THE EFFECTS OF LOCUS OF CONTROL, NEED FOR ACHIEVEMENT, NEED FOR AFFILIATION
NEED FOR POWER, BARGAINING HISTORY, AND BARGAINING DIRECTIVE
ON BARGAINING BEHAVIOR

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree of Doctor of Philosophy in the Graduate
School of The Ohio State University

By
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* * * * *

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1984

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INTRODUCTION

Psychologists have long debated over what causes behavior - the environment or the personality of the individual. Mischel, (1981, 1973A, 1979) states that "personality organization is subtly differentiated across contexts while also coherent over time. "Complex behavior is regulated by interactions that depend intimately on situational variables as well as dispositions" (Mischel, 1981, p. 518). Henry Alker (1974) goes so far as to state that an abnormal individual will show consistencies in his behavior across environments where a normal person will modify his behavior in order to adapt to the situation. This seems to suggest it is very simplistic to assume that behavior is created solely by the environment or by personality. What is clear is that behavior is jointly determined by both factors. The environment provides the individual with information concerning the appropriateness of his behavior. Individual differences will:
"determine behavior in a given situation most strongly when the situation is ambiguously structured, so that each person is uncertain about how to categorize it, has to structure it in his or her own terms, and has no clear expectations about the behaviors most likely to be appropriate...To the degree that the situation is 'unstructured' and the person expects that virtually all responses from him or her are equally likely to be appropriate (i.e., will lead to similar consequences), the significance of individual differences will be greatest" (Mischel, 1981, p. 527).

This debate has specific implications for certain social situations which operate against a very complex environments and rely on individual interactions. One such situation is the collective bargaining setting. The negotiators are faced with the difficult task of interpreting a complex and sometimes ambiguous environment. The environment is made complex by the various demands made on the negotiator. For example, the negotiator must satisfy his constituency, his opponent, and to some extent, the community at large. The degree to which each party must be satisfied may vary throughout the contract negotiations. Satisfying the parties means coming to a settlement on a variety of issues. Each issue has a different level of importance for the parties involved so the negotiators concern themselves with trying to satisfy their constituencies on a variety of issues. Further considerations of the negotiators involve their past
history in settling past contracts, strike activity, and relations with the opposing party. All of these factors combine to create an extremely complex environment.

The negotiator's task involves interpreting the bargaining environment. Mischel, (1981), would predict that the personality of the negotiator would affect the way in which the negotiator interprets his situation. It may be reasonable to assume that particular personality types may interpret situations in unique ways. If the individual interprets his situation in a particular way, then his behavior is a direct result of his conceptualization. Two individuals may be placed in equivalent situations but behave quite differently if they have different personalities.

Mischel's views on behavior seems to suggest that if we can understand what environmental factors are important in the bargaining exchange and how different personality types interpret these factors, then it might be possible to predict the negotiators behavior.

Researchers have made efforts to identify environmental and personality effects on bargaining behavior. Although some progress has been made, few efforts have been directed to understand how the environment and the personality of the bargainer interact to produce cooperative or competitive
behaviors. For example, labor economists view the environment in terms of market conditions, the demands made by each party, the costs of a strike, and the particular issues involved in the negotiations. These factors are used to explain the types and frequency of concessions that are made during the negotiations. Other researchers, primarily in the social sciences, look to personality traits to explain bargaining behavior. Specific traits are said to be responsible for cooperative or competitive behaviors. A recent example of this approach is a study conducted by Assor and O'Quin, (1982).

In a recent article by Assor and O'Quin, (1982), personality variables were examined in relationship to measures of bargaining "toughness". Subjects bid against a confederate over a landscape painting. The authors collected measures of personality (personal control factor, deference, social desirability, and dominance) and of bargaining behavior (number of bids before the final offer, number of bids after the final offer, proportional concession to partner's final offer and the actual dollar amount of the subject's first bid after the final offer). The authors concluded that approval, deference, power and competence had an effect on the subject's bargaining behavior which confirms researchers such as Rubin and Brown (1975), who cite studies which have suggested that some individuals may have certain personality
dispositions which may make certain bargainers very susceptible in their concern to demonstrate their power and competence. Assor and O'Quin found additional support for these studies by finding that certain personality variables did have an effect on bargaining toughness.

Personality traits may have had an effect in this particular situation, but it is questionable how predictive these traits are in other situations. Certain behaviors may be more appropriate for particular situations. Other situations may require a different set of traits. Bem and Allen (1974) have said that it is possible that certain people may have some consistency in their behavior, however, it is doubtful that all traits will appear in a consistent manner. The situation is very important in determining which trait is appropriate and how consistently it appears. The studies like those of Assor and O'Quin's have limitations on their findings since the effects of the personality traits may only occur within specific environments and may not hold given other situations. It is interesting that many studies which look at the effects of personality use assorted games, such as the Prisoner's Dilemma game, to test their hypotheses. Various games have been used to test bargaining theories and each game creates a unique environment. Some games provide the subject with threat potential, some require role playing, and some require the exchange of goods. The
important point is that many of the bargaining games create unique environments in which the subject's boundaries of behaviors are defined by the game. So, while a subject's personality predisposes him to behave in a particular way, the environment in which he is placed determine which behaviors are relevant.

Researchers in the area of bargaining tend to test their subjects in one environmental context (i.e., the bargaining game). Since the situation provides the boundaries and cues for behavior, then past findings have been restricted to narrow bargaining environments and can not be generalized to other environments. For example, researchers have examined environments which are purely cooperative or purely competitive. In an actual collective bargaining situation, it is conceivable that economic pressures may create a situation which is contrary to the past bargaining experience of the negotiators. It would be difficult to project how subjects would behave in this more complex environment. Furthermore, some of these studies have attempted to assess the relationship of certain personality traits without considering the type of environment that the subject must behave within. It is much more likely that behavior differences were created by an interaction of both the environment and the trait. Each bargaining environment has unique properties whose
elements change from one bargaining session to another, and no game can simulate all combinations. However, it would seem to be logical to compare behavior across different games to determine environmental effects upon behavior.

Games do not reproduce the complexities of the collective bargaining setting. At best, they give some indication as to how personality affects behavior in very simple environments. Social psychologists, like Assor and O'Quin, have examined the personality of the bargainer to explain bargaining behavior. The approach does not look at environmental factors and their contribution to bargaining behavior. This was examined by traditional researchers, such as Hicks, Walton and McKersie, and more recently Pruitt (1981) and Bacharach and Lawler. Instead of focusing on personality traits, these authors look at the party's demands, the choice process, time pressures, the issues, the probability and expense of a strike, and the power that each side possesses.

Each school of thought - personality vs. the environment - look to very specific explanations for behavior. Unfortunately, each perspective tends to ignore the contribution made by the other. Bargaining outcomes are the result of many factors - issues, economic environment, the bargainers involved, and the relationship between union and employer. Many of these factors contribute to the
success or downfall of the negotiation process. Environmental approaches, many of which are taken by labor economists, only looked to external explanations for bargaining behavior. For example, in times of economic hardship, agreement may be reached quickly since members are afraid of losing their jobs. Other factors that contribute to the effectiveness or ineffectiveness of negotiations center around market conditions, and the power each party holds over his/her opponent. But variables such as recessions and depressions are external factors and cannot be influenced by those participating in negotiations.

Environmental approaches, those that emphasize factors external to the bargaining itself, may not have total predictive power. Social psychologists tried to fill some gaps of the environmental approach by examining personality traits and their effects on bargaining. Commenting on this work, Thomas Kochan (1981) has stated that the behavioral models of negotiation have been valuable to the field of collective bargaining since "they attempt to empirically test propositions of formal bargaining models in the laboratory (Kochan, 1981, p. 242). The importance of this contribution is acknowledged but he cautions against inferring a great deal of generalizability to these studies. Kochan feels that the external validity of
such research is limited since the laboratory does not adequately simulate the collective bargaining environment.

Certainly the laboratory cannot simulate all aspects of the collective bargaining experience. A realistic setting likely would involve a host of confounding variables that would muddy the findings. Furthermore, most researchers do not presume that their findings directly apply to real collective bargaining settings. The act of bargaining is a form of social interaction which takes place in many areas of everyday life and bargaining does not only restrict itself to formal contexts only. Personality traits and the bargaining environment have been studied as separate independent variables. The findings are contradictory and not much has been done to investigate the relationship between these variables and environmental factors. They have been studied separately, often using games (such as the Prisoner's Dilemma Game) to create cooperative and competitive environments. Subjects would complete the game and their performance was studied to see if their were any differences due to personality traits. Sometimes the payoff matrices in these games would be altered to create cooperative or competitive environments.
Kochan (1981), states that the game theorists attempt "to incorporate a number of the strategic, interpersonal, structural, and psychological factors that limit the predictive power of the rational factors" (Kochan, 1981, p. 242). The "rational approach" theories of bargaining behavior set forth by labor economists are limited in that they do not take into account the personal dynamics which take place in any bargaining situation. Bargaining is not always a rational process. Individual personalities and traits can alter the bargaining relationship in spite of other variables which are present in the environment. A better understanding of the personality traits leads to a better prediction of the outcomes of the negotiations available. More importantly, by understanding the effects of personality traits on bargaining outcomes, participants can modify their own tendency to compete or cooperate to better adapt to the situation.
Personality traits cannot be studied in isolation of other factors. The kind of effect that they exert will be influenced by the negotiating environment (Mischel, 1981). The bargaining environment—composed of the sum effects of economic, physical, and historical factors—can create a cooperative or a competitive atmosphere. Individuals process information that the environment transmits and react to it based upon their particular personality make-up. Instead of relying on the researcher's determination of what kind of environment the subject is in, it might be more useful to rely on the subjects' judgment about the kind of environment he is in (whether it be cooperative or competitive). It is the perception of the environment that will effect the expression of bargaining behavior. When researchers have examined perception of the environment, they have the subject's use the game's reward structure of the games to infer if a game is competitive or cooperative. This method may produce accurate perceptions, but it is not as complex or realistic for in a collective bargaining situation. In a "real world" situation, individuals look to far subtler factors. Negotiators tend to process environmental cues such as the past relationships between management and union, the consequences of their own actions,
and the pressure to represent their respective side in a particular way.

Since Mischel predicts an interactive model of behavior, it seems appropriate to test this idea against a realistic situation - that of a contract negotiation. Subjects will be scored on personality traits (Locus of Control, Need for Achievement, Need for Affiliation, Need for Achievement, and Need Power) and tested against various bargaining scenarios. This study will attempt to construct simple situations that will simulate a more realistic collective bargaining setting by manipulating bargaining history (whether it be cooperative or competitive) and the type of directive which is given to the subject (should he/she bargain in a cooperative or competitive manner). Subjects will be asked to participate in all of these settings and will bargain through the computer. Personality traits (Locus of Control, Need for Achievement, Need for Affiliation, Need for Power) will also be examined to see if they have any effect on the bargainer's behavior. Specific behaviors that will be tested include the first and last bid, the total number of bids, the difference between the subject's first and last bid with that of the computer's and finally, the difference between the subject's first bid and the subject's last bid. It is hypothesized that the different conditions and the
personality variables will contribute to the bargaining behavior of the subject. The results will help understand the relevance of the situation and the personality of the bargainer in a collective bargaining situation.
TRADITIONAL APPROACHES TO BARGAINING

Traditional approaches tend to focus on bargaining behavior as the result of environmental pressures. Walton and McKersie classify types of bargaining through the types of goals each party is trying to receive. The goals determine whether the parties will be in direct conflict or in harmony with each other. Within each type of bargaining, different factors work together to set the pace of bargaining such as the minimal acceptable level of a strike, the expense of a strike, and the utilities of the solutions. This theory helps explain what the environment influences in the way of bargaining.
"...we conceive of labor negotiations as an example of social negotiations by which we mean the deliberate interaction of two or more complex social units which we are attempting to define or redefine the terms of their interdependence" (Walton and McKersie, 1965, p. 3)

Walton and McKersie, (1965) state that bargaining can be broken down into four subsystems - distributive, integrative, attitudinal, and intraorganizational bargaining. Each subsystem has certain characteristics associated with it. For example, distributive bargaining is characterized by a situation in which one party's goals are in direct conflict with those of the other party's. The loss of one party's is a gain for the other. Labor-management negotiations is one example of distributive bargaining. Integrative bargaining refers to the party's efforts to gain certain goals which are not in direct conflict with the opposing party's. Since the issues at hand are not in direct conflict, some solution may be reached which will provide mutually acceptable terms. Attitudinal bargaining concentrates on changing the perceptions of the other parties which changes the...
relationship of the two. Rather than being a decision making effort, this subsystem concentrates on the interpersonal. Finally, intraorganizational bargaining deals with deals with bringing the desires of two opposing constituencies into alignment and will not be dealt with in this paper.

Within these subprocesses, each party defines demand limits which will have an impact on the agreement or disagreement on particular items, such as wages. When we speak of limits, we are speaking of the costs that are incurred by employer and employee. Lower limits are set by the union while management sets upper limits. For example, a lower limit for a union negotiator would be a wage rate set below a point an employee would face more costs if he stayed at his current job than if he would move to another place of employment. A company's upper limit is set above the wage at which it would be able to hire replacements more cheaply than paying the current workers. If the union is demanding a wage rate at this point (the upper limit), the company may find that it is less costly to hire the replacements than to settle with its current employees. If the two parties can not come to agreement, employees may go on strike. In doing so, they experience the cost of lost wages, security, goodwill from management, and the loss of their public image. (Walton and McKersie, 1965, p.
Management also experiences a loss in public image, goodwill among labor, and loss of profits. (Walton and McKersie, 1965, p. 32)

Each side develops a resistance point - a point in which labor would choose to strike rather than settle. In other words, there is a particular level of an issue which is the minimum acceptable level at which the party is willing to negotiate down to. (Walton and McKersie, 1965, p. 41). The area between the resistance points of the two parties is known as the settlement range. Negotiators try to target their demands in such a way as to reflect the negotiators estimate of his opponent's resistance point.

What affects the assessment of the resistance points by the parties and what determines the level of their demands? The parties usually begin by determining how expensive a strike would be to the opposing party. There is an inverse relationship between the strike costs of the party and the resistance point of the opposing party. (Walton and McKersie, 1965, p. 60). Although each party may have some estimate as to the relative costs of a strike, each party cannot precisely predict the exact cost of a strike. Information can be gathered on the issues either through indirect information or from information gathered through the negotiation process. Indirect
information gathering may involve looking at market conditions, assessing the strike fund, inventories, and alternative production methods (Walton and McKersie, 1965, p. 62). Direct means of assessment in the bargaining process come from information given or gained in the bargaining sessions. For example, the parties may decide to give minimal information, to give particular types of impressions, to change Opponent's own perceptions of their utilities, and by manipulating the perceived strike costs of the opponents. (Walton and McKersie, 1965, p. 66-75).

In integrative bargaining, solutions are sought in which both parties can benefit. The techniques used in this process are the opposite of those used in the distributive process. Bargainers identify the problems of common interest and then begin a search for alternate solutions. Consideration is also given to the consequences of these solutions. The negotiators then rank the alternatives in the order of preference and go about trying to find a solution (Walton and McKersie, 1965, p. 137). This type of process involves a great deal of information exchange about the issue. Though the information exchange, not only is the problem identified, but the various alternative solutions are developed. The utilities of each solution are discussed and finally a solution is decided upon.
(Walton and McKersie, 1965, p. 139). As might be expected, this process involves a great deal of trust and motivation to solve the problem. Communication of the problem is critical in that it allows information to be exchanged and is the primary means by which alternatives will be discussed and decided upon.

Shea, (1980), praises the efforts of Walton and McKersie on three counts. First, Shea states that the authors break new ground since they concentrate on the bargaining process. Secondly, Walton and McKersie developed a general theory of conflict rather than concentrating on industrial bargaining. Finally, the authors incorporate the fields of psychology, economics and sociology to formulate a more complete picture of the process of negotiations.

At the same time, Shea points out certain flaws in the work. The categories of the bargaining process - distributive, integrative, attitudinal and intraorganizational - are vague and do not easily lend themselves to empirical study (Shea, 1980, p. 713). Certain behaviors can be identified with all four categories. Shea also criticizes the fact that although Walton and McKersie describes what is exchanged in the bargaining process but not "how". In other words, it is unclear how the
participants come to an agreement in the theory. Finally, Shea feels that the treatment of intraorganizational bargaining and the idea of interdependence among the parties and those that they represent.
HICK'S MODEL

Another perspective which takes a labor economist's approach is Hick's model of bargaining behavior. Walton and McKersie's approach took a broad perspective where different types of bargaining were classified. Hicks takes a strict labor economist's approach where the bargaining process is examined. Each party has its own concession curve and where a potential strike may occur. While this model is valuable in explaining how environmental factors may affect the process of bargaining and in what direction, it limits itself to the issue of wages and does not attempt to address the bargaining process in a multi-issue situation.

Hicks looks at the labor-management bargaining as costs of the party over a period of time. These costs are anticipated by the parties and are the basis for their concessionary behavior. Bacharach and Lawler point out an interesting quote by Hicks who describes the purposes of his model: "Though it is called the 'Theory of Industrial Disputes', its main object is not to make a theoretical analysis of the bargaining process. What it does seek to do is to answer the question: To what extent can trade union
pressure compel employers to pay higher wages (or to grant more favorable terms to their employees in other respects) than they would have done if no such pressure had been exercised" (Hicks, 1963, p. 352). The model is presented in Figure 11. The X axis represents the expected duration of the strike while the Y-axis represents the wage rate. The employer's concession curve represents the amount of wages that management would be willing to give to the union to prevent a particular length of a strike. For example, if management did not expect the union to go on strike, a very low wage rate would be given. However, if management expected a strike of long duration, they would concede to a higher wage rate to offset the strike. The curve levels out since there is a point in which management will not concede to any higher wage since to do so would eliminate profits and would mean closing down the business.

The unions curve is a resistance curve. According to Hicks, this curve represents the employer's estimate of how long the union is willing to strike at what wage level. The beginning of the curve represents a selected wage rate which the union initially demands. As the curve progresses along the x-axis, it can be seen that the union is willing to endure a longer period of strike rather than accept a lower wage rate. The resistance curve dips sharply
at one point and this demonstrates a point at which management will not grant the minimum wage that workers feel their entitled to. If this occurs, the union resolve disintegrates and the union will concede to a wage rate which is below that of what management would have granted initially.

The point at which the two curves intersect, labeled point S, represents the highest wage rate that management is willing to concede in order to prevent a strike. Any wage greater than this would be greater than any anticipated costs of a strike.

The key concept in this model is the anticipated costs. The model is based on the anticipations of management and labor before a strike actually occurs. Once a strike has occurred, the model no longer holds. In addition, Hicks has recognized that the union may be able to manipulate the employer into believing that it has a higher resistance than it actually has. Management may have difficulty in getting the union to accept S as the solution.

Hicks makes several assumptions in his model. Both parties accurately assess the curves and S and each side holds similar conceptions. Also, Hicks assumes that
the parties will try to convince each other that S is the
best that either side can do without resorting to a strike.

It seems unlikely that each party can have a completely
accurate perceptions of the others. The model also seems too
rigid in its conception of the bargaining concessions. It
does not allow for any fluctuation in the demands or
concessions of the parties. Other approaches, by Pruitt,
(1981) and Bacharach and Lawler (1981) allow for more
variation in behavior in the negotiations themselves.
PRUITT'S APPROACH

Pruitt, (1981) has defined negotiation as "a process by which a joint decision is made by two or more parties. The parties first verbalize contradictory demands and then move toward agreement by a process of concession making or search for new alternatives" (p. 1). The functions of negotiations (according to Pruitt) are 1) the development of specific agreements, which may set precedence and can settle controversies, 2) development of longer term policies about roles, obligations, and privileges, and 3) mediation of social change which may result from the inadequacies of previous structures to handle the conflict, (Pruitt, 1981, p. 6). Zartman, (1977) has made the statement that "Ours is an age of negotiation" (Zartman, 1977, p. 2). Although the act of negotiation occurs in many facets of society, Pruitt is only concerning himself with those negotiations which occur in the industrial society. Pruitt's model, known as the strategic choice model, states that the bargainer chooses among three strategies for moving toward agreement during the course of the negotiations themselves. One strategy is to concede unilaterally, or to narrow the gap between the
demands of the bargainers through concession; the second is to stand firm and employ pressure tactics, such as threats and persuasion (both are considered forms of pressure tactics) which also act to narrow the gap in a competitive way; and the third, to collaborate with the other party in search of a mutually acceptable solution which has the function of using compromise or using a third party to reach agreement. (Pruitt, 1981, p. 20) Any one or a combination of these strategies can be used by the bargainer. Two other strategies, inaction and breaking off negotiation are ignored by the model since, according to Pruitt, "they do not reflect an interest in agreement". (Pruitt, 1981, 16). After the bargainer has engaged in the choice process, several outcomes are possible. Pruitt states that if a negotiator wishes to reach agreement in a quick manner he must not concede too speedily or too slowly. In addition, if a bargainer makes larger initial demands and smaller concessions he or she will achieve a larger outcome.

Pruitt does not specifically say which strategy will be chosen and when, but he does give an idea as to how certain strategies are chosen. The first guideline states that if the negotiator chooses one strategy the other strategies are much less likely to be chosen. Secondly, any conditions that
lead to choosing or not choosing a particular alternative have the opposite effect on the other strategies.

The second guideline deals with defining what conditions must exist in the environment in order for coordinative behavior to occur among the parties. In particular, the motivations for achieving coordination and a mutual trust among the parties must be present for effective negotiation to occur. Coordination refers to concession making and at what rate they are made.

Each party has certain expectations about what demands the other party will present. Such expectations may be formed as a result of the bargainer's own situation. Concession too, might result from the expectancy of the rate of concessions from the other party. For example, concessions may result if the negotiator expects concessions from the other side. Threats and persuasion may be used by the negotiator to include the amount of concessions made by the other party. Another method of receiving a concession from the other party is to point out an alternative which is beneficial to both parties (p. 21). Along with any concession that a negotiator may expect from he other party, there also will be demands.
Negotiators tend to enter negotiations when they feel they have a strong position and the other party is likely to make concessions. If the other party is likely to make demands outside of the acceptable bounds of the negotiator, and if the other party is not likely to make concessions, then negotiations may be seen as a waste of time. (p. 23). A limit is defined by Pruitt as "a bargainer's ultimate fallback position, the level of benefit beyond which he or she is unwilling to cooperate" (Pruitt, 1981, p. 25) It is also unlikely that negotiators will enter into negotiations if they feel they are in a weak position or if the view the other party's being highly resistant to making concessions. The model concentrates on the relation between the limits of the party and the demands of the parties. Two predictions are made about a bargainer with limits 1) The existence of a limit will produce heightened demands because of the need to defend the limit; and 2) The existence of a limit will produce diminished demands because thinking about ultimate concessions makes it psychologically easier to concede. (p. 27). Kelley (1966) states that a level of aspiration is a function of what is seen as being attainable. Yukl (1974b) found that the relationships between limit and level of aspiration are such that:
1. "Limit tends to remain constant over time, whereas aspiration declines toward limit. Aspirations, or what the negotiator hopes to achieve, will decrease due to an increasing sense of realism as the negotiations progress.

2. Limit and aspiration are positively correlated. The existence of a limit tends to set aspiration levels.

3. The strength of this correlation increases over time.

Time acts as a moderator effect on concession rate and amount. Pruitt defines time pressure as "a desire to end the negotiation quickly" (Pruitt, 1981, p. 30). Time pressure acts to lower demands and creates faster concessions. It's overall effect on the bargaining process is that the demands of the bargainer declines rapidly at first and then levels off. Bartos, (1974) examined the concession process using five-person bargaining groups and found the same type of pattern in which initial demands decreased over time, but towards the end of the negotiation session, subjects would make a very large concession. Pruitt explains that since bargainers move close to their limit as time goes on, and since they make large initial demands, this gives them a large range to work within. The final large concession is a
result of trying to prevent the failure of the negotiations. This concept was studied by Kelley, Beckman, and Fischer (1967). Two bargainers were each given black cards with numbers ranging from one to eight. Each bargainer would hold up one of these cards. Agreement was reached if the two cards held by the subjects totaled nine. After each trial was completed, each subject would turn over one of the red cards placed before him/her. The value on the red card could range from 1 to 6. The red card constituted the subject's Minimum Necessary Share (MNS) and was deducted from the last black card that the subject turned over. The resulting figure was the bargainers' outcome. Figure 1 summarizes the results of this experiment. The higher the limit, or MNS, the higher the demand and the closer the initial demand is to the limit. Each curve represents the average demand of several subjects. The amount of concessions is related to the strategy that the bargainer uses, the initial demand versus the rate of concession, the negotiator's relationship with the other party and his/her mood, the way in which the bargainer is a representative of others, the amount of status and trust he/she possesses, and individual differences in demands and concessions which exist between bargainers. Pruitt, (1981) integrates these components into a model demonstrating concession rates of bargainers. The model is presented in two parts.
First is the basic model which "portrays the impact on a bargainer's demands of time, time pressure, limit, and the other's expected ultimate demand" (see Figure 2). The second model, or augmented model, demonstrates the effect of the other's current demand. (see Figure 3).

Pruitt's model is derived from the resistance model developed by Kelley, et. al., (1967). This model examines a single bargainer who must decide among several levels of demands (in this case, nine levels). Demands range from those which are the most favorable to the bargainer (Level nine) to the least favorable (level 1). The curves on the graph are representative of resistance curves. Each curve represents bargainers with different limits. When the curve goes beyond the point of the bargainers limit, the curve reaches towards infinity. In other words, there is total resistance in conceding beyond this limit (see Figure 4).

It is assumed that every unit of resistance requires one unit of time to overcome it. In the graph shown, there are three time lines and these represent the amount of resistance overcome. These three lines are known as concession curves. this model predicts declining demands over time and that decline occurs more rapidly initially than as negotiations progress.
Pruitt feels the model lacks two variables: time pressure and the other bargainer's behavior. Despite that, Pruitt's Basic Demand/Concession model (see Figure 2), shows that strength of force (the x axis) refers to the strength of force pressing the bargainer in either direction. \_A represents the strength of the force pushing the bargainer to make concessions. \_R is the strength of the force resisting concession making. The arrows point to the direction of these forces. As Pruitt states "the intersection of the resistance curve and the concession curve tells us the level of demand at which these two forces are balanced and hence the level of demand that is predicted by the two curves" (Pruitt, 1981, p. 49). Several predictions were made from this model:

1. **Limit** - a higher limit is predicted to produce larger demands.

2. **Other's expected demand** - Bargainers make larger concessions when the other reveals a more favorable limit.

3. **Limit \_x Time pressure or time elapsed.** As time pressure increases ranging from low to moderately high, limit effects will become greater. When time
pressures increase, the demand level approaches the bargainer's limit.

4. Other's expected demand x time pressure or time elapsed. The tendency to track the other's expected demand is stronger under high than under low time pressure. In other words, it is much more likely that an individual will be mismatched with his opponent's demand level when there is a significant time pressure. (Pruitt, 1981, p. 53).

5. Limit x other's expected demand. "the model predicts a larger limit effect when the other's expected demand is low (unfavorable to the bargainer) than when it is high." (Pruitt, 1981, p. 53)

The Augmented Demand/Concession Model, adds another variable to the Basic Demand/Concession Model - the other party's actual demand. Agreement is reached at a predicted point where the concession curve is vertical since the bargainer's demand is identical with that predicted for the other. This point can be reached in one of two ways: 1) by an approaching deadline and 2) by the party's movement to the demand level he or she is ultimately expected to make. Agreement is reached at the first point
when the party reaches its deadline or perceives that the other has made all the concessions he or she can be expected to make (Pruitt, 1981, p 54-55). Additional predictions from the model are cited by Pruitt:

1. "Demand will be lower the closer the other's actual demand ultimately expected from the other.

2. As time pressure increases, holding the other's actual demand constant a less favorable ultimate demand will be expected from the other.

3. The closer the other's actual demand is to the other's expected demand, the more pronounced will be tracking of the other's expected demand.

4. The effect of a bargainer's limit on his or her demand is an inverted U-shape function of the closeness of the other's current demand to his or her expected demand" (Pruitt, 1981, p. 55).

This model describes the concession rate of the individual's in a bargaining situation but it does not describe when a negotiator will cooperate or compete. An attempt is made to develop broad definitions of these
concepts but they are not directly included in the model. Pruitt speaks of two types of behaviors - competitive and coordinative behaviors. Competitive behavior is defined as "efforts to elicit unilateral concessions from the other party" (Pruitt, 1981, p. 71). Coordinative behavior is "when bargainers work together in search of a mutually acceptable agreement" (Pruitt, 1981, p. 91).

Cooperative tactics are of five types: imposing time pressure by emphasizing the other party's costs if they continue with the negotiations, appearing firm by appearing as if unwilling to concede to the other party's demands, reducing the other's estimate of the likelihood that one will concede, and reducing the other's resistance to concession making through the use of threats or persuasion or promises, building a case on one's preferences on the basis of the principles of prominence and finally, developing a positive relationships with the other party or improving his or her mood.

Coordinative behavior involves quite a bit of trust by both sides. Types of coordinative behavior include those that involve high risk behaviors and those involving low risk. Risky behavior may involve making large concessions in exchange for a large concession by
the other party. Large concessions such as these involve certain types of loss to the negotiator such as image loss, information loss, position loss, and a loss of opportunity for competitive behavior. Moderate risk involves situations where there is weak trust between parties but need of coordinative behavior. In this case, the negotiator may use nonverbal communication which give signals of a willingness to coordinate effort. Low risk behaviors may involve combining various strategies or by relying on third parties to prevent some of the risks that were discussed earlier.

Pruitt discusses how issues can affect bargaining behavior. Two contemporaries of Pruitt - Bacharach and Lawler - look at how a bargainer approaches the bargaining situation. In addition, they discuss a few key factors that figure prominently in the bargaining arena.
Bacharach and Lawler (1981) state that although bargainers wish to settle, they wish to settle in such a way that is most beneficial to themselves. In assessing how to bargain, the participants compare the cost/benefits of different settlements to the cost/benefits of no settlements (Bacharach and Lawler, 1981, p. 4) Bacharach and Lawler examined how negotiators approach a bargaining situation by using different theorists were used to explain what factors were important in a bargaining environment.

One situation deals with what is known as a bilateral monopoly. Two parties bargain exclusively with one another. Each party has a great deal at stake in the outcome of the negotiations and emphasis is placed on the issue(s) pertinent to the bargaining session. Issues can be thought of as resources which must be divided in some way that a loss to one party represents a gain to the other party. Bargaining over a wage rate is a typical example of this approach. (Bacharach and Lawler, 1981, p. 5)
Each issue contains a range of possible solutions, or the contract zone, which sets up boundaries where agreement may or may not be reached. Each party has minimum demands at which any settlement must meet. Any offers falling below these minimum demands will not produce an agreement. Theorists using this concept include Hicks (1963), Nash, (1950), Zeuthen, (1930).

Offers and counter-offers figure prominently in analyzing the bargaining process. It is assumed that the offers will converge after a period of time. Once the offers converge, a determinate solution can be reached. This solution is the single settlement (Bacharach and Lawler, 1981, p. 6).

Finally, many theorists predict that bargainers have perfect information about the bargaining environment — information about the situation of the Opponent's and their own. Game theorists such as Nash, (1950, 1953) make this assumption while other theorists use the concept of information as a key element of their theories. (Bacharach and Lawler, 1981, p. 6).

Game theorists created particular environments to test some of these concepts. From these studies, particular
conclusions have been drawn about the effects of bargaining behavior.
GAME THEORY

Game theorists use some of the concepts discussed previously to test how an individual behaves in a bargaining situation. All individuals are assumed to behave in a rational way and will maximize their own benefits. A matrix is presented to the two parties which describes the outcomes for all possible combinations of choices. The number of points (or whatever unit of reward there happens to be) given to each player depends upon how his/her opponent plays. So, the players must make a strategic choice while second guessing what his/her opponent might decide to do. Most games, such as the Prisoner's Dilemma game, are constructed in such a way as to create incentives to cooperate and compete. In other words, the game involves mixed strategies. The structure also provides the players with complete information about the utilities of all parties involve. This kind of situation presents limitations in the behavior of the participants. Since the structure of the game is set, the parties cannot create new outcomes nor can they use any exclusive information to
influence the choices of the opponent. Bacharach and Lawler point out that the central concept in game theory is that each party's solutions are based upon the utilities of the other party.

This type of approach has several limitations pointed out by Bacharach and Lawler, (1981). The authors question the assumptions of perfect rationality, information and the utility functions as they relate to an actual bargaining situation. These conditions do not exist in a real world situation and because the game does not reflect the real world, any tests of theory using this approach have questionable results. Another failing of the approach is that it really does not provide revolutionary insight on the phenomena of bargaining. Nash (1950, 1953) and Raiffa (1953) predict that the participants will settle on some middle ground, between the optimum solution of both parties. Finally, this approach does not make an adequate analysis of the possible environmental constraints. In game theory, the environment makes no impact on the decisions of the players since the environment is not defined beyond the matrix values. (Bacharach and Lawler, 1981, p. 16)

Game theory is very limited in its predictive power. Bacharach and Lawler make this observation: "Game theory is
unable to tell us anything about the process of bargaining because its assumptions identify and remove all the obstacles that bargainers have to confront" (Bacharach and Lawler, 1981, p. 16). Furthermore, the approach assumes that all participants will perceive the matrix and the goals of the game in the same way. Each individual may, in fact, have slightly different perceptions and interpretations of the game.

As Kochan, (1981), has pointed out, these approaches don't offer theories as to where or why certain concessions are made and why the parties may be more resistant to the demands of the other party. Even though these approaches offer some market explanations as to why certain demands are set, they say little, if anything, about the effects of a bargainer's own personality (individual differences) on the outcomes of bargaining. These differences, interacting with the environment, may create conditions which facilitate concession making or may promote the parties to be more resistant to the demands of the other parties.

The personality of the bargainer has been studied using various gaming theories (such as the Prisoner's Dilemma). In general the results have been inconclusive, but this may be
due to the various types of games which have been used in the past. Rubin and Brown (1975), have suggested that the games may have direct effects on the findings since different games require different tasks which may be cooperative or competitive in nature. This thought lends credence to the notion that traditional theories may have substantial impact on the way in which a bargainer interprets his environment.

To understand the how researchers have tested bargaining theories using game theory, a closer examination must be made of the types of games that are used. By gaining a better understanding of these types of games, a more careful interpretation of the results can be made.
THE BARGAINING ENVIRONMENT

Past research has shown that bargaining behavior will change when the subject is given different instructions for a game (Deutsch, 1958, 1960a). The experimenter created an orientation which promoted competitive individualistic, or cooperative motivations in a particular bargaining game. Deutsch, formulated three sets of instructions which created a competitive, cooperative, or individualistic setting. Subjects were instructed to "win as much money as you can for yourself...and try to do better than the other person" (competitive); "consider yourself to be partners with the other player...and you want him to win as well as you" (cooperative); and "win as much money as you can without caring about what the other person does" (individualistic).

Other researchers have used Deutsch's instructions. Kanouse and West, (1967), Griesinger and Livingston (1973), and Radlow, Wiedner and Hurst (1968), used the Prisoner's Dilemma game and found that subjects in the cooperative condition displayed more cooperative behavior than in the other conditions.
Alexander and Weil, (1969) used a 20-trial modified PD game listing plays between fictitious subjects called "Al" and "Bob". Al made cooperative choices while Bob made competitive choices. Subjects were given this list of choices to examine. After the subjects had time to read through it, they were given an Adjective Checklist and told to rate the players (Al and Bob). There were two checklists - one which emphasized personal traits unrelated to the game (the PAL list) and a list which contained traits most appropriate to the competitive setting (the PLA list). Subjects were given either the PLA or PAL list. After the checklist was completed, the subjects participated in a PD game. Individuals who had been given the PAL list were more cooperative in their behavior than subjects given the PLA list. The researchers believed that the PAL subjects may have inferred from the trait list that cooperation was desired. PLA subjects believed that competition was desirable. Subjects in the PAL condition rated Al higher than Bob while those in the PLA condition rated Bob higher than Al. The PAL and PLA tests proved to be an effective way of manipulating bargaining behavior.

Not all researchers use the PD game. Crawford and Sidowski, (1964) used the Minimal Social Situation game and found that subjects tended to make more "correct"
(cooperative) choices in the cooperative condition than in the competitive. Willis and Hale (1963), used a 50-trial coordination game found that subjects in the competitive condition had more difficulty in coordinating their efforts than in the cooperative condition.

Deutsch and Lewicki (1970), used the Acme-Bolt Trucking game to study the effectiveness of brinksmanship strategy. Subjects who were given cooperative set of instructions were more effective in their performance than those in the competitive condition.

Schiavo and Kaufman (1974), used Deutsch's instructions in the Parcheesi Coalition game with three conditions - individualistic, competitive and cooperative. It was found that the type of instructions that were given to subjects in the cooperative condition made a significant effect in the types of behavior that was exhibited in the game.

Instructions alone do not determine the climate of the game. The differences found in these studies merely indicate that subjects are adapting their behavior to the requirements of the instructions rather than responding to differences in environmental climate. What would be more useful in demonstrating differences of behavior across
environments is changing the game used in the experiment rather than just changing the instructions. A subject will try to do as he is told rather than responding to variations in an experimental setting, so it is critical that the game must be constructed so that the subject will perceive for himself the differing contexts.

In addition, these experiments were very structured and based on interactionist theory will create differences based on behavior which is not trait related. Ambiguous equivalents of these games would allow for trait differences to manifest themselves.

Examples of specific type of games have been described by Morley and Stephenson (1977):

Distribution games. (DS) These games provide the subjects with shares of a particular resource. The distribution of resources are determined by bargaining between the parties. For example, Kelley, Beckman and Fischer (1967) used nine points which were to be divided among the players (this could be split in 8 different ways). Each subject was given a minimum necessary share (MNS) and paid a sum equal to the difference between the value of the contract he agreed and the MNS value he was given.
Games of Economic Exchange (GEE) are games in which a single buyer confronts a single seller, which produces a bilateral monopoly (Siegel and Fouraker, 1960; Johnson and Cohen 1967; Holmes, Throop and Strickland, 1971; Kelley and Schenitzki, 1972). The game involves the exchange of bids and subjects are paid the value of the contract they negotiate.

Role playing debates (RPD) requires the subject to learn details of a situation to such a degree that he will be effective in acting out the role assigned to him. Much of the responsibility for a successful simulation rests with the subjects involved in the study.

It is clear that most of these games involve monetary exchanges and profit gains. Findings in these kind of settings may not be generalizable to other situations which provide more subtle influences over an individual's perceptions. Subject's tend to judge the situation and their own success based on these rewards (how are they supposed to divide up the rewards, were they successful in completing their task, etc.) rather than processing other cues contained in the environment. Not all bargaining situations are evaluated by the potential rewards that are provided in the system. Some participants rely on other methods to determine whether or not a
situation is more cooperative or competitive. Past bargaining history of the participants, the personality of the other bargainer, and the policies of the different sides can provide just as relevant information.

Campbell (1969), Bass (1966), and Druckman (1967, 1968) used a collective bargaining simulation. Bass, (1967) and Bass, Vaughn and Cox, (1968) have described this simulation—subjects would be assigned to play either union or management roles. A package of materials would be given to each subject which would describe the company's history, the nine negotiable issues, other local settlements, and a position statement.

This approach has been criticized on several grounds. Nicholson, (1970), states "Not all aspects of behavior are, at present, well reproduced, nor are we sure which ones are well reproduced and which are not" (Nicholson, 1970, p. 152). It is also unclear how much the subjects immerse themselves in their respective roles and act as if they were actually the representative of a designated group. Another drawback of this approach is that the subjects themselves are required to learn a large amount material which may lead to less than enthusiastic participation.
Other criticisms have been concerned with the negotiator's role in the experiment. McGrath, et. al., examined certain forces which act on the negotiator. Vidmar and McGrath, (1967) state "Conflict arises not as a result of the task per se, but rather from a conflict-producing role structure derived from member commitments to reference groups outside the actual negotiation situation and from perception of a contingent reward situation (Vidmar and McGrath, 1967, p. 6). The model is called the tripolar model since each negotiator is faced with three specific forces which act on the negotiator's position. The three forces are: "R" forces or role forces which are those forces which are the level of commitment or obligation towards their respective parties. "C" forces are directed towards the community at large and "A" forces are directed towards the opponents party. The negotiator attempts to arrive at a solution which satisfies the three groups (own party, opponent's party, and the community) which is comparable to the amount of force they exert on the negotiator.

A successful agreement, that is, totally successful, is one in which all of the three forces are satisfied. These forces must be in balance among the participating parties within the negotiation group. However, the R-forces is the most important of the three in determining success (an inverse relationship was found among R-forces and task success).
Conflict within the group is thus regarded as a function of: the task itself, the attitudinal commitments of a negotiator to a party position, and the role obligation of a negotiator to represent a party' (Morley and Stephenson, 1977, p. 29). The authors conclusions are based on their observations of successful and unsuccessful experimental groups. R-forces were greater in the unsuccessful group and results in inappropriate bargaining.

The importance of the R-forces is a central theme in these studies. Morley and Stephenson (1977, p 29-30), feel that the researchers went to extremes in that they claim that R-forces will not be generated unless specific role obligations are given to the negotiator. When roles are not specifically given, the R-forces do not exist. Morley and Stephenson (1977) interpret this to mean that the predictive power of the other forces can only be assessed in relation to the R-forces. The authors feel this interpretation is faulty and criticize the experiments conducted by Vidmar and McGrath. The particular experiment they cite involves a comparison of two groups — one groups was placed in a negotiation setting and the other was given a problem to solve. The first group had subjects envision themselves as representatives of an organization and would get rewarded if the subject's were able to represent their organization's views in the final written solution. The other subject's were presented with
information and were told that this information represented views from an opposing party. These views were given to the subject with the claimant that the information was provided for the purpose of informing the subject on such an viewpoint. Rewards were contingent upon a fair solution. Vidmar and McGrath felt that the performance in the first group was less effective than those in the second. The rationale for this comparison was questioned by Morley and Stephenson who pointed out that the two tasks were not comparable and so any comparisons based on such an assumption is in error. Furthermore, the first group had competitive instructions while the problem-solving group was cooperative in its task. Vidmar and McGrath concluded that the R-forces alone produced the poorer performance in the negotiations group. In addition, the researchers state that the three forces become salient in the negotiations setting. Morley and Stephenson believe that all three forces will be predictive of task success no matter if the subject was a representative or not.

Druckman and Zechmeister (1970), had subjects pretend they were political decision makers who had to divide an $8 million government budget among eight proposed methods of dealing with urban racial problems. Each subject chose four of the proposals and was assigned to roles consistent with his choices. An Ideological Link (IL) condition
contained one set of proposals explicitly derived from an ideology of 'social change' and the other set from an ideology of 'system maintenance'. The 'No Ideological Link' (NIL condition) omitted the additional information. Subjects in the IL condition found it harder to reach agreement than subjects in the NIL condition (4 out of 8 dyads in the NIL condition reached agreement before a thirty minute deadline, whereas 0 out of 7 dyads in the IL condition did so.). Consequently the number of pairs who maximized their joint profit (by apportioning the entire $8 million) was greater in the NIL condition than in the IL condition (7 out of 8 dyads in the NIL condition reached Maximum joint payoffs agreements, whereas only 2 out of 7 dyads in the IL condition did so.) Furthermore, compromise was unlikely in the IL condition and conflict tended to result in either deadlock or capitulation.

Vidmar and McGrath (1965) wished to see how 'standard' negotiation groups compared to 'cross-assigned' groups. "Standard" meant that a member of party A represents party A. "Cross-assigned" meant that a member of party A would represent party A and another member of A would represent party B. It was predicted that cross-assigned groups would produced higher quality settlements, however the results were not significant.
Frey and Adams (1972), used a union-management simulation to see how subjects would behave in a role playing context. All subjects were assigned management roles. Subjects played against a simulated opponent. The negotiation process consisted of an exchange of ten written communications (selected from a set of seventeen possible communications). Three dependent measures were taken - subjects' final offer, subjects' mean levels of demand, and subjects' mean levels of resistance to their constituents - using multivariate analysis. When union tactics were 'exploitive' (messages were 'demanding and threatening' and 'frequently emphasized the harm that a strike would do to the company') the subjects' mean levels of demand were higher. When the Union's tactics were 'cooperative', (messages were 'conciliatory and emphasized the mutual gain which an agreement would bring about').

Within a condition of constituent distrust, subjects who received exploitive messages from union negotiators made smaller last offers, made smaller mean concessions and showed greater resistance to suggestions from their constituents than did subjects who received cooperative messages from the union. In other words, subject's bargaining behavior was jointly determined by 'an internal conflict factor' (constituent trust v. constituent distrust) and 'an externals conflict factor' (received cooperation v. received exploitation).
Frey and Adams have pointed out, 'In such a context, a negotiator's behavior cannot be adequately explained by the variables of the dyadic bargaining process alone' (p. 345).

Previous studies have shown that there can be certain R-force effects associated with negotiators. To avoid such effects, it would seem appropriate to use subjects who are best equipped to deal with these pressures. However, for any individual difference variable to be predictive of a negotiation success certain individuals must be systematically associated with certain sorts of outcomes. Subject populations cannot provide this association (McGrath and Julian, 1963; Julian and McGrath, 1963). Many researchers seeking personality correlates of successful negotiation has met with limited success (Sawyer and Guetzkow, 1965; McGrath 1966; Bass, 1966; Lamm, 1973). It is true that some findings have been positive (Bass, 1966; Lamm, 1973), but overall, this is not the case (Stephenson, 1971b). Sawyer and Guetzkow, (1965) feel that personality may become critical when information decreases and stress increases. Others have stated that more attention should be given to the nature of the group task and other conditions in which groups perform.

Karass, (1970) used 'negotiator trait scores' from management ratings of professional negotiators employed in
the American aerospace industry as 'buyers, subcontractor administrators, contract managers, and termination specialists'. 'Unskilled' negotiators were those individuals who received trait scores below the sample median. 'Skilled' negotiators received scores above the sample median. The subjects were assigned to one of two conditions - Equal power or plaintiff power. The conditions were manipulated by varying the number of court cases used as a precedence and 'adding a degree of uncertainty to the equal power variation' (Karass, 1970, p. 15). The unskilled negotiators obtained more favorable settlements when they were given higher power. The skilled negotiators were not affected by the variations.

In an actual collective bargaining setting, cooperative and competitive environments are often the result of the past bargaining relationship of the parties. Cooperative relationships exist when issues are settled with a minimal amount of conflict whereas competitive relationships involve great disputes over issues and quite often result in strikes
PERSONALITY OF THE BARGAINER

Personality characteristics have an effect on the type of bargaining behavior exhibited by the subjects. From the studies cited below, it is not clear how stable these effects are over different environments. Some studies indicate significant findings, others do not. This discrepancy may be due to the type of game or situation in which the subject was placed. Interpretation of findings is further complicated since structured environments may enhance environmental effects while ambiguous situations allow the interaction of personality and behavior to remain unchanged.

Locus of Control, defined by Rotter in 1966, is the belief that rewards are determined by one's own efforts (internal locus of control) or by environmental factors (external control) such as fate or luck. Condry, (1967) used a two person bargaining game and found no significance between locus of control and bargaining behavior. Bobbitt, (1967) used a PD game in a
competitive environment where subjects were tested using Rotter's Locus of Control scale. It was found that internals were less competitive than the externals. When the game became cooperative in nature, internals were less cooperative than externals. Need for Achievement (Nach) has had some effect on bargaining behavior. Terhune, (1968) found that subjects scoring highly on Nach made more cooperative choices in both cooperative and competitive environments in three one-trial PD game. Chaney and Vinacke (1960) found quite different results. Subjects who were high in Nach behaved more aggressively and formed fewer coalitions with the other subjects in the triad. Crowne (1966), reported no relationship between Nach and the amount of cooperation exhibited by subjects. Conflicting results may be due to the fact that subjects in a PD game are playing against each other on a one-to-one basis and the Parcheesi coalition game concentrates on coalition formation.

Although there are conflicting results, there is an explanation. Rubin and Brown (1975), suggest that the bargaining game used in research may affect the bargaining behavior of the subjects. The PD game, they claim, is much more competitively structured than the Parcheesi Coalition game which allows for more cooperative behavior. Different researchers use different games which decreases the generalizability of their findings since different games may
produce different results. For example, Terhune (1968) and Crowne (1966) used the Prisoner's Dilemma game while Chaney and Vinacke (1960) used the Parcheesi Coalition game and this may account for their diverse findings. Studies of Need for Affiliation (Naff), have made attempts to demonstrate how the trait is affected by different environments. Terhune, (1968) found that when the game was cooperative, subjects high in Naff would exhibit cooperative behavior. When the subjects were placed in a competitive environment, their behavior became much more competitive due to suspicions that the other party would 'defect' on making a cooperative choice. Noland and Catron (1969), found that subjects high in Naff would exhibit more cooperative behavior in the PD (a competitive game) than the low Naff.

Need for Power refers to the need to exert control or influence over people (Hammer and Organ, 1978). Marlowe, (1963) found that subjects are more competitive when they measure highly on Needs for aggression and autonomy (Terhune, 1970, states that autonomy, aggression, and prominence are variants of need for power). Terhune cites an unpublished study conducted by Higgs and McGrath, (1965), who found that individuals who are high in the need for prominence tend to compete. Sermet, (1967b) first found no relationship between need for dominance (another
name for power and was measured by the Minnesota Multiphasic Personality Inventory) but in a later study, he found that subjects high in the need for dominance would be more competitive than those who were low in this trait.
PURPOSE OF THE STUDY

The purpose of this study is to test a model of bargaining - one which would incorporate the various approaches (environmental and social psychological), into a comprehensive study of the bargaining process. Such an approach should look at the personality of the participants, the historical relationship of the two parties, and the current bargaining environment. By looking at all of these factors, a complete picture of bargaining dynamics can be observed. Rather than predicting bargaining behavior from situations which have little to do with the collective bargaining environment, subjects will be participating in several environments which attempt to simulate more realistic settings.

The settings will vary along two dimensions - the bargaining history of the two parties and the management directive to the subject. The bargaining history will contain descriptions of the past bargaining history of the two parties. The management directive tells the subject how management sees the current situation and how they wish the
subject to bargain. Each dimension (history and directive),

is described in one of two ways - either competitively or

collaboratively making a total of four situations. All

subjects will participate in four bargaining games. Each
game has specific orientations. The Competitive History is
described in antagonistic connotations so the subjects may

perceive that competitive behavior is appropriate. To insure

that the subjects will perceive this as a competitive
setting, descriptions of the history will contain elements

which demonstrates the volatile nature of the union-
management relationship. The Cooperative History is
described in more humanistic terms and attempts to

create a more cooperative atmosphere. In addition,

both games will have an cooperative and a competitive
directive which will be described in detail later in this

paper. These two conditions were added to test the

bargaining behavior of the subjects in conditions of

conflicting orientations. It will be interesting to see

how the subjects will react to situations where they are

confronted with a bargaining history that is contrary to

their directive (to bargain competitively or cooperatively).

This paper attempts to investigate the

interaction of certain personality characteristics (Locus

of Control, Need for Achievement, Need for Affiliation,
Need for power, on bargaining behavior in four different environments - Competitive Orientation-Competitive Directive, Competitive Orientation-Cooperative Directive, Cooperative Orientation-Cooperative Directive, and Cooperative Orientation-Competitive Directive. Personality characteristics may have different effects across conditions. Previous literature on the effects of personality in bargaining have been limited in scope since researchers limit their tests to one setting only. It is hoped that this study will provide additional information on the role of personality in bargaining. Before any hypotheses can be formulated, a review of the relevant literature will be presented.
PROBLEM STATEMENT

This study attempts to see the effects of personality traits (Locus of Control, Nach, Naff, Npow), bargaining history (either cooperative or competitive) and Bargaining Directive (whether the subject is told to take a hard-line stance against the union, or told to take a cooperative approach toward the union) on bargaining behavior. Past research has the limitation of testing personality variables in one setting only. Even though some studies have varied the instructions or other particulars, the game has remained the same. The bargaining games that have been used such as Prisoner's Dilemma, Acme Bolt Trucking, etc., are not constructed in such a way as to involve the participants fully, are not sufficiently complex in regards to issues, and may have inherent biases in their structure (for example, the PD game is basically competitive while the Parcheesi Coalition game is cooperative). A more complete picture of how personality characteristics affect bargaining behavior can be accomplished by using different situations.
In this study, cooperative behavior and competitive behavior will be defined by the following dependent variables: first and last bid, total number of bids, the difference of the subject's first and last bid to that of the computer's, and the difference of the subject's first and last bid. Cooperative behavior is defined as making relatively few bids (an indication that the subject came more quickly to agreement), a larger first and last bid, and a smaller difference on the first and last bid of the subject from the bid of the computer. Competitive behavior will result in a greater number of total bids, smaller first and last bids, and a large difference of the subject's first and last bid with that of the computer's. Differences may be found in the difference of the subject's first and last bid - cooperative trends may indicate a large difference while competitive trends may indicate a small difference.

The following hypotheses will be tested:

1. Cooperative behavior (fewer number of bids, larger first bids, larger last bids, smaller differences between the subject's first and last bid with that of the computer's, and a smaller difference between the subject's first and last bid) will be greater in the cooperative History than in the competitive
History while competitive behavior (a greater number of bids, smaller first bids, smaller last bids, greater differences between the subject's first and last bid with those of the computer's, and a greater difference between the subject's first bid and last bid) will occur more in the competitive condition.

Deutsch and Krauss (1960, 1962), tested threat potential and found that subject's adopted a competitive orientation and reduced their joint maximum payoffs. Hornstein (1965), found that those with unequal power were more competitive than those with equal power. Similar findings were reported by Tedeschi, et. al., (1969), McClintock, et. al., (1973), Maderna, (1970), and Aranoff and Tedeschi, (1968); Berkowitz, Hylander and Bakaitis, (1973); Tedeschi, (1970); Borah (1963); Shomer et. al., (1966); Deutsch and Lewicki (1970); Diegan, (1970); Sheposh and Gallo, (1973); Solomon, (1960); Swingle (1970a); Tedeschi and Lindskold, et. al., (1969). However, some studies have found just the opposite (Kormorita, Sheposh, and Braver, 1968; Tedeschi, Bonoma & Novinson, 1970b; Harford, Solomon & Cheney, 1969; Morrison, et. al., 1971; Murdoch 1967; Thibaut, 1968; Thibaut & Fauchex, 1965).
2. There will be an interaction effect between Bargaining History and:

   A. Locus of Control. Bobbitt, (1967), showed that internals are less competitive than externals in a competitive game. Internals are less cooperative than externals in a cooperative game.

   B. Need for Affiliation. Terhune, (1968), states those high in Naff are more cooperative than those low in Nach in a cooperative game.

In a competitive game, those high in Naff are more competitive than those low in Naff. Kanouse and West (1967), Griesinger and Livingston (1973), Radlow, Wiedner and Hurst (1968), Crawford and Sidowski (1964), all found that more cooperative choices were made in a cooperative environment. Rubin and Brown (1975), feel that some games lend themselves to competitive behavior and that certain games such as the Parcheesi Coalition game, lend themselves more to cooperative behavior. Personality characteristics help determine the cooperativeness or competitiveness of a subject (Terhune, 1968; Chaney and Vinacke, 1960;), the bargaining environment has also been proven to be an important factor in the subject's behavior (Deutsch and Krauss, 1960, 1962; Deutsch, 1958,

3. Cooperative Directives will show more cooperative behavior (larger first and last bids, smaller differences between the subject's first and last bid with that of the computer's, and a smaller difference between the subject's first and last bid) while the competitive Directive will show more competitive behaviors (a greater number of bids, smaller first and last bids, greater differences between the subject's first and last bids with that of the computer's, and a greater difference between the subject's first and last bid).

In crossed situations (such as competitive history-Cooperative directive or Cooperative history-competitive directive) the directives will act as moderators to the subject's behavior in the following way:

A. Locus of Control.
In cooperative history-competitive directive or competitive history-cooperative directive:

i) internals will be less competitive than externals in a competitive game.

In the cooperative history-cooperative directive and the competitive history-cooperative Directive:

ii) both externals and internals will behave more cooperatively in a cooperative game; both internal and externals will be more competitive in a competitive game.

B. Need for Affiliation.

In the cooperative history-competitive directive and the competitive history-cooperative directive:

i) High Naff will be more cooperative than those low in Naff in a cooperative game.

In a competitive game, those High in Naff will be more competitive than those low in Naff.
In the cooperative history-cooperative directive and the competitive directive-competitive directive:

ii) both high and lows will be more competitive in competitive games. High and lows more competitive in competitive games.

C. Need for Achievement.

In the cooperative history-competitive directive and the competitive history-cooperative directive:

i) High and low Naff will make cooperative choices in both conditions.

In same-type situations:

ii) both hi and low Nach will make cooperative choices in the cooperative game while they will make more competitive choices in the competitive game.

D. Need for Power.

In the crossed situations:
i) Those who score highly on this trait will tend to compete more than those who are low in both competitive and cooperative games.

In the same-type situations condition:

ii) The Competitive environment will produce more competitive behaviors in both hi and lows, but the cooperative condition will produce more cooperative behavior.

4. Personality traits will affect bargaining behavior in these ways:

A. Locus of control. Internals will bargain more competitively than externals.

B. Need for Achievement. Those high in Need for Achievement will be more competitive than those who are low in this trait.

C. Need for Affiliation. Those high in this trait will bargain more cooperatively than those who are low in this trait.
D. Need for Power. Those who are high in this trait will bargain more competitively than those who are low in this trait.
METHOD

Subjects. Subjects were drawn from the college of Business Administration. Participation in the study was voluntary and was solicited from various classes. Students were told that the purpose of the study is to study bargaining behavior. The personality measures were given to the subject to fill out at the lab session. Identification numbers were assigned to each subject for purposes of coding, but each subject was assured of his/her anonymity. Subjects were measured on the personality variables using Rotter's Locus of Control scale (Rotter, 1966) for locus of control, and the Edwards Personal Preference Schedule (Edwards, 1954) for Need for Achievement, Need for Affiliation, Need for Power. The total time required to complete these forms is approximately one-half hour.
Personality Measures. Personality traits were measured as follows: a) Locus of Control was measured by Rotter's Internal vs. External Scale (in Robinson and Shaver, 1973); b) Need for Achievement, Need for Affiliation, and Need for Power were measured by the Edwards Personal Preference Scale of Achievement, Affiliation and Dominance respectively.

Procedure. Subjects were given the personality inventories before they came to the lab and were to be completed by the time that the subject reported to the lab. Once the tests were handed in to the experimenter, an identification number was assigned and the subject was taken to the computer room. Each subject was seated with his/her own terminal. Preliminary instructions on the use of the terminal and the purpose of the simulation was given by the experimenter. The subject was told that he/she would be playing against an unseen subject who was at another computer site. The subject were also told that this opponent was being evaluated on their skills as a bargainer. This was done to insure involvement and a greater sense of responsibility in playing the simulation. The subject then entered his/her ID into the terminal and the bargaining simulation began. The subject participated in four conditions of the simulation - 1) cooperative history-cooperative directive; 2) Competitive
history-cooperative directive; 3) Competitive history-
Competitive directive; and 4) cooperative history-
Competitive directive. Each condition represented a separate
bargaining task in which the subject was asked to bargain
over a wage agreement. A complete list of experimental
instructions and simulation conditions are listed in Table 9.
All four conditions were randomly presented to the subjects
to counterbalance any ordering effects.

All four conditions took approximately a total time of
one hour to complete. The subject was really required to
bid against the computer, although he was told he was
playing against another subject who was operating another
terminal. The subject read the background information for
each part of the simulation. The computer prompted him/her
to indicate if he/she understood these instructions. If the
answer was 'yes', the subject began bidding. If the answer
was 'no' the subject was given the instructions again. When
the subject was ready to bargain, the computer would open
with its bid. The subject would then enter his/her own bid
and bidding would continue in this fashion until the end of
the simulation section. The subject could end the simulation
one of two ways - 1) the subject could bargain until 15
minutes had passed at which time the section of the
simulation was automatically terminated or 2) the subject
could enter a bid which was equal to the last bid of the computer's. This would signal an agreement had been reached and would automatically terminate the simulation section. At that time, the computer flashed a message that negotiations were terminated. The next game section began its program. This sequence of events continued until the subject participated in all four conditions. Four different bargaining settings (composed of different levels of history and directive) were be randomly assigned to all subjects. In the different directive conditions, subjects were told of the importance of agreeing or disagreeing and the direct consequences of his/her actions. In the competitive directive, the subject was told that his job depended upon his being able to maintain management's position and not giving in to union demands. In the cooperative directive, subjects were told that it was mandatory to maintain the close working relationship of the union and management. Other descriptions were added to strengthen the imperative to be cooperative or competitive.

**Bargaining Measures.** Several measures of the subject's bargaining behavior were assessed. Like Assor and O'Quin, (1982), the total number of bids (abbreviated as TNOFB) for each section were an indication of the bargaining toughness of the subject. A large number of bids indicates a more
competitive behavior will a low number of bids indicates a more cooperative orientation. The subject's first and last bid (abbreviated as FBID and LBID respectively), were examined to give some indication how the subject opened and closed each simulation section. Large opening bids were judged to be more cooperative than small opening bids. Likewise, large closing bids were seen to be more cooperative in nature than small.

In order to gain a sense of process, several variables were created. The subject's opening and closing bid were compared to the computer's bid to gain a sense as to how close or far the subject was in relation to his/her opponent. Two variables were constructed – one which measured the difference of the subject's first bid with that of the computer's first bid (abbreviated as FBC) and one which measured the difference of the subject's last bid with that of the computer's (abbreviated as LBC). A large difference in these variables indicates that the subject is far from the demands of his/her opponent and is being competitive. A small distance indicates that the subject was in close accordance with the bids of the computer and is indicative of cooperative behavior.
Finally, a variable was created to assess the progress of the subject from beginning to end. This variable provided the difference between the subject's first and last bid (abbreviated as DFLB). A large difference indicated cooperative behavior since the subject would begin with a small bid and then approach his/her opponent's last bid more closely. A small difference would indicate that the subject was consistent in his/her bargaining behavior.

**Scoring Method.** The Personality measures were scored and divided into these categories: 1) Need for Achievement, Need for Affiliation, and Need for Power were scored using the Edwards Personal Preference Schedule. The scores were divided into three categories - high, medium and low using a trimedian split. In other words, approximately a third of the subjects were classified in the 'low' category, a third in the 'medium' category, and a third in the 'high' category. The personality measures - Locus of Control, Need for Achievement, Need for Affiliation and Need for Power - have been divided into three levels. The first level of each variable (labeled as a number 1) represents a low score; a number 2 represents a moderate score and a 3 indicates a high score on the variable. Many studies examine these variables by using a median split. Scores above the median were considered high scores while those below the median were
considered low scores. A major problem in drawing conclusions from his analysis is that it becomes difficult to interpret a score falling around the median. For example, if a sample had a median Nach score of 16, then a score of 15 would be considered a low score while a score of 17 would be considered a high score. Practically, the level of Nach exhibited by someone scoring either a 17 or a 15 is probably much the same. It seems only logical that these personality scores should be divided in such a way that will clearly differentiate between who fall on the extreme ends of the scale. 2) Locus of Control – Subjects were rated as being either internal or external based on Rotter's method of scoring this trait. Subjects were divided into high (internal), low (external) and medium (equally internal and external) categories. The dependent measures - bargaining behavior - were represented by the total number of bids within each section of the simulation, the first and last bid of the subject, the difference between the subject's first and last bid with that of the computer's, and the difference of the subject's first bid with his/her last bid - were stored and copied on the computer. These variables were calculated for each of the four conditions. This provided information as to the process of the bidding - whether or not there are greater adjustments at the beginning of the bidding or towards the end.
STATISTICAL ANALYSIS

Means and standard deviations were calculated for all variables; the independent variables (Locus of Control, Need for Achievement, Need for Affiliation, Need for Power) for each condition and for all dependent measures. A repeated analysis of variance were conducted to test the main effects and the interactions of the variables. A repeated measures was considered a necessary design since 1) it would be too difficult to assign an equal number of subjects with the same personality makeup to each condition and 2) since there are a limited number of subjects available to test, the repeated measures design allows for fewer required subjects.

Between subject factors included NACH, NPOW, NAFF, Locus of Control, and sex. Within subject factors included History and Directive. Descriptive statistics were calculated for all variables and a correlation table was produced to assess the relationship between the variables. The correlation table can determine how highly related one variable is to another. This is to insure that there are no redundancies in either the independent or dependent measures.
The MANOVA analysis was first performed with all of the dependent variables in the model. The main model, which looked at the effects of History and Directive, was tested using this procedure. The personality variables were then added and tested.
RESULTS

Independence of the Personality Variables. Before the variables were analyzed, there was some concern over the independence of the personality variables. If these variables were not independent, then the interpretation of the Manova results would have been inaccurate. The analysis of the correlation matrix in Table 1 demonstrates that the personality measures have little relationship with one another and therefore measure separate personality traits.

These relationships that are statistically significant account for only a small percentage of the variance between the two variables and there is theoretical justification for this modest relationship. For example, individuals who are internal Locus of Control tend to score higher on Need for Achievement and Need for Power. The highest correlations were between the variable pairs of Naff-Nach and Naff-Npow. Both pairs had negative correlations which implies that a high score in one results in a low score in the other.
<table>
<thead>
<tr>
<th></th>
<th>LC</th>
<th>NACH</th>
<th>NAFF</th>
<th>NPOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NACH</td>
<td>-0.1816**</td>
<td>1.00</td>
<td></td>
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<tr>
<td>NAFF</td>
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<td>-0.2698***</td>
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</tr>
<tr>
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<td>-0.1436*</td>
<td>0.2196***</td>
<td>1.00</td>
<td></td>
</tr>
</tbody>
</table>

* represents $p < .05$
** represents $p < .01$
*** represents $p < .001$
The main effects of history and directive — along with their interaction — was tested without including the personality measures (the results are presented in Table 2). The analysis confirmed the hypotheses that those individuals who were in a competitive history were more competitive in their behavior than those in a cooperative history. Table show the results of the analysis. The main effects of history and directive were significant. History was significant ($F=1466.96892$, $df=6$, $p < .001$) as was Directive ($F=308.12402$, $df=6$, $p < .001$). The History by Directive interaction was not significant ($F=1.12538$, $df=6$, $p < .348$).

To further understand the effects of History on bargaining, t-tests were used on all of the dependent variables. The results are presented in Table 3. It is clear that all variables were significantly different from each other in the Cooperative and Competitive conditions. Subjects behaved in a cooperative manner in the cooperative history — the number of bids was lower, the opening bids were higher, the first bid was closer to that of the computer's, and the difference between the subject’s first and last bid was lower. Interestingly enough, the cooperative history had
significantly lower final bids than that of the competitive history. It also appears that the last bid of the subject was further from the computer's in the cooperative condition than in the competitive condition.

T-tests were also used to examine the effects of the cooperative and competitive Directives (see Table 3). The results were not as dramatic as those results for History. However, cooperative directives resulted in a higher number of bids, a smaller difference between the subject's first bid and that of the computer's, and a smaller difference between the subject's opening bid with his/her final bid.

The main effect for history demonstrated that the total number of bids in the cooperative history was lower (X=36.8011, N=241) than the competitive history (X=41.8009, N=241). The first bid in the cooperative history was higher (X=1072.9627) than the competitive history (1065.3660). The last bid in the cooperative history (X=1112.9398) and the last bid of the competitive history (1116.5519) show that competitive history had a higher final bid than the cooperative history. The difference of the subject's first bid with that of the computer was smaller in the cooperative history (X=95.1867) than the competitive history (X=108.6909). The difference of the subject's last bid with
that of the computer was higher in the cooperative history ($X=5.7946$) than that of the competitive history ($X=4.8693$). The difference between the subject's first and last bid was lower in the cooperative condition (45.1722) than in the competitive history (57.3527).
<table>
<thead>
<tr>
<th>Variable</th>
<th>DF</th>
<th>F</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>HISTORY</td>
<td>6</td>
<td>1466.97</td>
<td>P &lt; .001</td>
</tr>
<tr>
<td>DIRECTIVE</td>
<td>6</td>
<td>308.12</td>
<td>P &lt; .001</td>
</tr>
<tr>
<td>HISTORY X DIRECTIVE</td>
<td>6</td>
<td>1.12</td>
<td>P &lt; .348</td>
</tr>
<tr>
<td>VARIABLE</td>
<td>COOPERATIVE HISTORY</td>
<td>COMPETITIVE HISTORY</td>
<td>STANDARD ERROR</td>
</tr>
<tr>
<td>----------</td>
<td>---------------------</td>
<td>---------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>TOTAL BIDS</td>
<td>36.80</td>
<td>41.80</td>
<td>1.98</td>
</tr>
<tr>
<td>FIRST BID</td>
<td>1072.96</td>
<td>1065.36</td>
<td>6.94</td>
</tr>
<tr>
<td>LAST BID</td>
<td>1112.93</td>
<td>1116.55</td>
<td>4.59</td>
</tr>
<tr>
<td>FBC</td>
<td>95.18</td>
<td>108.69</td>
<td>6.94</td>
</tr>
<tr>
<td>LBC</td>
<td>5.79</td>
<td>4.80</td>
<td>3.75</td>
</tr>
<tr>
<td>DFLB</td>
<td>45.17</td>
<td>57.37</td>
<td>6.98</td>
</tr>
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</table>
Results for the Directive Effect. The main effect for Directive demonstrated that the total number of bids in the cooperative directive (X=40.0913) was higher than that of the competitive directive (X=38.5104). The subject's first bid in the cooperative directive (X=1072.9627) is higher than that of the competitive condition (X=1066.2158). The last bid in the cooperative directive (X=1113.1971) was less than that in the competitive directive (X=1116.2946). The difference between the subject's first bid and that of the computer's was higher in the competitive directive (X=106.3361) than in the cooperative directive (X=97.5415). The difference of the subject's last bid with that of the computer's was higher in the cooperative directive (X=7.0519) than in the competitive directive (X=3.6120). The difference between the subject's first bid and his last bid was higher in the competitive directive (X=54.2531) than in the cooperative directive (X=48.2718).
TABLE 3
MEANS AND T-TESTS FOR DEPENDENT VARIABLES ACROSS DIRECTIVE

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>COOPERATIVE DIRECTIVE</th>
<th>COMPETITIVE DIRECTIVE</th>
<th>STANDARD ERROR</th>
<th>T-VALUE</th>
<th>SIG. OF T</th>
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<tr>
<td>TOTAL BIDS</td>
<td>40.09</td>
<td>38.51</td>
<td>.746</td>
<td>-6.70</td>
<td>P &lt; .001</td>
</tr>
<tr>
<td>FIRST BID</td>
<td>1072.96</td>
<td>1066.22</td>
<td>6.29</td>
<td>1.34</td>
<td>P &lt; .181</td>
</tr>
<tr>
<td>LAST BID</td>
<td>1113.20</td>
<td>1116.29</td>
<td>2.51</td>
<td>-1.43</td>
<td>P &lt; .153</td>
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<td>FBC</td>
<td>97.54</td>
<td>106.29</td>
<td>6.29</td>
<td>-2.14</td>
<td>P &lt; .380</td>
</tr>
<tr>
<td>LBC</td>
<td>7.05</td>
<td>3.61</td>
<td>2.40</td>
<td>.38</td>
<td>P &lt; .701</td>
</tr>
<tr>
<td>DFLB</td>
<td>48.27</td>
<td>54.25</td>
<td>5.95</td>
<td>-2.04</td>
<td>P &lt; .05</td>
</tr>
</tbody>
</table>

90
Results for Personality Traits. When the personality variables were added, the dependent variables were linearly dependent on the variables which represented the difference between the subject's first bid with that of the computer's. The program's matrix found that the values for these variables was 0 after transformation and was unable to perform any multivariate analysis. Given this, it was decided to look at groups of dependent variables separately. A list of the sets of variables is presented in Table 4. The first group looked at the total number of bids only. The second group dealt with the endpoints of the bargaining session - the first bid and the last bid. The final group dealt with those variables which described the process of the bargaining - the difference of the subject's first bid with that of the computer's; the difference of the subject's last bid with that of the computer's; and the difference of the subject's first bid with that of his/her last bid.

No main effects were found for the personality characteristics. Some significant interactions were found and are listed in the supplemental findings.
TABLE 4

SETS OF VARIABLES ANALYZED FOR THE COMPLETE MODEL CONTAINING PERSONALITY AND ENVIRONMENTAL VARIABLES

SET 1

TOTAL NUMBER OF BIDS (TNOPB)

SET 2

DIFFERENCE OF SUBJECT'S FIRST BID WITH THE COMPUTER'S FIRST BID (FBC)

DIFFERENCE OF SUBJECT'S LAST BID WITH THAT OF COMPUTER'S LAST BID (LBC)

DIFFERENCE OF SUBJECT'S FIRST AND LAST BID (DFLB)

SET 3

SUBJECT'S FIRST BID (FBID)

SUBJECT'S LAST BID
Additional Findings. A main effect was found for sex for all of the dependent variables. The results are presented in Table 5. The total number of bids, \( F=10.97, \text{ df}=1, p < .001 \); the first bid change, last bid change and the difference between the first and last bid \( (F=4.17; \text{ df}=2; p < .01) \); and the first and last bid \( (F=4.09; \text{ df}=2, p < .02) \).

T-tests were used to see if the differences between males and females were significant (results are presented in Tables 6-Table 9 and graphically represented in Figures 5 - 10). Overall, it appears that males are more competitive than females in all conditions. Table summarizes the results of these tests. The group means are compared for the variable of sex, it was found that in condition 1 (Cooperative History-Cooperative Directive) males made a higher number of bids than females \( (X=40.3699 \text{ for males and } X=32.8421) \); Females had a higher first bid \( (X=1086.1053 \text{ than did males } (X=1064.4315) \). Similarly, females made higher last bids \( (X=1121.4842 \text{ than males } (X=1102.1644) \). Females also tended to match the computer's first bid much more closely than males \( (X=81.8947 \text{ for females; } X=103.5685 \text{ and represents the difference of the subject's first bid with that of the computer's). The difference of the subject's last bid with that of the computer's is much less for females } (X=1.9789) \).
than for males (13.7055). The difference of the subject's first bid with that of his/her last bid was less for the females (X=37.8842) than the males (53.7466).

In the second condition (Cooperative history - Competitive Directive), females made less number of bids (X=33.2000) than males (X=38.1507). Females made higher first bids (X=1087.1895) than did males (X=1066.4932). Females made slightly greater last bids (X=1119.8000) than did males (X=1113.6918). The difference of the subject's first bid with that of the computer's is less for females (X=82.8105) than for males (X=103.5068). The difference of the subject's last bid with that of the computer's was slightly less for males (X=2.4452) than for females (X=2.6). The difference of the subject's first bid with that of his/her last bid was less for females (X=34.8211) than for males (X=48.0753).

The third conditions (Competitive History - Cooperative Directive) had females a lower total number of bids (X=38.7579) than males (X=45.3973). Females had a higher first bid (X=1081.2) than males (X=1067.5822). Last bids were higher for females (X=1122.9895) than males (X=1112.4658). The difference between the subject's first bid with that of the computer's was higher for males (X=105.4178) than females (X=91.8211). The difference
between the subject's last bid and that of the computer's was higher for the males (X=7.1096) than the females (X=1.8105). The difference of the subject's first bid with that of his/her last bid was higher for the males (X=53.6370) than the females (X=42.00).

The fourth condition (Competitive history - Competitive directive) had females bidding a lower number of total bids (X=35.3684) than males (X=44.3699). Females had a higher first bid (X=1065.8737) than males (X=1052.5137). Females had a higher last bid (X=1125.0105) than males (X=1110.9452). The difference of the subject's first bid with that of the computer's, it was found that males had a higher difference (X=122.4863) than females (X=109.3895). The difference of the subject's last bid with that of the computer's was higher for the males (X=6.6438) than for the females (X=1.7579). The difference of the subject's first bid with that of his/her last bid was higher for the males (X=67.9110) than for the females (X=62.1895).
### TABLE 5

**MANOVA RESULTS FOR THE VARIABLE OF SEX**

**SET 1 - TOTAL NUMBER OF BIDS (TNOFB)**

<table>
<thead>
<tr>
<th>F VALUE</th>
<th>DF</th>
<th>SIGNIFICANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.97</td>
<td>1</td>
<td>P &lt; .001</td>
</tr>
</tbody>
</table>

**SET 2 - DIFFERENCE OF SUBJECT'S FIRST BID WITH THE COMPUTER'S (FBC)**

**DIFFERENCE OF SUBJECT'S LAST BID WITH THE COMPUTER'S (LBC)**

**DIFFERENCE OF SUBJECT'S FIRST AND LAST BID (DFLB)**

<table>
<thead>
<tr>
<th>F VALUE</th>
<th>DF</th>
<th>SIGNIFICANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.17</td>
<td>2</td>
<td>P &lt; .01</td>
</tr>
</tbody>
</table>

**SET 3 - SUBJECT'S FIRST BID (FBID) AND LAST BID (LBID)**

<table>
<thead>
<tr>
<th>F VALUE</th>
<th>DF</th>
<th>SIGNIFICANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.09</td>
<td>2</td>
<td>P &lt; .05</td>
</tr>
</tbody>
</table>
**Table 6**

Means and T-Test for Dependent Variables and Sex

Cooperative History – Cooperative Directive

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>MALES</th>
<th>FEMALES</th>
<th>T-VALUE</th>
<th>SIGNIFICANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TOTAL BIDS</strong></td>
<td>40.37</td>
<td>32.84</td>
<td>3.35</td>
<td>p &lt; .001</td>
</tr>
<tr>
<td></td>
<td>(1.57)</td>
<td>(1.60)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FIRST BID</strong></td>
<td>1064.43</td>
<td>1086.11</td>
<td>-2.39</td>
<td>p &lt; .005</td>
</tr>
<tr>
<td></td>
<td>(8.56)</td>
<td>(2.99)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>LAST BID</strong></td>
<td>1102.16</td>
<td>1121.48</td>
<td>-2.14</td>
<td>p &lt; .01</td>
</tr>
<tr>
<td></td>
<td>(8.33)</td>
<td>(1.80)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FBC</strong></td>
<td>103.57</td>
<td>81.89</td>
<td>2.39</td>
<td>p &lt; .01</td>
</tr>
<tr>
<td></td>
<td>(8.56)</td>
<td>(2.99)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>LBC</strong></td>
<td>13.71</td>
<td>1.97</td>
<td>1.37</td>
<td>p &lt; .08</td>
</tr>
<tr>
<td></td>
<td>(8.51)</td>
<td>(0.53)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>DFLB</strong></td>
<td>53.74</td>
<td>37.88</td>
<td>1.56</td>
<td>p &lt; .06</td>
</tr>
<tr>
<td></td>
<td>(9.86)</td>
<td>(2.40)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VARIABLE</td>
<td>MALES</td>
<td>FEMALES</td>
<td>T-VALUE</td>
<td>SIGNIFICANCE</td>
</tr>
<tr>
<td>----------</td>
<td>-------------</td>
<td>-------------</td>
<td>---------</td>
<td>--------------</td>
</tr>
<tr>
<td></td>
<td>(STANDARD ERROR)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL BIDS</td>
<td>38.15 (1.16)</td>
<td>33.20 (1.37)</td>
<td>2.76</td>
<td>p &lt; .003</td>
</tr>
<tr>
<td>FIRST BID</td>
<td>1066.49 (6.45)</td>
<td>1087.19 (2.98)</td>
<td>-2.88</td>
<td>p &lt; .002</td>
</tr>
<tr>
<td>LAST BID</td>
<td>1113.69 (1.68)</td>
<td>1119.80 (1.86)</td>
<td>-2.44</td>
<td>p &lt; .007</td>
</tr>
<tr>
<td>FBC</td>
<td>103.50 (6.55)</td>
<td>82.81 (2.98)</td>
<td>2.88</td>
<td>p &lt; .002</td>
</tr>
<tr>
<td>LBC</td>
<td>2.44 (0.41)</td>
<td>2.6 (0.57)</td>
<td>-0.22</td>
<td>p &lt; .418</td>
</tr>
<tr>
<td>DFLB</td>
<td>48.07</td>
<td>34.82</td>
<td>2.02</td>
<td>p &lt; .022</td>
</tr>
</tbody>
</table>
TABLE 8
MEANS AND T-TEST FOR DEPENDENT VARIABLES AND SEX

COMPETITIVE HISTORY - COOPERATIVE DIRECTIVE

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>MALES</th>
<th>FEMALES</th>
<th>T-VALUE</th>
<th>SIGNIFICANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(STANDARD ERROR)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL BIDS</td>
<td>45.39 (1.55)</td>
<td>38.75 (1.86)</td>
<td>2.74</td>
<td>p &lt; .003</td>
</tr>
<tr>
<td>FIRST BID</td>
<td>1067.58 (7.03)</td>
<td>1081.20 (3.15)</td>
<td>-1.77</td>
<td>p &lt; .038</td>
</tr>
<tr>
<td>LAST BID</td>
<td>1112.46 (4.55)</td>
<td>1122.99 (2.16)</td>
<td>-2.09</td>
<td>P &lt; .015</td>
</tr>
<tr>
<td>FBC</td>
<td>105.41 (7.03)</td>
<td>91.82 (3.14)</td>
<td>1.77</td>
<td>P &lt; .038</td>
</tr>
<tr>
<td>LBC</td>
<td>7.10 (4.16)</td>
<td>1.81 (0.21)</td>
<td>1.27</td>
<td>P &lt; .102</td>
</tr>
<tr>
<td>DFLB</td>
<td>53.64 (7.60)</td>
<td>42.00 (2.66)</td>
<td>1.45</td>
<td>P &lt; .075</td>
</tr>
</tbody>
</table>
TABLE 9
MEANS AND T-TEST FOR DEPENDENT VARIABLES AND SEX

COMPETITIVE HISTORY - COMPETITIVE DIRECTIVE

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>MALES (STANDARD ERROR)</th>
<th>FEMALES (STANDARD ERROR)</th>
<th>T-VALUE</th>
<th>SIGNIFICANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL BID</td>
<td>44.37 (1.74)</td>
<td>35.37 (1.87)</td>
<td>3.52</td>
<td>P &lt; .001</td>
</tr>
<tr>
<td>FIRST BID</td>
<td>1052.37 (11.92)</td>
<td>1065.87 (14.93)</td>
<td>-0.70</td>
<td>P &lt; .242</td>
</tr>
<tr>
<td>LAST BID</td>
<td>1113.95 (4.12)</td>
<td>1125.01 (2.72)</td>
<td>-2.99</td>
<td>P &lt; .001</td>
</tr>
<tr>
<td>FBC</td>
<td>122.49 (11.92)</td>
<td>109.39 (14.91)</td>
<td>0.69</td>
<td>P &lt; .246</td>
</tr>
<tr>
<td>LBC</td>
<td>6.64 (3.73)</td>
<td>1.76 (0.32)</td>
<td>1.31</td>
<td>P &lt; .096</td>
</tr>
<tr>
<td>DPLB</td>
<td>67.91 (12.32)</td>
<td>62.18 (14.66)</td>
<td>0.30</td>
<td>P &lt; .382</td>
</tr>
</tbody>
</table>
For total number of bids, a significant interaction between NAFF and NACH was found ($F=4.95$, df=4, $p < .001$); LC X NACH X HIST ($F=3.48$, DF=4, $p < .01$); SEX X LC X NPOW X HIST ($F=2.53$, DF=4, $p < .05$). The group of dependent variables which describe the differences of the subject's bid and that of the computers (FCB = Difference between first bid of subject and that of the computer's first bid; LCB=difference between the subject's last bid with that of the computer's last bid; and DFLB=the difference of the subject's first and last bid), produced the following significant results: SEX X LC X NPOW X HIST X DIR ($F=1.87$, DF=12, $p < .05$); LC X NPOW X HIST X DIR ($F=2.12$, DF=12, $p < .05$). The last set of variables - those dealing with the actual first and last bid of the subject produced these significant results: LC X NPOW X HIST ($F=2.001$, df=8, $p < .05$); LC X NPOW X HIST X DIR ($F=2.305$, df=8, $p < .05$); SEX X LC X NPOW X HIST X DIR ($F=2.036$, df=8, $p < .05$).
FIGURE 12
MEANS OF TOTAL NUMBER OF BIDS FOR MALES AND FEMALES

1=COOPERATIVE HISTORY - COOPERATIVE DIRECTIVE
2=COOPERATIVE HISTORY - COMPETITIVE DIRECTIVE
3=COMPETITIVE HISTORY - COOPERATIVE DIRECTIVE
4=COMPETITIVE HISTORY - COMPETITIVE DIRECTIVE

--- = MALES
----- = FEMALES
FIGURE 13

MEANS OF FIRST BID FOR MALES AND FEMALES

1 = COOPERATIVE HISTORY - COOPERATIVE DIRECTIVE
2 = COOPERATIVE HISTORY - COMPETITIVE DIRECTIVE
3 = COMPETITIVE HISTORY - COOPERATIVE DIRECTIVE
4 = COMPETITIVE HISTORY - COMPETITIVE DIRECTIVE

---- = MALES
----- = FEMALES
FIGURE 14

MEANS OF LAST BID FOR MALES AND FEMALES

1 = COOPERATIVE HISTORY - COOPERATIVE DIRECTIVE
2 = COOPERATIVE HISTORY - COMPETITIVE DIRECTIVE
3 = COMPETITIVE HISTORY - COOPERATIVE DIRECTIVE
4 = COMPETITIVE HISTORY - COMPETITIVE DIRECTIVE

_____ = MALES
------ = FEMALES
FIGURE 15

MEANS OF THE DIFFERENCE OF THE SUBJECT'S FIRST BID
WITH THAT OF THE COMPUTER'S FIRST BID
FOR MALES AND FEMALES

1 = COOPERATIVE HISTORY - COOPERATIVE DIRECTIVE
2 = COOPERATIVE HISTORY - COMPETITIVE DIRECTIVE
3 = COMPETITIVE HISTORY - COOPERATIVE DIRECTIVE
4 = COMPETITIVE HISTORY - COMPETITIVE DIRECTIVE

--- = MALES
----- = FEMALES

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FIGURE 16
MEANS OF THE DIFFERENCE OF THE SUBJECT'S LAST BID WITH THAT OF THE COMPUTER'S LAST BID FOR MALES AND FEMALES

1 = COOPERATIVE HISTORY - COOPERATIVE DIRECTIVE
2 = COOPERATIVE HISTORY - COMPETITIVE DIRECTIVE
3 = COMPETITIVE HISTORY - COOPERATIVE DIRECTIVE
4 = COMPETITIVE HISTORY - COMPETITIVE DIRECTIVE

--- = MALES
------- = FEMALES
FIGURE 17

MEANS OF THE DIFFERENCE OF THE SUBJECT'S FIRST BID WITH THE SUBJECT'S LAST BID FOR MALES AND FEMALES

1 = COOPERATIVE HISTORY - COOPERATIVE DIRECTIVE
2 = COOPERATIVE HISTORY - COMPETITIVE DIRECTIVE
3 = COMPETITIVE HISTORY - COOPERATIVE DIRECTIVE
4 = COMPETITIVE HISTORY - COMPETITIVE DIRECTIVE

--- = MALES
----- = FEMALES
DISCUSSION

The data supported the hypotheses that the bargaining environment - composed of a bargaining history (either cooperative or competitive) and a bargaining directive (in which subjects were told to be cooperative or competitive with their opponent) - had a significant effect on the bargaining behavior of the subjects. The effect of history produced results which were in keeping with the results found by Deutsch (1960). Cooperative histories produced cooperative behavior in which there were lower number of total bids, greater first bids, smaller differences of first bid with the computer, and smaller differences between the subject’s first and last bid. Overall, the subject made fewer bids, was more generous in his/her opening bid and followed the computer’s opening bid fairly closely. However, it appears that by the end of the simulation section, the subjects in the cooperative condition had higher final bids which were different from the computer’s last bid.
The effects for Directive were more in line with what was predicted. Subjects in the cooperative directive tend to exhibit what is considered by this study to be cooperative behaviors – more generous first and last bids that closely match that of the computer's bid. However, the subject's tended to have a greater number of total bids here than in the Competitive condition. So, the directive effect produced more consistent results than that of history. Those who were told to be cooperative were cooperative, those who were competitive were competitive.

The personality variables, Locus of Control, Need for Achievement, Need for Affiliation, and Need for Power, were not found to be significant for bargaining behavior. The hypotheses which predicted main effects for these traits were not supported, nor were the hypotheses which predicted interaction effects with personality traits and history.

The significant results of gender seemed to follow what some researchers have found in the past – women tend to be more cooperative than men. The differences were most salient in the first condition – the cooperative history/cooperative directive. Once the subjects were faced with mixed
conditions, the differences lessened somewhat, but not greatly so. In fact, females tended to behave just as cooperatively in the competitive history-competitive directive as they did in the cooperative history-cooperative directive. Directions and history did not seem to have the same effect on females as they did on males. This finding has interesting implications. Mischel would have predicted that since the situation had a significant effect, some variation of behavior would be found for all subjects. This does not seem to be the case, however. Females seem to be consistently more cooperative despite the situational demands of the simulation. The variable of gender may be a moderator variable in bargaining behavior.

Explanation of Results. Part of the model - the environmental effect - proved to have a significant impact on the bargaining behavior of the subject. The other part - the personality traits - did not contribute significantly to behavior. Gender differences were found and females were found to be more consistently cooperative than males.

It is possible that environmental effects were found because of the way in which the simulation conditions were written. Mischel has stated that when conditions are ambiguous, the individual's personality will become the primary factor which
directs an individual's behavior. In this study, conditions were written in such a way that it made it very clear to the subjects that this was either a cooperative or competitive environment. The situation was even more clearly defined through the use of the bargaining range. The range was used to give the subject some idea as to what concessions would be acceptable to management. Very little was left for the subject to interpret. It might be argued that the simulation conditions represented concrete situations rather than ambiguous situations. If this is the case, then the personality traits of the subjects would not be required to interpret the bargaining environment. The theory states that traits will have little or no effect on the interpretation of the environment when the environment is very structured.

The overall model (which tested the effects of History and Directive) showed main effects for History and Directive. No significant results were found for the personality variables, however there are many possibilities to explain this occurrence.

The bidding schedule of the computer could have caused the subject to behave in a consistent way. The program schedule was very much the same in all conditions, with minor variations to provide some flexibility in creating the
illusion of playing against another person. Some subjects were quick to realize that although the schedule varied slightly, the overall pattern was very consistent. Once the subject had learned the overall pattern, they could guess how long it would take for their opponent to enter the contract zone (the settlement range given to them in the instructions). Consistent patterns in the bidding schedule may have indicated to the subject that consistent behavior was desired.

The simulation needs more variety in both description and bidding schedule. In addition, experienced negotiators should be recruited for this study to compare the results. In this way, the results can be analyzed as to how well they relate to professionals in the field.

Theoretical Implications. The results seem to confirm previous findings of such researchers as Kanouse and West (1967), Griesinger and Livingston (1973), Radlow, Wiedner and Hurst (1968), Crawford and Sidowski (1964). Deutsch would have predicted that the directive given to the subjects should have evoked the intended cooperative or competitive orientations. This seemed to be the case. Historical descriptions of the bargaining relationship did not implicitly tell the subject how he should behave; he merely
was told how the two parties had behaved in the past. The issue of whether or not the student perceived this description as a guideline to his/her behavior in the current situation remains to be resolved. What is apparent is that the history description seemed to create the appropriate behaviors (in other words, behaviors were consistent with the description). The Directive paragraph followed Deutsch's instructions, however, they were not as direct as those used in his research. It was felt that telling a subject directly that he/she had the aim to compete or cooperate would bias the results. Subjects tend to do as the experimenter wishes, and a direct request is fairly easy to follow. In a collective bargaining environment, the choice of competing or cooperating is not so clear-cut. There are situations which warrant competition and there are situations which call for cooperation. More precisely, the negotiator of a collective bargaining contract must satisfy three constituencies - his own party, the other's party, and the community at large (see Vidmar and McGrath, 1967). If the negotiators own party is dissatisfied with the terms of the agreement, there is a possibility of losing face with them and being forceably ejected from the position as a negotiator. But, the negotiator must not unilaterally satisfy all of his own party's demands. To do so would invite the wrath of the opposing party along with the possibility of reaching a
stand-off in the negotiations. To some extent, the community at large must be placated since if the two parties cannot reach agreement, the resulting strike may cause public harm or inconvenience.

So, although Deutsch's instructions served as a guideline for the Directive paragraph, they were not used verbatim since negotiators find themselves at the center of conflicting role requirements described by McGrath. Certain constituencies require cooperation and some require competition. The confusion lies in the fact that the negotiator must determine the course of action for all three roles. Since the the Directive paragraph was trying to simulate a more realistic situation, the effects that were found by Deutsch may not apply here. In other words, it is not clear how concrete the concept of role obligations are to the subjects. Their concern may have been how the experimenter evaluated their performance. What may have been uppermost in their minds is what is considered as winning. If winning meant holding out for an agreement most acceptable for their own party, then that might have been the determinant for their behavior. Furthermore, it might be conceivable that females have a different perspective about winning than males. Males on the whole may view winning as being competitive and showing resistance to the other party's demands. Females may view
winning as achieving an equitable agreement with both sides reaching an acceptable wage.

No significant main effects were found for the personality variables and this might have been due to the requirements of the task. Research dealing with these variables used games which provided clear cut choices or tasks. Relatively little was done to provide subject's with a way of modifying the outcomes of their choices. In addition, most researchers concentrated on one of the personality variables rather than looking at all of them simultaneously. The correlation matrix of the personality variables produced very low correlations indicating that these variables were not correlated. If this is truly the case, then focusing in on one variable may be appropriate. However, a person's personality is made up of all of these variables and one should not assume that by examining one variable, bargaining behavior can be predicted. Some other variable, which might be highly related to the variable in question may, in fact, be producing the observed results. The particular variables which were chosen for this study did not seem to have any significant effect however, these variables were tested along with situational variables and these instructions may have had a nullifying effect on the subject's personality forces. These interpretations may have acted on certain personality
variables which produced the behavior. Once subject's thought they understood the object of the game, no further effort was produced to adapt their behavior to the demands of the situation other than to follow the instructions. What personality variables operated on the subject were not sufficient to produce main effects in and of themselves.

This implies that previous research may unintentionally create specific instructions to the subject's. As Rubin and Brown, (1975) have observed, different games produce different orientations. The Prisoner's Dilemma game is, by its very goal of gaining the maximum number of points, is a competitive game. Those playing wish for themselves the maximum achievable outcomes and will structure their play accordingly. On the other hand, the Parcheesi Coalition game requires people to form coalitions - a cooperative situation. Subjects must agree to work together in order to gain the maximum amount of points instead of fending for themselves. So, it is debatable whether the previous findings are testing what they had originally intended. What they may have been testing was the effect that the game had on the kinds of strategies that the subject's chose to use.

Another factor which may have an effect on the results but was not directly tested, was the effects of the set limits
(the settlement range). All of the instructions had the same exact limits — one low limit — the current wage; one medium limit, and one high limit beyond which the management would be highly displeased with any settlement higher than this endpoint. Pruitt, (1981) has stated that the expectations of the negotiator are partially formed based on his current situation. The simulation instructions provided a partial picture of what the current situation was. The most concrete indicator of the negotiator's position was the settlement range. If the subject was looking for an indicator of success, this was the indicator. Subjects might have seen their success as being predicated on their ability to settle on a wage at the lower end of this range. So, Pruitt's observation may explain the behavior of the subject. Subjects may have compared the opening bid of the computer's with that of the upper limit of the settlement range. Since the opening bid was always above that limit, the subject may have had serious doubts as to the feasibility of coming to a mutually acceptable agreement, and formulated the appropriate strategies. Subjects will, according to Pruitt, vigorously defend their limits — in this case, the subjects will adopt strategies to try to get the other party to enter the range of an acceptable agreement. The critical issue here is how the subject perceived the difference of the current wage and the demands of the union. In other words, some subjects may
have perceived the demands of the union and the demands of management to be so far apart that there was no room for agreement and therefore the primary action to take was to achieve the best contract for the side that they represented. If the subject perceived that each side was not that far from coming to some sort of mutual agreement then the subject may have made some effort to cooperate and come to an equitable agreement.

In conclusion, several theoretical implications have been found. Mischel's model of behavior seems to fit well with the findings. Four simple, concrete situations were presented to the subjects and these situations had definite impact on bargaining behavior. Personality would not have played a major role in shaping behavior since the situations were not ambiguous and required no unique interpretations. The findings supported this. Pruitt's model of bargaining seems to explain some of the consistencies of behavior in the findings. In particular, it seems logical to assume that the settlement range given to the subjects may have had a large impact on their bargaining behavior by defining what was an acceptable and unacceptable behavior. Bacharach and Lawler, (1981), emphasize that bargainers tend to settle in ways that are most beneficial to themselves. In their terminology, the contract zone, (which can be equated with the settlement
range) specifies the possible range of solutions. The contract zones on both parties creates certain concession curves that have been described by Hicks (1963). The Union’s curve is the employers estimate of how long the union were willing to strike for a specific wage. Translated into this study is how long will the computer hold out for a specific wage given the allotted time. The subject's realize that the so called "opponent" on the other end would strike, however they were also aware that they would be evaluated on their performance at the end of 15 minutes. Since the subject was representing management, the optimum settlement may have seemed difficult, if not impossible to reach. Subjects may have been aware that the only pressure on them to concede was the time limit and the score which was assessing their success (only given at the end of all four experimental conditions). So, subject's might have been only interested in maintaining a wage found acceptable by management without worrying about the strike pressures normally felt in a real-life negotiations. The personality of the subject did not seem to make much difference in his/her behavior and such findings call into question previous studies which found pronounced differences in personality types. This is not to say that these studies are invalid, it merely suggests that these findings may not apply in a different context such as that found in collective bargaining.
So, this study seems to confirm the fact that the situation seems to have a greater impact on bargaining behavior than the personality traits when the situation is very clear-cut. The personality models do not seem to hold in these particular contexts and it is not clear if the situational effects had effects because of the kind of situation they represent or because the subjects felt that these instructions held the key to their success at completing the simulation.

External Validity. Lab studies have often been criticized for their lack of external validity. Collective bargaining involves very complex scenarios and contain factors which make it very difficult to adequately simulate an actual contract negotiation. Another problem in recreating the bargaining environment was the issue of how much information could the subjects remember without becoming bored or frustrated. Given these problems, it was necessary to construct the situations so that they would be easy for the subjects to assimilate while at the same time representative of a typical bargaining setting. Most negotiations bring with them a certain history - a past bargaining experience. Not only do the negotiators bring with them a past negotiating experience, but they also bring the current demands of their constituencies. Each element, history and
demand, occur in each bargaining session. Rather than identifying the specific factors for each, a general description was given to the subjects to convey a general impression as to whether or not the situation was competitive or cooperative.

It seems clear that when a situation is clearly defined, the negotiator's behavior will be a result of the environment. It is still not clear what is the dominant influence on behavior when the situation is very complex or very ambiguous. So, it seems that the conclusions which are drawn from this study can apply only to those situations which are very simple, or very structured. Although the simulation itself is somewhat simplistic, it attempts to include some of the major considerations that face any negotiator. Historical and current descriptions of the bargaining situation were given to the subject in the hopes that he/she would take this information and use it to determine their own particular strategy. This seems to be what happened—subjects responded to the demands of the instructions and behaved appropriately. It was further hypothesized that the personality variables would have an effect on behavior, but this was not supported by the data.
Personality variables determine what types of behaviors were exhibited by the negotiator once the situation has been assessed. If it was found that these traits exhibited a significant main effect, the benefits to negotiators would be in the area of training. For example, if a negotiator were to find himself with a high NACH score, and if the results of this study sound that those high in this trait tended to exhibit competitive behavior, then some effort could be made to train the individual to recognize this competitive tendency. It might be counter-productive to be highly competitive given certain situations, and it would be worthwhile to train negotiators to recognize their personal tendencies. Since there were no significant main effects for personality, it is questionable whether this information is of worth to the negotiator. Negotiators in the field are probably less likely to give way to personality traits except in unique or complex circumstances. The reason for this is simply experience. Negotiators have faced many situations and have found effective strategies based on their assessment of the situation. In other words, constant practice may have given the negotiator a set of rules and guidelines which govern his behavior.

Since there were main effects for history and directive for the the study, there might be some value in trying to
pinpoint what particular factors in these environments led the subject to behave in the way that they did. Certain elements may have the same effect on professional negotiators. The important point is that this study attempted to create environments which have more relevance to the real collective bargaining world. Unfortunately, professional negotiators were not found in sufficient numbers to use them as subjects. Nevertheless, if the situational factors had created certain behaviors, such information may have been of value to the newcomers in the field of collective bargaining. Individuals who are not familiar with the collective bargaining environment might be more susceptible to environmental effects than experienced negotiators simply because they have nor past reference points to draw information on.

This study demonstrates that the situation has definite effects on the bargaining behavior of the subject. In addition, gender differences that were found were of a significant and consistent nature. If this finding holds true in other similar studies, it might be of use to negotiators to realize that when a situation requires more cooperative behavior, a female negotiator would tend to be much more cooperative than a male negotiator. Before any
though is given to preventing females from entering a so-called "competitive" field as negotiation it should be noted that proper training could reduce cooperative tendencies. Natural tendencies may have been more evident in a situation like the one in this study than in one where there were direct consequences of not coming to agreement (which is common in collective bargaining situations - a strike is a possible consequence of not coming to agreement). If these same subjects were placed in the same situation, but with the possibility of receiving a bad grade for their poor performance, the difference between males and females may have been reduced or eliminated. The consequences of the situation may reduced gender differences.

Implications for Future Research. It is clear from the results that more research needs to be centered on bargaining in realistic settings. By looking at these settings, a clearer picture can be constructed concerning the bargaining process. Past research focused in on situations that were very direct in their instructions or were not very realistic. If some conclusive things can be said about the effects of these situations, then this knowledge will lead to a better understanding of what causes the negotiator to set certain limits, why or why not he/she comes to agreement, and why some negotiators will settle and others will not. It is
simply not clear how strongly personality traits affect behavior (if at all) in collective bargaining settings. The data seems to suggest that the while personality variable may not exhibit main effects, they may have joint effects on behavior. Therefore, it seems advisable to look at some of these joint effects and their relationship to bargaining.

These personality variables represent only a small number of traits. Other variables may be tested which may have a greater effect on bargaining behavior. More appropriate measures of a bargainer's personality, such as Loevinger's Ego-Development Scale (1969), may provide a more integrated look at the personality of the subject and may provide better information on the role of personality in the negotiating environment. Negotiators may select that particular occupation because their personalities are well-suited to the profession. If specific traits lead them to the profession, then these traits may be important ones in the negotiating process. It is not clear what these traits might be, but it might be worthwhile to examine other traits such as propensity to take risks, tolerance for ambiguity, and Machiavellianism to see what effects they might exert in the bargaining environment.
It is also unclear as to how well the student samples are predictive of performance of professionals. There has been quite a debate concerning this issue and future research may be conducted to address this problem. Professional negotiators and students should be used as separate samples and then tested to see if their behavior is similar. If this is the case, then some definitive conclusions can be drawn from the studies. If not, then alternative hypotheses need to be generated that would be more appropriate for the professional population.

Although some effort has been made to examine the bargaining process, much more needs to be done to discover how the subject perceives his/her instructions and how strategies are decided. It might be more useful to discover how personality variables affect such decisions and how situational variables contribute to the expression of these personality traits.
CONCLUSIONS

This study was originally intended to discover the how well Mischel's conception of behavior fits into the collective bargaining setting. More specifically, how much does the individual rely on his personality when interpreting the environment around him? Although the answers to these questions has not been resolved for complex situations, it has confirmed the notion that personality has little effect on behavior when the situation is simple and structured. Every effort was made to fashion the simulation to meet these requirements and the result was statistical support for the notion that the bargaining environment tends to affect behavior. Since the simulations are found to have a great deal of impact on the behavior of the subjects, then more care must be taken to construct these experiments. Not only that, but more studies need to be made which test such instructions to verify their significance. Otherwise, no concrete statements about the results can be made. They may be situation-specific. Findings that are situation-specific are not very generalizable and may not apply to other settings. Rubin and Brown, (1975) made similar
conclusions when they reviewed the extensive literature on bargaining. They noticed that the PD game tended to be competitive in nature while the Parcheesi Coalition game was essentially cooperative. The observations that these two games were fundamentally different in orientation could explain the contrary findings in the literature. It is always difficult to make generalizations across different experiments and this study attempted to see if Rubin and Brown's observations may hold true for situations that have different orientations. If it was found that the situations do have different effects then past research may be interpreted in a more logical fashion. Personality factors and their relationship to bargaining behavior is always taking place within a particular situation. As the situation changes, so too do the personality effects on behavior. Finding these differences could give a better picture about how the variations in a bargaining environment might affect bargaining behavior.

Future research should concentrate on 1) developing situations which are more complex and simulate 'real world' negotiating environments 2) assessing the effects of different personality traits in these more complex
conditions. Once these situations are adequately constructed then studies can be conducted on their impact on behavior. Furthermore, these studies should be conducted on professional negotiators as well as students to see if the results are similar. It may be that students demonstrate behaviors that are very different from professional bargainers. If this is so, then previous research using college students may not be generalizable to those professionals in the field who may find the results of such a study of practical significance.

Constructing adequate experiments is just the first step in investigating the bargaining behavior of individuals. Perhaps the personality traits that have been used by researchers do not give an adequate portrait of the subject. A personality is made up of many individuals traits which are highly related. Focusing in on only a few traits severely restricts any broad statements that can be made regarding personality and bargaining behavior. What might be useful is to identify a global factor which may give a more comprehensive picture of the subject's personality. It might be helpful to examine what traits may dominate the personality given certain situations. In competitive situations, for example, traits dealing with the management of conflict may become dominate whereas in the cooperative condition, traits dealing with need for affiliation,
approval, and acceptance may dominate behavior. It is not clear from previous work how these traits determine behavior and whether or not this is a static or dynamic process.

In conclusion, this study created more questions than it solved. The process of bargaining is very complex and researchers have only begun to scratch the surface. This study attempted to answer some of the questions raised by interactionist's theory - how the environment and the personality jointly work together to influence behavior. The results of the study were inconclusive, however, it is clear that the issue is far more involved than at first glance. The possibilities for future research are many. More care should be taken to construct experiments which accurately reflect real life situations. This may mean more research is needed in the field which has the advantage of accurately simulating real life events and provides the participants with incentive to act in a serious and natural manner.

If this can be accomplished, then it were possible to test bargaining behavior in a controlled environment that will reflect real world situations. It is important to continue this line of research to provide a complete and adequate picture of the bargaining process.
APPENDIX 1

INSTRUCTIONS FOR SUBJECTS

You are going to be participating in a bargaining situation. You are to treat this simulation in a serious manner. You are being assessed on your bargaining skill and your ability in remembering and processing the background information that were given to you. There were four separate situations and you were asked to negotiate a contract in each. Please read all instructions very carefully. After you complete each section of the simulation (you may either end each section by coming to agreement with your opponent or by timing out) you will complete one page of the handout that was given to you. COMPLETE THESE FORMS ONLY AFTER YOU COMPLETE EACH SECTION. YOU WILL HAVE TO FILL OUT ONE PAGE OF THE HANDOUT FOR EACH SECTION OF THE SIMULATION. Agreement is reached when you enter the same bid as your opponent. You have a fifteen minute time limit on each section of the simulation. After this time, the computer will automatically continue on to the next section of the simulation.
Your opponent is another student from another class. These students have been put at another computer cite. You were playing against four opponents. You have been selected to start the simulation.

During this simulation, THERE were NO TALKING, OR LOOKING AT YOUR NEIGHBOR'S TERMINAL. IF YOU HAVE A QUESTION, RAISE YOUR HAND AND I WILL ANSWER THE QUESTION. IF YOU TALK DURING THE SIMULATION, YOU WILL NOT GET CREDIT.

When you are done, please give me he completed handouts. These must be filled out to receive full credit for the simulation. After you give me these, you may leave. Do not stand around and talk about the simulation, but leave the room and do not stand out in the hallway. On you way out, please pick up one of the handouts which will explain the study in more detail.

IT IS EXTREMELY IMPORTANT THAT YOU DO NOT REVEAL THE NATURE OR PURPOSE OF THE STUDY TO YOUR FRIENDS OR CLASSMATES. THIS WILL CONTAMINATE THE RESULTS.

After the instructions were read, the subjects were asked if they had any questions before the simulation began. If there were none, the
subjects were prompted by the computer to enter their first name. Once they did so, they were connected with the main program. The subjects would read the instructions for each section (each section had to be completed sequentially) and then begin bargaining. The instructions for each section were as follows:

SIMULATION INSTRUCTIONS

Competitive History—Competitive Directive.

The airline mechanics union met with great resistance when it began its organization campaign twelve years ago. Once the mechanics were organized, the relationship between management and labor began to show signs of hostility. Contract negotiations were difficult and many arguments occurred over the terms of the contract. Agreements were reached after much difficulty and strikes were a common occurrence at these times. The strikes created a good deal of tension between labor and management and both sides had a deep mistrust of the other. Many grievances have been filed against management and the managers have countered that these grievances have been unjustified.

The airline management is keenly aware of the poor economic conditions that exist at this time. They
fear that if the union demands a large increase they will not have the funds needed to meet the payroll. In fact, the state of the economy has reduced profits and the company is facing financial difficulties. The company must look after its own interests and so it has decided that although a settlement of $11.05 is acceptable, a settlement equaling $11.66 is much too high and is totally unacceptable. If you are unable to come to an acceptable settlement, you were dismissed from the company and your actions will have placed the company in a serious financial position.

Competitive History-Cooperative Directive.

The airline mechanics union met with great resistance when it began its organization campaign twelve years ago. Once the mechanics were organized, the relationship between management and labor began to show signs of hostility. Contract negotiations were difficult and many arguments occurred over the terms of the contract. Agreements were reached after much difficulty and strikes were a common occurrence at these times. The strikes created a good deal of tension between labor and management and both sides had a deep mistrust of the other. Many grievances have been filed against management and the managers
have countered that these grievances have been unjustified.

The airline is facing economic hard times. Management is looking at the upcoming negotiations with some apprehension. If the negotiations are not settled in a mutually acceptable way, the workers have threatened to strike. If this should occur, the company would be placed in a financial crisis. Striking mechanics would prevent the normal business operation of the airlines and seriously hurt the profits of the company. It is critical for you to attempt to come to agreement with the union. Although a settlement of $11.05 is acceptable to the company, any settlement equaling $11.66 is totally unacceptable. If you cannot come to agreement, the workers will strike and the company will fire you from your job.

Cooperative History—Cooperative Directive.

Relations between the airline mechanics union and management have always been extremely friendly. Even when the union was first introduced, each side made every effort to build good relations with the other. Management has a favorable view of the union and feels that the union has always been reasonable in
its demands. Many of the union officials are friendly with members on the management negotiating team. All negotiations in the past have resulted in an acceptable contract for both sides. Each side respects the other and there is a sense of mutual trust for one another.

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Cooperative History - Competitive Directive

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when the union was first introduced, each side made every effort to build good relations with the other. Management has a favorable view of the union and feels that the union has always been reasonable in its demands. Many of the union officials are friendly with members on the management negotiating team. All negotiations in the past have resulted in an acceptable contract for both sides. Each side respects the other and there is a sense of mutual trust for one another. The airline management is keenly aware of the poor economic conditions that exist at this time. They fear that if the union demands a large increase they will not have the funds needed to meet the payroll. In fact, the state of the economy has reduced profits and the company is facing financial difficulties. The company must look after its own interests and so it has decided that although a settlement of $11.05 is acceptable, a settlement equaling $11.66 is much too high and is totally unacceptable. If you are unable to come to an acceptable settlement, you were dismissed from the company and your actions will have placed the company in a serious financial position.
FIGURE 1

DEMAND LEVEL AT EACH TIME POINT FOR BARGAINERS WITH DIFFERENT SIZES OF LIMIT (MNS VALUES)

(from Kelley, Beckman, and Fischer, 1967)
FIGURE 2
PRUITT'S BASIC DEMAND/CONCESSION MODEL

R=RESISTANCE CURVE  C=CONCESSION CURVE  X=PREDICTED DEMAND LEVEL
FIGURE 3

PRUITT'S AUGMENTED DEMAND/CONCESSION MODEL

(Adapted from Pruitt, 1981)
FIGURE 4

KELLY'S RESISTANCE MODEL OF DEMAND

1-7 = RESISTANCE CURVES EACH RESULTS FROM A DIFFERENT LIMIT (MNS) LEVEL
TIMES = CONCESSION CURVES EACH REPRESENTING A DIFFERENT TIME

(ADAPTED FROM KELLEY, BECKMAN, AND FISHER, 1967, BY PRUITT, 1981)
FIGURE 5

MEANS OF TOTAL NUMBER OF BIDS ACROSS CONDITIONS

--- = COOPERATIVE HISTORY
----- = COMPETITIVE HISTORY
FIGURE 6

MEANS OF FIRST BID ACROSS CONDITIONS

COOPERATIVE          COMPETITIVE

AMOUNT OF BID

= COOPERATIVE HISTORY

= COMPETITIVE HISTORY
MEANS OF LAST BID ACROSS CONDITIONS

DIRECTIVE

--- = COOPERATIVE HISTORY

---- = COMPETITIVE HISTORY
FIGURE 8

MEANS OF THE DIFFERENCE OF THE SUBJECT'S FIRST BID WITH THE COMPUTER'S FIRST BID ACROSS CONDITIONS

--- = COOPERATIVE HISTORY
----- = COMPETITIVE HISTORY
FIGURE 9

MEANS OF THE DIFFERENCE OF THE SUBJECT'S LAST BID
WITH THE COMPUTER'S LAST BID
ACROSS CONDITIONS

--- = COOPERATIVE HISTORY
----- = COMPETITIVE HISTORY
FIGURE 10

MEANS OF THE DIFFERENCE OF THE SUBJECT'S FIRST BID WITH THE SUBJECT'S LAST BID ACROSS CONDITIONS

--- = COOPERATIVE HISTORY

---- = COMPETITIVE HISTORY
FIGURE 11

THE HICKS BARGAINING MODEL

(Wage Rate vs. Time diagram showing intersection of employer's concession curve and union's resistance curve, indicating a wage rate of W₁ at time T₁. (From Hicks, 1932, in Kojian, 1980, p. 241))
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