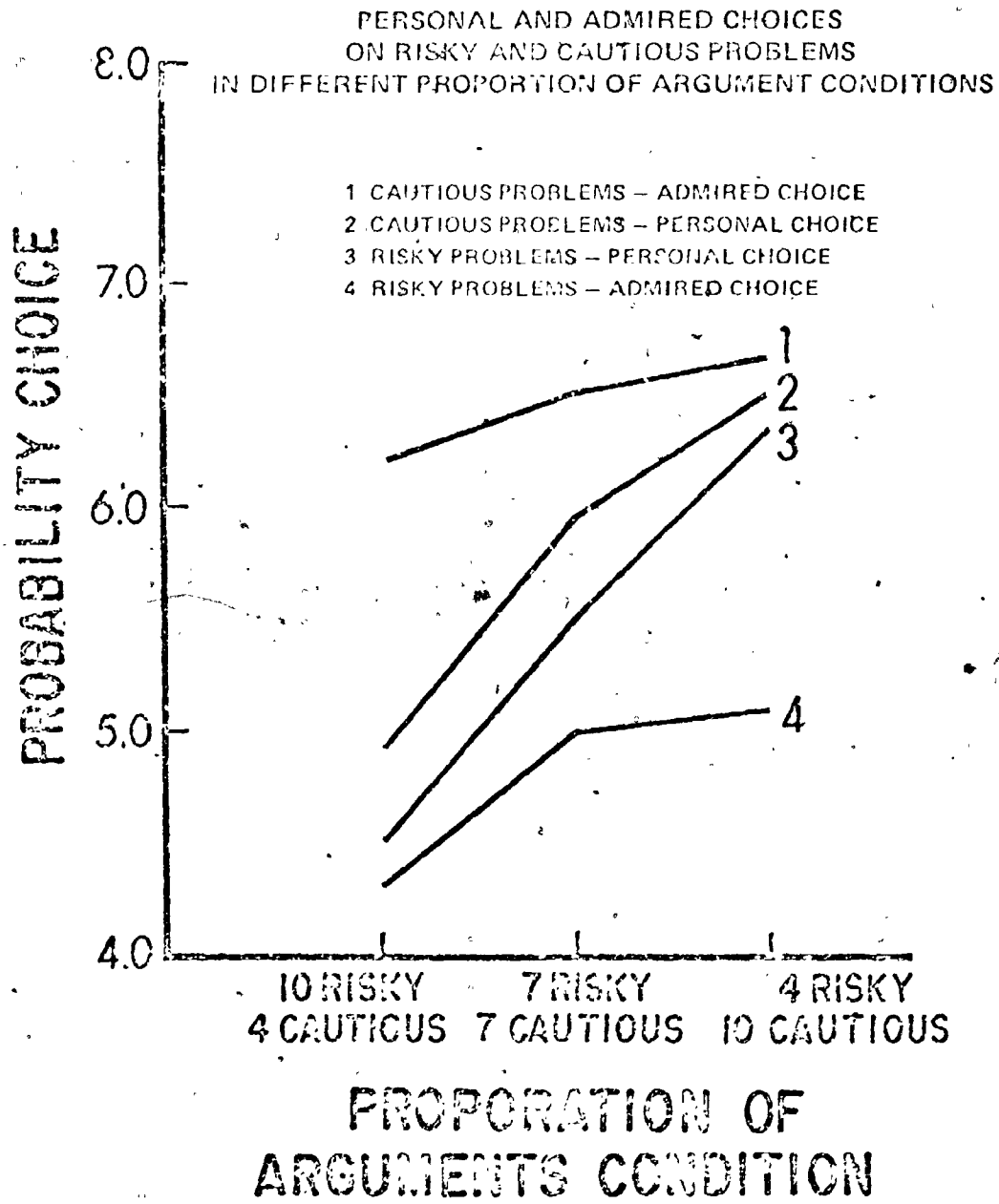
*p < .05

TABLE 16

Personal and Admired Choices on
Risky and Cautious Arguments
in Different Proportion
of Argument Conditions

<u>Argument Condition</u>	<u>Item Type</u>	<u>Specific Item</u>	<u>Decisions</u>	
			<u>Personal</u>	<u>Admired</u>
10 Risky 4 Cautious	Risky	1	4.40	4.20
		2	4.60	4.40
		<u>Mean</u>	<u>4.50</u>	<u>4.30</u>
	Cautious	1	5.00	6.00
		2	4.80	6.40
		<u>Mean</u>	<u>4.90</u>	<u>6.20</u>
7 Risky 7 Cautious	Risky	1	5.70	4.60
		2	5.30	5.40
		<u>Mean</u>	<u>5.50</u>	<u>5.00</u>
	Cautious	1	6.10	6.10
		2	5.90	6.90
		<u>Mean</u>	<u>6.00</u>	<u>6.50</u>
4 Risky 10 Cautious	Risky	1	6.00	4.60
		2	6.80	5.50
		<u>Mean</u>	<u>6.40</u>	<u>5.05</u>
	Cautious	1	6.40	6.20
		2	7.00	7.10
		<u>Mean</u>	<u>6.70</u>	<u>6.65</u>

FIGURE 5



arguments presented subjects. More specific hypotheses than this, however, have been advanced. In order to evaluate these predictions, it is necessary to examine the differences in admired choices between each of the proportion of arguments conditions for both risky and cautious arguments. A similar comparison of means is required for personal choices. In order to make these comparisons, Dunn's procedure (Kirk, 1968) was used.

Personal decisions will be considered first. The first comparison is between the choices made in the condition where there is a high proportion of arguments in favour of caution and those in the condition involving equal numbers of risky and cautious arguments. It was found that the personal choices were significantly more cautious in the high proportion of cautious arguments level than they were in the equal arguments condition on both risky and cautious problems (.66 is the difference required to establish significance at the .05 level). A similar comparison between the equal number of arguments condition and the condition involving a high proportion of arguments, in favour of risk, revealed that choices were significantly more risky in the high proportion of risky arguments condition on both risky and cautious problems.

With decisions in the admired choice conditions, a quite different picture emerges. On risky problems, the admired choices, in the high proportion of arguments

favouring caution condition, are significantly more cautious than those in the arguments condition, involving a preponderance of arguments in support of risk. As well, the decisions in the proportion of arguments condition, favouring the risky alternative, are significantly more risky than those in the equal arguments level of the proportion of arguments factor. There is no significant difference in mean choice between the arguments condition supporting the cautious alternative and the equal arguments condition.

On cautious problems there are no significant differences in admired choice between any of the proportion of arguments conditions. The significant decision by item type interaction reflects the finding that admired choice is riskier than personal choice on risky items and that with cautious problems admired choices are more cautious than personal choices, regardless of the arguments presented subjects. This general statement, however, masks a somewhat disquieting outcome of the present study. It was fully expected that with risky problems the change in admired choice from the condition involving equal number of risky and cautious arguments to the preponderance of risky arguments condition would be greater in the direction of risk than found. There was a significant difference between these two conditions, as has been indicated; however, it is apparent that personal choice

and admired choice are converging, in the arguments condition favouring the risky alternative. As well, it was anticipated that the change from equal numbers of arguments, in favour of each alternative, to the high proportion of arguments favouring caution would result in a greater change in admired choice in the direction of caution, on cautious problems, than obtained. This difference was not found to be significant, and personal choices and admired choices converge in the arguments condition supporting the cautious alternative.

Discussion

The major hypotheses of the present experiment have been confirmed--to an extent. Personal decisions on risky and cautious problems were found to be a function of the proportion of arguments favouring the alternatives of the CD problems used. Admired choices on risky problems were more risky when there was a preponderance of risky arguments presented than they were when an equal number of arguments favouring risk and caution were made available. Admired choices on risky problems were affected no differently in the arguments condition favouring caution than they were in the equal arguments condition. These findings accord with the prediction that admired choices would be affected on risky problems only when a high proportion of arguments favouring the risky alternative were made available.

There is only qualified support for the hypotheses related to the admired choice on cautious problems, however. As predicted, there was no effect upon admired choices, with cautious problems, when a high proportion of arguments favouring the risky alternative were presented, relative to the equal arguments condition. Unfortunately, this was also true of the comparison between the equal arguments condition and the high proportion of arguments, favouring caution, condition. One possible explanation of this is that the average importance of cautious arguments, in the high proportion of cautious arguments condition, is less than the similar ratings of risky arguments in the arguments condition favouring the risky alternative of risky problems. This does not, however, appear to be the explanation. As is clear from the importance ratings analyzed in Appendix B, cautious arguments are rated as more important, on the average, than are risky arguments. It is conceivable that the lack of an effect in this cell of the design might be attributed to the effects of the individual items. The admired choices assigned one cautious problem conformed, tolerably well, to the hypothesis. The admired choices were somewhat more cautious in the arguments condition, favouring caution, than they were in the equal arguments condition. The admired choices on the other problem, however, were even less cautious than personal choices on the same problem. Such

an outcome occurred in no other cell of the design.

Although the results were basically as predicted, it is apparent that the changes predicted in relation to admired choices were not as robust in certain conditions as expected. It was hypothesized that the discrepancies between admired choice and personal choice, on risky problems for example, would be greater than those found in the condition where a high proportion of risky arguments were presented. This is even more true for cautious problems in the high proportion of cautious arguments condition. There are at least two possible explanations for these findings that would still be consistent with the advocated assumptions that link admired choice with personal choice. First of all, it might well be that the manipulation in the present experiment is not as strong or precise as might be desired. The arguments generated by a hypothetical peer are not as compelling, perhaps, as the arguments that issue from a co-participant in a group discussion. Of greater theoretical interest is the possibility that, at some point, the arguments attributed to oneself, when making a decision, and to an admired person become very similar. If an individual is exposed to new information which is considered relevant and important, and the individual considers a finite number of reasons when making a decision (Fishbein, 1967; Miller, 1956), it is conceivable that more important information will displace

old, less important information. Most of the information now available, in relation to a CD decision, would be more equivalent in importance. This could lead to a situation where the information presently available and applied to a personal decision is considered very important. This suggests that there might be a greater congruence between the arguments attributed to an admired person when making a decision and the arguments, or considerations, that are used personally in deciding upon a minimum odds preference.

Although an account is being offered for a less than ideal outcome (in terms of the stated hypotheses), it is important to recognize that this experiment represents the first reported instance of predicted effects, regarding the admired choice, that were, in their essentials, demonstrated. There was only one condition where expectations were not at all confirmed. This was the situation where a high proportion of arguments, supporting the cautious alternative, were presented in relation to cautious problems.

In summary, the present experiment demonstrated that personal choices on both cautious and risky problems can be altered by varying the proportion of arguments favouring a particular alternative of a CD problem. Admired choice varies in a similar fashion, albeit a more reluctant manner than is true of personal choices. As predicted, it was found that a high proportion of cautious

arguments presented subjects in relation to a risky problem did not alter admired choice as much as it did personal choice. Similarly, a high proportion of risky arguments presented, as reasons to consider when making a choice on a cautious problem, affected admired choice less than personal choice. These findings are consistent with the hypothesis that the arguments favouring the least preferred alternative of a CD problem are perceived as less important and hence there is little basis to reconsider one's admired choice. A preponderance of risky arguments presented individuals, making decisions on risky problems, led to more risky decisions than those accompanying the presentation of equal numbers of risky and cautious arguments on the same problems. This difference is consistent with the expectation that changes in admired choice are dependent upon the acceptance of arguments that are considered as relatively important. The fact that admired choices were not more cautious than those, in the equal arguments condition, on cautious problems, does qualify the above conclusion.

So far, then, it has been shown that shifts in the rated importance of arguments, following group discussion, are correlated with changes in the admired choice. Further, qualified support exists for the view that presentation of arguments, typically viewed as important by individuals, leads to a change in admired choice, in the

direction advocated by the arguments. The next experiment to be described examines the assumption that the admired choice is premised on a subset of the arguments used in making a personal decision on CD problems, and that this subset consists of considerations that are relatively more important than some used in arriving at a personal decision.

CHAPTER VII

EXPERIMENT III

An important assumption regarding the admired choice is that it is premised upon a subset of the arguments used to make personal decisions; the considerations considered relatively more important to the decision-maker. This implies that with risky and cautious problems, the arguments attributed to an admired person making a decision on a CD problem would be primarily in favour of risk and caution respectively, and that fewer arguments would be attributed to this person than would be attributed to oneself. It is also predicted that the choices attributed to an admired person will be more risky than personal choice on risky problems and more cautious than decisions attributed to oneself on cautious problems. This hypothesis regarding arguments appears to be contrary to a statement made by Burnstein, Vinokur and Pichevin (1974). These authors maintain that extreme choices are admired because it is assumed that the person making the decision has more persuasive arguments than oneself in favour of the alternative revealed as preferred. Although the present conception of the admired choice agrees that an admired person is assumed to have persuasive arguments in favour

of the preferred alternative, the actual number of reasons attributed to the admired person is expected to be few compared with the number of arguments attributed to oneself.

The following experiment attempts to evaluate which of the two predictions discussed is best supported by evidence.

Method

Overview

Subjects in this experiment were randomly assigned to one of three conditions. Subjects in each condition were given a CD problem and a set of forty arguments that previous subjects had listed as arguments they used in arriving at personal decisions on the CD problem. Twenty of the arguments favoured the cautious alternative of the CD item and twenty supported the risky alternative. Subjects in one condition were asked to indicate what arguments they thought a person they most admired would use in arriving at a decision on the CD problem. The next task was to attribute a minimum probability choice to this most admired person. In another experimental condition, subjects were asked to choose the arguments and the risk level that they would attribute to themselves. The final group of subjects excerpted the arguments they thought a person they least admired would select and chose a risk preference they felt such an individual would endorse.

Although no specific predictions have been advanced regarding a least admired individual, it was expected that the results of this group should be, essentially, the opposite of those found with the most admired individual. The inclusion of such a target person also lends a certain symmetry to the levels of the independent variable being considered.

The procedure, described above, was repeated with each of the four CD problems used in the previous two experiments, in each condition.

Subjects

A total of thirty students from a sociology course at the University of Western Ontario participated in this experiment on a voluntary basis.

Materials

CD Problems. A set of four CD items was used that included two items known to yield reliable risky shifts and two items known to yield reliable cautious shifts. These items were the same as those used in the previous two studies described. The forty arguments relevant to each problem were those selected from the large pool as described in study two. The forty arguments related to a particular item were listed on two sheets of paper in a random order and stapled to the appropriate CD problem.

Instruction. There were three sets of instructions

used in this experiment, one for each experimental condition. They differed only in the point of view that a subject was asked to take when performing the tasks comprising the experiment. Instructions in all conditions asked subjects to first read over the first CD problem completely and await further instructions. In one condition the subjects were asked to imagine that the person he most admired was making a decision on the problem. The list of arguments appropriate to that item were then brought to the subject's attention. The instructions continued to the effect that subjects should read over this list of arguments and then select the arguments they felt the person they most admired would use in making a decision on the CD problem. The subjects were then asked to indicate their selections by underlining the relevant arguments. Once this task was completed, the subjects were asked to make a choice of odds on the minimum probability scale that they thought the admired person would prefer.

In the other two conditions of the experiment, the sequence of tasks posed the subject was exactly the same, except the point of view the subject was asked to take when selecting arguments or indicating a probability preference differed. In the personal point of view condition, subjects chose arguments that they themselves would use in making a decision and also made a personal decision.

The least admired condition subjects were required to select the arguments a person they least admired would use in decision-making and further picked a minimum probability that such a person would select.

After completion of the tasks appropriate to the first CD problem, subjects in all conditions were told to continue with the following three problems in their booklet in exactly the same manner as they did with the first problem. Each subject then selected arguments, and indicated a probability preference with only one point of view in mind.

Results

The scores on five dependent variables were analyzed in this study. The number of risky and cautious arguments attributed to the hypothetical decision-maker were each treated as separate dependent measures. The average importance of the risky and cautious arguments assigned the target person was also assessed. Each argument that an individual underlined, in relation to a particular CD problem, was given the average importance rating obtained for that problem in the manipulation check of Experiment II. The importance ratings assigned each of the arguments, chosen in favour of the risky alternative, were then averaged. This average importance rating for risky arguments was the third dependent measure. Similarly, the importance ratings of the cautious arguments, attributed

to a target person, were averaged. This mean importance of cautious arguments score was also treated as a dependent measure.

The minimum probability choices attributed to a target person were the fifth set of scores analyzed.

The analysis performed on each of the dependent variables was a four-way analysis of variance. Target person, item type, specific problems, and subjects were the particular factors in the design. The target person factor, consists of three levels; the most admired person, self and the least admired person. It is considered a fixed factor. Item type is a fixed factor, and consists of a level of risky problems and one of cautious problems. Each of the two CD problems associated with a level of item type comprise levels of a third random factor called specific items. Levels of specific item are nested within item type. Subjects, as a random factor in the analysis, are nested within the target person factor.

The Number of Risky Arguments

The analysis of variance summary table is found in Table 17. The important significant effect of this analysis was the interaction between target person and item type. An examination of the means in Table 18 reveals that on risky items subjects attribute fewer risky arguments to both the most admired and least admired person than they do to themselves. On cautious items, subjects

TABLE 17

Analysis of Variance of Risky Arguments
 Attributed to Different
 Target Persons

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F'</u>
Admiration (A)	2	2.43	.63
Item Type (T)	1	13.33	1.67
A X T	2	24.75	18.47*
			<u>F</u>
Subjects (S)	27	4.14	3.69*
Levels (L)	2	7.48	6.67*
S X T	27	1.60	1.42
A X L	4	.86	.76
S X L	54	1.12	

*p < .05

TABLE 18

Number of Risky Arguments
Attributed to Different
Target Persons

<u>Person Attributed to</u>	<u>Problem Type</u>					
	<u>Risky Problems</u>			<u>Cautious Problems</u>		
	<u>1</u>	<u>2</u>	<u>Mean</u>	<u>1</u>	<u>2</u>	<u>Mean</u>
Admired	3.30	2.60	2.95	1.20	1.60	1.40
Self	4.20	2.70	3.45	1.50	2.20	1.85
Least Admired	2.20	1.70	1.95	3.00	3.20	3.10

also attribute fewer risky arguments to the most admired person than to themselves but more risky arguments are assigned to the least admired person.

Of less importance to the hypotheses of this study are the indicated main effects due to subjects and specific CD problems. The fact that subjects differ in their overall willingness to attribute risky arguments is not unexpected. That specific levels of problems show a significant effect on the dependent measure indicates that studies using a number of different CD problems should include these as levels of a factor so the variation of scores on the dependent measure can be partitioned appropriately.

The Number of Cautious Arguments

The important significant effects, on this dependent measure, involved the factor of item type, the variable of target person and the interaction between these two (Table 19).

The interaction, as can be seen in Table 20 of the means of the various conditions, reflects the fact that on cautious CD problems the number of arguments attributed to the most and least admired person is less than arguments attributed to subjects themselves. Yet, with risky problems, even though fewer arguments are attributed to most admired person, more are attributed to the least admired individual than are ascribed to subjects person-

TABLE 19

Analysis of Variance of Number of Cautious
Arguments Attributed to Different
Levels of Admiration

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F'</u>
Target Person (A)	2	11.23	4.34*
Item Type (T)	1	14.70	13.60*
A X T	2	27.70	25.60*
			<u>F</u>
Subjects (S)	27	3.49	2.22*
Item Level (L)	2	.67	.42
S X T	27	1.98	1.26
A X L	4	.67	.42
S X L	54	1.57	

*p < .05

TABLE 20

Number of Cautious Arguments
 Attributed to Different
 Target Persons

<u>Person Attributed to</u>	<u>Problem Type</u>					
	<u>Risky Problems</u>			<u>Cautious Problems</u>		
	<u>1</u>	<u>2</u>	<u>Mean</u>	<u>1</u>	<u>2</u>	<u>Mean</u>
Admired	2.00	1.60	1.80	3.00	3.40	3.20
Self	2.00	2.40	2.20	4.10	4.10	4.10
Least Admired	2.90	2.50	2.70	1.30	1.70	1.50

ally. The finding that the least admired person has the fewest arguments attributed to him, regardless of item type, is the main reason why the target person variable is significant. A further examination of Table 20 makes it clear that the main effect due to item type results from subjects attributing more arguments on cautious problems than they do on risky problems. As with the dependent measure of attributed risky arguments, subjects differed significantly in their tendency to attribute cautious arguments, regardless of item type or specific item involved.

Average Importance Ratings:
Risky Alternative

Examination of Table 21 indicates that the main effects due to target person and item type are significant.

The target person effect (Table 22) arises due to the importance ratings associated with the most admired person being higher than those assigned either the self condition or the least admired condition. Subjects in the self condition also tended to choose arguments with higher importance ratings than those selected for the least admired person.

The significant item type effect results from the importance ratings in favour of the cautious alternative being higher than those in favour of risk. This appears to be consistent with the results of the manipulation

TABLE 21

Analysis of Variance Summary Table
for Importance Ratings:
Risky Alternative

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F'</u>
Target Person (A)	2	13.19	31.10*
Item Type (T)	1	2.47	5.15*
A X T	2	.97	1.00
			<u>F</u>
Subjects (S)	27	.62	2.04*
Item Level (L)	2	.19	.64
S X T	27	.60	1.97*
A X L	4	.07	.21
S X L	54	.30	

*p < .05

TABLE 22

Average Importance of Arguments Supporting
the Risky Alternative in Different
Conditions of Target Person

<u>Target Person</u>	<u>Problem Type</u>					
	<u>Risky Problems</u>			<u>Cautious Problems</u>		
	<u>1</u>	<u>2</u>	<u>Mean</u>	<u>1</u>	<u>2</u>	<u>Mean</u>
Admired	3.91	3.78	3.85	4.35	4.50	4.42
Self	3.86	3.75	3.80	3.78	3.99	3.88
Least Admired	2.95	3.10	3.03	2.97	3.09	3.03

check which showed cautious arguments to be rated as more important than risky arguments, overall.

The subjects by item type interaction was significant as was the main effect due to subjects. The interaction indicates that subjects on risky problems differ in terms of the importance ratings assigned. Similarly, with cautious items, subjects also differed in the importance ratings of the arguments they chose. This interaction also accounts for the significant main effect due to subjects which indicates that subjects differ in the overall importance of arguments they attribute to a hypothetical decision-maker.

Average Importance Ratings:
Cautious Alternative

The importance ratings of the cautious arguments essentially mirror those of the risky arguments. Item type and target person main effects were significant (Table 23, Table 24).

The importance ratings of the arguments chosen for the most admired person were the highest followed by the ratings associated with the self condition. The arguments attributed to the least admired person were the lowest of the three conditions in terms of average importance ratings.

The Item type effect is consistent with the finding that the cautious arguments received higher importance

TABLE 23

Analysis of Variance Summary Table
for Importance Ratings:
Cautious Alternative

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F'</u>
Target Person (A)	2	14.97	42.57*
Item Type (T)	1	4.96	8.30*
A X T	2	.74	2.67
			<u>F</u>
Subjects (S)	27	.42	1.05
Item Level (L)	2	.64	1.61
S X T	27	.35	.90
A X L	4	.32	.82
S X L	54	.39	

*p < .05

TABLE 24

Average Importance of Arguments Supporting
the Cautious Alternative in Different
Conditions of Target Person

<u>Target Person</u>	<u>Problem Type</u>					
	<u>Risky Problems</u>			<u>Cautious Problems</u>		
	<u>1</u>	<u>2</u>	<u>Mean</u>	<u>1</u>	<u>2</u>	<u>Mean</u>
Admired	4.01	3.80	3.90	4.45	4.69	4.62
Self	3.74	3.42	3.58	3.88	3.90	3.89
Least Admired	3.01	2.88	2.94	2.93	3.35	3.14

ratings than the risky arguments.

The Minimum Probability Choice

The significant effect of interest in relation to this dependent measure was again the interaction between item type and target person (see Table 25). The interaction term, as can be seen in Table 26, is significant because with risky items the riskiness of the choice of odds made by subjects varies directly with the degree of admiration attributed to the described decision-maker, whereas there is an inverse relationship between the riskiness of the choice of odds and the degree of admiration shown the stimulus person on cautious problems. There is a complete cross-over interaction revealed on this dependent measure.

Two other statistically significant findings involved subjects. The subjects by item type interaction was found to be significant, as was the main effect due to subjects. These effects reveal that subjects on risky problems differ, to an extent, on the degree of riskiness endorsed. Similarly, with cautious items, even though most subjects attribute a relatively cautious choice, there is a difference found in the extent of attributed caution. This interaction also accounts for the significant main effect due to subjects, which suggests that subjects do differ in the overall level of odds they attribute to a hypothetical decision-maker. As well, it

TABLE 25

Analysis of Variance of CD Choices
Attributed to Different Levels
of Target Person

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F'</u>
Admiration (A)	2	.48	.08
Item Type (T)	1	4.41	1.60
A X T	2	24.00	3.22*
			<u>F</u>
Subjects (S)	27	2.93	1.78*
Levels (L)	2	.04	.03
S X T	27	4.44	2.69*
A X L	4	5.14	3.12*
S X L	54	1.64	

*p < .05

TABLE 26

Personal Choices on CD Problems Attributed
to Different Levels of
Target Person

Person Attributed to	Problem Type					
	Risky Problems			Cautious Problems		
	<u>1</u>	<u>2</u>	<u>Mean</u>	<u>1</u>	<u>2</u>	<u>Mean</u>
Admired	5.80	5.50	5.65	7.80	6.30	7.05
Self	5.50	6.00	5.75	6.30	7.50	6.90
Least Admired	7.00	6.70	6.85	5.40	5.50	5.45

was found that the target person by specific item interaction was significant. This is consistent with the finding that although the average choices across risky and cautious problems behaved as predicted, individual problems in the "self" level of the target person factor acted unexpectedly. Of interest, is the very cautious mean associated with the second cautious CD problem in this condition.

Discussion

Although the major hypothesis of this study was confirmed, an unexpected finding has emerged which suggests some interesting implications. It was found, as predicted, that subjects attribute fewer arguments to the admired person making a decision than they do to themselves, and that these arguments, on the average, tend to be more important than those attributed either to oneself or a least admired person.

What is of interest, beyond this, is the finding that subjects attribute a larger number of arguments, in support of the least preferred-alternative, to the least admired person than they do to either themselves or an admired individual. Although the result that admired individuals use few arguments is consistent with the hypothesis that admired individuals are perceived as using only the arguments considered as most important to oneself, the fact that the less admired person is seen as making

decisions, at times, with a large number of unimportant arguments suggests two possible interpretations. One hypothesis might be that a least admired person is simply viewed as a person who makes decisions in terms of a lot of trivial arguments. As such, the attribution of a greater number of arguments, in the present experiment, to the least admired person might represent how people view the decision processes of a less liked individual. Another interpretation, however, might suggest that the attribution of arguments to a least admired person has nothing to do with one's image of this person's decision processes; rather, it is a hostile act consistent with one's dislike for the person. If a person is evaluated negatively, one attributes as many poor attributes to that person as are currently available. In this experiment, this would be the arguments that tend to be rated as the least important. It is not possible to evaluate these two hypotheses, given the design of the present study. They are, however, of sufficient interest to warrant further investigation. The results of such further study would be of particular interest to attribution theory (Shaver, 1975), since it is primarily concerned with the factors that influence one's perception of the causes of other people's behaviour.

Regardless of the merits of the above hypotheses, the findings regarding the admired person are entirely

consistent with the hypothesis upon which this study is premised; the admired person is perceived as making a decision in terms of fewer arguments than contribute to personal decisions, and these arguments tend to be those that are considered most important personally.

It is possible, however, to advance another interpretation of these findings, and it must be addressed, critically. If one accepts the view that an admired choice is a decision made by a person who is imagined to have more (Burnstein, Vinokur, & Pichevin, 1974) persuasive arguments, in favour of the preferred alternative, than oneself; it is possible to argue that the present experiment does not represent a serious refutation of this position. A protagonist of such a position might argue that, even though only a few important arguments are attributed to the admired person in this study, the findings are an artifact of the list of arguments presented subjects. The list of arguments was introduced as representing considerations other people have used in making decisions on those problems. If one imagines that an admired person is someone who has reasons for behaving that are much more important than those used by most other people, it is reasonable to suggest that the arguments presented in this study are not representative of the population of arguments that an admired person would use. Of the arguments most other people use in making decisions,

only a few are likely to be as cogent as those used by an admired person. Hence, only a few of the arguments presented subjects are attributed to an admired person. This criticism implies that, regardless of the list of arguments presented an individual, it is always possible to imagine a list of arguments used by an admired person that would supercede in importance a list of arguments based upon the considerations of one's peers. More succinctly stated; it is difficult to know what arguments an admired person would use, but one can be sure they are important, there are a lot of them, and certainly not those used by most other people. This position represents a serious challenge to the methodology of the present experiment. It is certainly conceivable that, when subjects are asked to choose arguments they feel an admired person would use in making a decision, they choose only what they feel are the best, and yet imagine there are still a lot more that have not been listed. The present study cannot directly confront this challenge; however, there is one implication of this position that can be refuted. Ironically enough, the refutation is premised upon some unexpected results of Experiment II.

If it is true that one always imagines an admired person to have more arguments, in favour of the preferred alternative, than one personally is aware of, it follows that one should always attribute a more extreme decision

to an admired person than to oneself. The results of Experiment II, however, indicated that personal choices and admired decisions tended to converge in the situation where individuals are presented with a high proportion of arguments supporting the preferred alternative of a CD problem. If one is always supposed to imagine an admired person having more, and better, reasons than oneself for choosing, irrespective of the current information available, then it is necessary to predict that personal and admired choice would not converge. The actual results of Experiment II seriously question, then, the view that the admired person is always expected to have considerably more, and better quality, information available.

This experiment lends more support to the position that the admired choice is a function of a subset of important arguments available to a decision-maker. The final experiment, to be described, attempts to buttress the present account still further by demonstrating that alternative accounts of the admired choice, based upon various value explanations of personal decisions, on CD problems can be reformulated in terms of the relevant arguments position which has served as the basis for the present conception of the admired choice.

CHAPTER VIII

EXPERIMENT IV

A study by Madaras and Bem (1968) has been cited (Pruitt, 1971) as support for the view that extreme choices indicate adherence to values of risk or caution. A person who endorses such values is assumed to be an admirable person. Jellison and Riskind (1969) resort to the value of ability to explain the positive evaluation of extreme choices (at least on risky problems). Extreme choices indicate ability to judges of such decisions and hence admiration for the possession of a valued quality. Both of these positions are claiming that the degree of admiration accorded a hypothetical decision-making is a function of the perceived degree of endorsement of a consensually appreciated value. It is possible to cast the conclusions of these authors into somewhat different terms given the present conception of the admired choice. In terms of this view, it is expected that the degree of admiration attributed to a hypothetical person is contingent upon the extent to which the arguments being used are evaluated as important, as well as their number. A person using a high proportion of arguments typically viewed as important is likely to be viewed as admirable, whereas the

use of a high proportion of arguments evaluated as unimportant is expected to be admired less.

Past research also indicates that the importance of arguments does not depend upon their content being related to cultural values. Each CD problem suggests its own unique arguments; the bulk of which focus upon the particular outcomes of the individual problem (Vinokur, Trope, and Brunstein, 1975). Jellison and Riskind's (1970) findings that extreme choices suggest to judges that the decision-maker has high ability would seem to follow quite easily from the supposition that an admired person uses important arguments in arriving at a decision. If a person uses primarily what would be judged as persuasive considerations in arriving at a decision, it would seem reasonable to view the decision-maker as being someone possessing high ability.

The present experiment is an attempt to evaluate the hypothesis that the degree of admiration attributed to a hypothetical decision-maker is a function of the proportion of relatively important reasons used in arriving at a decision on a CD problem. More particularly, it is expected that, with risky problems, when a high proportion of risky arguments are ostensibly used by a decision-maker, greater admiration will be attributed to this person than is the case when a high proportion of cautious arguments are used. Risky arguments on risky problems

are, on the average, rated as more important than cautious arguments. With cautious problems, higher admiration will be indicated for the decision-maker who uses a high proportion of cautious arguments than will be granted a person who uses a preponderance of risky arguments. The average importance rating of arguments associated with the cautious alternative of cautious problems is higher than the rating of arguments in favour of the risky alternative.

Another hypothesis of this experiment is that the actual choice of odds attributed to a hypothetical decision-maker on a CD problem will be a function of the proportion of arguments presented in relation to a particular CD problem. A high proportion of risky arguments will eventuate in riskier choices on both risky and cautious problems than those preferred when a high proportion of cautious arguments are presented.

Method

Overview

Subjects were randomly assigned to one of three experimental conditions. Individuals were given a CD problem and a set of fourteen arguments that have in the past been listed as reasons for arriving at a choice on the particular CD problem. The experimental conditions differed in terms of the proportion of these fourteen arguments that supported the risky and cautious alternatives of the CD problem. In one condition, ten arguments

were supportive of the risky alternative and four favoured the more cautious alternative. The second condition involved seven arguments favouring both the risky and the cautious alternatives whereas the third condition had ten arguments pro the cautious alternative and four reasons pro the risky alternative. Subjects in all conditions were told that the arguments before them were reasons formulated by a student their own age in arriving at a decision on the CD problem. In each condition, subjects were asked to indicate on a scale how much they admired the person who made the decision on the basis of these arguments and also what decision they thought he made in terms of these arguments. Each subject repeated this procedure with four CD problems in the condition to which he was assigned. For a subject in any one condition, the proportion of the fourteen arguments favouring the risky alternative was the same for all four CD items.

Subjects

Thirty subjects from a Child Development Course at Huron College participated in this experiment on a volunteer basis.

Materials

CD Problems. The four CD items used in this experiment were the same as those employed in the previous studies. These consisted of two risky and two cautious

problems. Each problem was arranged in a booklet along with a list of arguments appropriate to each problem.

Arguments. The same lists of arguments were used in this experiment as were used in Experiment II.

Instructions. Subjects in each condition were instructed to read the first problem in their CD booklet. After having read the problem, the list of arguments on the following page of their booklet was brought to the subject's attention. Subjects were told that the arguments were reasons that a student their own age said he considered and used in making his decision on the CD problem they had just read. The subjects were then asked to indicate on a scale available on the third sheet of their booklet how much they thought they would admire the student who used these arguments, and to also select the minimum probability that they felt this student would choose. This selection was made on the scale which immediately followed the CD problem on the first page. After completing these tasks, subjects in all conditions were instructed to deal with each of the three remaining CD problems in their booklet in the same way.

Procedure

Since the instructions were the same for each experimental condition, the three experimental conditions were administered at one experimental session. The thirty CD booklets required for the experiment were arranged in a

pile in a random order. As subjects appeared for the experimental session, they were handed a booklet off the top of the pile. After all subjects in the session were seated, the experimenter proceeded with the instructions described here.

Results

The dependent variables in this experiment are the scores on a seven-point scale of admiration, and the minimum probability choices attributed to the fictitious individual in each of the experimental conditions. The analysis performed on these scores was a four-way analysis of variance. One factor was the proportion of arguments, consisting of three levels, treated as a fixed factor; another was the problem type (risky and cautious), also treated as a fixed factor. The third factor was the specific CD problems of which there are two nested within each level of problem type. This is considered a random factor. The last factor is subjects which are nested within each level of the proportion of arguments factor.

The Degree of Admiration

The analysis of variance summary table relevant to scores on the admiration variable is found in Table 27. None of the main effects in this analysis was found to be statistically significant (an alpha level of .05 was used to determine the critical F values necessary to establish

TABLE 27

Analysis of Variance Summary Table for
Degree of Admiration Attributed
to Target Persons

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F'</u>
Arguments (A)	2	.43	.34
Item Type (T)	1	.04	.02
A X T	2	8.13	4.21*
			<u>F</u>
Subjects (S)	27	2.02	1.26
Item Level (L)	2	.68	.42
S X T	27	2.69	1.68*
A X L	4	.83	.52
S X L	54	1.59	

*p < .05

the significance of computed F and F' ratios).. The interaction between proportion of arguments and problem type was significant. Referring to Table 28, it is clear that this effect arises because subjects attribute a higher degree of admiration to an individual who ostensibly used a high proportion of risky arguments in making a decision on a risky problem than to the same person using a high proportion of cautious arguments to reach a decision on the same problem. The opposite is found to be true with cautious problems. Admiration was higher for the person using more cautious arguments on a cautious problem than for the individual who used a high proportion of risky arguments.

The interaction between proportion of arguments and specific CD problems was also significant. This finding indicates that the individual problems associated with the risky-cautious dichotomy react somewhat differently to the proportion of arguments manipulation. Overall, however, the risky and cautious problems affect the level of admiration as predicted.

The Attributed Choice of Odds

The analysis of variance summary table for the "minimum choice of odds" dependent measure is found in Table 29. The important significant effect this analysis revealed was a significant main effect due to proportion of arguments, Table 30 shows that the higher the

TABLE 28

Admiration Attributed to Hypothetical Persons
Using Different Proportions of Argument
on Risky and Cautious CD Problems

<u>Proportion of Arguments</u>	<u>Problem Type</u>					
	<u>Risky Problems</u>			<u>Cautious Problems</u>		
	<u>1</u>	<u>2</u>	<u>Mean</u>	<u>1</u>	<u>2</u>	<u>Mean</u>
10 Risky 4 Cautious	5.1	4.5	4.8	4.0	3.8	3.9
7 Risky 7 Cautious	4.2	4.7	4.5	4.6	4.1	4.4
4 Risky 10 Cautious	4.1	4.1	4.1	5.1	4.9	5.0

TABLE 29

Choices Attributed to Hypothetical Persons
Using Different Proportions of
Arguments on CD Problems

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F'</u>
Arguments (A)	2	14.91	4.95*
Item Type (T)	1	2.70	.85
A X T	2	1.08	.93
			<u>E</u>
Subjects (S)	27	4.10	2.25*
Item Level (L)	2	2.47	1.36
S X T	27	2.25	1.24
A X L	4	.74	.41
S X L	54	1.82	

*p < .05

TABLE 30

Choices Attributed to Hypothetical Persons
Using Different Proportions of Argument
on Risky and Cautious CD Problems

<u>Proportion of Arguments</u>	<u>Problem Type</u>					
	<u>Risky Problems</u>			<u>Cautious Problems</u>		
	<u>1</u>	<u>2</u>	<u>Mean</u>	<u>1</u>	<u>2</u>	<u>Mean</u>
10 Risk 4 Cautious	4.90	5.10	5.00	5.00	5.10	5.05
7 Risk 7 Cautious	5.10	5.90	5.50	5.30	5.00	5.15
4 Risk 10 Cautious	6.30	6.70	6.50	6.30	5.50	5.90

proportion of arguments favouring the risky alternative of a CD problem, the lower the minimum probability of success attributed to the decision-maker by subjects, regardless of item type.

Discussion

The two hypotheses of this study have been confirmed. It was found that subjects indicate admiration for a problem solver, only if this individual used a high proportion of arguments favouring the alternative typically preferred by subjects making personal choices on a particular CD problem. Subjects admired a person for using a high proportion of risk supportive arguments on risky problems and a high proportion of arguments favouring the cautious alternative on cautious CD items. It is clear that subjects attribute a choice of odds to the hypothetical decision-maker that is consistent with the balance of arguments on both risky and cautious problems.

In order to be admired, then, it appears that the majority of arguments a person uses must support the alternative typically preferred on a CD problem. As has been shown in past studies, the arguments supporting the preferred alternative are rated as more important and persuasive to subjects. Hence, the reasonable conclusion that the admiration for the decision-maker is a function of the proportion of important and persuasive arguments used in arriving at a decision.

It might appear, without further clarification, that the findings of the present study conflict with the conclusions of the previous study described in this chapter. Recall that, in the last experiment, subjects attributed fewer arguments to an admired person than they did to themselves. The present investigation, however, demonstrated that the more arguments used to support the favoured alternative of a CD problem, the greater the admiration indicated. If a contradiction is perceived, it is only apparent. With a risky problem, for example, if a subject is presented with a high proportion of arguments favouring the risky alternative, and the subject is asked to evaluate the decision-maker, a number of the arguments presented are likely to be new and persuasive. If these arguments are construed as important, then the subject has even more reason to admire the hypothetical problem solver than would be the case when there is no information about how the decision was arrived at. If one discovers that a person has used even more considerations, deemed important, than one would expect on the basis of information available to oneself, then that person will receive greater admiration than would be the case in the absence of the discovered information.

To the extent that the hypotheses of this study have been confirmed, the view of the admired choice being argued for again receives support. Persuasive arguments

theory, as an explanation of the choice shift, is also enhanced in credibility inasmuch as the present conception of the admired choice takes as its initial assumption the hypothesis that personal decisions and changes in these decisions in the context of group decision-making are a function of information available to the decision-maker.

CHAPTER IX

CONCLUSIONS AND IMPLICATIONS

A review of the literature concerned with the choice shift makes clear that the major controversy surrounding its explanation stems from the advocacy of two very different alliances. Value explanations of individual decisions on CD problems and social comparison accounts of group induced shifts in these decisions line up squarely against a problem solving account of personal choices and a relevant arguments view of changes in decision following group discussion. Value explanations of individual decisions and social comparison accounts of group process interface through the construct of social values. A problem solving "exchange of information" explanation of group shifts views individuals as making decisions in terms of information available; the availability of which depends upon whether the individual is isolated or in a position to obtain new information. Although the coherence lent to each of these positions by their respective unifying constructs, in part shapes their continuing popularity, a complete account of their eminence in the choice shift literature must recognize that the components of each of these alliances has a respectable niche in

various theoretical discussions in social psychology. The demonstrated role of values in social behaviour (Rokeach, 1970) and the importance of social comparison in many group contexts (Festinger, 1954; Ring, Lipinsky & Braginsky, 1965; Wrightsman, 1960) lends considerable credibility to an explanation which involves both of these concepts. As well, one finds neither a lack of justification in applying a problem solving approach to individual decision on CD problems (Becker & McClintock, 1967) nor novelty in suggesting that groups affect decisions through the exchange of information (for a review, see Kelly & Thibaut, 1969). The backgrounds of the elements of each of the two important theories of the choice shift have clearly contributed to the large numbers of researchers associated with the examination and defense of each of these positions in the context of the choice shift. The typical strategies of researchers has been to either examine the implications of a particular position (e.g., Vidmar, 1970, in relation to social comparison) or to assimilate the central variables of one position into the domain of phenomena that can be accounted for by the important assumptions of the other (Burnstein & Vinokur, 1975, in support of relevant arguments theory). The research of this dissertation has been premised upon the latter strategy. An attempt has been made to account for the findings associated with a variable important to the

value-social comparison explanation of the choice shift from a relevant arguments perspective. The variable that was focused upon was the admired choice. The importance of this variable to value-social comparison accounts of the choice shift has perhaps been best summarized by Burnstein, Vinokur and Pichevin (1974, p. 433):

The discrepancy between what a person chooses and what he admires seems a straightforward indication of value adherence (and thus the potential for comparison processes inducing a shift in choice).

The findings related to this variable, however, can be interpreted in terms of the assumptions of a relevant arguments position. It has been suggested that the admired choice is derived from a subset of the considerations used to formulate a personal choice, and that this subset consists of the relatively more important reasons available and considered relevant to personal choices. Support for this contention comes from Experiment III of the series of studies described. In this experiment, it was found that individuals attribute a fewer number of arguments to an admired person than they do to themselves, and that these fewer arguments tend, on the average, to be more important than those used personally.

It was also advanced that changes in admired choice should occur following group decision-making on CD problems, if there is a concomitant acquisition by group members of new important information during discussion. It was found, in Experiment I, that there was a shift in

admired choice following group discussion and that these shifts were in the same direction as shifts in personal decisions on the CD problems. Parallel to these shifts there were also changes in the average importance of the arguments associated with the preferred alternatives of risky and cautious problems. The average importance of arguments supporting the risky alternative of risky problems increased, as did the importance of arguments in favour of the cautious alternative of cautious problems. The number of arguments supporting the risky alternative on risky problems also increased following group decision-making. There was no such increase in arguments favouring caution on cautious problems, following group interaction. The results of this experiment conformed quite well with expectations.

The basic hypothesis underlying the predictions, of the study discussed above, is that the admired choice is more susceptible to change following the receipt of new, important information, whereas personal choice is viewed as alterable in the face of simply weight of information. Experiment II attempted to evaluate this hypothesis more directly than was the case in Experiment I. It was found that indeed personal choices are affected by the proportion of arguments presented in favour of the alternatives of a CD problem. The higher the proportion of information in favour of a CD problem, the more extreme the preference

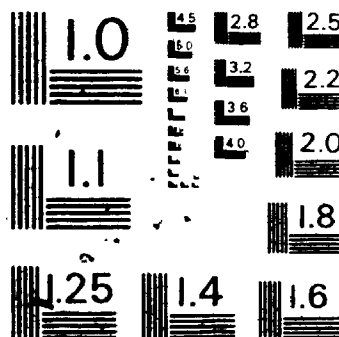
indicated for that alternative, regardless of item type. The findings with regard to admired choice gave qualified support for the hypothesis suggested. When a high proportion of arguments favouring risk on risky problems was presented, subjects indicated a riskier choice of odds than was the case when either equal numbers of arguments favouring each alternative were presented, or there were more arguments favouring the cautious alternative. This was the predicted outcome since the arguments in favour of risk on risky problems are rated as more important than those in favour of caution. With cautious problems, however, there was not found to be any difference between the different "proportion of arguments conditions" in their affect upon admired choices. It was expected that the admired choices in the situation where a high proportion of cautious arguments were presented would be more cautious than those found in the conditions involving a lower number of arguments in favour of caution. This was expected since the arguments supporting caution or cautious problems tend to be more important than those favouring risk.

Also, it was suggested that admiration is accorded another to a degree dependent upon the proportion of perceived important to less important arguments used by that person in making a decision. Experiment IV offered support for this hypothesis and also indicated that

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choices attributed to hypothetical decision-makers were contingent upon the proportion of arguments supporting the alternatives of CD problems.

On the whole, it appears that the research offers considerable support for the present conception of the admired choice which has been premised upon the assumptions of relevant arguments theory. One point of interest is that the situations which have led to disconfirmation of hypotheses have all involved cautious problems. Cautious CD problems have been the bane of a considerable number of studies in the choice shift area (Brown, 1965; Jellison and Riskind, 1970; Levinger and Schneider, 1969). Experiment I of the present research found that following group discussion of cautious problems, there was no increase in the number of arguments favouring caution and yet there was an increase in the average importance of arguments associated with the cautious alternative. In Experiment II, although the arguments in favour of the cautious alternative of cautious problems are rated as important, they do not appear to have an effect upon the admired choice. It is not immediately clear how these results can be reconciled to the relevant arguments position, but they do suggest that greater attention will have to be given to how information is processed in relation to these cautious items.

The present research also suggests some refinement

to the initial view of the admired choice. The results of the second experiment suggest that as the proportion of important to less important information presented a person increases, personal choice and admired choice become more congruent. One explanation of this finding is that it is possible to reach a point, in terms of the information available to one, where most of the reasons considered relevant to a decision are quite equivalent in importance, and hence personal and admired choices are more similar. The third of this series of experiments found that although one consistently refers fewer arguments to an admired person than to oneself, a less admired person has more relatively unimportant arguments attributed to him than are considered by oneself; a finding somewhat unexpected, at least from an attribution theory analysis of the situation. Each of these unexpected outcomes deserves further research attention in order to explore the hypotheses advanced in the discussion of each of these experiments.

To the extent that this research has been consistent with the view of the admired choice which has been advanced, the relevant argument account of the choice shift has received further support. It is clear, however, that this effort must be supplemented by further efforts at exploring the implications of the relevant arguments position, if this view of the choice shift is to endure.

Notable among these efforts should be the attempt to expand the domain of group decision-making to which this account is applied. Changes in decisions following group decision-making have been recorded using a number of tasks other than Choice Dilemma problems. Shifts follow discussion of attitudinal items (Doise, 1967; Gouge & Frazer, 1972; Moscovici & Zavolloni, 1969), category width problems (Vidmar, 1974), and items concerning matters of fact or logic (Barnlund, 1959; Thomas & Fink, 1961). It would be of considerable value to explore the possibility of generalizing the relevant arguments explanation of group shifts to each of these tasks. This effort would be of particular interest in the case of group shifts on attitudinal problems. Relevant arguments theory is a view of decision change that is entirely consistent with a number of theories of attitude change (Anderson, 1971; Fishbein, 1967; Greenwald, 1968). As such, it affords the possibility of linking what have been lamented (McGuire, 1968) as fields of study too often occupying separate attention.

A further reading of the attitude literature (Rokeach, 1970) also suggests that it is possible to entertain a rapprochement between two constructs which have so far been considered as antagonistic in the choice shift literature. These are the constructs of values and relevant arguments. The proposition that values are important to personal decisions on CD problems and the choice shift

appears at present to have at best marginal support, and yet even in some research where the role of values is questioned, it is clear that the authors (Pruitt & Cosentino, 1975) are reluctant to dismiss their importance. This reluctance is understandable given there is research to support the view that values play an important role in social behaviour (Rokeach, 1970). A reconciliation between values and relevant arguments is perhaps best approached by considering the distinction made between attitudes and values by Rokeach (1970). He defines attitudes as "a package of beliefs consisting of interconnected assertions to the effect that certain things about a specific object are true or false, and other things about it are desirable or undesirable" (Rokeach, 1970, p. 159). An attitude, then, is a cluster of arguments relevant to a particular situation. It is clear that there is virtually no distinction between how Rokeach defines an attitude and what has in the choice shift literature been referred to as relevant arguments. A further quote from Rokeach, however, is of critical importance.

Once a value is internalized it becomes, consciously or unconsciously, a standard or criterion for guiding action, for developing and maintaining attitudes toward relevant objects and situations, for justifying one's own and others' actions and attitudes, for morally judging self and others, and for comparing self with others.

(Rokeach, 1970, p. 160)

Such a notion of values suggests that attitudes (relevant arguments) are in effect derivative of values. Values are

superordinate in the hierarchy of one's beliefs and potential assertions. This offers an answer to the inevitable question regarding relevant arguments. Where do they come from? The arguments or assertions one brings to a situation are dependent upon one's values. The failure of research in the choice shift literature to compellingly demonstrate the importance of values in this context might be attributed to three factors. The first is theoretical. Relevant arguments or attitudes are the direct precursors of behaviour in a particular situation whereas the influence of values, being superordinate in the hierarchy of beliefs, is mediated through the particular arguments relevant in a situation. Relevant arguments, then, will always demonstrate a more direct influence upon behaviour than is the case with values.

The second problem in assessing values in the choice shift literature has been the reliance upon operational definitions which have involved the most admired choice. As the present research suggests, the admired choice, as is the case with personal decisions, is more directly affected by relevant arguments and hence any expected relationship between admired choice and values is likely to be of a second order nature.

The third problem with the study of values, in the context of group shift effects, has been the attempt to isolate some one value that is prepotent in its influence

on CD choices. It is much more reasonable to expect that the arguments considered relevant to the consequences of CD problems are influenced by any number of social, economic, and moral values.

Although the above represents an acknowledgement that values can ultimately have an affect upon CD decisions, their second order nature suggests that greater benefit is to be derived in the immediate future, by examining the more direct antecedents of decisions which in the present context appears to be the arguments relevant to the consequences of alternatives made available on CD problems. The benefit to be derived, however, in ultimately using a framework like Rokeach's to examine group phenomena is that it might represent the "theoretical home" (Cartwright, 1971) which saves the work on the choice shift from becoming "nothing more than an interesting episode in the history of social science" (Cartwright, 1971, p. 376).

The research of this dissertation has tried to support the view that the admired choice is neither causally related to personal decisions on CD problems nor is it a standard of comparison in the group context. It is seen essentially as an artifact of the factors influencing personal decisions. Although the admired choice might be an artifact in the context of the choice shift, there are two areas of research to which the present

findings regarding the admired choice appear to have relevance. One is the field of persuasion.

A factor that is of some interest in a persuasion situation is the source of the message. It is generally argued that the attractiveness of the source has some bearing upon the persuasive impact of a delivered message. One of the concerns with the study of source effects, however, has been that it has proceeded too often in an atheoretical fashion. A number of variables have been posited as important influences upon source attractiveness, but these results at times appear contradictory, with little hope of reconciliation given the general lack of theory linking source effects to the process of attitude change within the individual. What appears necessary is an incorporation of source effects into theories of attitude change by the use of terms that are consistent with those that are assumed to mediate attitude development and change. The present research suggests that this might be possible. Anderson (1971), for instance, argues that present attitudes and attitude change are dependent upon the affective scale value of information available and its relative importance. These are exactly the terms that have been used to discuss the admired person and his expected behaviour. The behaviour and decisions of an admired person are expected to be a function of the relatively more important reasons that are

available to oneself. This suggests that it is possible to offer hypotheses about those situations in which a particular source will be admired or not, and also predict the circumstances under which admiration for a source will change, with consequent implications for attitude change in a message recipient, entirely in terms of information available to the recipient.

Another area of research where the present view of the admired choice might have implications is in the discussion of attribution theory. Attribution theory is primarily concerned with the source to which an individual attributes the causes of one's own or others' behaviour. Typically, these causes are seen as residing in the person, in the environment or, to some extent, both. It has also been argued that persons very often see their own behaviour as resulting from a greater complexity of causes than the causation attributed to others' acts (Nisbett & Valins, 1971). The present research suggests that the attribution of causation will be dependent upon the evaluation of the author of the behaviour. To admired individuals one attributes important reasons for acting, whereas the less admired or valued person is viewed as acting in terms of less important considerations. It is possible that a number of attempts that have been made to predict the locus of causation in terms of situation or person might be reformulated on the basis of the

evaluation of the source of the behaviour. It is also conceivable, given the results of Experiment III in the present series of studies, that the complexity or number of reasons attributed to a person's behaviour might depend upon the evaluation of the source of the behaviour rather than simply upon whether the behaviour is of oneself or another.

In conclusion, it would appear that the findings of the present research suggest a number of areas of study where the assumptions underlying the relevant arguments account of the choice shift, and the conception of the admired choice, might be profitably used.

REFERENCES

- Anderson, N. H. Integration theory and attitude change. Psychological Review, 1971, 78, 171-206.
- Barnlund, D. C. A comparative study of individual, majority and group judgment. Journal of Abnormal and Social Psychology, 1959, 58, 55-60.
- Baron, R. S., Dion, K. L., Baron, P. H., and Miller, N. Group consensus and cultural values as determinants of risk taking. Journal of Personality and Social Psychology, 1971, 20, 446-455.
- Becker, G. M., and McClintock, C. G. Value: Behavioral decision theory. Annual Review of Psychology, 1967, 18, 239-286.
- Berlo, D. K., and Lemert, J. B. A factor analytic study of the dimensions of source credibility. Paper presented at the meeting of the Speech Association of America, 1961, New York.
- Brown, R. Social Psychology. New York: Free Press of Glencoe, 1965.
- Burnstein, E., and Vinokur, A. Testing two classes of theories about group induced shifts in individual choice. Journal of Experimental Social Psychology, 1973, 9, 123-137.
- Burnstein, E., and Vinokur, A. What a person thinks upon learning he has chosen differently from others: Nice evidence for the persuasive-arguments explanation of choice shifts. Journal of Experimental Social Psychology, 1975, 11, 412-426.
- Burnstein, E., Vinokur, A., and Pichevin, M. F. What do differences between own, admired, and attributed choices have to do with group induced shifts in choice? Journal of Experimental Social Psychology, 1974, 10, 428-443.
- Byrne, D. Interpersonal attraction and attitude similarity. Journal of Abnormal and Social Psychology, 1961, 62, 713-715.

- Byrne, D., and Nelson, D. Attraction as a function of attitude similarity-dissimilarity: The effect of topic importance. Psychonomic Science, 1974, 1, 93-94.
- Cartwright, D. Risk taking by individuals and groups: An assessment of research employing choice Dilemmas. Journal of Personality and Social Psychology, 1971, 20, 361-378.
- Clark, H. H. The Language-as-fixed-effect fallacy: A critique of language statistics in psychological research. Journal of Verbal Learning and Verbal Behavior, 1973, 12, 335-359.
- Clark, R. D., III, and Willems, E. P. Risk preferences as related to judged consequences of failure. Psychological Reports, 1969, 25, 827-830.
- Clark, R. D., III, and Willems, E. P. Where is the risky shift? Dependence on instructions. Journal of Personality and Social Psychology, 1969, 13, 215-221.
- Clark, R. D., III, Crockett, W. H., and Archer, R. L. Risk-as-value hypothesis: The relationship between perception of self, others, and the risky shift. Journal of Personality and Social Psychology, 1971, 20, 425-429.
- Coleman, E. B. Generalizing to a language population. Psychological Reports, 1964, 14, 219-226.
- Doise, W. Intergroup relations and polarization of individual and collective judgments. Journal of Personality and Social Psychology, 1969, 12, 136-143.
- Ebbesen, E. B., and Bowers, R. J. Proportion of risky to conservative arguments in a group discussion and choice shift. Journal of Personality and Social Psychology, 1974, 29, 316-327.
- Ferguson, D. A., and Vidmar, N. Effects of group discussion on estimates of culturally appropriate risk levels. Journal of Personality and Social Psychology, 1971, 20, 436-445.
- Festinger, L. A theory of social comparison processes. Human Relations, 1954, 7, 117-140.

- Fishbein, M. A behavior theory approach to the relations between beliefs about an object and the attitude toward the object. In M. Fishbein (Ed.), Readings in Attitude Theory and Measurement. New York: Wiley, 1967.
- Goldberg, S. C. Three situational determinants of conformity to social norms. Journal of Abnormal and Social Psychology, 1954, 49, 325-329.
- Gouge, C., and Fraser, C. A further demonstration of group polarization. European Journal of Social Psychology, 1972, 2, 95-97.
- Greenwald, A. G. Cognitive learning, cognitive response to persuasion, and attitude change. In A. G. Greenwald, T. C. Brock and T. M. Ostrom (Eds.), Psychological foundations of attitudes. New York: Academic Press, 1968.
- Heapy, N. A. Social comparison vs. persuasion in the context of group shift effects. Paper presented at the meeting of the Canadian Psychological Association, Québec, 1975.
- Jellison, J. M., and Riskind, J. A social comparison of abilities interpretation of risk taking behavior. Journal of Personality and Social Psychology, 1970, 15, 375-390.
- Kelley, H. H., and Thibaut, J. W. Group problem solving. In G. Lindzey and E. Aronson (Eds.), Handbook of social psychology. Vol. 4. (2nd ed.), Cambridge, Mass.: Addison-Wesley, 1969.
- Kirk, R. E. Experimental design: Procedures for the behavioral sciences. Belmont, California, 1968.
- Kulp, D. H. Prestige as measured by single-experience changes and their permanency. Journal of Educational Research, 1934, 27, 663-672.
- Lamm, H., Schaude, E., and Trommsdorff, G. Risky shift as a function of group members' value of risk and need for approval. Journal of Personality and Social Psychology, 1971, 20, 430-435.
- Leventhal, H., and Niles, P. A field experiment on fear arousal with data on the validity of questionnaire measures. Journal of Personality, 1964, 32, 459-465.

- Levinger, G., and Schneider, D. J. A test of the risk is a value hypothesis. Journal of Personality and Social Psychology, 1969, 11, 165-169.
- Madaras, G. R., and Bem, D. J. Risk and conservatism in group decision making. Journal of Experimental Social Psychology, 1968, 4, 350-365.
- McCauley, C., Stiff, C., Woods, K., and Lipton, D. Group shift to caution at the race track. Journal of Experimental Social Psychology, 1973, 9 80-86.
- McGuire, W. J. The nature of attitudes and attitude change. In G. Lindzey and E. Aronson (Eds.), Handbook of Social Psychology. Vol. III. (2nd ed.) Reading, Mass.: Addison-Wesley, 1969.
- Miller, G. A. The magical number seven plus or minus two: Some limits on our capacity for processing information. Psychological Review, 1956, 63, 81-97.
- Moscovice, S., and Zavalloni, M. The group as a polarizer of attitudes. Journal of Personality and Social Psychology, 1969, 12, 125-135.
- Newcomb, T. M. An approach to the study of communicative acts. Psychological Review, 1953, 60, 393-404.
- Nisbett, R. E., and Valins, S. Perceiving the causes of one's own behavior. Morristown, N.J.: General Learning Press, 1971.
- Nordhoy, F. Group interaction in decision-making under risk. Unpublished master's thesis, Massachusetts Institute of Technology, Sloan School of Management, 1962.
- Ostrom, T. M. Perspective as an intervening construct in the judgment of attitude statements. Journal of Personality and Social Psychology, 1966, 3, 135-144.
- Pruitt, D. G. The "Walter Mitty" effect in individual and group risk taking. Proceedings of the 77th Annual Convention of the American Psychological Association, 1969, 4, 425-426. (Summary)
- Pruitt, D. G. Choice shifts in group discussion: An introductory review. Journal of Personality and Social Psychology, 1971, 20, 339-360.

- Pruitt, D. G., and Cosentino, C. The role of values in the choice shift. Journal of Experimental Social Psychology, 1975, 11, 301-316.
- Pruitt, D. G., and Teger, A. I. Is there a shift toward risk in group discussion? If so, is it a group phenomenon? If so, what causes it? Paper presented at the meeting of the American Psychological Association, Washington, D.C., September, 1967.
- Rabow, J., Fowler, F. J., Jr., Bradford, D. L., Hofeller, M. A., and Shibuya, Y. The role of social norms and leadership in risk-taking. Sociometry, 1966, 29, 16-27.
- Regan, D., Strauss, B., and Fazio, R. Liking and the attribution process. Journal of Experimental Social Psychology, 1974, 10, 385-397.
- Ring, K., Lipinsky, C. E., and Braginsky, D. The relationship of birth order to self-evaluation, anxiety reduction, and susceptibility to emotional contagion. Psychological monographs, 1965, 79, (10, Whole No. 603).
- Rokeach, M. The open and closed mind: Investigations into the nature of belief systems and personality systems. New York: Basic Books, 1960.
- Rokeach, M. Beliefs, attitudes, and values. A theory of organization and change. San Francisco: Jossey-Bass Inc., 1970.
- Satterthwaite, F. E. An approximate distribution of estimates of variance components. Biometrics Bulletin, 1946, 2, 110-114.
- Shaver, K. G. An introduction to attribution processes. Cambridge, Mass.: Winthrop, 1975.
- Silverthorne, C. P. Information input and the group shift phenomenon in risk taking. Journal of Personality and Social Psychology, 1971, 20, 456-461.
- St. Jean, R. Reformulation of the value hypothesis in group risk taking. Proceedings of the 78th Annual Convention of the American Psychological Association, 1970, 5, 339-340.

- St. Jean, R., and Percival, E. The role of argumentation and comparison processes in choice shifts: Another assessment. Canadian Journal of Behavioral Science, 1974, 6, 297-308.
- Stoner, J. A. F. A comparison of individual and group decisions involving risk. Unpublished master's thesis, School of Industrial Management, Massachusetts Institute of Technology, 1961.
- Stoner, J. A. F. Risky and cautious shifts in group decisions: The influence of widely held values. Journal of Experimental Social Psychology, 1968, 4, 442-459.
- Suchman, E. A. The intensity component in attitude and opinion research. In S. A. Stouddes et al., Measurement and prediction. Princeton: Princeton University Press, 1950.
- Teger, A. I., and Pruitt, D. G. Components of group risk taking. Journal of Experimental Social Psychology, 1967, 3, 189-205.
- Thomas, E. J., and Fink, C. F. Models of group problem solving. Journal of Abnormal and Social Psychology, 1961, 63, 53-63.
- Thorndike, R. L. The effect of discussion upon the correctness of group decisions, when the factor of majority is allowed for. Journal of Social Psychology, 1938, 9, 343-362.
- Vidmar, N. Group composition and the risky shift. Journal of Experimental Social Psychology, 1970, 6, 153-166.
- Vidmar, N. Effects of group discussion on category width judgments. Journal of Personality and Social Psychology, 1974, 29, 187-195.
- Vinokur, A. Cognitive and affective processes influencing risk taking in groups: An expected utility approach. Journal of Personality and Social Psychology, 1971, 20, 472-486.
- Vinokur, A., and Burnstein, E. The effects of partially shared persuasive arguments on group induced shifts: A group problem solving approach. Journal of Personality and Social Psychology, 1974, 29, 305-315.

Vinokur, A., Trope, Y., and Burnstein, E. A decision making analysis of persuasive argumentation and the choice-shift effect. Journal of Experimental Social Psychology, 1975, 11, 127-148.

Wallach, M. A., and Kogan, N. Sex differences and judgment processes. Journal of Personality, 1959, 27, 555-564.

Wallach, M. A., and Kogan, N. The roles of information, discussion, and consensus in group risk taking. Journal of Experimental Social Psychology, 1965, 1, 1-19.

Weideman, E. S. The group shift as a social comparison phenomena. Dissertation Abstracts International, 1972, 6104b.

Whyte, W. H., Jr. The organization man. New York: Simon and Schuster, 1956.

Winer, B. J. Statistical Principles in Experimental Design. (2nd ed.) New York: McGraw-Hill, 1971.

Wrightsman, L. S. Effects of waiting with others on changes in felt level of anxiety. Journal of Abnormal and Social Psychology, 1960, 61, 216-222.

APPENDIX A

MATERIALS USED IN EXPERIMENT I

Risky Choice Dilemma Problems

Cautious Choice Dilemma Problems

Booklet Instructions

Personal Choice Instructions

Admired Choice Instructions

Instructions Regarding Listing
of Arguments

Argument Listing Sheet

Importance Rating Instructions

Group Instructions

Subject Selection

Risky Choice Dilemma Problems

Mr. H, a competent chess player, is participating in a national chess tournament. In an early match, he draws the top-favoured player in the tournament as his opponent. Mr. H has been given a relatively low ranking in view of his performance in previous tournaments. During the course of his play with the top-favoured man, Mr. H notes the possibility of a deceptive though risky maneuver which might bring him a quick victory. At the same time, if the attempted maneuver should fail, Mr. H would be left in an exposed position and defeat would almost certainly follow.

Imagine that you are advising Mr. H. Listed below are several probabilities or odds that Mr. H's deceptive play would succeed. Please check the lowest probability that you would consider acceptable for him to try the deceptive play.

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

Cautious Choice Dilemma Problems

Mr. and Mrs. B have been attempting to have a child for a number of years. Mrs. B is now pregnant but a complication has arisen. The doctor has advised Mr. and Mrs. B that if the pregnancy is allowed to progress, Mrs. B's life could be in danger. If further complications do develop, the doctor will not be able to save the child and may not be able to save Mrs. B. If the pregnancy is terminated, at this time, it will be impossible for Mrs. B to become pregnant again.

Mr. I is about to board a plane at the airport at the beginning of his overseas vacation. Although he has been looking forward to this trip for some time, he is troubled because he awoke in the morning with a severe abdominal pain. Because he has never flown before, he thinks that the pain may simply be an upset stomach brought on by anticipation of the flight. Although he is not far from a hospital where he knows he will obtain quick attention, he realizes that a visit to the hospital will cause him to miss his flight which, in turn, will seriously disrupt his vacation plans. The pain has gotten more severe in the last few minutes.

Booklet Instructions

Name: _____

Sex: _____

On the following pages you will find a number of questions being asked about a particular type of problem. Below is an example of this type of problem. Read the example carefully.

Mr. C is currently a college senior who is very eager to pursue graduate study in Chemistry leading to the Doctor of Philosophy degree. He has been accepted by both University X and University Y. University X has a world-wide reputation for excellence in chemistry. While a degree from University X would signify outstanding training in this field the standards are so very rigorous that only a fraction of the degree candidates actually receive the degree. University Y, on the other hand, has much less of a reputation in chemistry, but almost everyone admitted is awarded the Doctor of Philosophy degree, though the degree has much less prestige than the corresponding degree from University X.

As you can see the central person in each situation is faced with a choice between two alternative courses of action. One alternative is more desirable and attractive than the other, but the probability of attaining or achieving the desirable alternative is less than that of attaining the less attractive alternative.

In this booklet there are four sections. Each section will be preceded by a set of instructions that tells you what sort of question will be asked about a problem. The instructions will also specify how you should answer the particular question. Each section asks you for different information about a problem but the problem in each of the sections will be the same.

Personal Choice Instructions

For the situation on the following page, you will be asked to indicate the minimum odds of success you would demand before recommending to the central person in the problem that the more attractive or desirable alternative be chosen.

Read the situation carefully before giving your judgement. Try to place yourself in the position of the central person in the situation, before giving your advice.

When making your decision, make a check mark in front of the statement of minimum odds which represents your personal choice. Remember that each time the riskier alternative is always assumed to be more desirable than the safer course. Similarly, the meaning of the odds you are being asked to mark are hypothetical, and thus it is not your task to decide what the odds might actually be in a real life situation. The odds you mark indicate the lowest odds you personally would be willing to take or still advise the central figure to take before giving the risky alternative a try.

Mr. H, a competent chess player, is participating in a national chess tournament. In an early match, he draws the top-favoured player in the tournament as his opponent. Mr. H has been given a relatively low ranking in view of his performance in previous tournaments. During the course of his play with the top-favoured man, Mr. H notes the possibility of a deceptive though risky maneuver which might bring him a quick victory. At the same time, if the attempted maneuver should fail, Mr. H would be left in an exposed position and defeat would almost certainly follow.

Imagine that you are advising Mr. H. Listed below are several probabilities or odds that Mr. H's deceptive play would succeed. Please check the lowest probability that you would consider acceptable before advising him to choose the risky play.

- The chances are 1 in 10 that the play would succeed.
- The chances are 2 in 10 that the play would succeed.
- The chances are 3 in 10 that the play would succeed.
- The chances are 4 in 10 that the play would succeed.
- The chances are 5 in 10 that the play would succeed.
- The chances are 6 in 10 that the play would succeed.
- The chances are 7 in 10 that the play would succeed.
- The chances are 8 in 10 that the play would succeed.
- The chances are 9 in 10 that the play would succeed.
- Place a check here if you feel Mr. H should not attempt the risky play no matter what the probabilities.

Admired Choice Instructions

For the situation on the following page, you will be asked to indicate the minimum odds of success that you would most admire someone demanding before they recommended that the more attractive or desirable alternative be chosen.

Read the situation carefully before giving your judgement. Try to think of someone you admire being in the position of the central person in the situation.

When making your decision about the choice you would most admire the central person making, put an A in front of the alternative that reflects your admired choice. Remember that each time the riskier alternative is always assumed to be more desirable than the safer course. Similarly the odds you are being asked to mark are hypothetical, and thus it is not your task to decide what the odds might actually be in a real life situation. The odds you mark are the lowest odds you would admire someone for taking or advising the central figure to take before giving the risky alternative a try.

Mr. H, a competent chess player, is participating in a national chess tournament. In an early match, he draws the top-favoured player in the tournament as his opponent. Mr. H has been given a relatively low ranking in view of his performance in previous tournaments. During the course of his play with the top-favoured man, Mr. H notes the possibility of a deceptive though risky maneuver which might bring him a quick victory. At the same time, if the attempted maneuver should fail, Mr. H would be left in an exposed position and defeat would almost certainly follow.

Listed below are several probabilities or odds that Mr. H's deceptive maneuver would succeed. Please indicate with an A the lowest probability that you would most admire Mr. H choosing before he considered it acceptable for the risky play in question to be attempted.

- The chances are 1 in 10 that the play would succeed.
- The chances are 2 in 10 that the play would succeed.
- The chances are 3 in 10 that the play would succeed.
- The chances are 4 in 10 that the play would succeed.
- The chances are 5 in 10 that the play would succeed.
- The chances are 6 in 10 that the play would succeed.
- The chances are 7 in 10 that the play would succeed.
- The chances are 8 in 10 that the play would succeed.
- The chances are 9 in 10 that the play would succeed.
- Place a check here if you think Mr. H should not attempt the risky play, no matter what the probabilities.

Instructions Regarding Listing
of Arguments

The following section of this booklet consists of two pages. On the first page is a description of a problem similar to the one described on the first page of this booklet. Your first task in this section, following your reading of these instructions, will be to read the problem carefully. After you have read over the problem, you are to turn to the next page. On this page you will find two columns. One column is headed by the title "Risky Alternative" whereas the other is titled "Cautious Alternative." You will also notice that each column is subdivided into boxes. What I would like you to do is think of all the arguments you can that support the choice of the uncertain but attractive alternative and write them down in the column under the heading of "Risky Alternative." Write one and only one argument in a box under this heading. After you have written all the arguments that support the risky alternative, one per box, try to think of all the arguments that you think support the choice of the less risky but less attractive alternative of the problem. Write these arguments down under the heading of "Cautious Alternative."

In summary, after reading the problem write down all the arguments that you feel would support the choice of the attractive but risky alternative, and then write down all the arguments that you think would support the choice of the more certain but less attractive alternative under the appropriate headings.

Mr. H, a competent chess player, is participating in a national chess tournament. In an early match, he draws the top-favoured player in the tournament as his opponent. Mr. H has been given a relatively low ranking in view of his performance in previous tournaments. During the course of his play with the top-favoured man, Mr. H notes the possibility of a deceptive though risky maneuver which might bring him a quick victory. At the same time, if the attempted maneuver should fail, Mr. H would be left in an exposed position and defeat would almost certainly follow.

Importance Rating Instructions

The first thing I would like you to do now is rip out this sheet of instructions and turn back to the problem that precedes the arguments you listed. Familiarize yourself with the problem again. Imagine that you must advise the central person in the problem to choose one alternative or the other. Given this, I would like you to rate each argument you wrote down as to how important it would be to you in coming to a decision about such advice.

I would like you to rate the importance of each argument using the following scale:

extremely important 1 2 3 4 5 6 7 not at all important

If an argument is extremely important in helping you make a decision between the alternatives of the problem, then rate it 1. If a particular argument was not at all important to your decision, then choose 7. If an argument's importance is somewhere between "extremely important" and "not at all important," choose a number that reflects the degree of importance relative to these two extremes.

Group Instructions

Name: _____

Sex: _____ M or F

The questionnaire you have in front of you involves the same decision problems that appeared in the booklet you have just finished. What we are interested in now is having the group discuss each problem in turn and arrive at a unanimous decision on each. You will recognize that a unanimous decision is different from a majority vote. That is, discussion should continue until everyone is in agreement. You may not return to a question; discuss each one until the group decision is reached and then go on to the next. When the group reaches its decision, you are to mark it on your questionnaire so that you will have a record of the group's decisions.

I am not going to participate in any of the discussion, although I will be available to answer any procedural questions which may arise.

You will have 20 minutes to discuss and complete the four items. In order that you may time yourself properly, I will provide you with a time signal in fifteen minutes.

If you have any questions, then open your door and I or one of my assistants will help you out. Otherwise start immediately. Remember, in each case we are interested in only the group's final decision.

Subject Selection

In this study, it was essential that there be four-person groups in all conditions in order to carry out the anticipated analysis of variance which would include groups as a factor. In order to accomplish this, each of the three major conditions (group discussion, control task, and unitary decision condition) required exactly forty subjects who would comprise ten four-person groups.

On the first day experimental sessions were held, one hundred and nine students reported to one of four sessions. The number of students in each of these sessions were as follows: Session 1 - 32 students, Session 3 - 26 and Session 4 - 27. In session one, eight subjects (two groups) could not complete the post group tasks because of time constraints. In session three, there was one two-person group that had to be formed, and in session four, a three-person group was required. The data on these thirteen subjects could not be included in the analysis, given its constraints.

A fifth session was required to complete the study. In this session, twenty-four students who, as part of class time work in sociology, took part. The instructor agreed to this in exchange for a lecture on the choice shift phenomena by the present experimenter.

APPENDIX B

MATERIALS USED IN EXPERIMENT II
AND MANIPULATION CHECK

Instructions.

Stimulus Arguments for Mrs. B

Stimulus Arguments for Mr. G

Stimulus Arguments for Mr. H

Stimulus Arguments for Mr. I

Manipulation Check

Instructions

Name: _____

Sex: _____ M or F

On the following pages you will find questions being asked about a particular type of problem. Below is an example of this type of problem. Read the example carefully.

Mr. C is currently a college senior who is very eager to pursue graduate study in Chemistry leading to the Doctor of Philosophy degree. He has been accepted by both University X and University Y. University X has a world-wide reputation for excellence in chemistry. While a degree from University X would signify outstanding training in this field the standards are so very rigorous that only a fraction of the degree candidates actually receive the degree. University Y, on the other hand, has much less of a reputation in chemistry, but almost everyone admitted is awarded the Doctor of Philosophy degree, though the degree has much less prestige than the corresponding degree from University X.

As you can see the central person in this situation is faced with a choice between two alternative courses of action. One alternative is more desirable and attractive than the other, but the probability of attaining or achieving the desirable alternative is less than that of attaining the less attractive alternative.

Now that you are familiar with the type of problem you will be dealing with, I would like you to tear off this sheet and the following four from this booklet. Go on to the second page and read the instructions there.

On the next page you will find a problem similar to the one you just read. Please read the problem carefully. Ignore the rating scale below. You will be instructed on how to use this later.

After you have read the problem turn to the next page. There you will find a list of arguments that an average student at the University of Western Ontario felt the central figure in the problem should consider in making a decision in the situation described. Read these carefully and then turn to the next page.

Mr. H, a competent chess player, is participating in a national chess tournament. In an early match, he draws the top-favoured player in the tournament as his opponent. Mr. H has been given a relatively low ranking in view of his performance in previous tournaments. During the course of his play with the top-favoured man, Mr. H notes the possibility of a deceptive though risky maneuver which might bring him a quick victory. At the same time, if the attempted maneuver should fail, Mr. H would be left in an exposed position and defeat would almost certainly follow.

The chances are 1 in 10 that the play would succeed.

The chances are 2 in 10 that the play would succeed.

The chances are 3 in 10 that the play would succeed.

The chances are 4 in 10 that the play would succeed.

The chances are 5 in 10 that the play would succeed.

The chances are 6 in 10 that the play would succeed.

The chances are 7 in 10 that the play would succeed.

The chances are 8 in 10 that the play would succeed.

The chances are 9 in 10 that the play would succeed.

Place a check here if you feel Mr. H should not attempt the risky play no matter what the probabilities.

Now that you have read the problem and the arguments, I want you to turn back to the problem. You are now to imagine that you are advising the central character in the problem. I want you to check in one of the spaces provided below the problem, the lowest probability that you would consider acceptable before advising the central figure in the problem to choose the risky alternative. You should seriously consider the arguments you have read before making a decision.

After you have made your decision on this problem you will find three other problems on the following pages accompanied by arguments used by students. I would like you to go through each of these problems and arguments, in turn, and do exactly the same things, in the same order as you did with this first problem.

Now that you have read the problem and the arguments, I want you to turn back to the problem. You are now to imagine that the central figure in the problem is someone you admire greatly. I want you to place an A, in one of the spaces provided below the problem, the lowest probability that you think your admired person would consider acceptable before attempting or choosing the risky alternative. You should seriously consider the arguments you have read before making a decision.

After you have indicated the decision your admired person would have made on this problem, you will find three other problems on the following pages accompanied by arguments used by students. I would like you to go through each of these problems and arguments, in turn, and do exactly the same things in the same order as you did with this first problem.

Stimulus Arguments for Mrs. B

It's not a happy decision to make, but certainly Mr. B is not going to jeopardize the life of someone he has known and loved.

You just don't fool around with the life of someone you love.

If the parents desire children so much, they can always adopt following an abortion.

Mrs. B might always be nagged by doubt if she has the abortion. It is possible that the child and she could have lived.

Abortion is murder of an unseen life.

They have a once in a lifetime chance of having a child.

Mr. B could become mental if he lost both his wife and the new child.

The child might not be a healthy one even if it did survive, since the mother seems so unhealthy.

Given the fact that it took a long time for a pregnancy to occur and a complication did arise, it seems Mrs. B isn't the type of woman to have babies.

The decision of whose life is to be saved occurs many times in history. Surely one decides in favour of someone one has known and loved--the mother.

It seems the odds are that the child is going to die in either case. The best bet is to ensure the survival of the mother.

Abortion is a drastic decision, but it very often has to be considered if one is going to save a life.

Sometimes protecting the life of someone you love means that someone else has to die.

There is no justification for threatening an adult woman's life when abortion is legal in this situation.

Mrs. B

Given the fact that it took a long time for a pregnancy to occur and a complication did arise, it seems Mrs. B isn't the type of woman to have babies.

Mr. and Mrs. B now at least have a chance of having a child after so many years.

Maybe Mr. and Mrs. B are underestimating medical technology.

If they have an abortion, they are not only giving up a child but the chance of ever having a child.

The B's don't have an alternative; they can adopt a child and avoid the risk of having the mother and baby die.

The life of Mrs. B and the baby could be endangered.

Mr. and Mrs. B's idea of male and female roles might require a child in the family.

Abortion is contrary to religious and moral beliefs.

Having heirs to carry on the family name is important to many families.

The child might not be a healthy one even if it did survive.

The decision of whose life is to be saved occurs many times in history. Surely one decides in favour of someone one has known and loved--the mother.

Abortion is murder of an unseen life.

You just don't fool around with the life of someone you love.

There is no justification for threatening an adult woman's life when abortion is legal in this situation.

Mrs. B

Mrs. B might always be nagged by doubt if she has the abortion. It is possible the child and she could have lived.

If the pregnancy continues, there will be an heir to carry on the family name.

If she does have the abortion, it's not just the baby's life that is lost, there is also no chance of ever having their own children.

It seems the odds are the child is going to die in either case; the best bet is to ensure the survival of the mother.

Mrs. B is likely to feel guilty the rest of her life if she has an abortion.

The decision of whose life is to be saved occurs many times in history. Surely one decides in favour of someone one has known and loved--the mother.

Sometimes protecting the life of someone you love means that someone else has to die.

The husband would never forgive himself if he encouraged his wife to continue the pregnancy and she died.

The mother and father might become much closer if they face the risky decision together.

Abortion is murder of an unseen life.

It's worth a degree of risk to have your own child.

Having heirs to carry on the family name is important in many families.

Every pregnancy entails risks.

Abortion is contrary to religious and moral beliefs.

Stimulus Arguments for Mr. G

When you own something or part of something, you work harder for it.

There will be increased financial reward if he takes the job.

Anybody would rather work for themselves rather than someone else.

The time to make a change is now while he's young.

If the new company fails, he is not likely to find a job as good as he left given today's job market.

The competition within the electronics industry almost guarantees a new small company will fail.

It's comforting to know his future is safe in his present job.

In his present job, he has guaranteed salary.

More money just isn't worth the risk.

He has job security--that's valuable.

He must consider the future of his family also.

He won't have to worry about his retirement with a guaranteed pension.

His wife would appreciate knowing he has a steady job.

He doesn't need more money.

Mr. G

When you own something or part of something, you work harder for it.

There will be increased financial reward if he takes the job.

A share of the action makes one feel one is accomplishing something.

If you don't take a few calculated risks, you'll never get ahead.

With a good education he can get another job if the company fails.

If the new company fails, he can't help but to have gained a lot of valuable experience.

One reason to stay with his present job is that he can't afford to jeopardize the future of his wife and child.

More money just isn't worth the risk.

The competition within the electronics industry almost guarantees a new small company will fail.

If the new job failed, he would have no income and an uncertain future.

It's more exciting to look forward to part ownership in a company than liberal pension benefits.

More security in the end with the new job if it succeeds.

It's more interesting to be part of something new and growing than part of some huge corporation.

If the company succeeds, he can offer his family a more rewarding and richer future.

Mr. G .

A change of life is good. It gets you out of a rut.

As a young man he'll be able to find other jobs if the new one fails.

If you have a good job, keep it.

He doesn't need more money.

He must consider the future of his family as well.

When you are part of something, you work harder for it.

More security in the end with the new job if it succeeds.

He has job security--that's valuable.

A share of the action makes one feel one is accomplishing something.

He has financial security--why take a risk.

To join a company with an uncertain future is not good.

Anybody would rather work for themselves rather than someone else.

If you don't take a few calculated risks you never get ahead.

More money just isn't worth the risk.

Stimulus Arguments for Mr. H

It's more exciting to try something risky than just play safe, especially if you're expected to lose anyway.

He has nothing to lose. Why not try.

If he does win because of the tricky play, he can take a certain satisfaction in putting down the champ. Chess champs' egos need humbling.

Mr. H is low ranking, hence he has to try something tricky.

There's no use being rash and tricky in chess; a persistent development of a strategy is likely to win in the end.

The player would be respected a lot more in chess circles if he displayed a carefully thought through play rather than trying a flashy play.

It's better to play carefully. Another surer play might come.

If you are defeated, you can try again whereas if you are defeated trying a deceptive move, you might be disqualified.

Mr. H has been losing previous tournaments.

If you're playing an expert, he's likely to see the deceptive strategy.

He's probably underestimating his opponent's overall defense strategy.

There's less of a chance of getting a checkmate at the beginning of a game with a chess master, no matter what move he makes.

He's playing a known expert who will probably see the move.

There will be other chances--why not play a solid game.

Mr. H

He has nothing to lose. Why not try.

If he does win because of the tricky play, he can take a certain satisfaction in putting down the champ. Chess champs' egos need humbling.

If plan doesn't work, defeat will follow.

It's best to stick to traditional strategies that have been tried and tested rather than try and be deceptively clever.

Mr. H has been losing previous tournaments.

Even if he wins with the deceptive play, his glory will be short-lived. Later tournaments will show that his win was a lucky break, and that it wasn't a victory of skill.

There is a chance of gaining the prestige of beating a top-favoured player.

Mr. H is low ranking, hence he has to try something tricky.

Sometimes in a chess game a chance opening occurs that even a champion can't defend against. Might as well take advantage of the chances when they come up.

If he doesn't try the play, how will he ever know whether it can work.

A chess game is not all that important, therefore, why not take the gamble.

It's more exciting to try something risky than just play safe, especially if you're expected to lose anyway.

Sometimes a deceptive move can throw your opponent off, just enough to take advantage of.

Mr. H might become a prestigious figure if he tried the play and succeeded.

Mr. H

The player would be respected a lot more in chess circles if he displayed a carefully thought through play rather than trying a flashy play.

It's better to master a carefully planned cautious strategy in chess even if it means being beaten along the way.

It's best to stick to traditional strategies that have been tried and tested rather than try and be deceptively clever.

If he tries the deceptive move, he could blow the match entirely.

There will be other chances--why not play a solid game.

It's more exciting to try something risky than just play safe, especially if you're expected to lose anyway.

If you do win against a champion chess master, there are very often very rewarding side benefits to be gained.

He has nothing to lose. Why not try.

The 'risky' move might just win out.

You never get anywhere if you don't take chances.

Since he's playing a top-favoured man, he's likely to lose so why not try something unusual.

Even if the play doesn't work when he tries it, he'll learn something anyway. That's the most you can expect when you're playing the best.

If he hasn't been doing well in past tournaments, why should one expect that the play would be so devastating.

Another chance might come up in the game that doesn't require such a great risk.

Stimulus Arguments for Mr. I

A vacation would do him a lot of good in the way of health.

The most time he is likely to be on the plane is six hours. Nothing too serious is likely to happen in that time.

The acute pain may be due to a bleeding ulcer which requires immediate attention.

He's probably only anxious.

The relief of finding out there is nothing wrong is certainly worth the inconvenience of rescheduling a vacation.

If he doesn't go on the trip, he'll be missing a long-awaited vacation.

The flight staff knows how to deal with emergencies.

If it's a charter flight, he is likely to lose a lot of money.

Even if there is a doctor on the plane, if the condition is serious, a doctor without proper facilities is useless.

The problem is most likely excitement.

If the pain lasted the whole trip, he can get attention where he is going.

If the plan has to turn back because his condition becomes serious, won't he feel the fool.

Wouldn't he feel stupid in front of his family if he disrupted the vacation only to find out there's nothing wrong.

Most people have a nervous stomach before a plane trip.

Mr. I

If the pain lasted the whole trip, he can get attention where he is going.

The pain may be due to working too hard anyway and the trip would do him good.

The relief of finding out there is nothing wrong is certainly worth the inconvenience of rescheduling a vacation.

It could be gall bladder trouble.

He's probably only anxious.

If he doesn't go on the trip, he'll be missing a long-awaited vacation.

Good medical treatment is hard to get in many resort areas.

There is not likely to be medical help on the flight.

Wouldn't he feel stupid in front of his family if he disrupted the vacation only to find out there's nothing wrong.

It would be better to be sure nothing is wrong and board another plane.

It is just fear of flying.

The flight staff knows how to deal with emergencies.

It is certainly stupid to take chances with your health just to catch a plane.

It could be a heart attack.

Mr. I

The pain may be due to working too hard anyway and the trip would do him good.

If the plane has to turn back because his condition becomes serious, won't he feel the fool.

The relief of finding out there is nothing wrong is certainly worth the inconvenience of rescheduling a vacation.

A vacation would do him a lot of good in the way of health.

If the pain continues to get worse during the trip, he'll require medical attention at the destination which involves great expense, a ruined plane ride, and perhaps a ruined vacation.

If it's a charter flight, he is likely to lose a lot of money.

Good medical treatment is hard to get in many resort areas.

He might have to spend his vacation in a hospital overseas.

A vacation plan can be rearranged.

This could be a life and death situation.

Even if the condition only lasts a couple of days, it's better to recover at home, reschedule the trip and be assured that when he starts his vacation, he'll feel well and enjoy it.

If the pain persists during the trip, he can seek medical attention at his destination.

There is not likely to be medical help on the flight.

Even if there is a doctor on the plane, if the condition is serious, a doctor without proper facilities is useless.

Manipulation Check

In each of the four studies of this dissertation an assumption has been made. It has been claimed that the arguments generated by subjects in Experiment I, favouring the risky alternative of risky problems, will be viewed by subjects in later experiments as more important to decision-making on CD problems than those supporting caution on the same problems. Similarly, it has been assumed that the arguments in favour of the cautious alternative of cautious problems will be seen as more important than those supporting the risky alternative of these items. Since these assumptions are of considerable importance to the hypotheses of Experiments II, III and IV, the present study was undertaken in an effort to evaluate the assumptions regarding the importance of arguments in relation to CD problems.

Method

Overview

Subjects were given the four CD problems used in each of the experiments and a list of forty arguments appropriate to each. These forty arguments consisted of twenty arguments in favour of the risky alternative of a particular problem and twenty supporting the cautious alternative of a problem. After reading a CD problem, subjects rated, on a seven-point scale, how important each

argument would be to them in making a minimum probability choice on each CD problem.

Subjects

Forty-two students in a course on Social Problems took part in this study. Their instructor requested they volunteer to take part. Of the forty-two, the data on thirty-three were retained for analysis. Nine of the subjects did not complete the ratings on all arguments presented.

Materials

CD Problems. The four CD items used in each of the experiments were employed in this study.

Arguments. The forty arguments associated with each CD problem were randomly selected from the pool of arguments made available in Experiment I. The details of this selection are described in the method section of Experiment II under the heading of 'Materials.'

Instructions. Subjects were instructed to read the first problem in the booklet they had been presented. After having read the problem, the list of arguments on the following two pages were brought to the subjects' attention. Subjects were told that the arguments were considerations students their own age had used in making decisions on the CD problem they had just read. Subjects were then verbally instructed to use a seven-point scale

to rate each of the arguments as to how important each would be to them if they had to decide upon a minimum odds choice on the problem they had read. Their importance ratings were placed beside each argument.

After completing the ratings of the arguments concerned with the first CD problem, subjects were instructed to go on and rate the arguments associated with each of the remaining CD problems.

Procedure

Since the experiment was carried out during class time, the experimenter waited until all the students had arrived for class. When all the students were seated, a booklet containing each CD problem, and associated arguments, was handed out to each student. Following this, the instructions described above were given.

Results

The dependent measure in this experiment is the average importance rating of the twenty arguments favouring either the risky or cautious alternative of a CD problem. The scores were analyzed using a four-way analysis of variance. One factor is whether the arguments favour risk or caution. The two levels of this factor are fixed. Item type is a two-level fixed factor. The two problems which make up each level of the item type factor comprise two levels of a specific item factor. The levels

of this random factor are nested within item type.

Subjects are also a random factor and are crossed with all other factors in the design.

Of interest to the assumption of this research are the significant main effects (Table 31) due to argument type and the argument type by item type interaction. The significant argument type effect arises (Table 32, Figure 6) because on the whole, the arguments in favour of the cautious alternative are rated as more important than those in support of the cautious alternative.

The significant two-way interaction is accounted for by the findings that the importance ratings in favour of the cautious alternative of cautious problems are higher than those in favour of the risky alternative of these problems. As well, the importance of arguments in favour of risky alternatives of risky problems is greater than that found with the arguments favouring the cautious alternative of these risky problems.

Discussion

These results support unequivocally the assumption that the arguments in favour of risk on risky problems are on average more important than those in support of caution on the same problems. As well, the arguments favouring the cautious alternative of cautious problems can be said to be, with research support, more important than those in

TABLE 31

Analysis of Variance Summary Table
for Importance Ratings

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F'</u>
Item Type (T)	1	.70	.18
Arguments (A)	1	35.64	6.40*
T X A	1	79.86	14.42*
			<u>F'</u>
Subjects (S)	32	1.69	2.52*
Item Level (L)	2	3.34	4.99*
S X T	32	1.23	1.84*
S X L	64	.66	
S X A	32	1.52	1.00
L X A	2	5.57	3.40*
S X T X A	32	1.61	.98
S X L X A	64	1.63	

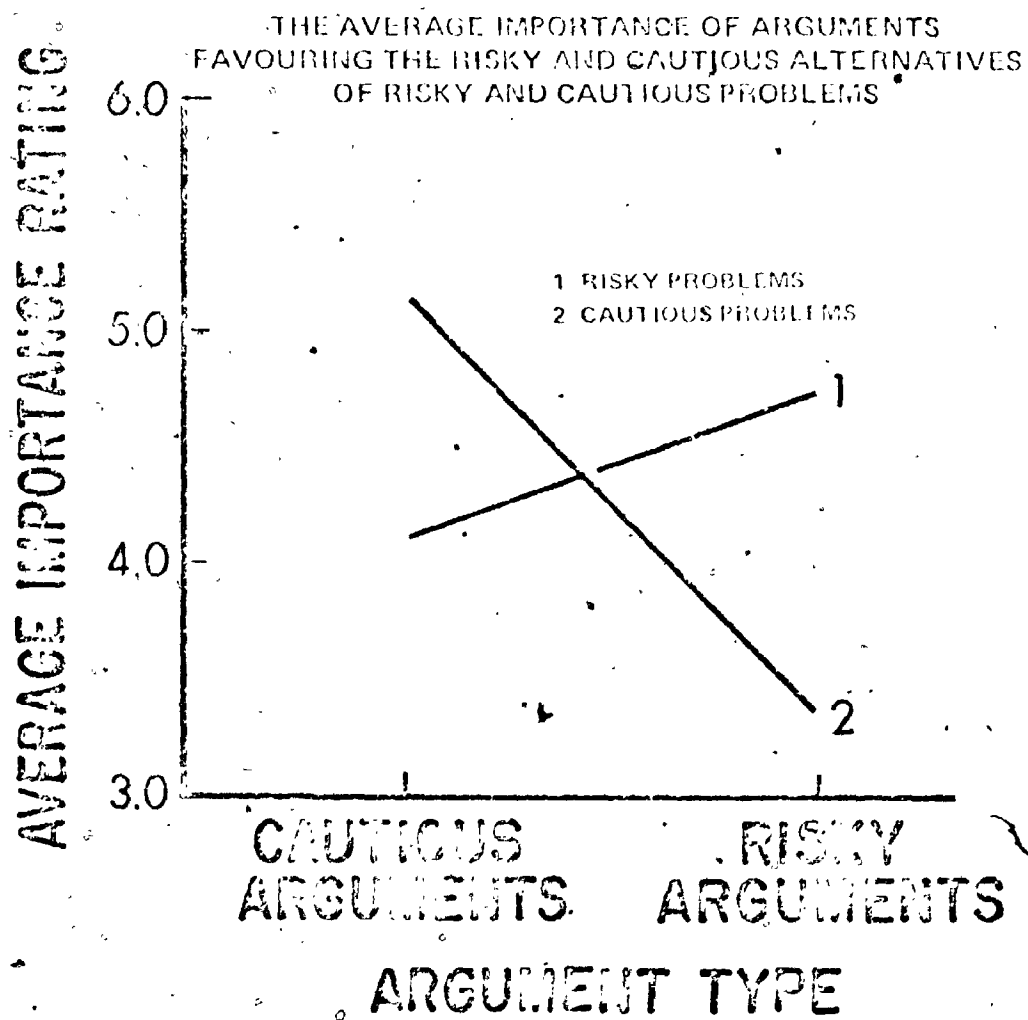
*p < .05

TABLE 32 -

The Average Importance of Arguments in
Favour of the Risky and Cautious
Alternatives of Risky
and Cautious Problems

<u>Problem Type</u>	<u>Specific Problem</u>	<u>Importance of Arguments</u>	
		<u>Risky Alternative</u>	<u>Cautious Alternative</u>
Risky	1	5.15	4.06
	2	4.34	4.15
	<u>Mean</u>	<u>4.75</u>	<u>4.10</u>
Cautious	1	3.13	5.13
	2	3.58	5.15
	<u>Mean</u>	<u>3.36</u>	<u>5.14</u>

FIGURE 6



favour of the risky alternative of cautious alternative.

What were assumptions regarding the importance of arguments in relation to CD problems can now be claimed as empirical givens.

APPENDIX C

MATERIALS USED IN EXPERIMENT III

Most Admired Instructions

Personal Instructions

Least Admired Instructions

Mr. and Mrs. B List of Arguments

Mr. G List of Arguments

Mr. H List of Arguments

Mr. I List of Arguments

Most Admired Instructions

Please read over the problem on the following page and the instructions below the problem carefully.

Now I would like you to use your imagination. Think of the central figure in the problem as being someone you admire greatly and that this person is faced with making the decision required in the instructions following the problem. The admired person you imagine may be a friend or a famous person or anyone you might think of. The important point is that they must be someone you admire greatly. Think of this person as having to select the minimum acceptable odds of success.

I would now like you to tear off the sheets which follow the problem. You will notice that there are forty arguments listed on these sheets. These arguments are a sample of considerations that other people who have read this problem thought were relevant to making a decision on this problem. What I would like you to do is to first read through the arguments carefully and to then underline the arguments you think the person you greatly admire would consider relevant to making his or her decision. Which of the arguments before you do you think the person you admire would take into consideration before making a decision on this problem. Now go ahead and read the arguments and underline the points that would be relevant to your admired person's decision.

Having completed this task, I would like you now, using the scale under the problem, to choose the minimum odds of success you think your admired person would select for this problem.

Following this problem you will find three other problems very similar to the problem you have just completed and lists of appropriate arguments. I would like you to go through each problem in turn and do exactly the same things, in the same order as you did with the first problem.

Personal Instructions

Please read over the problem on the following page and the instructions below the problem carefully.

Now I would like you to use your imagination. Think of the central figure in the problem as being yourself. Think of yourself as having to select the minimum acceptable odds of success.

I would now like you to tear off the sheet which follows the problem. You will notice that there are forty arguments listed on this sheet. These arguments are a sample of considerations that other people who have read this problem thought were relevant to making a decision on this problem. What I would like you to do is to first read through the arguments carefully and to then underline the arguments you think you would consider relevant to making your decision. Now go ahead and read the arguments and underline the points that would be relevant to your decision. Having completed this task, I would like you now, using the scale under the problem, to choose the minimum odds of success you think you would select for this problem.

Following this problem you will find three other problems very similar to the problem you have just completed and lists of appropriate arguments. I would like you to go through each problem in turn and do exactly the same things, in the same order as you did with the first problem.

Least Admired Instructions

Please read over the problem on the following page and the instructions below the problem carefully.

Now I would like you to use your imagination. Think of the central figure in the problem as being someone you least admire and that this person is faced with making the decision required in the instructions following the problem. This least admired person you ~~imagine~~ may be someone you know or a famous person or anyone you might think of. The important point is that they must be someone you least admire. Think of this person as having to select the minimum acceptable odds of success.

I would now like you to tear off the sheet which follows the problem. You will notice that there are forty arguments listed on this sheet. These arguments are a sample of considerations that other people who have read this problem thought were relevant to making a decision on this problem. What I would like you to do is to first read through the arguments carefully and to then underline the arguments you think the person you least admire would consider relevant to making his or her decision. Which of the arguments before you do you think the person you don't admire would take into consideration before making a decision on this problem. Now go ahead and read the arguments and underline the points that would be relevant to your least admired person's decision.

Having completed that task, I would like you now, using the scale under the problem, to choose the minimum odds of success you think your least admired person would select for this problem.

Following this problem you will find three other problems very similar to the problem you have just completed and lists of appropriate arguments. I would like you to go through each problem in turn and do exactly the same things, in the same order as you did with the first problem.

Mr. and Mrs. B List of Arguments

You just don't fool around with the life of someone you love.

It's not a happy decision to make, but certainly Mr. B is not going to jeopardize the life of someone he has known and loved.

Mrs. B might always be nagged by doubt if she has the abortion. Is it possible that the child and I could have lived.

There is no justification for threatening an adult woman's life when abortion is legal in this situation.

If the pregnancy continues there will be an heir to carry on the family name.

If she does have the abortion it's not just the baby's life that is lost, there is also no chance for ever having their own children.

If the parents desire children so much they can always adopt following an abortion.

Why not let the pregnancy continue for now. If things get worse, surgery can occur at the last minute.

Mrs. B is likely to feel guilty the rest of her life if she has an abortion.

Sometimes protecting the life of someone you love means that someone else has to die.

Abortion is a drastic decision, but it very often has to be considered if one is going to save a life.

The risk involved seems to be no different than that involved in driving a car or motorcycle.

The mother and father may become much closer if they face the risky situation together.

There is a feeling of pride that comes from taking a risk for a desirable goal.

The husband would never forgive himself if he encouraged his wife to continue the pregnancy and she died.

It seems that the odds are that the child is going to die in either case; the best bet is to ensure the survival of the mother.

The decision of whose life is to be saved occurs many times in history. Surely one decides in favour of someone one has known and loved--the mother.

Abortion is murder of an unseen life.

It's worth a degree of risk to have your own child.

Even if the pregnancy is successful, the pain and anguish of the pregnancy are likely to affect the development of the child. The child won't be the perfect baby the parents hoped for.

Maybe Mr. and Mrs. B are underestimating medical technology.

If they have an abortion, they are not only giving up a child but the chance of ever having a child.

The B's don't have an alternative; they can adopt a child and avoid the risk of having the mother and baby die.

Mrs. B seems like the type that even if they both survive, the pain will be unbelievable.

Given the fact that it took a long time for a pregnancy to occur and a complication to arise, it seems Mrs. B isn't the type of woman to have babies.

Mr. and Mrs. B now at least have a chance of having a child after so many years.

There is a chance that both can live and be saved. They should take it.

Having heirs to carry on family name is important to many families.

No point taking a risk since the child could die anyway.

A child is not worth a current life.

Mr. B could become mental if he lost both his wife and the new child.

Mr. and Mrs. B's idea of male and female roles might require a child.

A child is worth risks.

Every pregnancy entails risks.

He could lose his wife.

They could adopt a baby.

Abortion might be contrary to religious or moral beliefs.

The life of Mrs. B and the baby could be endangered.

The child might not be a healthy one even if it did survive, since the mother seems so unhealthy.

They have a once in a lifetime chance of having a child.

Mr. G List of Arguments

With today's job market he should be happy he has a decent secure job.

He's still young. He should wait to gain the experience a big corporation can offer before he thinks about starting up a new company with others.

A change in life is good. It gets you out of a rut.

If the new job failed he would have no income and an uncertain future.

It's more exciting to look forward to part ownership in a company than liberal pension benefits.

More security in the end with the new job if it succeeds.

One reason to stay with his present job is that he can't afford to jeopardize the future of his wife and child.

One of the things lacking in most jobs is the opportunity for commitment. This new job sounds like a situation where an individual could feel that one's future is a result of his own hard work.

As a young man he'll be able to find other jobs if the new one fails.

If the new company fails, he is not likely to find a job as good as he left given today's job market.

You shouldn't start off a new risky job unless you know the people running the enterprise very well.

If the new company fails, he can't help but to have gained a lot of valuable experience.

If the company succeeds, he can offer his family a more rewarding and richer future.

If you don't take a few calculated risks, you'll never get ahead.

It's comforting to know his future is safe in his present job.

The competition within the electronics industry almost guarantees a new small company will fail.

He won't have to worry about his retirement with a guaranteed pension.

It's more interesting to be part of something new and growing than part of some huge corporation.

New job is likely to involve excitement and challenging interest.

In his present job he has guaranteed salary.

When you own something or part of something, you work harder for it.

He can't throw away five years of job experience on an undertaking like this.

There will be increased financial reward if he takes the job.

He has financial security--why take a risk.

He has job security--that's valuable.

He must consider the future of his family also.

He's highly qualified in a profession and should try for better than he's got.

With a good education he can get another job if the company fails.

With a family and child he'll work harder in the new company.

He should take the job--there's an exciting opportunity.

He doesn't need more money.

To join a company with an uncertain future is not good.

A share of the action makes one feel one is accomplishing something.

His wife would appreciate knowing he has a steady job.

If you have good job, keep it,

He has knowledge of what the jobs ahead will require. That is an important form of security.

More money just isn't worth the risk.

No reason to worry about giving up pension. In his own company he can arrange a benefit plan.

Anybody would rather work for themselves rather than someone else.

The time to make a change is now while he's young.

Mr. H List of Arguments

He's probably underestimating his opponent's overall defense strategy.

If you're playing an expert, he's likely to see the deceptive strategy.

You never get anywhere if you don't take chances.

The player would be respected a lot more in chess circles if he displayed a carefully thought through play rather than trying a flashy play.

Even if the play doesn't work when he tries it, he'll learn something anyway. That's the most you can expect when you're playing the best.

Since he's playing a top-favoured man, he's likely to lose so why not try something unusual.

It's best to stick to traditional strategies that have been tried and tested rather than try and be deceptively clever.

If you do win against a champion chess master, there are very often very rewarding side benefits to be gained.

It's more exciting to try something risky than just play safe especially if you're expected to lose anyway.

If he hasn't been doing so well in past tournaments, why should one expect that the play would be so devastating.

There's less of a chance of getting a checkmate at the beginning of a game with a chess master, no matter what move he makes.

If he does win because of the tricky play, he can take a certain satisfaction in putting down the champ. Chess champs' egos need humbling.

If he is just lucky enough to win, he'd gain a great deal of prestige.

Sometimes in a chess game a chance opening occurs that even a champion can't defend against. Might as well take advantage of the chances when they come up.

Another chance might come up in the game that doesn't require such a great risk.

Even if he wins with the deceptive play, his glory will be short-lived. Later tournaments will show that his win was a lucky break, and that it wasn't a victory of skill.

There's no use being rash and tricky in chess, a persistent development of a strategy is likely to win in the end.

If you're playing the best, you have to play somewhat different than you usually do, why not take a chance.

Sometimes a deceptive move can throw your opponent off, just enough to take advantage of.

It's better to master a carefully planned cautious strategy in chess even if it means being beaten along the way.

The risky move might just win out.

Mr. H hasn't been playing well. What he thinks is deceptive might not be.

If he cheated, he could be caught and disgraced.

He's playing a known expert who will probably see the move.

There is a chance of gaining the prestige of beating a top-favoured player.

Mr. H might have found this maneuver successful in past games.

If he doesn't try the play, how will he ever know whether it can work.

If he tries the deceptive move, he could blow the match entirely.

Mr. H might become a prestigious figure if he tried the play and succeeded.

If plan doesn't work, defeat will follow.

There is a chance of quick victory. Why not take the chance.

A chess game is not all that important, therefore, why not take the gamble.

Mr. H is low ranking, hence he has to try something tricky.

Mr. H has been losing previous tournaments.

He has been rated low.

He has nothing to lose. Why not try.

If you are defeated, you can try again whereas if you are defeated trying a deceptive move, you might be disqualified.

He might catch his opponent off guard.

It's better to play carefully. Another surer play might come.

There will be other chances--why not play a solid game.

Mr. I List of Arguments

Wouldn't he feel stupid in front of his family if he disrupted the vacation only to find out there's nothing wrong.

A plane trip is worth a little pain.

If he is sick on the plane, he'll be upsetting everybody on the plane.

We worry too much about aches and pains in our society.

The relief of finding out there is nothing wrong is certainly worth the inconvenience of rescheduling a vacation.

If the plane has to turn back because his condition becomes serious, won't he feel the fool.

If he doesn't go on the trip, he'll be missing a long awaited for vacation.

If the pain is due to acute appendicitis and he is not immediately examined, he might die on the trip.

The acute pain may be due to a bleeding ulcer which requires immediate attention.

It is most likely not a serious ailment and the pain will go away during the trip.

Most people have a nervous stomach before a plane trip.

It is certainly stupid to take chances with your health just to catch a plane.

It's certainly not much trouble to reschedule a vacation given you've only missed a day or so.

If the pain continues to get worse during the trip, he'll require medical attention at the destination which involves great expense, a ruined plane ride, and perhaps a ruined vacation.

He might be suffering from nothing more than indigestion.

If the pain persists during the trip, he can seek medical attention at his destination.

The pain may be due to working too hard anyway and the trip would do him good.

Even if the condition only lasts a couple of days, it's better to recover at home, reschedule the trip and be assured that when he starts his vacation, he'll feel well and enjoy it.

Even if there is a doctor on the plane, if the condition is serious, a doctor without proper facilities is useless.

There are doctors on planes sometimes.

If it's a charter flight, he is likely to lose a lot of money.

The most time he is likely to be on the plane is six hours. Nothing too serious is likely to happen in that time.

A vacation would do him a lot of good in the way of health.

He might create a lot of trouble for others on the airplane.

A vacation plan can be rearranged.

The problem is most likely excitement.

There is not likely to be medical help on the flight.

It is just fear of flying.

He's probably only anxious.

It could be a heart attack.

It could be gall bladder trouble.

The flight staff knows how to deal with emergencies.

He might have to spend his vacation in a hospital overseas.

It could be appendicitis.

If the pain lasted the whole trip, he can get attention where he is going.

If it's a reasonably short flight, there is no problem.

Good medical treatment is hard to get in many resort areas.

It would be better to be sure nothing is wrong and board another plane.

This could be a life and death situation.

It doesn't sound like his past health indicates a problem.

APPENDIX D

MATERIALS USED IN EXPERIMENT IV

Procedural Instructions

Admiration and Attributed
Choice Instructions

Procedural Instructions

(1) Please read the problem on the front of your booklet. As you will see the central person in this situation is faced with a choice between two alternative courses of action. One alternative is more attractive than the other, but is less likely to occur than the less desirable alternative. After reading the problem please look up.

(2) On the next page you will find a list of arguments. These arguments were reasons that a student your own age said he considered in making his decision on the CD problem you have just read. Read these problems carefully. After you have read them look up.

(3) Now turn to the third page and read the instructions there. After you have done what the instructions request please look up.

(4) Now go on to the next page. You will find another similar problem and arguments used by a student. Do exactly as you have done with the problem you have just read. You will find a set of written instructions following the arguments that are exactly the same as the one you have just read.

There are three more problems to deal with.

(5) If you are missing any problems or anything seems out of line please put your hand up. You must complete all problems.

Admiration and AttributedChoice Instructions

Indicate on the scale below how much you would admire the student who used the arguments you have just read. As you can see, there are seven points on the scale.

Admire not at all 1 2 3 4 5 6 7 Admire greatly

If you admire the person greatly, choose 7. If not at all, choose 1. If your admiration is somewhere between these two extremes, choose a number that reflects the degree of admiration relative to these two extremes. Please make your choice now by circling a number.

Now that you have rated how much you admire the student, turn back to the page with the problem. I would like you to now indicate the minimum odds of success you think the student would demand before recommending to the central figure in the problem that the more attractive or desirable alternative be chosen.

To do this, place a check mark in front of the statement of minimum odds, under the problem, which you feel represents the choice that the student would have made, given the arguments he used.