EFFECTS OF SITUATIONAL, ATTITUDINAL, AND MEDIATIONAL FACTORS ON COOPERATIVE BEHAVIOR

By

MARK HAROLD WINKEL

Bachelor of Arts
Cleveland State University
Cleveland, Ohio
1975

Master of Arts in Psychology
Cleveland State University
Cleveland, Ohio
1980

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Thesis Approved:

Thesis Adviser

Dean of the Graduate College

PREFACE

This study is concerned with the effects of situational factors on cooperativeness in a conflict situation involving a communicative third party. More specifically, the effects of payoff structure and normative messages from a third party on cooperativeness of disputants in a Prisoner's Dilemma Game are assessed. In addition, the relationship between attitudinal measures, behavioral intentions, and cooperative behavior are explored using standard linear regression.

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CHAPTER I

INTRODUCTION

Statement of the Problem

Studies of third party intervention in conflict (Rubin, 1980; Wall, 1979) have for the most part involved mixed motive bargaining behavior (Ajzen & Fishbein, 1970; Chertkoff & Esser, 1976; Druckman & Bonoma, 1976; Krauss, 1966; Pruitt & Johnson, 1970; Wall, 1979). The variables investigated have included mediation techniques (Johnson & Tuller, 1972), face saving behavior (Brown, 1968; Johnson & Tuller, 1972; Pruitt & Johnson, 1970), social goals and normative beliefs (Ajzen & Fishbein, 1970; McNell & Reid, 1975). However, many of the results have proven contradictory and equivocal. The present study is designed to investigate and perhaps to clarify the relationship between two major components which influence third party mediation in conflict. These components are (1) behavioral intentions, as discussed by Ajzen and Fishbein (1970), and (2) situational factors.

Ajzen has demonstrated (Ajzen, 1971; Ajzen & Fishbein, 1970) that behavior is influenced by or is a function of behavioral intentions, made up of attitudes and normative beliefs (see Figure 1). An attitude may be thought of as a belief about some object or event and the evaluative aspects of that belief. A normative belief on the other hand refers to individuals' perceptions of the behavior expected of him by relevant or significant others (Ajzen & Fishbein, 1970).

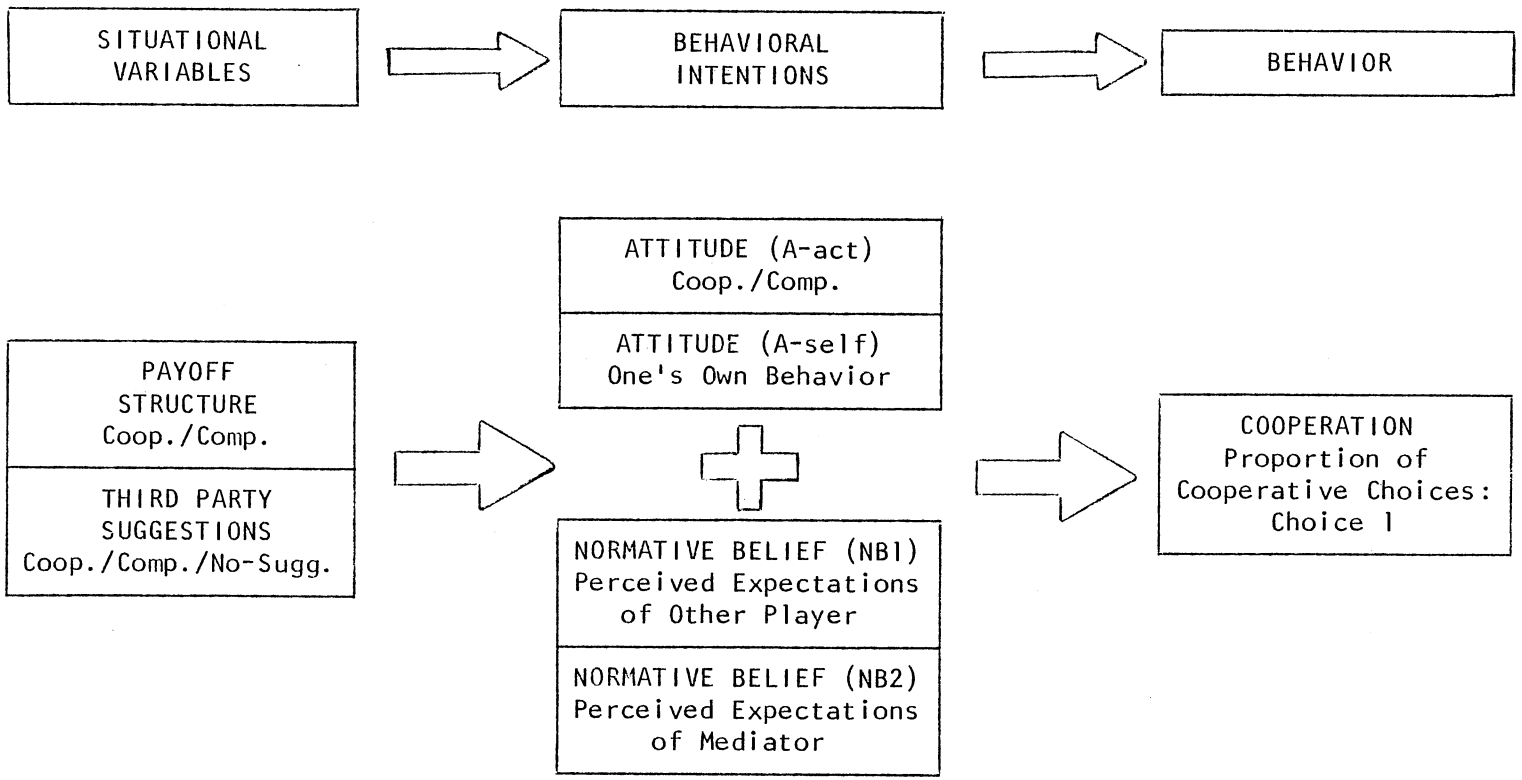

Figure 1. Model of the Relationship Between Situational Variables, Behavioral Intentions, and Behavior

Situational determinants consist of events occurring externally to the individual. Two such factors which have been shown to affect bargaining in a dyadic situation are the payoff structure and persuasive communications directed at the participants (Ajzen, 1971; Ajzen & Fishbein, 1970).

In one investigation (Ajzen & Fishbein, 1970), the effects of several situational variables on (cooperative) behavior were assessed. Motivational orientation and payoff structure (i.e., Cooperation Index or CI) were systematically varied in a two-person Prisoner's Dilemma (PD) situation. To clarify the relationship between attitudes, normative beliefs and behavioral intentions, Ajzen and Fishbein employed an extension of Dulaney's theory of propositional control. The model states that overt behavior (B) is mediated by behavioral intentions (BI) which are in turn a joint function of an individual's attitudes toward performing the act of cooperation (A-act) and his/her beliefs about what he/she is expected to do in a given situation (i.e., normative beliefs or NBs). Both motivational orientation and payoff structure produced significant differences in subjects' level of cooperation in a two-person PD game. In addition, these differences were in the hypothesized directions, with subjects in the cooperative treatment conditions exhibiting the greatest level of cooperative behavior. The results further revealed that behavioral intentions were highly predictive of game behavior, and that BI were in turn a function of the attitude toward the act of cooperation (A-act) and of the subjects' perceived expectations of the other player (NB).

In summary, Ajzen and Fishbein's (1970) extension of Dulaney's theory of propositional control was demonstrated to be highly successful in

predicting overt behavior from behavioral intentions in a two-person PD situation.

In another study, Ajzen (1971) investigated the effects of persuasive communications on overt behavior in a two-person PD situation. Motivational orientation and type of persuasive message served as the independent variables. The persuasive messages were oriented either toward changing subjects' attitudes (i.e., attitudinal message) or normative beliefs (i.e., normative message). In addition, each of these messages was designed to encourage either cooperation or competition in the PD situation. As in the previous investigation, Fishbein's extension of Dulaney's theory of propositional control was employed to test hypotheses about the effects of persuasive communications on overt behavior in a two-person PD game. The results revealed that the attitudinal and normative messages affected behavior in the hypothesized directions. Enhanced cooperative behavior was demonstrated by subjects who received a generalized attitudinal message advocating cooperation, with a corresponding decrease in cooperative behavior by subjects receiving a competitive normative message and who were in the cooperative motivational orientation. As is evident, persuasive communications may have an effect on behavior in the direction advocated by the message. In addition, the regression equations predicting behavior from behavioral intentions under the two motivational orientations were effective to the extent that persuasive communications affected their respective targets. It was also demonstrated that the attitudinal measures carried more weight in the prediction of cooperative behavior with a competitive than cooperative motivational orientation, and that the normative belief measures were of greater relative importance in the cooperative motivational orientation.

Therefore, the attitudinal message had its greatest impact on behavior in the competitive motivational orientation while the normative message had its greatest effect in the cooperative motivational orientation. Again, Fishbein's extension of Dulaney's theory of propositional control proved to be effective in predicting behavior in a two-person PD situation. Another important conclusion which may be drawn from this investigation is the demonstration of behavioral change as the result of persuasive communications. However, these messages were of a general nature, and directed at participants in a two-person PD situation.

While the relationship of these variables has been assessed separately in dyadic bargaining situations, there has not been as yet a systematic investigation of them in a conflict situation involving a third, neutral party who makes suggestions. Furthermore, the normative and attitudinal messages to the participants have, in the past, been directed at the subjects in general, using the instructions.

The purpose of the present study is to assess the effects of payoff structure and specific third-party messages (i.e., situational variables) on behavioral intentions and subsequent behavior (i.e., cooperativeness) in a conflict situation. This will be accomplished by systematically varying the payoff structure and third-party suggestions to the participants.

Four major areas of research directly related to the present study are conflict, negotiation and mediation, attitudes, and attitude-behavior relations. Investigations relevant to the present problem within each area will be discussed. The relationships between several of these variables will subsequently serve as the base for the generation of the hypotheses.

Conflict

As pointed out by Rubin (1980), conflict is inherent in the process of interdependence between people. There are many different types of conflict: intrapersonal, interpersonal, intragroup, intergroup, and international (Deutsch, 1978). Consequently there are many variables affecting the course of conflict, including the characteristics of the parties, the nature of the issue giving rise to the conflict (i.e., motivational significance), the social environment within which the conflict occurs, the interested audiences to the conflict, the strategies and tactics employed by the parties in conflict, and the consequences of the conflict to each of the parties (Deutsch, 1978).

Conflict may arise then out of the interaction between two persons (i.e., interpersonal conflict) resulting from a combination of many of the variables just mentioned. Furthermore, people emit behavior in the presence of each other, which then has natural consequences for all those present. These natural consequences in turn produce outcomes and reinforcements for the parties involved which in turn provide the opportunities for conflict and cooperation (Thibaut & Kelly, 1959; Tedeschi & Lindskold, 1976). But what exactly do we mean when we talk about conflict? Deutsch (1969) has described conflict as existing "whenever incompatible activities occur." These incompatibilities may occur within individuals, groups, or nations, or between them. Furthermore, while situational determinants may affect the nature of conflict, there is a phenomenological component which should be considered as well. In other words, this experienced component to conflict may interact with situational determinants to produce unique perceptions and evaluations of the

situation (e.g., attitudes and normative beliefs) which then transform the objective conditions into experienced conflict.

While a number of different typologies of conflict have been proposed (Boulding, 1962; Rapoport, 1960), the typology of immediate interest is one of mutual contingency. In this context, mutual contingency will refer to a situation where each person enters an interaction with a plan; however, each is responsive to the actions of the other and modifies his plan as a result (Tedeschi & Lindskold, 1976). In this setting, there are usually a number of different issues involved. Some of the more salient issues include control over resources (Kuhn, 1963), values, beliefs, and the nature of the relationship between the parties (i.e., general orientation towards each other and interpersonal trust).

Conflict among issues of mutual importance may lead to an impasse between the parties. There usually are any of a number of different avenues of conflict resolution open to the participants. For instance, the disputants may resolve the issues themselves through coercion, through unilateral withdrawal by one of the parties, or through negotiation. One other course of action is intervention by a third party, either at the invitation of the disputants or at the request of some external agency. It has been demonstrated that the style of third-party intervention affects bargaining behavior (Johnson & Tullar, 1972). Often an intervention occurs in order to provide the disputants with advice or to impose some binding decisions (Rubin, 1980). The former condition (i.e., third-party intervention involving non-binding suggestions) has been referred to as mediation.

Negotiation and Mediation

The mediation process has been described by Wall (1979) as consisting of at least three individuals (i.e., mediator, negotiator, and opposing negotiator) and three relationships (i.e., mediator negotiator, mediator-opposing negotiator, and negotiator-opposing negotiator). Therefore, the nature of outcomes of the mediation process may be considered to be the result of an interaction between (a) the personal characteristics of the three participants, (b) the nature of the three interpersonal relationships, and (c) situational factors. Regarding the personal characteristics of the three participants, there are numerous investigations in the negotiation literature which describe the effects of the two negotiators' personal characteristics and their interpersonal relationships (Chertkoff & Esser, 1976). Wall (1979) reports on both the negotiator-opposing negotiator relationship and the mediator-negotiator relationship in a bargaining situation. Still other experiments on negotiation have demonstrated the effects of such factors as the need to maintain face in interpersonal bargaining (Brown, 1968; Pruitt & Johnson, 1970), style of third party intervention (Johnson & Tullar, 1972), size of conflict and sex of experimenter (Deutsch, Canavan, & Rubin, 1971), attitudes and normative beliefs (Ajzen, 1971; Ajzen & Fishbein, 1970; Krauss, 1966; McNeel & Reid, 1975), opponent's concession rate (Druckman & Bonoma, 1976; Wall, 1977), and various types of messages (Ajzen, 1971; Wall, 1979). Payoff structure and whether negotiation takes place in the presence of others (Ajzen & Fishbein, 1970; Braver & Barnett, 1976; Brown, 1968) are situational factors which have been explored.

Attitudes

Another related topic which deserves attention is that of attitudes. As Allport (1935, 1968) pointed out, the concept of attitude "is probably the most distinctive and indispensible concept in contemporary American social psychology" (1968, p. 59). Furthermore, although definitions vary considerably, there seems to be "general agreement that a person's attitude toward some object constitutes a predisposition on his part to respond to the object in a consistently favorable or unfavorable manner" (Ajzen & Fishbein, 1973, p. 41). However, there has been an accumulation of reports for more than 40 years which demonstrates rather low or nonsignificant relations between attitudinal predictors and behavioral criteria (cf. Wicker, 1969). Although the evidence has been discouraging, social psychology has recently been witnessing a revival of interest in the relationship between attitude and action (e.g., Ajzen & Fishbein, 1973; Ajzen & Fishbein, 1977; Brannon, 1976; Liska, 1975; Schneider, 1976). In addition, several such studies have been concerned with attitude-behavior relations in interpersonal bargaining and conflict (Ajzen, 1971; Ajzen & Fishbein, 1970; Krauss, 1966; McNeel & Reid, 1975). Krauss (1966) demonstrated the effects of structural and attitudinal factors in interpersonal bargaining and interpreted them in terms of Heider's (1958) theory of cognitive balance. Ajzen and Fishbein (1970), on the other hand, present an interpretation of attitude-behavior relations in terms of Dulaney's (1967) theory of propositional control. According to Ajzen and Fishbein (1977):

> A single behavior is determined by the intention to perform the behavior in question. A person's intention is in turn a function of his attitude toward performing the behavior and of his subjective norm. It follows that a single act is predictable

> from the attitude toward the act, provided there is a high correlation between intention and behavior (p. 888).

Recent findings (Ajzen, 1971; Ajzen & Fishbein, 1970) have tended to show that attitude-behavior relations can have real consequences for interpersonal conflict.

Attitude-Behavior Relations

While attitude-behavior relations have been studied in the two-person PD situation, little information exists regarding third-party involvement. There is, however, evidence supporting a strong relationship between attitudes and behavior in a dyadic situation. It logically follows, then, that a similar relationship may exist when three individuals are involved.

A useful model of attitude-behavior relations has been proposed by Ajzen and Fishbein (1970), employing an extension of Dulaney's theory of propositional control. This model states that overt behavior is mediated by behavioral intentions which in turn consist of the sum of several weighted components. As pointed out by Ajzen and Fishbein (1970, 1977) these weighted components include attitudes and social normative beliefs. The model may be expressed algebraically as follows:

$$B \sim BI = [A - act]w0 + [NBs]w1$$

where

B = overt behavior;

BI = behavioral intentions;

A - act = attitude toward performing a given behavior in a given situation;

NBs = social normative beliefs; and

w0,w1 = empirically determined weights.

This model has been demonstrated to be highly successful in the prediction of game behavior in a Prisoner's Dilemma paradigm (Ajzen, 1971; Ajzen & Fishbein, 1970).

However, due to the addition of a third party in the present investigation, the inclusion of two other components are needed to enhance the predictive utility of the model. These additional components include attitude toward one's self based upon one's own behavior in the past (A - self), and perceived expectations of the mediator (NBs). This extension of Fishbein's (1967) model may then be expressed algebraically as follows:

$$B \sim BI = [(A - act)w0 + (A - self)w1] + [(NB1)w2 + (NB2)w3]$$

where

A - self = attitude toward one's self based upon one's own behavior in a given situation;

NB1 = social normative beliefs related to the other player; and

NB2 = social normative beliefs related to the mediator.

This relationship may be seen in Figure 1.

In addition, it has been pointed out that any variable external to the model can influence behavioral intentions, and hence behavior, by indirectly affecting the various components of the model (Ajzen, 1970).

Two such external variables (i.e., situational variables) which seem most relevant to the process of third-party mediation are: (1) the outcome or payoff associated with a particular decision made by a participant, and (2) the type of suggestion made by a third party to mediate

the conflict process. The selection of the situational variables to be employed in the present investigation is based on previous work carried out in a two-person PD situation (Ajzen, 1971; Ajzen & Fishbein, 1970).

The Experimental Situation

Edwards (1954) and others (von Neumann & Morgenstern, 1944) have noted that game theory offers a useful method for investigating the decision-making process. As defined by Edwards (1954), "game" is a very general concept which refers to any "situation in which money (or some valuable equivalent) may be gained as the result of a proper choice of strategy" (p. 406). In a mixed-motive situation, such as the one in a Prisoner's Dilemma game, there is an ambivalence about the relationship between the parties. The interests of each participant are partly coincident and partly in conflict. Thus, this theoretical model might be usefully employed to study the process of conflict involving two or more individuals.

The experimental situation selected for the present investigation is the Prisoner's Dilemma game. In the PD game players make repeated choices between two alternatives which have been called "Cooperation" and "Defection" (Rapoport & Chammah, 1965). These two responses are assumed to serve the motives of cooperation and competition, respectively. The choices of the players determine the payoff to each (see Figure 2). Furthermore, it has been demonstrated (Rapoport & Chammah, 1965) that different payoff matrices tend to produce different amounts of cooperation. Indices of "cooperative advantage" associated with various matrices have been developed by these investigators. As pointed out by Ajzen and Fishbein (1970), the most generally useful index is the ratio

(X1 - X4)/(X3 - X2) which has been referred to as the "Cooperation Index" by Terhune (1968: see Figure 3). The cooperation index has a range from 0 to 1, and in this particular investigation will be 0.90 for the cooperative payoff matrix, and 0.10 for the competitive payoff matrix (Figure 2). The cooperative payoff matrix will be identical to the PD game used by Deutsch (1960). The competitive payoff matrix on the other hand will be designed to discourage cooperative choices (i.e., Choice 1).

Since the present investigation involves three participants, the PD game as described above will be modified to include a third party. This will be accomplished by using three PD machines--two to be used by the players, and one to be used by the mediator. The particular choices of the players will be intercepted by the third party and transferred to the respective other player. The mediator will not alter the responses in any way, but will use a signaling feature of the equipment to make suggestions to the participants before their choices have been made. These suggestions will be designed to encourage either cooperation, competition, or no-suggestion (see Procedures).

The experimental manipulations in the present investigation are designed to answer a number of questions related to third-party mediation of conflict. The questions to be answered include the following: What effect will the manipulation of the payoff structure of the situation have on subsequent cooperativeness in a conflict situation involving a neutral party? How will suggestions from a neutral third party affect cooperative behavior? In what ways will these two variables affect an individual's attitudes and normative beliefs? Furthermore, what is the relationship between attitudes, normative beliefs, behavioral intentions,

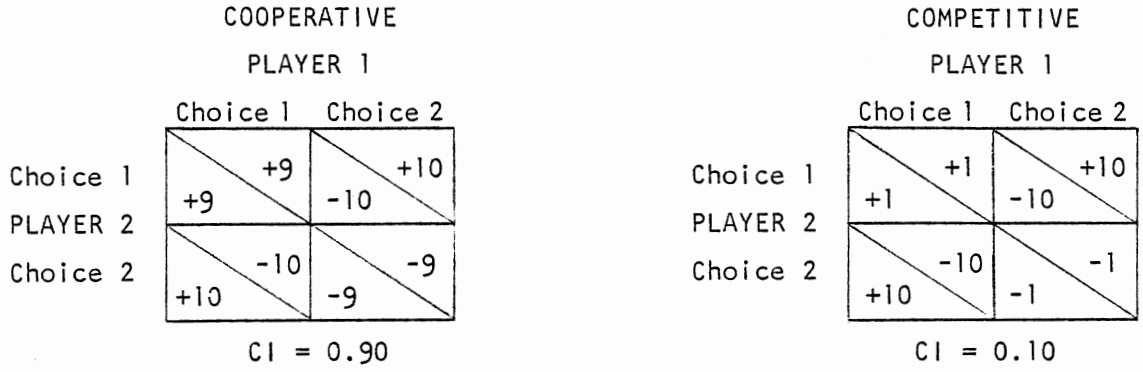

Figure 2. Payoff Matrices for Cooperative and Competitive Cooperation Indices

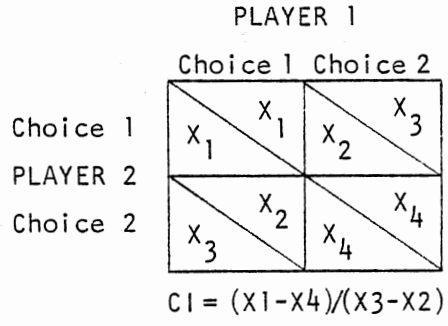

Figure 3. Computation of Cooperation Index (CI)

and behavior in a conflict situation involving neutral third-party interventions?

Hypotheses

To summarize, the main purpose of the present study is to assess how behavior and two situational factors (i.e., payoff structure and third-party suggestions) are mediated by behavioral intentions in a PD game involving third-party mediation. The experimental hypotheses are as follows:

1. A greater percentage of cooperativeness, as reflected in the measures of A - act 1, A - act 2, A - self, NB1, NB2, and B, will occur in the situation of cooperative payoff matrix than in the competitive matrix situation.

2. A greater percentage of cooperative choices will occur when subjects receive a suggestion from the third party advocating cooperation. The smaller percentage will be exhibited by those receiving a competitive suggestion, with intermediate levels of cooperative choices in the no-suggestion condition.

3. The terms BI and B in the model will be highly correlated, since behavior is mediated by behavioral intentions.

4. A statistically significant multiple correlation will result for the five predictors (A - act 1, A - act 2, A - self, NBL, and NB2) and behavioral intentions, since behavioral intentions are a function of attitudes and normative beliefs.

5. A high multiple correlation will result between the predictor variables and behavior, as behavior is mediated by behavior intentions which are a function of attitudes and normative beliefs. However, the

passage of time following administration of the attitude questionnaire will affect behavior during the last 10 trials. Thus, the multiple correlation for the predictor variables on behavior will be significantly lower than that for the predictor variables and behavioral intentions.

CHAPTER II

METHOD

Subjects

A total of 60 undergraduate psychology students served as the experimental subjects (30 males and 30 females). All received class credit for participation. Equal numbers of male and female subjects were randomly assigned to all of the experimental conditions.

Procedure

Two subjects and two experimenters participated in each session, although each subject was led to believe that s/he was playing against the other subject with a third party mediating the game. Upon arrival at the experimental laboratory, the two subjects with experimenter 1, who was posing as a naive subject, were escorted one at a time to adjacent experimental rooms by experimenter 2. Once in their respective rooms, each subject was told that their opponent (ostensibly the other subject) and the mediator (experimenter 1) are in two neighboring rooms. In addition, the subjects were informed that they, the two players, are in the two rooms, each connected with the mediator's room.

Located on a table directly in front of each subject was a Prisoner's Dilemma machine (Appendix C). The subjects were informed that they would play 20 trials of the game with the PD machine, and that the choice of each player would be relayed to the mediator before it was transferred

to the respective other. In addition, the mediator would be making suggestions to each player as to which choice s/he believed would maintain the greatest equity between them. A set of instructions was then read separately to each subject by experimenter 2 (Appendix A). Following administration of instructions, each subject took a five-item multiple choice quiz over procedures to ensure understanding (Appendix B). Once any final questions concerning the procedure were answered, experimenter 2 went to the center room (mediator room) where experimenter 1 had originally been escorted, and the game began. Once the game had started, each subject played a two-person PD game, ostensibly with the other subject. In addition, there was a third party (the mediator) who made suggestions to each player before they made their response choices.

Each subject actually played against a pre-planned game strategy which was 50 percent cooperative and 50 percent competitive. Each experimenter used the pre-planned strategy while operating a PD machine control unit designed to produce the responses of both the other player and the mediator. Thus, each subject was playing against an experimenter who was operating a PD control unit in the center room. The experimenter and control unit served the purpose of the other player and the mediator. The rationale for running subjects in this manner was expediency. The purpose of having experimenter 1 pose as a subject in the beginning of the experiment was to help make the situation believable for the subjects. If there were only two subjects in the waiting room to begin with, the subjects might have had a tendency to think that there really was no third party involved.

Prior to making a choice on each trial, subjects received a suggestion from the mediator (i.e., experimenter 1 or experimenter 2). There

were three possible suggestions which could have been sent by the mediator: one advocated cooperation, one advocated competition, and the third said "no suggestion." The probability of any particular suggestion being sent was determined prior to the beginning of the session. The pre-planned sequence of opponent suggestions and mediator suggestions was determined randomly in advance. The probability structure associated with the different experimental treatments may be found in Table I.

TABLE I

PROBABILITY STRUCTURE OF MEDIATOR'S SUGGESTIONS AND OPPONENT'S STRATEGY

Variable	Level	Response	Probability of Response (Per Trial)
Treatment: Mediator's Suggestion	Cooperative	Mediator suggests choice 1 (coop.)	p = 0.80
		Mediator suggests choice 2 (comp.)	p = 0.10
		No suggestion	p = 0.10
	Competitive	Mediator suggests choice 1 (coop.)	p = 0.10
		Mediator suggests choice 2 (comp.)	p = 0.80
		No suggestion	p = 0.10
	No suggestion	Mediator suggests choice 1 (coop.)	p = 0.10
		Mediator suggests choice 2 (comp.)	p = 0.10
		No suggestion	p = 0.80
Control: Opponent's Strategy	Neutral	Choice 1 (coop.)	p = 0.50
		Choice 2 (comp.)	p = 0.50

Once 10 trials were played, experimenter 2 returned to the subject rooms separately and administered a six-item attitude questionnaire (Appendix D). After the subjects had completed the questionnaire, experimenter 2 returned to the mediator room and both subjects played 10 more trials under the same experimental conditions. The percentage of cooperative choices (i.e., Choice 1) during the second 10 trials was used as the measure of cooperative behavior. At the conclusion of the game, the subjects were debriefed and asked to sign a confidentiality statement regarding procedural information (Appendices E and F).

Independent Variables

Other mediation studies (Ajzen, 1971; Ajzen & Fishbein, 1970; Johnson & Pruitt, 1972; Johnson & Tullar, 1972) have examined the effects of mediation on both the negotiator and his opponent. Unfortunately, the methodologies employed have provided confounded and equivocal data because they have not clarified the major sources of variance related to each participant. Thus, the findings of these investigations could have resulted from the negotiator's response to the technique, from the opponent's response, or from an interactive negotiator opponent response. In an effort to control for these confounds, the two treatments will be applied only to the negotiators (i.e., subjects).

Mediator Suggestion Type

The mediator made a suggestion on every trial prior to the subject's choice. The type of suggestion made depended upon the particular experimental condition. Once again the probability and order of the suggestions made by the mediator were determined randomly prior to the

initiation of each game (see Table 1). The same procedure was employed for the competitive and no-suggestion conditions as well.

Cooperation Index

The Cooperation Index as defined by Ajzen and Fishbein (1970) consisted of two different payoff matrices designed to encourage either predominantly cooperative or competitive behavior. The payoff matrices employed may be seen in Figure 2.

In Figure 2, the upper triangle in a cell corresponds to the negotiator's payoff, while the lower triangle represents the opponent's payoff. The points in each cell of the matrices represent the points each participant received on a given trial, provided that the particular combination of choices was made by the players. Choice 1 by either player represented a cooperative response, while Choice 2 represented a competitive response. Furthermore, by manipulating the points in the individual cells, a matrix encouraging primarily cooperative or competitive behavior was created (i.e., Cooperation Index). To enhance motivational commitment, the actual payoff consisted of $.01 per point. However, it was possible for subjects to lose money as well as gain money. Subjects were individually given one dollar and were told that they could keep whatever they won during the game.

Opponent's Strategy

It has been demonstrated that opponent's concession rate in a bargaining situation affects subject's expectations and subsequent behavior (Druckman & Bonoma, 1976). Therefore, the opponent's strategy was held constant at 50 percent cooperative, and 50 percent competitive. This

was accomplished by determining the opponent's response choice (i.e., Choice 1 or Choice 2) in advance of the experiment. The particular pattern of responses on any given trial was determined randomly for all subjects, and the same strategy was employed for all subjects (see Table 1).

Dependent Variables

Level of Cooperation

The level of cooperation for a given subject (i.e., behavior or B) was determined by the frequency with which s/he made Choice 1 during the last 10 trials of the game. The frequency measure was then divided by 10 to obtain the percentage. Only the percentage of Choice 1 was used in the data analysis, since the percentage of Choice 2 is the simple inverse of Choice 1 percentages.

Attitude Questionnaire

The attitude questionnaire provided measures for the following experimental variables, and is based on Ajzen and Fishbein's (1970) conceptualization of attitude-behavior relations.

1. A direct measure of the subject's attitude toward the act of cooperation (A - act) was based on the sum over four semantic differential scales. These four scales have been shown to have high loadings on the evaluative factor (cf. Osgodd, Suci & Tannenbaum, 1957). The items were presented as follows:

Making Choice 1 is

foolish ___:___:___:___:___:___:___ wise

good ___:___:___:___:___:___:___ bad

harmful ___:___:___:___:___:___:___ beneficial

rewarding ___:___:___:___:___:___:___ punishing

2. Attitude toward competition was measured in the same way as attitude toward cooperation with the only difference being the introductory statement.

Making Choice 2 is

foolish ___:___:___:___:___:___:___ wise

good ___:___:___:___:___:___:___ bad

harmful ___:___:___:___:___:___:___ beneficial

rewarding ___:___:___:___:___:___:___ punishing

3. The subjects' attitudes toward their own behavior (A-self) were also measured using the four semantic differential scales and was read as follows:

The choices I made were

foolish ___:___:___:___:___:___:___ wise

good ___:___:___:___:___:___:___ bad

harmful ___:___:___:___:___:___:___ beneficial

rewarding ___:___:___:___:___:___:___ punishing

4. The perceived expectations of the other player (NBl) were measured as follows:

My partner thinks that I should make Choice 1 ___% of the time, and Choice 2 ___% of the time.

5. The perceived expectations of the mediator (NB2) were measured as follows:

   The mediator thinks that I should make Choice 1 ___% of the time, and Choice 2 ___% of the time.

6. Behavioral intentions (BI) were measured as follows:

   I intend to make Choice 1 ___% of the time, and Choice 2 ___% of the time.

CHAPTER III

RESULTS

A 2x3 completely randomized design with two levels of Cooperation Index (i.e., cooperative payoff matrix = 0.90 vs. competitive payoff matrix = 0.10) and three levels of Mediator Suggestion Type (i.e., cooperative vs. competitive vs. no-suggestion) were used to investigate subjects' cooperative behavior. An analysis of variance was computed to determine the effects of the independent variables on the level of cooperation by subjects.

In order to determine the extent of the relationship which existed between behavior (i.e., percentage of cooperative choices in the PD game) and other indices of the study, product moment correlation coefficients were computed for behavior with behavioral intentions, behavior with attitudes, and behavior with normative beliefs, for all subjects.

To determine the predictive utility of the two attitude and normative belief measures, in relation to game behavior and behavioral intentions, standard linear regression was employed for all levels of the treatment variables collapsed, based upon a least squares solution. This was computed once using game behavior as the criterion, and once using behavioral intentions as the criterion. The attitude and normative belief measures were used as predictors. In order to determine the extent to which the treatment variables affected the prediction of game behavior and behavioral intentions, standard linear regression was also employed.

More specifically, for each independent variable which resulted in a significant main effect (i.e., as determined by the initial analysis of variance), the best possible linear regression model for each level of the treatment was computed using the General Linear Model procedure in the Statistical Analysis Systems computer package. Game behavior and behavioral intentions were used separately as criterion variables with the attitudes and normative belief measures acting as predictor variables. Correlation coefficients, regression coefficients, and multiple correlations are reported in the results.

Effects of Experimental Manipulations

The effects of the experimental manipulations on game behavior in a Prisoner's Dilemma situation were explored with the use of 2(CI) x 3 (Mediator Suggestion Type) analysis of variance. There were two main effects and one interaction effect in the analysis.

As can be seen in Table II, the main effect for Cooperation Index was statistically significant beyond the .05 level of significance for the dependent measures of attitudes toward the act of cooperation (A - act 1), attitudes toward the act of competition (A - act 2), attitudes toward self (A - self), behavioral intentions (BI), and behavior (B). In addition, the mean differences for these measures were in the hypothesized directions, with more cooperative responses being emitted by subjects in the cooperative CI condition.

Furthermore, the behavioral intentions of the subjects reflected their actual game behavior as predicted, with more cooperative intentions being expressed by subjects with a cooperative payoff matrix than by those exposed to a competitive payoff matrix (Figure 4). As can

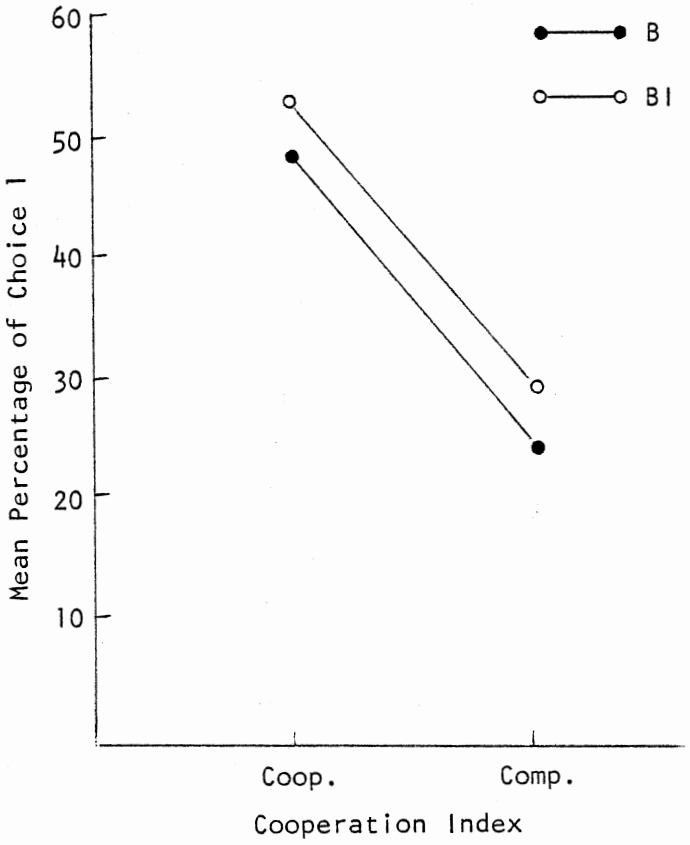

Figure 4. Mean Percentage of Choice 1 for Behavior and Behavioral Intentions by Cooperation Index

further be seen in Table II, the effect of Cooperation Index was statistically significant at or beyond the .01 level of significance for A - act 1, A - act 2, BI, and B, while subjects' attitude toward themselves was statistically significant at $p < .05$ level. Regarding the attitude measures in particular, this effect may be seen in Figure 5. The main effect for Cooperation Index did not significantly affect the normative beliefs of the subjects, either toward their opponent or the mediator.

TABLE II

MEAN RESPONSES FOR ATTITUDE QUESTIONNAIRE, BEHAVIOR AND BEHAVIORAL INTENTIONS BY COOPERATION INDEX

Dependent Variable	Cooperation Index	
	Cooperative	Competitive
A - act 1	17.07**	13.00**
A - act 2	16.97***	22.07***
A - self	17.23*	19.30*
NB1	58.67	58.17
NB2	48.93	48.17
BI	52.50**	29.70**
B	49.30***	23.00***

*$p < .05$.

**$p < .01$.

***$p < .001$.

As is evident, the first hypothesis that a greater percentage of cooperative responses would occur in the cooperative CI than in the

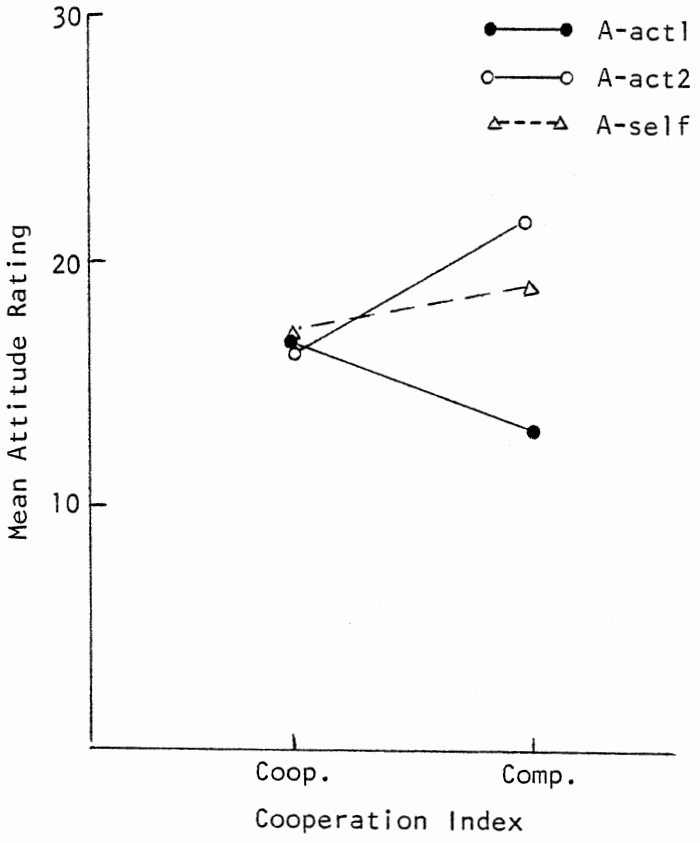

Figure 5. Mean Attitude Ratings on Four 7-Point Semantic Differential Scales for Cooperative and Competitive CI

competitive CI was fully supported for all variables except the normative belief measures (Appendix H).

While the second hypothesis, that a greater percentage of cooperative choices would occur in the condition where subjects received suggestions from the mediator primarily advocating cooperation, was not supported, it is interesting to note that subjects' normative beliefs about the mediator were affected by this treatment.

The main effect for the manipulation of Mediator Suggestion Type was statistically significant, $p < .001$ when data for normative beliefs about the mediator were analyzed. The means are in the expected directions with the greatest percentage of cooperative normative belief responses being emitted by subjects in the cooperative mediator suggestion condition ($M = 61.50$), the second greatest percentage being displayed by subjects in the no-suggestion condition ($M = 47.50$), and the smallest proportion by those subjects in the competitive condition ($M = 36.40$). Subjects were clearly cognizant of the suggestions they received from the third party.

Relationship Between BI and Behavior

As predicted, a relationship was shown to exist between behavior (B) as measured by proportion of Choice 1 on the last 10 trials of the PD game, and behavioral intentions (BI), $r = .63$ (Table III). When the two levels of Cooperation Index (CI) are examined separately, a statistically significant, $p < .001$, positive relationship between B and BI was demonstrated in the cooperative CI condition, $r = .72$. The correlation coefficient in the competitive condition did not reach statistical significance.

TABLE III

CORRELATION COEFFICIENTS FOR ATTITUDE QUESTIONNAIRE AND RESPONSES WITH BEHAVIOR

A-act 1 - B	A-act 2 - B	A-self - B	NB1 - B	NB2 - B	BI - B
.584**	-.621**	-.425**	.024	.270*	.629**

*$p < .05$.

**$p < .001$.

A more detailed examination of the relationship between B and BI may be found in the individual cells of the 2 x 3 matrix in Table IV. As can be seen, a strong positive relationship exists between B and BI in the condition where a third party makes suggestions predominantly advocating cooperation, regardless of whether the situational determinant (i.e., CI) is designed to encourage cooperation or competition, r = .81 and r = .82, respectively. By contrast, much weaker relationships exist in the condition where a third party suggests a competitive response (i.e., Choice 2) 80 percent of the time, neither correlation coefficient reaching statistical significance. Finally, the strongest positive relationship between B and BI was exhibited in that condition where the CI was cooperative and the third party sent the no-suggestion message to the player 80 percent of the time, r = .88.

Clearly, support was provided for the third hypothesis that a strong positive relationship exists between B and BI in a conflict situation involving an active third party. This relationship is particularly salient when the payoff structure of the situation encourages cooperative

behavior between individuals and where there is a third party who sends predominantly cooperative or no-suggestion messages to the disputants.

TABLE IV

CORRELATION COEFFICIENTS FOR BEHAVIORAL INTENTIONS WITH BEHAVIOR

Cooperation Index	Mediator Suggestion Type			Med. Sugg. Type Collapsed
	Coop.	Comp.	No-Sugg.	
Cooperative	.81*	.50	.88**	.72**
Competitive	.82*	-.18	.33	.23

*$p < .01$.

**$p < .001$.

Prediction of Game Behavior

Regression: CI Collapsed

The fourth hypothesis, that BI may be predicted from the present attitude and normative belief measures, was supported in the present investigation. As can be seen in Table V, the multiple correlation for the regression equation predicting BI from attitudes and normative beliefs is .416 and statistically significant, $p < .001$.

To test the hypothesis that BI are a function of attitudes and normative beliefs, the multiple correlation coefficient for the model predicting behavior from attitudes and normative beliefs was compared with

the multiple correlation coefficient for the same model with BI included as an additional predictor variable. If the inclusion of BI in the regression model would result in a significant difference between the multiple correlation coefficients for the two equations, one may conclude that BI is measuring some unique aspect of attitudes and/or normative beliefs, accounted for only by BI. The results of the comparison revealed a significant difference (.080) between R^2 for the two models, $p < .01$ (Table VI). Therefore, while BI may be a function of the attitude and normative belief measures in part, BI is also indicative of some subjective estimate unique from those already included in the model.

The results of the regression analysis further revealed that behavior, as well as behavioral intentions, may be predicted from a knowledge of subjects' expressed attitudes and normative beliefs (Table VI). The multiple correlation for the regression model predicting behavior, $R^2 = .461$, is statistically significant, $p < .001$. Thus, the fifth hypothesis that behavior may be predicted from a knowledge of one's attitudes and normative beliefs in a PD situation involving a neutral third party was supported. The comparison of R^2 for the regression model predicting behavioral intentions, $R^2 = .416$, and R^2 for the model predicting behavior, $R^2 = .461$, was also statistically significant, $p < .05$. However, this difference is not in the expected direction. Therefore, that the multiple correlation for behavior would be less than that for behavioral intentions due to the passage of time was not supported. However, when data for the competitive and cooperative CI are considered separately, it is the cooperative condition (Table VII), $R^2 = .632$, in particular which provides the best regression model for predicting BI from the attitude and normative belief measures.

TABLE V

REGRESSION COEFFICIENTS AND MULTIPLE CORRELATION
FOR ATTITUDE QUESTIONNAIRE RESPONSES
WITH BEHAVIORAL INTENTIONS

Regression Coefficients					
A-act 1 - BI	A-act 2 - BI	A-self - BI	NB1 - BI	NB2 - BI	R^2
1.741	-1.167	-.098	-.063	.269	.416*

*$p < .001$.

TABLE VI

REGRESSION COEFFICIENTS AND MULTIPLE CORRELATIONS
OF ATTITUDE QUESTIONNAIRE RESPONSES ON BEHAVIOR
FOR BI EXCLUDED VERSUS BI INCLUDED MODELS

Regression Coefficients						
A-act 1 - B	A-act 2 - B	A-self - B	NB1 - B	NB2 - B	BI - B	R^2
.106	-.165	-.124	.011	.026	*	.461**
.040	-.121	-.120	.014	.016	.037	.541**

*Excluded.

**$p < .001$.

TABLE VII

REGRESSION COEFFICIENTS AND MULTIPLE CORRELATIONS OF ATTITUDE QUESTIONNAIRE RESPONSES ON BEHAVIORAL INTENTIONS AND BEHAVIOR, FOR COOPERATIVE CI

	Regression Coefficients						
	A-act 1	A-act 2	A-self	NB1	NB2	BI	R^2
BI	2.511*	-.875	-1.607	.230	.472*	---	.632***
B	0.184	-.066	-0.136	.004	.022	---	.271
B	-0.055	.017	0.017	-.018	-.023	.095***	.545**

*$p < .05$.

**$p < .01$.

***$p < .001$.

As can be seen then, the overall regression analysis revealed that behavior and behavioral intentions are predictable from a knowledge of one's expressed attitudes as they relate to the act of cooperation and competition, attitudes toward one's self, and an individual's normative beliefs about his/her opponent and a third party.

Regression: Competitive CI

The regression model which predicted behavior from the attitude and normative belief measures in the competitive condition had a multiple correlation of .591, which was statistically significant, $p < .001$ (Table VIII). Furthermore, the multiple correlation, $R^2 = .608$, for the model predicting behavior with the inclusion of BI as a predictor variable was also statistically significant, $p < .001$ (Table VIII). As in the CI collapsed analysis, a comparison of these two multiple correlations was

made to determine the role behavioral intentions played in the model. The results of this comparison revealed a nonsignificant difference, indicating that in the competitive condition, the behavioral intention measure does not make a statistically significant contribution to the regression equation which predicts behavior from subjects' expressed attitudes and normative beliefs. Thus, in the competitive CI condition, BI are not a function of subjects' expressed attitudes and normative beliefs (see Table VIII).

TABLE VIII

REGRESSION COEFFICIENTS AND MULTIPLE CORRELATIONS OF ATTITUDE QUESTIONNAIRE RESPONSES ON BEHAVIORAL INTENTIONS AND BEHAVIOR, FOR COMPETITIVE CI

	Regression Coefficients						
	A-act 1	A-act 2	A-self	NB1	NB2	BI	R^2
BI	1.990	.065	.522	-.228	.204	---	.257
B	-0.033	-.248	-.092	.014	.032*	---	.591**
B	-0.058	-.249	-.099	.017	.029*	.013	.608**

*$p < .05$.

**$p < .001$.

Regression: Cooperative CI

When the same comparision was made for the cooperative CI condition, a statistically significant difference, $p < .01$, was found between the multiple correlation for the Bi-excluded regression equation, $R^2 = .271$,

when compared to the BI-included equation, $R^2 = .545$. The results of this comparison indicate that when predicting behavior from subjects' expressed attitudes and normative beliefs, the inclusion of behavioral intentions as a predictor adds significantly to the amount of variance accounted for by the model. Thus, when the payoff structure of the situation encourages cooperation, behavior may be predicted from a knowledge of subjects' expressed attitudes and normative beliefs when combined with their expressed behavioral intentions. Additionally, it was demonstrated in the cooperative condition that behavioral intentions could be successfully predicted from a knowledge of subjects' expressed attitudes and normative beliefs (Table VII), while B could not.

CHAPTER IV

DISCUSSION

The present investigation answered a number of specific questions regarding third-party mediation of conflict. In particular, what effect did the manipulation of the payoff structure of the situation have on subjects' subsequent cooperativeness in a conflict situation involving a neutral third party? How did suggestions from a neutral third party affect cooperative behavior? In what ways did these two variables affect an individual's attitudes and normative beliefs? Finally, what was the relationship between attitudes, normative beliefs, behavioral intentions, and behavior in a conflict situation involving neutral third-party intervention?

In answer to these questions, the results of the present investigation clearly demonstrated that cooperativeness was affected by the payoff structure of the situation when a neutral third party made suggestions to disputants in a conflict game. In addition, it was shown that suggestions from a neutral third party did affect subjects' normative beliefs about the third party, but did not directly affect cooperative behavior. Moreover, it was demonstrated that subjects' attitudes, normative beliefs, and behavioral intentions were affected by the payoff structure of the situation as well as the normative suggestions made to the disputants by a neutral third party. These findings are in basic agreement with those of earlier studies (Ajzen, 1971; Ajzen & Fishbein,

1970) which support Fishbein's (1977) model of attitude-behavior relations. Behavioral intentions do appear to mediate effects of situational variables on cooperative behavior. It also appears that the payoff structure of the situation is of greater relative importance to disputants than suggestions from a neutral third party when deciding to cooperate or compete in a conflict situation.

Attitudes

While many studies have explored the relation between attitudes and behavior, the results have often been disappointing. In the past, attitudinal and behavioral measures have often been selected in an arbitrary manner which may account for the inconsistent research findings.

A systematic approach to studying attitude-behavior relations has been profferred by Ajzen and Fishbein (1977). They suggest that a single behavior is determined by an individual's intention to perform the behavior in question. Furthermore, a person's intentions are claimed to be a function of his/her attitude toward performing the behavior and of his/her subjective norm. An attitude may be thought of as a person's evaluation of the entity in question, while behavior may be thought of as one or more observable actions performed by the individual. In addition, attitudinal and behavioral entities consist of four different elements: the action, the target at which the action is directed, the context in which the action is performed, and the time in which it is performed. The strength of an attitude-behavior relation depends on the degree of correspondence between attitudinal entities. It has been shown that significant relations between attitudes and behavior are usually

obtained when there is a close correspondence between elements making up attitudinal and behavioral entities (Ajzen & Fishbein, 1977).

In the present investigation, a close correspondence existed between attitudinal and behavioral elements. The four elements of the behavioral entity consisted of the action (making Choice 1 or Choice 2 in a PD game); the target at which the action was directed (choosing a cooperative strategy or cooperation); the context in which the action was performed (alone in a 5x8 sound attenuated experimental room); and the time in which it was performed (a particular 60-minute period).

In relation to the behavioral elements, the attitudinal elements consisted of the action (the attitude toward making Choice 1 and Choice 2 based upon four semantic differential questions); the target at which the action was directed (the attitude toward choosing a cooperative strategy or Choice 1 and the attitude toward one's own particular choices); the context in which the action was performed (the same experimental room in which behavior was measured); and the time in which it was performed (the same 60-minute period during which behavior was measured). As can be seen, a close correspondence between the attitudinal and behavioral entities existed in the design of the present investigation. The context was virtually identical for both the attitudinal and behavioral entities. The time was also very close, with 10 trials of a PD game separating the measurement of attitudes and behavior.

As a result of this close correspondence, a strong relationship was expected to exist between the attitudinal and behavioral measures. As can be seen in Table III, a strong positive relationship existed for all of the attitudinal measures in relation to the behavioral measure. From this correspondence, the prediction of behavior is expected from a

knowledge of attitudes, subjective norms, and behavioral intentions. The present investigation demonstrated that cooperative behavior in a conflict situation employing a neutral third party is predictable from subjects' expressed attitudes, normative beliefs, and behavioral intentions (Appendix I). While it was demonstrated that behavioral intentions are a function of attitudes and normative beliefs in third-party mediation of conflict, it also appears that behavioral intentions may contain a unique subjective component which adds significantly to the overall regression model in predicting cooperative behavior (Table VI).

When an examination of the regression data predicting behavior from attitudes and normative beliefs is made separately for each level of Cooperation Index, it becomes evident that the role played by behavioral intentions is quite different in the two models. With a cooperative payoff structure, it appears that behavioral intentions are a function of subjects' expressed attitudes and normative beliefs, and that behavior may be accurately predicted from a model which includes all three components (see Appendix I). A similar relationship has also been demonstrated by Ajzen and Fishbein (1970).

In contrast, it was demonstrated in the competitive condition that attitudes and normative beliefs affect behavior directly, and that behavioral intentions are not a function of attitudes and normative beliefs in the prediction of cooperative behavior. Behavioral intentions add little to the regression equation in predicting cooperative behavior with a competitive payoff structure.

One possible explanation for the discrepancy between these two models, regarding the relative importance of BI, may be found in Figure 5 and Table II. By closely examining these data, it becomes evident that

subjects were more definite about their feelings (i.e., attitudes) and normative beliefs about the mediator than they were about their intentions to behave in a particular way in the competitive CI. Furthermore, the weak relationship which exists between BI and B in the competitive CI, $r = .34$, may have been due to the possible influence of subjects' normative beliefs about the opponent, which were in opposition to the strategy encouraged by the competitive CI (Table II). Possibly, this influenced subjects to express intentions which were slightly more cooperative than their subsequent behavior. In the cooperative CI condition, it is evident that subjects' attitudes, normative beliefs about the mediator, and behavioral intentions were slightly more positive toward cooperation than might be expected from the strategy encouraged by the cooperative CI. Subjects in this situation may have felt a need to appear cooperative and favorable to others, since the appropriate choice to make was somewhat ambiguous to begin with.

In summary, behavioral intentions played a significant role in the present investigation when subjects were exposed to the cooperative CI but not when operating with the competitive CI. In the competitive CI attitudes and normative beliefs were better predictors of game behavior than BI.

Situational Variables

The effects of the Cooperation Index on cooperative behavior clearly support the results of other investigations (Ajzen, 1971; Ajzen & Fishbein, 1970; Rapoport & Chammah, 1965) which also demonstrate that different payoff matrices in a Prisoner's Dilemma situation produce different levels of cooperation. It was further demonstrated that

normative messages from a neutral third party affected subjects' normative beliefs about the mediator, and therefore indirectly affected their behavior (Appendix I). This finding supports those found by Ajzen (1971), who demonstrated that subjects' cooperative behavior in a similar Prisoner's Dilemma situation was affected by a generalized normative message given to subjects at the beginning of the game.

Furthermore, it was found that the manipulation of the payoff matrices clearly affected the subjects' attitudes and behavioral intentions. In addition, the results revealed that normative suggestions from a neutral third party directly affect subjects' normative beliefs, and indirectly subjects' subsequent cooperativeness in a conflict situation.

The relative importance of the CI manipulation, in relation to the mediator's suggestions, may be seen in Table III. One possible explanation for the importance of the CI manipulation relative to the mediator's suggestions may be the motivational significance associated with the payoff matrices. The present investigation was designed so that subjects could acquire monetary gains by making choices in a Prisoner's Dilemma situation. These choices were in turn associated with a particular payoff structure designed to encourage either cooperation or competition, depending upon the particular treatment group a given subject was in. Since the points each subject could win were associated directly with monetary gains or losses, one might argue that the payoff structure of the situation possessed greater motivational significance for subjects than suggestions from a third party.

However, in discussing the CI manipulation, it is helpful to understand some of the more practical implications of this treatment variable. In order to maintain a competitive situation in general, the computation

of CI must fall between 0 and 1.0. A CI of 0.10 may be construed as a competitive CI, while a CI equal to 0.90 may be thought of as cooperative, or less competitive. The cooperative CI as it has been used in the present investigation was one which should have encouraged a cooperative strategy by subjects, while a competitive CI was one which should have encouraged predominantly competitive choices by subjects. It should be noted that in practical terms, a cooperative CI (CI = 0.90) is a payoff structure which would "slightly" encourage competitive responses from subjects, maintaining the competitive nature of the paradigm employed in a PD game. In other words, while a CI = 0.90 has been referred to as a cooperative CI in the present study, it is in fact designed to encourage some competitive responses from subjects. However, it is very close to a neutral payoff structure, or one which only minimally encourages competition. This means that the dilemma faced by subjects in the cooperative CI is that of making Choice 1 or Choice 2, both of which appear as attractive alternatives, with Choice 2 being only slightly more attractive than Choice 1, the cooperative choice. While the two Cooperation Indices employed in the present investigation were referred to as cooperative and competitive, in practical terms the two matrices were neutral-to-slightly competitive, and highly competitive.

This leads to the conclusion that it was not the monetary salience of the payoff structure which accounted for the greater affect of the CI manipulation relative to third-party suggestions. As can be seen (Appendix H) the results indicated that the mediator's suggestions for cooperativeness did not have a significant effect on subjects' cooperativeness, even when such encouragement was combined with a cooperative payoff structure (CI). Suggestions from a third party would be expected to

have their greatest effect in the condition where neither cooperative nor competitive responses possessed greater salience, as is the case with a cooperative CI. Logically, one might assume that when faced with a situation where a greater payoff would not be gained by making either Choice 1 or Choice 2, subjects would be most likely to follow the suggestions of a third party. In the present investigation, third-party suggestions had little if any direct effect on cooperativeness. It is clear, however, that subjects did attend to the suggestions made by the third party, as evidenced by subjects' normative beliefs about the mediator. Subjects apparently received and understood the suggestions, but their ultimate cooperativeness was unaffected by this manipulation. Subjects were, instead, affected to a greater degree by the monetary gains and losses associated with the particular strategy encouraged by each of the payoff matrices.

Those individuals in the competitive CI condition felt significantly more positive about being competitive than those in the cooperative CI. Furthermore, the competitive CI group also felt less positive about being cooperative than did the cooperative CI group. Another interesting result regarding attitudes concerns subjects' perceptions of themselves. Those individuals in the competitive CI expressed significantly more positive feelings about their behavior than those in the cooperative condition. Apparently it feels "good" to compete.

While Cooperation Index did affect attitudes, behavioral intentions and behavior, it did not have any effect on the two normative belief measures. However, subjects' expressed normative beliefs about the mediator were affected by the type of normative suggestions made by the mediator. Subjects in the cooperative suggestion condition believed that

the mediator expected them to be more cooperative than those subjects in the competitive suggestion condition, while those subjects receiving the no-suggestion message rated their expected level of cooperativeness between the other two conditions.

Conclusions

Several important conclusions may be drawn from the present investigation. First, it seems clear that when a conflict situation involves a neutral third party and the situational payoffs encourage cooperation, then attitudes about an actor's behavior, beliefs about what others expect them to do, and the actor's intentions regarding what he/she may do are useful in the prediction of an actor's subsequent cooperativeness.

Attitudes about an actor's behavior and beliefs about what others expect him/her to do may be useful in predicting that actor's expressed behavioral intentions. In addition, what the person says he/she will do is highly predictive of what they will actually do, particularly when the payoff structure encourages cooperation. In the situation where the payoffs to the individual encourage competition with the opponent, the intentions one expresses about future behavior may be of little value in predicting that person's subsequent cooperativeness.

The present investigation also points out the importance of "real" (i.e., monetary) gains and losses. Following the experiment, several subjects indicated that the monetary payoffs greatly influenced their choices, relative to the suggestions from the third party. It is believed that the present results may be readily generalized to real-world situations in which disputants are engaged in a conflict situation

involving a neutral third party, and where disputants stand to gain or lose real monetary payoffs.

It is evident that the salient situational variable affecting behavior was the strategy each of the particular payoff conditions encouraged. Those individuals in the cooperative CI condition were more cooperative than those in the competitive CI in their game strategies. It is also interesting to note that the payoff structure of the situation affected only the expressed attitudes of the subjects and not their normative beliefs. The mediator's suggestions, on the other hand, affected only subjects' normative beliefs about what he/she thought the mediator expected them to do, but had little effect if any on actual behavior in subsequent trials of the game. It would appear then, in contrast to the findings of Ajzen (1971), that subjects pay very little attention to suggestions made by a third party when the payoffs of the situation are related to motivationally significant gains and losses. The results of the present study also indicate that the subjects were cognizant of the suggestions made by the mediator, but chose not to follow the mediator's suggestions.

One argument which might be raised, however, is that subjects may not have trusted the third party. This might be expected in the situation where the suggestions made by the third party were obviously contrary to the best interests of the players. For instance, with a competitive CI and where subjects received suggestions from the third party advocating predominantly cooperative choices, a subject might logically be expected to mistrust the third party. However, in a situation where third-party suggestions advocated a strategy coincident with that encouraged by the payoff structure, subjects should be expected to develop

great trust and follow the suggestions even more. This was not the case, as indicated by the results. Suggestions from the third party had no significant effect in either case on subjects' subsequent cooperativeness.

One limitation of the present investigation is that it does not adequately assess other motivational factors which disputants may contend with in a naturalistic setting involving third-party mediation. In many situations, there are more than two dichotomous alternatives which disputants are compelled to choose between. In addition, there may be multiple personal gain and loss factors which individuals consider in making a decision to cooperate or compete. The present investigation explored one area, the personal gains and losses associated with each of two separate PD game matrices.

Another factor which remains unclear is the exact role played by normative beliefs in conflict resolution. The results indicate that normative beliefs made a contribution to the overall model predicting behavior, even though they remained unaffected by the manipulation of CI. It is interesting to note the results found in Table II which indicate that subjects' normative beliefs about their opponent were almost identical for both the competitive and cooperative CI ($M = .58$). Thus, subjects believed their opponents expected them to be slightly cooperative regardless of the payoff structure.

As a result of the present findings, several questions are raised. What are the various motivational factors involved in a disputant's decision to cooperate or compete in a naturalistic setting? What role exactly do normative beliefs play, if any, in the resolution of conflict by a third party? Finally, under what circumstances would an individual in a

conflict situation be expected to comply with suggestions from a neutral third party?

Whatever the answers to these questions, the present investigation has provided information which points to the importance of payoff structure in a conflict situation involving a neutral third party, and raises serious doubts about the effectiveness of suggestions from a neutral third party.

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APPENDIX A

INSTRUCTIONS

Your task today will involve communicating with another person. But rather than just talk to each other, all of the communication will be accomplished with the use of the machine in front of you. Each of you will use a communication panel because you are in separate rooms.

In order to familiarize you with the procedures involved, we will practice the process using the machines. The other two people that you saw are in separate rooms adjacent to this one. One of the players has a machine identical to the one located in front of you. S/he will be the other player. The other person is in a room connected with both you and the other player. This person will be the mediator. His/her machine is similar to yours, except that the mediator's sole function will be to make suggestions to you and the other player regarding choices you will be making.

The overall objective for the players is to accumulate as many points as possible. Notice that the player's panels each have a matrix of four squares containing various numbers with plus and minus signs. The numbers in the upper triangles of each square correspond to the number of points you would receive in a particular round. Your opponent would receive the number of points designated in the lower triangle of the square. The points you receive in a round depend partly on a choice which you will make, and partly upon a choice your opponent makes. Notice that if you both make Choice 1, you both gain points (demonstrate), whereas if you both make Choice 2, you both lose points (demonstrate). If you make Choice 1 and your opponent makes Choice 2, then the outcome is that your opponent gains while you lose points (demonstrate). Likewise, if you make Choice 2 and your opponent makes Choice 1, the outcome is that you gain and your opponent loses points (demonstrate). So you see, you gain or lose points depending on the choices you and your opponent make on a given round. Remember, the objective is to gain as many points as possible, and to avoid losing points.

In addition, you will receive one cent for every point you gain during the game. Likewise, you will lose one cent for every negative point. At the end of the experiment you may keep any money you have accumulated during the course of the game. Since it is possible for you to lose points (money) right from the beginning, you will begin at 100. Once again, any money you have at the end of the game is yours to keep. Now here is a scoring sheet so that you may keep track of your money as the game progresses (Appendix G).

You will also receive a message from the mediator just prior to making your choice. This message will be in the form of a suggestion, as you can see on your communication panel. The mediator has been instructed to try to maintain the greatest equity between the two players. However, it is totally up to you as to whether you follow the mediator's suggestions. In other words, the only thing that affects the number of points you gain or lose is the points each of the players makes on a given round. The mediator will be making suggestions to the players only in order to maintain the greatest equity between them. Here is a summary of your instructions.

1. When the red Mediator Suggestion light comes on, a message will be sent to you by the mediator.

2. When the red Choose light comes on, make Choice 1 or Choice 2. The points you have lost or gained will light up in the matrix at the center of the machine.

Remember that you will be receiving one cent for every point you gain, and that you will be losing one cent for every negative point. You may keep any money you have accumulated at the end of the game.

I am now going to give you a short multiple choice quiz to make sure that there are no misunderstandings about the instructions. (Now give the quiz, score it, and correct any misunderstandings.)

I am going to leave the room now. The game will be starting momentarily when you receive the mediator's first suggestion. You should then make your first choice, Choice 1 or Choice 2. Remember, keep track of your points with the scoring sheet so you know how you are doing. The mediator will also be keeping track of your points. (After the first 10 rounds, interrupt the game and administer the attitude questionnaire, Appendix D.)

I am now going to stop the game momentarily, because I would like to get your responses to several questions concerning the game so far. (After the subject has completed the attitude questionnaire, resume the game for the final 10 rounds.) (Once the game is finished, debrief the subject, have him/her sign the confidentiality form, and dismiss.)

APPENDIX B

QUIZ OVER PROCEDURES

1. When the light beside Mediator's Suggestion comes on,

   a. the game is over.
   b. take note of the mediator's suggestion.
   c. calculate your points.

2. When the red Choose light comes on, you should

   a. sit back and wait.
   b. calculate your points.
   c. make "Choice 1" or "Choice 2."

3. After you have made your choice,

   a. add or subtract the points in the upper triangle to your total.
   b. add or subtract the points in the lower triangle to your total.
   c. do nothing, the game is over.

4. Each point on the scoring sheet is equal to

   a. $.01.
   b. $.05.
   c. nothing.

5. At the end of the game, you may

   a. keep any money you have accumulated.
   b. not keep any money you have accumulated.
   c. forget about money, because you were just playing with points.

APPENDIX C

DIAGRAM OF PD MACHINE

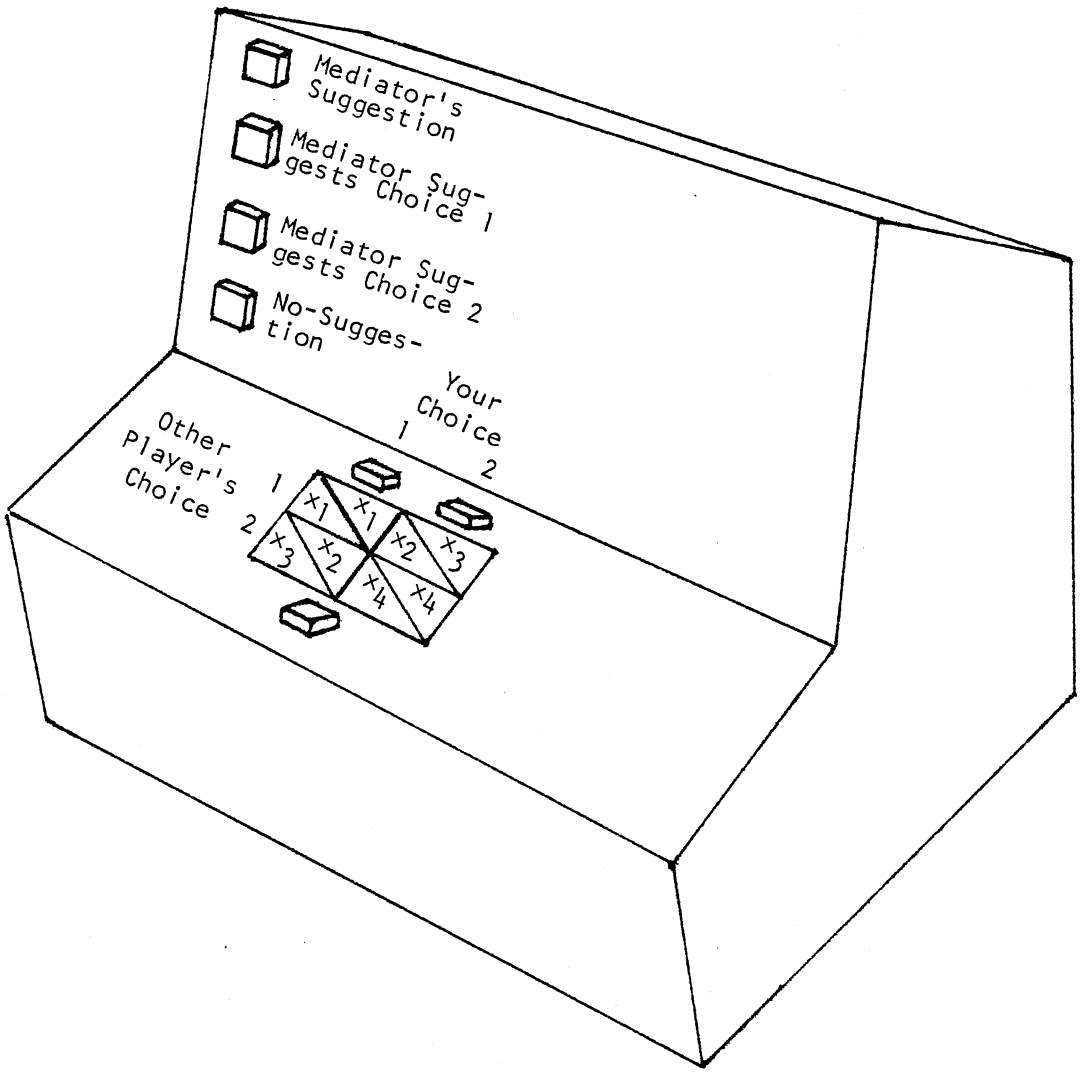

Figure 6. Diagram of PD Machine

APPENDIX D

ATTITUDE QUESTIONNAIRE

1. Making Choice 1 is

foolish ___:___:___:___:___:___:___ wise

good ___:___:___:___:___:___:___ bad

harmful ___:___:___:___:___:___:___ beneficial

rewarding ___:___:___:___:___:___:___ punishing

2. Making Choice 2 is

foolish ___:___:___:___:___:___:___ wise

good ___:___:___:___:___:___:___ bad

harmful ___:___:___:___:___:___:___ beneficial

rewarding ___:___:___:___:___:___:___ punishing

3. The choices I made were

foolish ___:___:___:___:___:___:___ wise

good ___:___:___:___:___:___:___ bad

harmful ___:___:___:___:___:___:___ beneficial

rewarding ___:___:___:___:___:___:___ punishing

4. My opponent thinks that I should make Choice 1 ___% of the time, and Choice 2 ___% of the time.

5. The mediator thinks that I should make Choice 1 ___% of the time, and Choice 2 ___% of the time.

6. I intend to make Choice 1 ___% of the time, and Choice 2 ___% of the time.

APPENDIX E

DEBRIEFING STATEMENT

This completes your participation in the study. There really was no right or wrong way to respond. Your natural responses will greatly help us to understand how people in general react in this type of situation. As you might have guessed, this is a study about conflict between people. Our basic purpose is to see what effects a third party will have on how people deal with a conflict. The study will involve several different types of conflict situations and we will be comparing between them. (Answer any questions, but do not disclose the identity of experimenter 1.)

APPENDIX F

CONFIDENTIALITY AGREEMENT

I hereby agree to keep any information concerning this experiment in strictest confidence until the experiment is completed and at which time the full nature and results of this experiment are made available to all who participated and would like any information.

Date: _____

Signed: _____

Thank you for participating and for your confidentiality. If you have any problems or questions concerning this experiment, feel free to contact me.

Mark Winkel
010 S. Murray Hall
Office Phone: 624-6024

APPENDIX G

SCORING SHEET

Round	Points/Money Begin at 100	Total
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

APPENDIX H

ANOVA SUMMARY TABLES

TABLE IX

ANOVA SUMMARY TABLES

Source	D.F.	Sum of Squares	F-Value	PR > F
Dependent Variable: A-act 1				
Model:				
CI	1	248.07	8.75	*
Mediator's Suggestion	2	48.43	0.85	NS
CI x Mediator's Suggestion	2	156.03	2.75	NS
Error	54	1531.40		
Dependent Variable: A-act 2				
Model:				
CI	1	390.15	13.20	**
Mediator's Suggestion	2	80.03	1.35	NS
CI x Mediator's Suggestion	2	135.10	2.29	NS
Error	54	1595.70		
Dependent Variable: A-self				
Model:				
CI	1	64.07	4.45	***
Mediator's Suggestion	2	83.63	2.90	NS
CI x Mediator's Suggestion	2	20.23	0.70	NS
Error	54	777.80		
Dependent Variable: NB1				
Model:				
CI	1	3.75	0.01	NS
Mediator's Suggestion	2	1473.43	1.33	NS
CI x Mediator's Suggestion	2	549.10	0.50	NS
Error	54	29850.30		
Dependent Variable: NB2				
Model:				
CI	1	8.87	0.03	NS
Mediator's Suggestion	2	6459.30	11.84	**
CI x Mediator's Suggestion	2	415.63	0.76	NS
Error	54	14729.10		

TABLE IX (Continued)

Source	D.F.	Sum of Squares	F-Value	PR > F
	Dependent Variable: BI			
Model:				
CI	1	7797.60	10.40	*
Mediator's Suggestion	2	328.30	0.22	NS
CI x Mediator's Suggestion	2	229.30	0.15	NS
Error	54	40480.20		
	Dependent Variable: B			
Model:				
CI	1	104.02	15.47	**
Mediator's Suggestion	2	12.13	0.90	NS
CI x Mediator's Suggestion	2	16.93	1.26	NS
Error	54	363.10		

*$p < .01$.

**$p < .001$.

***$p < .05$.

APPENDIX I

EMPIRICAL BEHAVIOR MODEL

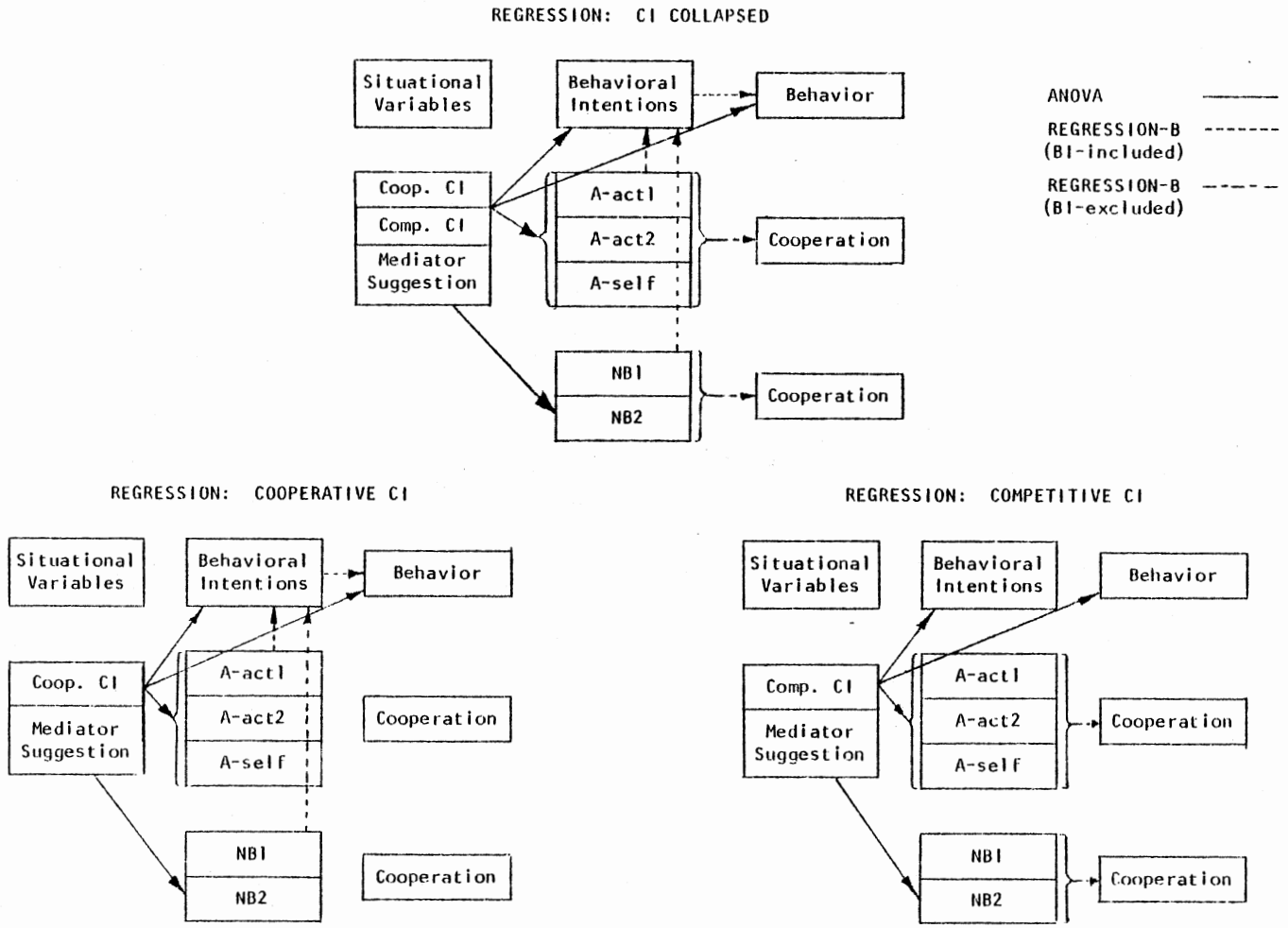

Figure 7. Empirical Behavior Model

APPENDIX J

GLOSSARY

Attitudes. Relatively lasting organizations of feelings, beliefs, and behavior tendencies directed toward specific persons, groups, ideas, objects.

A-act. A person's attitude toward performing a specific behavior in a specific situation.

A-act1. An individual's attitude toward the act of cooperation.

A-act2. An individual's attitude toward the act of compensation.

A-self. An individual's attitude toward him/herself based upon a given behavior in a given situation.

Behavior (B). One or more observable actions performed by an individual in a specific situation.

Behavioral Intentions (BI). An individual's intention to perform a given act which is a joint function of his/her attitude toward performing that behavior and of his/her beliefs about what "others" expect him/her to do in that situation.

Cooperation Index (CI). An index of "cooperative advantage" related to the proportion of cooperative choices in a conflict game.

Normative Beliefs (NBs). An individual's beliefs about what he/she is expected to do in a given situation.

NB1. An individual's beliefs about what the other player expects him/her to do.

NB2. An individual's beliefs about what the mediator expects him/her to do.

Prisoner's Dilemma Game (PDG). A game based upon a situation involving strong pressures toward both cooperation and competition.

VITA

Mark Harold Winkel

Candidate for the Degree of

Doctor of Philosophy

Thesis: EFFECTS OF SITUATIONAL, ATTITUDINAL, AND MEDIATIONAL FACTORS ON COOPERATIVE BEHAVIOR

Major Field: Psychology

Biographical Data:

Personal Data: Born in Cleveland, Ohio, on June 29, 1951, the son of Elaine and Harold Winkel.

Education: Graduated from Berea High School, Berea, Ohio, in June, 1969; received the Bachelor of Arts degree in Psychology from Cleveland State University, Cleveland, Ohio, in 1975; received the Master of Arts in Psychology degree from Cleveland State University, Cleveland, Ohio, in 1980; completed requirements for the Doctor of Philosophy degree at Oklahoma State University in May, 1982.

Professional Experience: Graduate teaching assistant, Department of Psychology, Cleveland State University, 1976-77; graduate research assistant, Psychophysiology Laboratory, Cleveland State University, 1977-78; research assistant, Division of Forensic Psychiatry, Ohio Department of Mental Health and Mental Retardation, 1977-78; graduate research assistant, Counseling Center, Cleveland State University, 1978-79; graduate research assistant, Forensic Psychology Laboratory, Oklahoma State University, 1979-80; graduate teaching assistant, Department of Psychology, Oklahoma State University, 1980-present.

Professional Affiliations: American Psychological Association; Southwestern Psychological Association; The Society for Personality and Social Research; The Society for Psychophysiological Research.