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MACHIAVELLIANISM AND POWER-DEPENDENCE RELATIONS IN SAME AND MIXED-SEX TRIADS

by

ANNETTE BENEDICT

A dissertation submitted to the Graduate Faculty in Psychology in partial fulfillment of the requirements for the degree of Doctor of Philosophy, The City University of New York

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BACKGROUND OF THE PROBLEM

In the world outside the laboratory, powerful individuals divide up the valuable prizes, the deference, income and safety that society can provide to some, but not all, of its members. Powerful individuals form an elite based on skill, class, personality and attitude. This elite depends for its success on manipulation of the environment. For this purpose, it uses the symbols, goods, violence, and practices of the social system (Lasswell, 1950). The psychological and physical dependence of other members of the social system contributes to the control that stronger members can wield over them. This control may be constrained by the "rules of the game" which govern the nature and outcome of possible negotiations. These rules may be reflected in mores or enforced by law.

Experimenters have attempted to study the human interactions involved in the negotiations between strong and weak, controller and controlled. To some extent, these interactions can be observed in field studies of political behavior, in the manipulation of work groups, in the study of dominance patterns within families. The specification of organismic and situational variables in field observations, however, poses great difficulties. As an alternative and as a supplement to field observations, experimental games have been devised in which subjects interact within an involving, semi-realistic situation.

Participants in such games may be given differential strengths, or weights, in order to study the effect on individual behavior of power relationships. They choose between alternative

courses of action in a situation of conflicting interest within a rigidly-defined framework. The assumptions are that each player is rational (that he fully understands the game, and will always make the best possible move), that his motives are unmixed, and that he wants to do the best he can for himself, disregarding the effect on the other player. Luce and Raiffa (1967) point out that "rationality" requires that both the possible outcomes and the variables controlling the possible outcomes are well specified, and that each individual has a consistent pattern of preferences among the possible outcomes. In some games, he is not able to gratify these preferences by himself; he must win the cooperation of other players, acting in concert with them while pursuing his own goals.

The alliance of two out of three participants may be required for either one to share a reward (which may be a given number of points, or dollars). The players are mutually dependent; the actions of each can facilitate or hinder, grant or deny, the other's achievement. Each one strives to control the other's conduct, usually through control over things he values. The ability of the individual to overcome the opposition of others, and attain his own goals, is the basis of Emerson's (1962) operational definition of power: "The power of actor A over actor B is the amount of resistance on the part of B which can potentially be overcome by A."

Coalition formation has been studied in many situations, including families (Strodtbeck, 1954). Simmel (1950) is noted for his sociological analysis of groups of three, from which Mills (1960)

concluded that any group of three tends to become a coalition of two against one. Caplow (1968) analyzed coalition formation in a famous conflict situation, Hamlet's problem of breaking the coalition between Claudius and Gertrude, and forging one between Gertrude and himself. An example of confused coalition structure is Milgram's obedience experiment (1963). The three participants perceived the social structure of the experiment differently. The subject tended to perceive himself as being in a coalition with the experimenter, helping him in a scientific endeavor. The experimenter, however, formed a coalition with the professional actor who played the part of "victim" in order to deceive the naive subject. The experimenter and the "victim" acted together in order to bring out the subject's reaction to an authority situation.

A coalition is "two or more persons who act jointly to affect the outcomes of one or more other persons" (Thibaut and Kelley, 1959). The coalition is temporary, means oriented, and may be an alliance among individuals or groups which differ in goals (Gamson, 1961); it does not imply a value consensus. By pooling their resources (some weight they control of which a critical quantity is necessary and sufficient to determine a decision), the members of the coalition accumulate enough power so that they can select among the alternatives that govern the distribution of rewards. They can then share the payoff.

The value of the rewards to the players may be expressed in a utility function, a "quantification of a person's preferences

with respect to certain objects" (Davis, 1970). The game is zero-sum or constant-sum if one man's loss is another's gain, if the outcome of each player's strategy, taken together, is either zero or some arbitrary constant, like 100 points. While analysis has been directed at the basis of coalition formation in n-person, zero sum games, the choice of subjects, the conditions for the experiment, the experimental task, and the measures used statistically, introduce variations in the results, and in their interpretation, that are difficult to reconcile. In addition, most theorists (Caplow, 1968; Gamson, 1964; Vinacke and Arkoff, 1957) focus their attention on the resource of the player at the moment, the weight he draws and uses on a particular round. The subject's cumulative score, the sum of his round-by-round scores up to that point, is the important factor for other theorists (e.g., Emerson, 1964) in considering both a) the basis on which the coalition will be formed and b) the basis on which the partners of the coalition will divide the payoff.

The research procedure

In most of the research on coalitions, the experimental game has been called parchisi, but has little resemblance to the traditional board game. There are generally three players. Each player draws a counter from a hopper. The counter he draws assigns him a weight for that game. Weights are thus assigned by chance. Players are labelled A, B and C according to the weights they draw.

A board is used, with consecutive numbers pasted around its sides. Each player has a pawn, or marker, which he moves around the board, starting at the lowest number. The object of the game is to

reach "home" (the highest-numbered space) first. A die is thrown by the experimenter on each round, or trial. All three players then move their markers. The number of spaces they move is equal to the number on the die times the weight on the counter that each player drew.

Coalitions may be formed at any time during the game. Two players can agree to pool their weights, and to divide the prize between them. When a coalition is formed, the two allies move forward according to their combined strengths. In some games, the allies also proceed to a position equal to their combined acquired spaces, if the coalition is formed after they have made some moves as individuals. Most players realize that the moving of the marker around the board is not necessary; victory (and defeat) are acknowledged after the coalition is formed. Players with a simple majority of the resources win. All winning coalitions have the same payoff, 100 points for the game.

When Vinacke and Arkoff (1957) first devised this procedure, the distribution of resources between the players was based on Caplow's (1956) six triad types of varying initial strength. These types, and corresponding numerical values, were as follows:

	TYPE	WEIGHTS A	B	C
I.	A = B = C	1	1	1
II.	A>B, B = C, A<(B + C)	3	2	2
III.	A<B, B = C	1	2	2
IV.	A>(B + C), B = C	3	1	1
V.	A>B>C, A<(B + C)	4	3	2
VI.	A>B>C, A>(B + C)	4	2	1

In 1959, Caplow added two more triad types, both of which have the possibility of ties:

VII.	A>B>C, A = (B + C)	3	2	1
VIII.	A = (B + C), B = C	4	2	2

In Vinacke and Arkoff's experiment, each group of subjects played 18 games, three series of six games, with triad types I through VI arranged according to a Latin square design. Other experimenters used fewer triad types. Kelley and Arrowood (1960) used Type V only. Emerson used Types I, IV, and VII.

Power relationships are different in the triad types. In Types IV and VI, A is all powerful; no coalition can defeat him. In Types I, II, III, and V, a coalition of any two can defeat the third player. However, minimum resource theory predicts that a coalition will form with the minimum total weight needed to win the game: a 3-2 coalition against 4 in triad type V; a 1-2 coalition, rather than a 2-2 coalition, in triad type III.

Minimum resource theory vs. "rational" behavior (game theory)

In both minimum resource theory and game theory, only the weight of the player on a particular round is considered. Minimum resource theory (Gamson, 1961; Vinacke and Arkoff, 1957) is based on "what might be called the parity norm" (Gamson, 1964, p. 88). This is the belief by the participants that a person ought to get from an agreement an amount proportional to what he brings into it, so that his reward will be proportional to his investments. The existence of this norm causes players to seek coalitions which have "minimum resources", that are no larger than is necessary to win. Each player seeks to contribute his fixed resources to a coalition in which those resources will be as large a share as possible, in order to maximize his rewards from participating in the coalition.

The "rational" approach is held by game theorists (von Neumann and Morgenstern, 1953) who base their predictions on expectations that players will be guided solely by the rules of the game, and will act according to complete understanding of the final consequences of his play. This is best illustrated by situations in which $A>B>C$, $A<(B+C)$. When the three participants in a triad hold weights labelled 4, 3, and 2, coalition between any two players will add up to more than half the total weight in the triad, and will win. One can "rationally" see that 4 & 3, 3 & 2, and 4 & 2 can all win. And game theorists would predict all three solutions, since the pivotal power of the players in this situation is equal (Luce and Raiffa, 1957). (The proportion of possible ways the resources of each player can

contribute to a winning coalition is the same for the three players.) Minimum resource theorists, on the other hand, would predict a coalition of 3 and 2 against 4; the coalition of 3 and 2 would be the minimum required to win, and each player would have contributed a larger share to the coalition than he would in a coalition with 4.

Vinacke and Arkoff (1957), pointing out that the "differential strength or power characterizing members of the group is a significant factor, one, in fact, that has numerous psychological dimensions not envisaged in game theory" (p. 2), designed an experiment "to determine what actually occurs in three-person groups when the members are initially confronted with a variety of seeming power-relationships to each other" (p. 2). They found that players appeared to be influenced primarily by perception of their relative strengths at the outset of the game, and did not become more "rational" in later series of games. The general kinds of agreement reached corresponded closely to perceptions of initial strength.

Are the results of Vinacke and Arkoff based on "a misunderstanding of the experimental situation that is not intrinsic to it, but results from the complexity of their total procedure" so that "subjects erroneously equate initial weights with real power"? To answer this question, Kelley and Arrowood (1960) set up triads with the 4-3-2 relationship only. Subjects were given full, formal instructions and an individualistic orientation, it being emphasized that each was to accumulate as many points for himself as possible, attempting to maximize his outcomes without regard to those of the other players.

Results indicated that the initial resource of the player was less determining of coalition formation in this experiment than it had been in Vinacke and Arkoff's. Subjects changed their view of 4's power. While 85% of their subjects believed, at some time, that the 4 weight carried greatest power, only 25% held this belief at the end of the experiment. 4 was therefore less excluded from coalitions than in the Vinacke experiments. 4 was still excluded in 47 percent of the triads; chance would predict that he should be excluded in only 33 percent.

Vinacke (Vinacke et al, 1966) reacted to these results by designing an experiment to present "conditions of freer choice, so to speak, between the alternative strategies that lead to the contrasting predictions...At the same time, it was hoped that various other findings might be cast into fuller perspective, notably the difference between the sexes which might change with variation in the amount of information available to the participants" (p. 183). Subjects in all-male and all-female triads were given a set of instructions about the two alternative strategies (rational behavior vs. minimum resource theory) with four power patterns: all equal (1-1-1), one stronger (3-2-2), all different (4-3-2) and all powerful (4-2-1). Only the results of the "one stronger" and "all different" games were analyzed. In these triads, females included the stronger player more often (i.e., behaved more "rationally") when the triad members understood the instructions. For males, the major effect of the instructions was in the players' motivation to win, as assessed by a postsession questionnaire. Special information increased their motivation to win.

A lower incidence of weak coalitions (coalitions made up of members with the smaller weights) was found in triads whose members expressed a high motivation to win than in other triads.

Experiments can be designed to support one theory or the other. For example, Gamson (1964) points out that support for minimum resource theory has been strongest when:

a) players compete for something that they really value.

b) the freedom to communicate is limited, so that both confusion and understanding of each player's pivotal power are minimized.

c) subjects are comfortable with competitive situations and enjoy winning (e.g., American male undergraduates).

d) the parity norm is made salient to the subjects. This might be done by giving the subjects an initial task in which the parity norm is particularly appropriate, for example, a gambling situation in which the subjects placed a collective bet, with each subject contributing a different amount of money to the bet. If the subjects then had to decide how to allocate any winnings from the collective bet, they might decide that those who risk the most should get a share that is proportional to their contribution.

If, on the other hand, one wishes to prove that the pivotal power of the player, and not his resources or weight, is important, the goal should still be valuable. In fact, players should compete for something which is so important to them that it outweighs considerations of what one ought to get (the parity norm) or any delicacy that they

might have about ruthless competition. Subjects should be free to make offers and counteroffers. There should not be limited communication, as there might be in a situation designed to prove minimum resource theory. The unlimited communication will give subjects ample opportunity for learning, particularly in a situation which is simple enough for them eventually to perceive the pivotal power of the players.

"Rationality" of the players will be enhanced if they are prevented from developing trust relationships which extend over several plays. Therefore, players should be rotated among several groups, so that they do not know with whom they will be included in the next play. Players should not know their cumulative scores, since that would bring in other considerations besides the pivotal power of a player.

Finally, "subjects should be indifferent to each other or evenly mildly hostile so that they are not bothered if some players consistently lose" (p. 105). Therefore, subjects should be selected who have no established social relationships with each other and who have no prospects of a continuing relationship after the experiment. Ideally, they should believe that people deserve whatever they can get, even if what they can get is more than their resources would indicate.

Anti-competitive behavior in women

In most experiments involving coalition formation, male subjects "had gratifyingly manifested the sort of behavior that the (male) experimenters had expected...they seemed to enter with gusto

into the game, bargaining competitively, making the best 'deals' they could, and, in short, striving to win" (Uesugi and Vinacke, 1963). But when Vinacke (1959) experimented with all-male and all-female triads, he concluded that "(a) females more often fail to form coalitions; (b) females more often arrive at triple alliances; (c) females more often form coalitions when none is necessary (that is, when one member can win without alliance; (d) females agree upon less disproportionate divisions of the prize." When playing in mixed-sex groups (Bond and Vinacke, 1961), women formed alliances with men when they, the women,were all-powerful (e.g., when they held the "3" in the 3-1-1 combination). They bargained less when the game started, although there was no difference later in the game. Bond and Vinacke suggested that in general, they seemed to find less fun in testing their strength against an opponent, and moderated their competitive impulses in the direction of altruism or "fairness". The emphasis on social relationships within the group, rather than concern over winning, leads women to an "accommodative" strategy, rather than the "exploitative" strategy of male competitors.

When men and women are in the same triad, Bond and Vinacke (1961) claim that the "male strategy may be 'self-defeating' when it encounters female strategy." When two men and one woman are in a triad, the men compete against each other, placing the woman at an advantage. They attempt to exploit her, but this means that she participates in more coalitions, and gains more points. When the triad consists of two women and one man, the aggressive play of the

man forces the two women into an alliance against him, either as a means of avoiding undue competition or as a defense against his perceived strength. According to Bond and Vinacke, the female minority member arrived at a better outcome than did the male minority member.

But Caplow (1968) comments on Vinacke's (1959) discussion of sex roles in a three-person game that Vinacke's conclusions are "heavily dependent upon statistical differences that are not significant," that "there were no significant differences when cumulative scores were shown," and that in Bond and Vinacke's (1961) study, "some differences between the sexes are apparent in the results; but they are not very large nor entirely consistent." He also expresses astonishment at the conclusions reached in an experiment based on a quiz game designed to offset the built-in masculine bias of male experimenters by emphasizing feminine interests (Uesugi and Vinacke, 1963). He points out that the investigators' conclusions were based on six criteria, only one of which (equal division of the prize) was significantly different from parchisi results, and the one difference was in female triads, not male. To find that "accommodative strategy apparently becomes more sharply defined in a game intended to enhance feminine interests" (Uesugi and Vinacke) is to be "cheerfully determined not to let the wings of theory be clipped by the scissors of empirical data" (Caplow, 1968).

Although the relationship between Vinacke's data and conclusions has been questioned, his experimentation is interesting in that there is

an attempt to measure, in male and female young adults, the effects of differential socialization in the modern nuclear family. Girls are taught to be like mothers whose "expressive" functions emphasize the emotional life of the family and its cohesiveness, rather than like their "instrumental" fathers, who negotiate across the boundary of the family in dealing with the outside environment (Parsons, 1955). Bronfenbrenner (1961) has suggested that girls are "over-socialized", that the greater use of "love-oriented"discipline results in cooperative, obedient girls who are anxious and sensitive to rejection. Recent explorations of women's "will to fail" (Horner, 1969) are consistent with Vinacke's designation of female behavior in triadic games as being accommodative, rather than exploitative.

Utter confusion theory

Kalisch (1954) varied the size of the group and found that players were often confused, particularly in the seven-person game. Talkativeness and aggressiveness were important in the formation of coalitions, as well as propinquity and the geometric arrangement of players around the table. In the five-person game, two players facing each other across the table were quite likely to form a coalition; and in the seven-person game, all coalitions were between adjacent players or groups of players. "In general as the number of players increased, the atmosphere became more confused, more hectic, more competitive and less pleasant to the subjects." Kalisch used a time limit of ten minutes. A time limit helps create pressure to form any coalition quickly. Other factors that contribute to this kind of

coalition formation are the use of unsophisticated subjects who do not know each other, complex variables, difficulty in communication, and only moderate differences between the players in resources and pivotal power.

Under some conditions, this utter confusion model and the rational theory make the same predictions (Collins and Raven, 1969). For example, the rational theory predicts an equal percentage of each of the three kinds of coalitions in the 4-3-2 situation. The random-choice or utter confusion model makes the same prediction.

Theory based on cumulative score

Emerson (1962) hypothesized that the dependence of one party provides the basis for the power of the other. In the game situation, he interpreted this to mean that the two players with higher cumulative scores will be eager to form a coalition with the player with the lowest score, who then represents the least threat. The player with the lowest score is thus the least dependent player, since he has two alternatives. He can form coalitions with either of the two players, whereas both of them have one preferred alternative, a coalition with him. Emerson (1964) attempted to show that this favored position can lead to the formation of more coalitions by the least dependent player, and that his position provides a power potential, so that he can bargain for a disproportionate share of the reward.

Emerson (1964) used three power relationships, defined in terms of numbers on disks: 3-1-1, in which one player is all powerful; 3-2-1, in which many relationships are possible; and 3-3-3, in which

all players are equal. The 3-1-1 trial type was designed to encourage no coalition, and was considered to be a gift of 100 points given to some player at random. Its function was to maintain imbalance among players in amount of winnings throughout the game. In the 3-2-1 trial type, players could divide 100 points by forming a 3-2 or 3-1 coalition, or could tie the score with a 2-1 coalition opposing the 3 player. This trial type was included to keep the game lively and the subjects aroused. The third trial type, 3-3-3, makes any coalition equally feasible. "Coalition formation was studied in trials of type 3, with power distributions anchored in the accumulated scores. Large accumulated winnings represent previous power advantage."

Keeping a trial-by-trial score, and a cumulative score for each player, Emerson predicted that the most frequent coalition would be the one which produced the largest reduction in variance among accumulated scores, and found that coalitions did form in such a way as to equalize the outcome among players. When one player gained an advantage, the power structure shifted to reduce that advantage through coalition formation. Did the player with the lowest score manage to get a more-than-equal share of the reward? Emerson predicted that he would, that unequal divisions would have a balancing effect through reducing the variance in winnings among players. He found that in 28 unequal divisions of reward within coalitions, 26 occurred in unbalanced conditions. The lion's share went to the player with the lowest accumulated score in all 26 cases. However,

there were 26 coalitions that divided the reward evenly in the unbalanced condition. In these cases, the subject with the lowest cumulative score did not use his power, a potential which might not have been recognized or acted upon.

The manipulative individual

Who does recognize and act upon that potential? Who is able to manipulate and control other people? While a fellow at the Center for Advanced Studies in the Behavioral Sciences (1954 - 1955), Richard Christie (1970), in collaboration with two political scientists, Robert Agger and Frank Pinner, decided that a successful manipulator might be a person with four important characteristics:

1. A relative lack of affect in interpersonal relationships. In general, it seemed that success in getting others to do what one wishes them to do would be enhanced by viewing them as objects to be manipulated rather than as individuals with whom one has empathy. The greater the emotional involvement with others, the greater is the likelihood of identifying with their point of view. Once empathy occurs, it becomes more difficult to use psychological leverage to influence others to do things they may not want to do.

2. A lack of concern with conventional morality. Conventional morality is difficult to define, but we were thinking here in terms of the findings that most people think lying, cheating, and other forms of deceit are, although common, reprehensible. Whether manipulators are moral or immoral is a moot problem, and one which probably concerns them less than those who are manipulated. The premise here is that those who manipulate others have a utilitarian rather than a moral view of their interactions with others.

3. A lack of gross psychopathology. The manipulator was hypothesized as taking an instrumentalist or rational view of others. Such a person would make errors in evaluating other individuals and the situation if his emotional needs seriously distorted his perceptions. Presumably, most neurotics and psychotics show deficiencies in reality testing and, by and large, fail in crucial ways in relating to others. Note that we are not suggesting that manipulators are the epitome of mental health; we were proposing that their contact with at least the more objective aspects of reality would have to be, almost by definition, within the normal range.

> 4. Low ideological commitment. The essence of successful manipulating is a focus upon getting things done rather than a focus upon long-range ideological goals. Although manipulators might be found in organizations of diverse ideologies, they should be more involved in tactics for achieving possible ends than in an inflexible striving for an ultimate idealistic goal (p. 3 - 4)."

To test their hypotheses, Christie and his collaborators interviewed the junior fellows at the Center about their relations with, and their reactions to, their mentors, the behavioral scientists who were responsible for their training and their being at the Center. The interviews revealed that the fellows' views of their mentors largely conformed to Christie and his collaborators' initial formulations about manipulators. In order to investigate further, Christie decided to utilize the writings of Machiavelli for the construction of a scale that would measure a person's point of view about the nature of man. His decision to use Machiavelli's writings was based on his desire to have an internally consistent philosophical statement that was consistent with the statements of other power theorists and with Christie and his collaborators' speculations. A further advantage in using Machiavelli's writings was the clarity with which Machiavelli stated his analysis and conclusions, augmenting each in a series of short essays.

A scale was constructed by taking statements from The Prince and The Discourses and bringing the language up to date. Some statements were reversed to counteract the effect of response set. Statements were added that appeared to be consistent with the writings of Machiavelli, e.g., the statement of Barnum, the circus magnate, that there's a sucker born every minute. Subjects were

asked to respond on a 1 - 7 scale: disagree strongly, somewhat, or slightly, no opinion, agree slightly, somewhat, or strongly. This scale, with some editing of ambiguities, became the Mach IV Scale. Each statement, either positively or negatively, stated the moral of one of Machiavelli's essays and tested the subject's conscious acceptance or rejection of Machiavelli's conclusion.

The statements do not measure the respondent's techniques of dealing with people. Rather, they measure his estimate of the objectively effective way of dealing with people: "There is no excuse for lying to someone else." "It is wise to flatter important people." The statements also measure the subject's views: "It is hard to get ahead without cutting corners here and there." and his morality: "All in all, it is better to be humble and honest than important and dishonest." A list of statements used on the Mach IV will be found in Appendix A.

Lerner (1950) has called Machiavelli "the first modern analyst of power" (p. xxvi). Machiavelli distinguished between man as he ought to be and man as he actually is, between the ideal form of institutions and the pragmatic conditions under which they operate. He was interested in how things actually get accomplished in a real political world. None of his critics, to the knowledge of the writer, refute his analysis of the struggles of his time. Rather, critics lament the emphasis in his work on techniques of acquiring and maintaining power. There is an underlying revulsion against examining such mechanisms, coupled with a yearning to find conventional morality superior as a guide to human relations.

For this reason, it was important to disassociate agreement with the objective conclusions of Machiavelli from the respondent's judgment about the social desirability of such conclusions. Otherwise, respondents who agreed with a statement drawn from The Prince might hesitate to indicate this because of the statement's negative social desirability rather than Machiavellianism. In fact, "Budner (1962) found a correlation in the neighborhood of -.35 between the Edwards SD scale and Mach IV among college males but among college females this was inflated to roughly -.75. Since the latter correlation was almost as high as the reliability of Mach IV, it suggests that these female respondents were answering Mach items almost exclusively in terms of social desirability as defined by Edwards" (Christie and Geis, 1970, p. 19). In order to preclude this possibility, the Mach scale was revised to a forced-choice format. Three choices were presented for each statement, with instructions to state which of the three was most characteristic of the respondent and which one was least characteristic. No response was marked for the third item.

On the Mach V, the forced-choice version of the Scale of Machiavellianism, there are twenty groups of three sentences each. One sentence is a Mach IV statement; one statement is of matched social desirability; and one statement is a buffer, high in social desirability if the other two are low, and low in social desirability if the other two are high. If the buffer is of high social desirability and is chosen by the subject as being most like him, he has to choose between two undesirable statements to decide which

statement is least like him. If the buffer is low in social desirability and is selected as being least like the subject, he has to choose which of two socially desirable statements is most like him. The effect of social desirability is thus minimized. This format also makes it difficult for subjects to guess the "right" or "wrong" answer, in order to fulfill what they consider to be the experimenter's expectations. (See Appendix B for the Mach V Scale.)

When the Mach item is worded in the pro direction, the scoring is as follows:

If the subject picks the Mach item as:	If the subject picks the item of matched social desirability as:	The score is:
Most like	Least like	7
Most like	Omitted	5
Omitted	Least like	5
Omitted	Most like	3
Least like	Omitted	3
Least like	Most like	1

The scoring is reversed when the Mach item is worded in the anti direction. The scoring key for Mach V will be found in Appendix C.

Christie states that "upon the basis of available evidence it seems reasonable to say that scores on Mach IV reflect Machiavellian orientations not only because respondents agree with Machiavelli but are also willing to endorse socially undesirable statements. Scores on Mach V reflect the willingness of respondents to agree with

Machiavelli when their tendency to agree with social (sic) undesirable statements is removed" (p. 30). The reliability of the Mach V is not high; it "hovers in the .60's" (Christie and Geis, 1970, p. 27). Christie and his associates "were more interested in devising a scale which would make meaningful discriminations among individual's behavior" (p. 27) than in constructing a scale with high internal consistency.

In testing the validity of the scale for predicting behavior, the hypothesis was that individuals whose outlook was similar to that of Machiavelli would be more skilled in interpersonal manipulation than individuals whose score on the Mach scales was low. Christie and Geis devised many games to test this hypothesis. One was the ten dollar game. Ten $1 bills were placed on the table in front of three subjects. The money was to belong to any of the subjects who agreed with each other as to how to divide the ten dollars. The subjects could not divide the ten dollars up among all three; they could divide the ten dollars evenly (5 and 5) or unevenly (8 and 2, 7 and 3, etc.). The game was over when any two players made an agreement which the third player could not get them to break. Seven triads were observed; each triad had different players. In all seven triads, the subject with the highest Mach score was a member of the final coalition. The probability of the high Mach being a member of the final coalition seven times in seven sessions is .059.

Another experiment was based on the Con Game, in which "a subject's score over a series of games is determined by his bargaining

ability (ability to enter coalitions, rather than allowing his two opponents to form one excluding him), shrewdness in bargaining (ability to get disproportionately large shares of the prize in coalition agreements entered), and dispassionate use of coalition partners (willingness to break coalition agreements, thus betraying a partner, at a strategic moment). The number of points won over a series of games provided an index of a player's ability to manipulate his opponents relative to their ability to manipulate him" (Christie and Geis, 1970). In this game, the more Machiavellian group members succeeded in getting more of the rewards, by outbargaining lows, i.e., the less Machiavellian. They were particularly successful when the bargaining situation was more ambiguous. "Combining Machiavellian orientations with ambiguity in the situation virtually eliminated the effect of objective, situational determinants in distributing rewards."

Questions raised by a pilot study

A pilot study by the writer set up fifteen triadic games, mostly in college cafeterias. Subjects were volunteers who happened to be free when requested to play. All participants filled out the Mach V before the game began. The game itself was a "game of skill and chance" as reported by Emerson (1964). Three power relationships or trial types were used: 3-1-1, 3-3-3, 3-2-1; trial types were presented in random order. Weights were designated by numbers pasted onto poker chips. Each set of weights was a different color: 3-2-1 chips were white, 3-1-1 chips were red, and the 3-3-3 chips were blue.

The three weights that constituted a trial type were placed in a felt bag. The subject reached into the bag and drew out his weight for that round, or trial. The throwing of the die, and the rules concerning the formation of coalitions, followed the parchisi research procedure.

It appeared that undergraduate women were accommodative, and men were exploitative. However, results differed from Vinacke's; women did not win with their accommodative strategies. In six mixed-sex triads, men won in five, and tied for top score in the sixth. The score of subjects on the Mach V did not predict success in the mixed-sex triad better than chance, although high Machiavellian scores did predict success in seven all-male triads.

The degree of involvement by participants was surprising. Apparently, the game approach has become integrated into current thinking. Sensitivity training can be considered a game that emphasizes human relations, not power relationships. Its proponents are optimistic about the ability of participants to communicate on an "authentic" level. Many participants hope to ameliorate their own alienation in a society in which power relationships are endemic, without referring to, or analyzing, the power relationships.

In the research on triads, the power relationship is emphasized, rather than the emotional exchange betweer the participants. Vinacke's interpretations of his findings emphasized the inability of his woman subjects to divorce their feelings about what was right and wrong from the "rational" situation created by the experimenter. The pilot study indicated that the social orientation of female subjects weakened their

ability to exploit power relationships. Their desire to cooperate with other players replaced strategy considerations in a mixed-motive game, a game in which cooperation with another player was needed to compete with a third player (whose cooperation, in turn, might be enlisted to compete with one's former ally).

The cooperation of two players for their common advantage has been studied in the two-person prisoner's dilemma game. In this game, women are consistently less cooperative than men, although it is not clear why (Harding, 1970). With a run of 300 plays of the game, more than half of the pairs of men had by the end "locked in" on a cooperative form of play. Cooperation is the more rational behavior in the prisoner's dilemma situation. High Machiavellians, for example, became significantly more cooperative when monetary rewards were introduced and the utility of winning the game was increased (Christie and Geis, 1970, p. 189).

Cooperation has also been studied in n-person games. Lieberman (1964) has developed the notion of trust based on self-interest; his subjects played a three-person, zero-sum game in which a partnership of two players received six, eight, or ten cents from the third player. He found that players in five out of eight triads formed a stable alliance with one other player in the game. This alliance benefitted both players. "The person who sacrifices some immediate gain to fulfill a commitment believes he is acting in his own interest, because his interests transcend the increased immediate gain he might make if he defected from a coalition." Some behavior of this kind was observed in the pilot study. An occasional 60 - 40

split on a 3-3-3 round was reciprocated by a 40 - 60 split on the next 3-3-3 round. But only one player in the pilot study - a man - attempted to weld a coalition for the entire game. He proposed to another player that they have a permanent partnership, "freeze out" the third player, run both their scores up to the final rounds, and then battle out the last few rounds. His strategy was not successful; he lost many points in a "give-away" program designed to win a partner for him. Although his Mach V score was the highest in the triad, he did not win the game.

The women who played in the pilot study games were not aggressive in trying to form coalitions. The initiative was most often with the men. Not even when the two women playing were friends did they unite to oppose the third player, a man. Either Lieberman's findings do not apply to students in New York, or the game used in the present pilot study was sufficiently different from the one he used at Harvard that permanent partnerships were not encouraged. Actually, in Lieberman's game, two players united to see that a third player lost. Only one player in the sample used for the pilot study proposed this behavior, and none accepted.

Subjects appeared to have divided feelings, contradictory attitudes. The desire for a friendly game was mixed with a desire to win. There also seemed to be a desire to test oneself, as a competent human being, against other competent human beings. It is possible that competence is defined differently for young men and women. Douvan (1966) explored adolescent conceptions of future time and adulthood, asking about plans, expectations, daydreams, hopes and

aspirations. She found that young men were oriented to the future primarily in terms of an occupational identity, that their dreams and plans were appropriate to each other. But young women separated fantasy and reality conceptions. For them, affect and color were concentrated in the fantasy realm, in which personal attractiveness and popularity were important.

It has been suggested (Church, personal communication) that famous women have been noted for their ability to gain their own ends in social situations. Such able manipulators might be expected to share the assumptions about human nature that men able to manipulate others have. But many women seem to experience conflict in objectives. This conflict may confuse the relationship between concepts about the nature of man and manipulative behavior toward fellow human beings.

The severity of the conflict may be influenced by the nature of the opposition. A subject's opposition in a triad may be of his/her own sex. Or the triad can be a mixed-sex triad. Mixed-sex triads are of two types: a) the subject may play two people of the opposite sex. In this type, the subject is said to be in a minority; b) there may be one member of the opposite sex and one member of the same sex as the subject. The subject is now in the <u>majority</u>. Does being in the minority or majority make a difference in the subject's behavior? Bond and Vinacke (1961) found that this differed for the sexes, that the female minority member of a mixed-sex triad arrived at a better outcome than did the male minority member in a mixed-sex triad, and that men and women, when in the majority, followed different

strategies. In the same-sex triad, is the high Machiavellian woman as successful - does she exploit power potentials - when opposed to low Machiavellian women as the high Machiavellian man is when opposed to low Machiavellian men?

The present study

The present study was designed to answer these questions. Triads consisting of one high Mach and two low Machs played two games together. The sexual composition of the triads was varied so that behavior could be observed under different conditions of opposition. The game itself followed the tradition of Caplow's power conditions, as used by Vinacke and Arkoff and simplified by Emerson. Cumulative scores were kept and subjects paid according to their final scores. After the second game, subjects reported their enjoyment and understanding of the game in a questionnaire.

Analysis was directed to clarifying which factors predicted success in a formalized situation that required the ability to make alliances and to protect one's own interests.

HYPOTHESES

The main hypotheses concern the relationships of a) the sex of the participants and b) their level of Machiavellianism to their success in the games to be played by the triads.

Main Hypotheses

1. In mixed-sex triads, men will have higher scores than women.

This hypothesis is contrary to the conclusions of Bond and Vinacke (1961), and is based on results of a pilot study. It is consistent with the findings of Gamson (1964) that American male undergraduates "compete just for winning's sake."

2. There will be a positive relationship between Mach score and success in the all-male triad.

This hypothesis is also based on the pilot study, and on the work of Christie (1970), who found a .71 correlation between Mach score and success in interpersonal bargaining in the triad.

3. The Mach score will not be predictive of success in the all-female triad.

The accommodative nature of interaction among women is expected to hamper the interpersonal manipulation on which the success of the Machiavellian is presumably based. In the writer's pilot study, this was true for younger, but not for older, women. Since all subjects in the present experiment are undergraduates, it is hypothesized that women's assumptions about human nature will not be directly related to their success in the triad.

4. There will be no consistent relationship between Mach score and success in the mixed-sex triad.

Since women's success in the triad is not expected to be directly related to their Mach scores, success in triads of which women will form a part is similarly not expected to be predictable from the Mach scores of the participants.

Subsidiary Hypotheses

1. Females will be more accommodative than males, engaging in such behavior as sharing points when they are all-powerful and proposing triple coalitions.

Vinacke's six criteria of accommodativeness have been adapted for this experiment, as follows:

a. Triple alliances.

When two players form a coalition, the third player is excluded. Triple alliances eliminate the exclusion of the third player. If they are more accommodative, it is expected that women, more frequently than men, will suggest sharing the points (the prize for the round) between three players rather than between two players.

b. Failure to form any coalition at all.

It is possible for no coalition to form on a 3-2-1 round, allowing 3 to win. Vinacke found that "females more often fail to form coalitions." Therefore, it is hypothesized that such failures, if they occur, will more likely be in all-female, rather than all-male triads.

c. Division of the prize equally, in pair-alliances.

Divisions of the prizes will be observed in 3-3-3 rounds, the condition under which all players are equal, to

determine whether "females agree upon less disproportionate divisions of the prize." More equal divisions of points are expected in female same-sex partnerships than in male same-sex partnerships.

d. Tendency to ally in the "all-powerful" position when no coalition is necessary to win.

In this game, the "all-powerful" position is the 3 in the 3-1-1 round. The player holding the 3 receives all the points if he makes no coalition. If he makes a coalition, his prize is reduced by whatever number of points he gives his partner. Women "more often form coalitions when none is necessary (that is, when one member can win without alliance)" (Vinacke, 1959). In this experiment, women are expected to be more likely to form coalitions when no coalition is necessary.

e. Women bargain less than men, with the difference significant only in the early games of a series.

Each participant will play two games. Since the extent of bargaining is most simply measured by the total time of the game, the starting and ending times will be noted in both games. It is hypothesized that analysis of the variance in total time of the game in all-male and all-female groups will indicate a significant effect of sex or order of play, or an interaction between them.

f. Women initiate "altruistic offers" more than men.

An altruistic offer is a suggestion by a subject that his fellow players form a coalition to his disadvantage. In the study of Uesugi and Vinacke (1963), the total incidence of altruistic offers was too small to permit statistical analysis. However, it is felt that if there are such offers in the present experiment, they should be initiated by women, rather than by men; and that the frequencies of such offers from men and women will be significantly different from the binomial probabilities of the distribution.

2. When all subjects have equal weights, the most frequent coalition will be the one producing the largest reduction in variance among the players' accumulated scores.

The player's accumulated score is the sum total of his score on each round, up to the round being analyzed. This hypothesis, based on the work of Emerson (1964), predicts that on the 3-3-3 rounds, players with the lower cumulative scores will form coalitions with each other, thus bringing their scores up, rather than forming coalitions with the player with the highest cumulative score.

2a. If there is an uneven division of the points given the coalition for a trial, the division of points will favor the player whose cumulative score is lower than his partner's.

On the rounds in which all players have the same weights (the red 3's), it is hypothesized that unequal divisions will favor the player with the lower cumulative score, rather than the player with the same, or higher, cumulative score.

2b. There will be more unequal divisions of points between partners whose cumulative scores are unbalanced than between partners whose cumulative scores are balanced.

On rounds in which all players are equal, it is expected that players with unbalanced cumulative scores will more often divide the prize unequally than will players whose cumulative scores are balanced.

3. The main hypotheses will be more strongly supported in the second game played by the triads than in the first game.

Since there is a strong element of confusion in the first game played by a triad, it is predicted that sex of the participant and his/her level of Machiavellianism will influence success in the second game more than it will success in the first game.

The above hypotheses applied to the experiment as it was originally designed, with subjects randomly assigned to same or mixed-sex triads. After the planned twenty-four triads were run, the results were surprisingly different from expectations based on previous experimentation, and on the pilot study of the writer. There did not seem to be any effect of Machiavellianism, sex, or triad formation, although there was a strong tendency toward an interaction of sex and Machiavellianism. Nor did the information supplied by the final questionnaire explain the lack of difference between scores of high and low Machiavellians.

It was decided to explore the reasons for the lack of difference. The experimenter had noted that in four pilot triads run after the original pilot study and before the experiment itself, results appeared

to be consistent with the hypotheses. In these triads, only written instructions were given; in the experiment itself, a verbal orientation was presented to subjects before they read the written instructions. Since Christie's results had been obtained with undergraduate men, it seemed worthwhile to vary the conditions for groups of men in order to ascertain whether it was the particular conditions of this experiment that were minimizing group differences. In the additional triads, subjects had only the written instructions. It was predicted that the lack of verbal orientation would produce significantly different results in these all-male triads.

METHOD

Subjects

Subjects were white male and female undergraduates at City College. They were all enrolled in classes in either the psychology, sociology, political science or economics departments. For the four pilot triads, 12 students were selected: 2 high Mach males, 3 low Mach males, 2 high Mach females, and 5 low Mach females. For the 24 triads that received verbal instructions, the 72 subjects were: 12 high Machiavellian men, 24 low Machiavellian men, 12 high Machiavellian women, and 24 low Machiavellian women. For the 8 all-male triads that received written instructions only, 8 high Mach males and 16 low Mach males were selected.

Triad Composition

Triads With Verbal Instructions (24)

Type	No.	Subject Composition
Same Sex (8)		
Male	4	1 high Mach male and 2 low Mach males
Female	4	1 high Mach female and 2 low Mach females
Mixed Sex (16)		
Male majority, female minority (8)		
Male high Mach	4	1 high Mach male, 1 low Mach male, 1 low Mach female
Female high Mach	4	1 high Mach female, 2 low Mach males

Type	No.	Subject Composition
Female majority, male minority (8)		
Male high Mach	4	1 high Mach male, 2 low Mach females
Female high Mach	4	1 high Mach female, 1 low Mach female, 1 low Mach male

Triads Without Verbal Instructions (8)

Payment for Second Game Only - 4 - 1 high Mach male, 2 low Mach males

Payment for Both Games - 4 - 1 high Mach male, 2 low Mach males

Instrument

The instrument used for subject selection was the Mach V, with no substantive changes. Appendix B contains a copy of the Mach V scale. The time required for filling out this scale was approximately one-half hour, which was the larger part of a class session at City College. It was not possible to take more than one class session for this activity. Therefore, only one Mach scale was administered. Since women as well as men were filling out the questionnaire, the high correlation for women between Mach IV scores and the Edwards SD scale militated against the use of the Mach IV, and for the use of the forced-choice version of the Mach scale, the Mach V.

Students were given four pages on which twenty groups of three statements were printed. From each of the twenty groups of statements, participants were asked to pick the statement closest to their thinking, and the statement furthest from their thinking, and to indicate their choices in the columns for "closest" and the columns for "furthest" which were provided on the left side of each page. On the last page,

students were asked to supply information about their age, their sex, and their ethnic identification.

Procedure

Subject Selection

Permission was granted by the department chairmen of the psychology, sociology, economics and political science departments at City College for the experimenter to enter the classrooms in order to have the students fill out the Mach V. In all cases, the agreement of the instructor was obtained, either by telephone the night before, or during the ten-minute break between classes.

Each student was given a Mach V scale and a 5" x 8" index card. The index card provided a space for name, address, and telephone number, and had a blank schedule of the school week, on which students were asked to cross out those hours during which they had classes, worked, or were otherwise occupied. This card is reproduced in Appendix C. The Mach V scale and the index card had the same identifying number on them, stamped by an ENM Automatic Numerator.

It was explained to the students that the scale would be used to select subjects for a psychological experiment, and that they might be called, at their homes, by the experimenter. It was also stated that only the experimenter would have the identifying card with their name and address.

Scoring the Mach V Scale

All of the protocols were scored by the IBM 1130 at the Graduate Center. Cards were punched with the answers coded numerically; a machine program scored the cards according to Christie's criteria. (Christie's scoring key is in Appendix D.) Since the working-out of the computer program was a lengthy process, however, all the protocols of white undergraduates were also scored by hand, so that the game procedure could start immediately.

An adding machine tape was printed with the answer to each group of questions printed as a two-digit number. All A's were coded as 1's, all B's as 2's, and C's as 3's. The machine tape was printed twice, to check accuracy. Each two-digit number (representing the "closest" and "furthest" choice) was scored by Christie's criteria, the scores were accumulated 20 was added to the total, and the final score marked on the questionnaire. The hash total on the adding machine tape was later used in the computer program to provide a check on the accuracy of the key-punching.

"Low" Machiavellianism was defined as a score of 102 or lower; "high" Machiavellianism, as a score of 112 or higher. Triad sessions were arranged for times when the chosen subjects were in school, but had no classes. Subjects were called at home by the experimenter, in order to check the convenience of the time, ascertain the subject's willingness to participate, and to finalize arrangements for the particular triad.

Location

Triad sessions were held at the Psychological Center of City College, at 3332 Broadway, New York, N. Y. Dr. Harold Wilensky is in charge of the Center.

The Laboratory

The laboratory was a room large enough for a high table, four side chairs, two lounge chairs, and a low coffee table. Microphones were suspended from the ceiling, and connected to a main recording system of Sony Cassettes, Model TC-125, located in the office area. The "on-off" switch of the Cassette recorder was linked to the light switch of the laboratory, so that recording started when the experimenter switched on the light, upon entering the room with the subjects. The recorded cassettes were transcribed to mylar tape at the end of each day's experimentation.

The Experimental Game

When Subjects Received Verbal Instructions

When the subjects entered the room, they found three game positions already set up. Each place had a wooden rack, similar to a Scrabble rack, but longer. (Racks were provided by the Selchow and Righter Co. The longer length was an additional third of a standard rack, which was pasted on to the standard rack.) Leaning up against each rack was a clear plastic rectangle, which held a card with a large, printed "A", "B", or "C" on it. On each rack were ten unglazed ceramic tiles, 3/4" x 3/4" x 1/4": 3 white tiles, 3 black, and 4 red. The white were marked 3, 1, and 1; the black were marked 3, 2, and 1; the red were all marked 3. The following

instructions were read to the subjects by the experimenter:

VERBAL INSTRUCTIONS

You are now going to play a game which tests skill in bargaining, and the making and breaking of alliances, as it goes on in the real world. Please relax and prepare to enjoy yourself. While the rules of the game seem a bit complicated at first, I will answer any questions that you have before the game begins. And I will also answer questions in the break between the first and second games.

You can see that you have three sets of tiles. The numbers on the tiles put you in different relationships to each other. With the 3-3-3 tiles, you are all equal. Everyone starts on the same ground, and your position depends on your bargaining. With the 3-1-1, one person is more powerful than the other two combined. And in the 3-2-1 situation, there are many possible relationships, based on the combinations of the weights.

You see that you have 10 tiles. There will be 10 rounds. You will play one tile at each round. Whether you play a red, white, or black tile will depend on the player who leads off the round. You will have one chance out of three to lead off the round.

Each round is won by a person or a partnership, who then gets 100 points. The person or partnership has to have over half the total tile weights on that round to win. The people in the partnership can agree to split the points in any multiples of 5 (50-50, 15-85, 60-40, 30-70, etc.). If the person or partnership has half the total tile weights, then it's a tie, and the score is split 50-50. The partnership then divides 50 points any way that both members have

agreed to (35-15, 25-25, 40-10, etc.). The basis for forming a partnership is the agreement between the partners as to how they will share the points that they will win. Try to get as good a deal for yourself as you can.

Now read the instructions.

Each player then read the following written instructions, a copy of which was next to each rack:

INSTRUCTIONS

You are here to play two games of ten trials, or rounds, each. For each trial, 100 points will be distributed. To win the 100 points, a person or partnership must have over 1/2 the total weight of that trial, or round. The weights are the numbers on the tiles. You have been given ten tiles. Three are white, and are marked 3-1-1. Three are black. These are marked 3-2-1. Four are red and are all marked 3. The white 3-1-1 is a suit, the black 3-2-1 is a suit, and a red suit is 3-3-3.

Each player will toss the dice. The player who throws the lowest number will start the first trial. After that, each trial will be started by the next player clockwise around the table. The first player puts out whichever tile he wants to. The other two players must complete the suit. If the first player puts out a white 3, the other two players must put out a white 1 and a white 1. If the first player puts out a black 2, the second player can put out a black 3 or a black 1. The third player has no choice. He must complete the suit, putting out a 3 if the second player put out a 1, or putting out a 1 if the second player put out a 3. If the first player puts out a black 1, the second player can put out a black 3 or a black 2. The third player must put out the tile remaining to complete the 3-2-1 suit. If the first player puts out a red 3, the other two players must put out red 3's. Each time that a suit is played, you have one less tile of that color. You have, therefore, less choice of tiles to play on each succeeding round. And for the players who do not have the initiative on a particular round, there may be no choice at all, because they must follow the suit started by the player with initiative.

Once the tiles have been put out, players may form partnerships. The numbers on the partners' tiles are added together. If their total - together - is more than 1/2 the total weight of the three tiles together, they win the trial. They then divide 100 points. If the weights of the two partners together add up to half

of the total for the three players, there is a tie. In that case, the partnership gets 50 points, and the other player gets 50 points.

The members of the partnership can distribute the 100 points for the trial any way to which they both agree, as long as it's in multiples of 5. If the partnership results in a tie with the third player, the members of the partnership have to decide how to divide the 50 points that the partnership will get. Tell the scorekeeper how you will divide the points you win. A cumulative score will be kept and will be available to you after each play.

This game will be tape-recorded. Please address your fellow-players as A, B, and C.

The aim of the game is to have the highest score at the end of the ten trials. Please play to win. You will be paid according to your point score. You may not make any agreements for side-payments or compensation after the game is over.

Please ask all questions before the game starts. No questions will be answered after the game starts.

SUITS:

WHITE	3 1 1
BLACK	3 2 1
RED	3 3 3

Two games were played by each triad.

Any questions that the subjects asked were answered before the game began. Additional questions were answered before the start of the second game.

On the score sheet, a copy of which will be found in Appendix E, were recorded the:

1. date
2. triad number
3. game number (first or second)
4. identification of the players

5. starting and finishing times
6. the player with initiative on that round
7. the suit he played
8. the tiles played by each of the three players
9. the division of points for that round
10. the cumulative scores of the players.

After the first game, subjects were informed that they would be paid for the second game. The $5.00, $3.00, and $1.00 prizes were placed on the table before the second game began.

When Subjects Received No Verbal Instructions

The racks and tiles were set up in the same way as for the triads that received verbal instructions. Subjects were instructed to read the written instructions after seating themselves around the table. Any questions the subjects asked were answered before the game began, or in the break between the first and second games.

When subjects received payment for one game only, the payment procedure was identical to that followed under the verbal instructions condition. When subjects received payment for both games, the $5.00, $3.00 and $1.00 for the first game were given to the subjects after the first game, and the $5.00, $3.00 and $1.00 prizes for the second game were placed in the center of the table. After playing the game, all subjects filled out a final questionnaire (Appendix F).

RESULTS

Taking the total score on the ten trials of a game for each individual as the dependent variable, a three-factor, unweighted means analysis of variance design was used for the all-male triads. The variables were Machiavellianism (A), triad condition (with or without verbal instruction) (B), and order of play (first or second game) (C). For the twenty-four triads in which the sex of the participants was a variable, a four-factor, unweighted means analysis of variance was used to determine the effects of Machiavellianism (A), sex of participant (B), triad formation (sex of other participants) (C), order of play (D), and any and all interactions of these factors. The unweighted means analysis of variance was used because of the unequal number of high and low Machiavellians, which resulted from the fact that one high Machiavellian played with two low Machiavellians in each triad. There is no reason to assume that this proportion (1:2) is a reflection of the number of high and low Machiavellians in the population. Therefore, "there are no grounds for permitting such frequencies to influence the estimation of popular means"(Winer, 1962, p. 224). By using unweighted means analysis, each cell in the experiment is treated "as if it contained the same number of observations as all other cells (at least with regard to the computations of main effects and interaction effects)" (p. 222).

Was Machiavellianism related to success in the triad?

Yes it was - in all male triads - if subjects were given written instructions only.

No, it wasn't, if the written instructions were supplemented and clarified verbally.

Conditions under which Machiavellianism was a significant variable:

In all-male triads, there was a significant interaction between Machiavellianism and triad type. There were three triad types. In triad type one, members received both verbal and written instructions; financial rewards were for the second game only. Subjects were given only written instructions in triad type two, and payment was for the second game only. Payment was for the first and second game in type three; only written instructions were given.

The analysis of variance of scores by high and low Machiavellians in these triads is in Table 1. One sees that there is an A (Machiavellianism) x B (Triad type) interaction, significant at the .01 level. The cell means, presented in Table 2, indicate that giving the players clear instructions resulted in low Mach males averaging higher scores than high Mach males. But high Mach males were more successful when subjects had only a closely-printed sheet as a guide to their game behavior. Cell means of scores for the high Machiavellian males in triads without verbal instructions, and low Machiavellian males in triads with verbal instructions were significantly higher, by Newman-Keuls analysis (Winer, 1962), than cell means of scores for high Machs in triads with verbal instructions, and low Machs without verbal instructions ($p < .05$).

Conditions under which Machiavellianism was not a significant factor:

Machiavellianism was not a significant factor when subjects

TABLE 1

ANALYSIS OF VARIANCE OF SCORES BY HIGH AND LOW MACHIAVELLIANS IN ALL-MALE TRIADS WITH AND WITHOUT VERBAL INSTRUCTIONS

Source	df	MS	f
Between Subjects	35		
Machiavellianism (A)	1	2,417.36	
Triad Condition - With or Without Verbal Instruction [a] (B)	2	1,604.69	
A x B	2	14,626.21	6.17*
Subjects (A x B)	30	2,371.67	
Within Subjects	36		
Order - First or Second Game (C)	1	156.25	
A x C	1	1,284.03	
B x C	2	47.40	
A x B x C	2	373.09	
Subjects (A x B x C)	30	2,071.88	

[a] Triads without verbal instructions were divided into groups who received monetary reward for the second game only, and groups given monetary reward for both games. All triads with verbal instruction received money for the second game only.

* $p < .05$

TABLE 2

MEAN SCORES OF HIGH AND LOW MACHIAVELLIANS

IN ALL-MALE TRIADS

Subject	With Verbal Instructions; Payment for 2nd Game Only	Without Verbal Instructions; Payment for 2nd Game Only	Without Verbal Instructions; Payment for Both Games
High Mach			
First Game	301.25	371.25	370.00
Second Game	301.25	348.75	356.25
Totals	602.50 a	720.00 c	726.25 e
Low Mach			
First Game	349.37	314.37	315.00
Second Game	349.37	325.00	321.98
Totals	698.74 b	639.37 d	636.87 f

N=36

12 High Machs

24 Low Machs

afd bce

were put at their ease, and the problem clarified by a set of verbal instructions administered by the experimenter at the start of the experiment. Individual differences were surprisingly large when such instructions were given. The cell means and the range of scores in the same sex and mixed sex triads are presented in Table 3. The range of low Mach males is from 150 to 690; the range of low Mach females is from 120 to 440. The lowest low Mach male was S23, who refused to compete or to be part of any coalition; he only took those points to which he was entitled without bargaining (150). The highest low Mach male was S50 who pleaded, cajolled, threatened, and confused his co-players. His success included four coalitions in which he received the entire 100 points. The lowest low Mach female was S51, who played in the same triad with S50. She gave S50 half her points when she was all-powerful (held the 3 in the 3-1-1 round). She therefore wound up with less than the 150 points to which her tiles would automatically entitle her.

No mean square in the analysis of variance of these triads (Table 4) was large enough to be significant when measured against these individual differences. There is a trend toward significance of the sex x Machiavellianism interaction. In Table 3, one sees that high Mach women, on the average, scored higher than low Mach women in the same type of triad. But scores for high Mach men averaged higher than scores for low Mach men only on the second game of triads in which the man was a minority, that is, when he faced two women. Machiavellianism appears to be more of an asset when one is in a minority situation than when one is part of the majority

TABLE 3

MEAN SCORES OF HIGH AND LOW MACHIAVELLIAN MALES AND FEMALES

Subject	Same Sex Triads			Player's Sex is Majority			Other Players are of Opposite Sex		
	Range	1st Game	2nd Game	Range	1st Game	2nd Game	Range	1st Game	2nd Game
Male									
High Mach	240-400	301.25	301.25	180-385	315.00	283.75	280-435	337.50	380.00
Low Mach	265-435	349.37	349.37	150-690	327.92	342.92	150-445	350.00	276.25
Female									
High Mach	300-445	340.00	347.50	315-460	353.75	381.25	275-445	367.50	395.00
Low Mach	210-405	330.00	320.00	240-440	320.42	328.33	120-405	333.75	293.75

TABLE 4

ANALYSIS OF VARIANCE OF SCORES BY MALE AND FEMALE HIGH AND LOW MACHIAVELLIANS IN TRIADS OF DIFFERING SEXUAL COMPOSITION [a]

Source	df	MS	F
Between Subjects	71		
Machiavellianism - High or Low (A)	1	6,828.17	
Sex (B)	1	8,002.30	
Triadic Composition [a] (C)	2	1,624.61	
A x B	1	23,334.62	3.10
A x C	2	13,605.64	1.81
B x C	2	1,115.55	
A x B x C	2	2,258.66	
Subjects (A x B x C)	60	7,532.38	
Within Subjects	72		
Order - First or Second Game (D)	1	151.76	
A x D	1	6,306.07	
B x D	1	954.35	
C x D	2	634.08	
A x B x D	1	247.45	
A x C x D	2	7,641.20	2.67
B x C x D	2	462.32	
A x B x C x D	2	2,053.91	
Subjects (A x B x C x D)	60	2,859.36	

[a] Subjects played under one of three basic conditions:

1) Facing other players of the same sex, an all-male or all-female triad. N=24

2) Being in a triad in which the subject was part of the majority, e.g., a male subject in a triad composed of two men and a woman. N=32

3) Being in a triad in which the subject was the only one of his or her sex. N=16

group. Both male and female high Mach subjects improved greatly when playing against two members of the opposite sex; in the second game, they averaged over one hundred points higher than low Mach players who faced two members of the opposite sex.

The success of the low Mach subjects when verbal instructions were given cannot be said to be due to their game-playing experience. On the final questionnaire, proportionately fewer low Machs reported playing social games "often" than high Machs. The proportion of "never" and "sometimes" answers were sufficiently alike to rule out this factor as an explanation (Table 5).

Only four out of the thirty-sex women stated that they belonged to Women's Liberation; three were low Machs, one was a high Mach. Two women claimed that they were liberated already (and didn't need Women's Liberation) and four were sympathizers. Of the four who were members, three women, two low Machs and one high Mach, won the second game played by their triad.

Main Hypotheses

1. Did men average higher scores in the mixed-sex triads?

No. The average score of all women playing in mixed-sex triads, including the first and second games, was 346.72. The average score of all men playing in mixed-sex triads, was 326.67.

2. Was there a positive relationship between Mach score and success in the all-male triad?

Only when instructions were limited to a printed sheet of instructions (plus the answers to any direct questions asked by the subjects).

TABLE 5

REPORTED FREQUENCY OF PLAYING SOCIAL GAMES

Subject		Often - Once a Week or More		Sometimes		Never	
		Freq.	%	Freq.	%	Freq.	%
High Mach	100%	8	22.22	24	66.67	4	11.11
Low Mach	100%	7	9.72	56	77.78	9	12.50

N=108

$x^2 = 3.14$, n.s.

3. Did the Mach score predict success in the all-female triad?

All female triads were given verbal instructions (in addition to the written instructions). The Mach score was not predictive of success. But it would be interesting to run all-female groups under conditions of greater ambiguity, i.e., without verbal instructions. It seems likely that under these circumstances, the Mach V score would be predictive in female triads.

Since success was defined as placing first in the second game (for which there were financial rewards), an attitude expressed by one female subject may be relevant. "Winning to me is making second place," she said. "I don't want to be first; I want to be second." She succeeded in placing second in accumulated point score in the triad.

4. Is there a consistent relationship between Mach score and success in the mixed-sex triad?

Not a significant one, although the results are in that direction. The mean for A1C2C3 (high Mach, male and female, in mixed-sex triads) was 321.67. For males alone, the high Mach mean was 329.06; the low Mach mean was 324.27. For females alone, the high Mach mean was 374.37; the low Mach mean was 319.06.

Since the C (triad type) x A (Machiavellianism) interaction is not significant, however, one cannot conclude that these means are significantly different (see Table 4).

Subsidiary Hypotheses

Are women more accommodative than men?

No, it doesn't seem that they are. The men in this experiment

exhibited as much, or more, of the behavior judged to be "accommodative" than did the women.

a. Triple alliances:

In the first 24 triads, two men and two women suggested triple alliances, which resulted in three-way splits when all players held the same tile (3-3-3 rounds). One man suggested a three-way split, searched the rules to see if it were possible, but was unable to convince his triad partners to split in this way. In the all-male triads, three groups split points three ways, and three men tried to influence their group to do so, but were unsuccessful.

b. Failure to form any coalition at all:

This did not happen. While it seemed a distinct possibility in one male triad on a 3-2-1 round, the player holding the 2 and the player holding the 1 finally made a coalition, tieing the player who held the 3.

c. Division of the prize equally, in pair-alliances:

In 45 same-sex partnerships, men split the points equally 16 times. In 47 same-sex partnerships, women split equally 10 times. The chi square, 2.31 (df = 1), does not indicate a significant relationship between the frequency of equal and unequal point divisions for male and female same-sex pair-alliances (Table 6).

d. Tendency to ally in the "all-powerful" position (holding the 3 in the 3-1-1 round) when no coalition was necessary to win:

Women did ally in the "all-powerful" position 31 times, in comparison with the males' 22 times. The binomial probability of this distribution is .0513. Table 7 indicates that "all-powerful"

TABLE 6

DIVISION OF POINTS IN SAME-SEX

PARTNERSHIPS ON 3-3-3 ROUNDS

Subject		Equal		Unequal	
		Freq.	%	Freq.	%
Male	100.0%	16	35.55	29	64.45
Female	100.0%	10	21.28	37	78.72

$x^2 = 2.31$, not significant

males had more female beneficiaries (14) than male (11), but that "all-powerful" females had almost twice as many beneficiaries (25) as female beneficiaries (13). (There are more "beneficiaries" than "deals" because some deals benefitted more than one player.)

This finding gives support to Bond and Vinacke's (1961) conclusion that "in the minority, females tend to form alliances with a male when this is not necessary to win (p. 74)."

e. Did men bargain more than women? Was the difference greater in the first than in the second game?

Table 8 gives the analysis of variance of total time per game of all-male and all-female triads in triads given verbal instructions. Men bargained significantly longer than women; there was no difference between the first and second games. When some men were given verbal instructions, and others were not, the men given verbal instructions bargained significantly longer than the other men (Table 9). Again, the order of play was not an important variable.

f. Altruistic offers:

An "altruistic offer" is a suggestion by a subject that his fellow players form a coalition to his disadvantage. Seven altruistic offers were observed in the twenty-four triads in which all players received verbal instructions, three initiated by male subjects and four by female subjects. The binomial probability of this distribution is .2734, and no conclusions can be drawn from this evidence about greater accommodativeness of female subjects.

One form of accommodative behavior which was observed in men, and not in women, was the equalizing of financial reward for

TABLE 7

ALLIANCES MADE WHEN SUBJECT WAS ALL-POWERFUL

(DIVIDED POINTS WHEN HELD THE 3 IN THE 3-1-1 ROUND)

	Beneficiary			
	Male		Female	
Subject	High Mach	Low Mach	High Mach	Low Mach
Male [a]	3	8	7	7
Female [b]	10	15	2	11

Note.--The "beneficiaries" are greater than the number of "deals" because there were more than one "beneficiary" for some "deals".

[a] Of the 22 males, 9, or 40.91% were high Mach.

[b] Of the 31 females, 9, or 29.03% were high Mach.

TABLE 8

ANALYSIS OF VARIANCE OF TOTAL TIME PER GAME OF ALL-MALE AND ALL-FEMALE TRIADS (WITH VERBAL INSTRUCTIONS)

Source	df	MS	F
Sex: All-Male or All Female	1	1,521.00	9.66*
Groups within Sex Classification:			
First and Second Games	2	42.25	
Triad Variation (within Groups)	12	157.38	

CELL MEANS OF TOTAL TIME PER GAME OF ALL-MALE AND ALL-FEMALE TRIADS (WITH VERBAL INSTRUCTION)

Subjects	Time	
	First Game	Second Game
Male	43.50	46.00
Female	28.25	22.25

the experiment by the winner giving the loser $2.00; all three players then had $3.00 each. Two high Mach men did this in the experimental room itself, one in front of the experimenter, and the other when the experimenter went out to turn off the recording apparatus. (The exchange was recorded on the cassette which continued to record while the experimenter walked to the central office where the controls were located.) One winning low Mach male offered to equalize payments, but his offer was refused by the woman who placed third in the triad.

Four low Mach males, and one low Mach female, refused to accept payment for the game.

2. When all subjects had equal weights - in a 3-3-3 round -, was the most frequent coalition the coalition that produced the largest reduction in variance among the players' accumulated scores?

Yes, when A>B>C, the most frequent coalition was BC (Table 10). But it is interesting to note that in the two cases in which A>B=C, the BC coalition did not appear. And 21 of the 39 A>B>C coalitions included the player with the highest accumulated score. Since one would expect the lowest-ranking players to form a coalition, and to exclude the highest-ranking player, the experimenter asked subjects about this when the game was over. In a mixed-sex triad (with a low Mach male, a high Mach female and a low Mach female), the two women were asked why they made every deal with the man, who won easily. They answered, "Because he always offered the better deal." In other words, their decision to make a partnership with him was based on his offer on each round separately; they did not

TABLE 9

ANALYSIS OF VARIANCE OF TOTAL TIME PER GAME OF ALL-MALE TRIADS WITH AND WITHOUT VERBAL INSTRUCTIONS [a]

Source	df	MS	F
Triad Condition - With or Without Verbal Instructions [a]	2	1,497.80	7.92*
Groups within Triad Condition - First and Second Games	3	38.87	
Triad Variation (within Groups)	18	189.15	

CELL MEANS OF TOTAL TIME PER GAME OF ALL-MALE TRIADS WITH AND WITHOUT VERBAL INSTRUCTION

Triad Type	Time	
	First Game	Second Game
With verbal instruction	43.50	46.00
Without verbal instruction; payment for second game only	18.00	25.00
Without verbal instruction; payment for first and second game	21.50	19.75

[a] Triads without verbal instructions were divided into groups that received monetary reward for the second game only, and groups given monetary reward for both games. All triads with verbal instructions received money for the second game only.

* $p < .01$

TABLE 10

COALITIONS ON NEXT-TO-LAST 3-3-3 ROUND,

ANALYZED BY PRE-COALITION CONDITION

Pre-Coalition Condition	Coalition	Freq.	Binomial Prob.
A>B>C	AB	10	.0842
	BC	18	.0323
	AC	11	.1110
A>B=C	AB	2	
A=B>C	AB	2	
	AC	1	

N = 44

Note.--Triple coalitions are not included.

consult the accumulated scores (which were in full view) in making their decisions. Similarly, his high-score position was used as a bargaining weapon by one low Mach male. "Whatever you offer, I can afford to offer better," he told his triad-mates. And they did not oppose this argument.

2A. Did the uneven point divisions favor the player whose cumulative score was lower than his partners'?

Table 11 indicates that when there was a previous score, 76 of the uneven point divisions in the 3-3-3 rounds favored the player with the lowest score. The binomial probability of 76 out of 100 divisions favoring the lower-ranking player is .00000006. In four unequal divisions, the players had equal cumulative scores. Three of the favored players were high Mach females, and one was a low Mach female. In 20 divisions in which the player with a higher cumulative score was favored, there were nine high Machs: two male and seven female, and 11 low Machs: eight male and three female. Since high Mach females were only one-sixth of the subject population in this analysis, they are disproportionately represented in the unequal divisions in which the favored player had an equal or higher cumulative score than the other player.

There were significantly more unequal divisions of points between partners in the 3-3-3 rounds whose cumulative scores were unbalanced than between partners whose cumulative scores were balanced ($x^2 = 4.51$, $p<.05$) (see Table 12). In the unequal divisions based on unbalanced accumulated scores, including two divisions in which the players agreed to decide the division by tossing a coin,

TABLE 11

RANK OF PLAYER FAVORED IN UNEVEN DIVISIONS BASED ON BARGAINING

Uneven Divisions	Frequency [a]	Binomial Prob.
Favored player with lower cumulative score	76	.00000006
Favored player with same or higher cumulative score	24	

[a] Two divisions based on the toss of a coin, and five uneven divisions between players who had no previous score were excluded from this analysis.

SEX AND MACH LEVEL OF PLAYERS WHO RECEIVED MORE THAN HALF THE POINTS WITH EQUAL OR HIGHER CUMULATIVE SCORE

		Subjects			
		Male		Female	
Cumulative Score	N=	High	Low	High	Low
Equal	4	0	0	3	1
Higher	20 [b]	2	8	7	3
Totals	24	2	8	10	4

[b] Excludes one division based on the toss of a coin.

TABLE 12

POINT DIVISIONS OF PARTNERS WITH BALANCED AND UNBALANCED SCORES

Previous accumulated score	%	Divisions			
		Equal	%	Unequal	%
Balanced	100.00	13	59.09	9	40.91
Unbalanced	100.00	54	35.53	98 [a]	64.47

$x^2 = 4.51$, $p < .05$

[a] Includes two divisions based on toss of a coin.

ANALYSIS OF UNEQUAL DIVISIONS

OF POINTS WITH UNBALANCED

ACCUMULATED SCORES

Favored player had:	Freq.	Binomial Probability
Lower accumulated score	77	.000000004
Higher accumulated score	21	

N = 98

77 divisions favored the player with the lower accumulated score; 21 favored the player with the higher accumulated score. The binomial probability of this distribution is .000000004.

Table 13 and Table 14 summarize the distribution of points in the 3-2-1 round. This round was particularly interesting because of the different coalition possibilities: 1) a coalition between 3 and 1, splitting 100 points, 2) a coalition between 3 and 2, splitting 100 points and 3) a coalition between 2 and 1, tieing 3. 3 was then entitled to 50 points, and 2 and 1 split 50 points between them. As can be seen in Table 14, however, two splits between the players holding the 2 and 1 distributed 100 points, which means that in those rounds, the player with the 3 took no points as his share of the distribution.

Table 13 summarizes the distribution of points when the player holding the 3 made a coalition with either 1 or 2. One would expect the distributions to be different, since the "objective resources" of the player with the 1 tile were smaller than those of the player with the 2 tile. But examination of the table indicates that the 70-30 split was the most popular in both coalitions, and that 60-40 was the next most frequent distribution in both coalitions. A similar proportion (17.07% in the 3-2 coalitions and 14.63% in the 3-1 coalitions) split the points evenly, 50-50.

In the 2-1 coalitions (Table 14), 63.63% of the players split the points evenly (25-25). And where there was an uneven split (20-30), the player with the 1 received the greater number of points in 4 out of 10 distributions. Even the 45-5 splits were evenly

TABLE 13

DISTRIBUTION OF POINTS IN 3-1 AND 3-2 COALITIONS

(3-2-1 ROUNDS)

Coalition	Distribution	Freq.	%	
3-2	100-0	1	2.44	
	95-5	1	2.44	
	85-15	1	2.44	
	80-20	1	2.44	
	75-25	2	4.88	
	70-30	13	31.70	
	65-35	1	2.44	
	60-40	10	24.39	
	55-45	2	4.88	78.05
	50-50	7	17.07	
	40-60	2	4.88	21.95
	Total	41		100.00%
3-1	90-10	1	2.44	
	80-20	3	7.32	
	75-25	4	9.76	
	70-30	11	26.83	
	65-35	3	7.31	
	60-40	9	21.95	
	55-45	2	4.88	80.49
	50-50	6	14.63	
	40-60	1	2.44	
	0-100	1	2.44	19.51
	Total	41		100.00%

TABLE 14

DISTRIBUTION OF POINTS BETWEEN 2-1 PARTNERS

(ON 3-2-1 ROUNDS) [a]

Distribution	Freq.	%
25-25	35	63.63
20-30 (2 receiving 30)	6	10.90
20-30 (1 receiving 30)	4	7.27
50-50 (3 receiving no points)	1	1.82
45-5 (1 receiving 45)	2	3.64
45-5 (2 receiving 45)	2	3.64
40-10 (2 receiving 40)	1	1.82
40-10 (1 receiving 40)	2	3.64
35-15 (2 receiving 35)	1	1.82
80-20 (3 receiving no points)	1	1.82
Totals	55	100.00%

[a] This analysis excludes seven three-way splits in which the distributions were as follows:

3	2	1
40	40	20
45	35	20
60	30	10
40	30	30
45	20	35
60	10	30
45	20	35

distributed (2 to 2) between splits favoring the player with the 2 and splits favoring the player with the 1.

3. The effect of game order.

In Table 1, the analysis of variance in all-male triads, order of play (C), the within-subject factor, is not significant, nor are any of the possible interactions involving C significant. Table 4 presents the analysis of variance in triads of differing sexual composition that were all given verbal instruction. In this table, order (first or second game) is factor D. Again, it is not significant, nor are any of its possible interactions. In Table 8, the analysis of variance of total time per game of all-male and all-female triads with verbal instructions, the effect of "groups within sex classification - first and second games" was not significant. Similarly, Table 9, the analysis of variance of total time per game of all-male triads, indicates no effect of "groups within triad condition - first and second games." Thus there was no effect of game order.

Response to the Mach V

Means for both the white and non-white students at City College were higher than the means reported for college students by Christie and Geis (1970). Table 15 gives the means and standard deviations of students classified by sex and ethnic group for both studies. It can be seen that there was very little difference between ethnic groups at City College. The lowest-scoring group was the Hispanic-American women; the highest-scoring group was Hispanic-American men. On the whole, however, there was less difference between the scores of women

TABLE 15

MEANS AND STANDARD DEVIATIONS OF SCORES ON MACH V

Group	Number Invalid	Number Scored	Mean	Standard Deviation
	Present study: 567 City College respondents			
Males				
Oriental	0	21	104.95	6.97
Hispanic-American	1	34	106.18	10.06
Black	5	34	104.47	9.52
White	12	233	106.00	9.71
Total Male	20 [a]	328 [b]	105.79	9.52
Females				
Oriental	0	12	105.67	8.61
Hispanic-American	1	22	101.36	6.18
Black	5	55	106.04	8.69
White	13	142	104.28	8.63
Total Female	19	237 [c]	104.64	8.57
Total Male and Female	45 [d]	567 [e]	105.30	9.13
	Christie and Geis (1970): 1744 college respondents [f]			
Males				
Caucasian		764	99.27	11.17
Nonwhite		62	98.17	10.38
Females				
Caucasian		832	95.60	10.09
Nonwhite		86	94.70	11.60

[a] Includes two "no answer" on ethnic classification.
[b] Includes three "other" and three "no answer" on ethnic classification.
[c] Includes one "other" and five "no answer" on ethnic classification.
[d] Includes six "no answer" on sex classification.
[e] Includes two "no answer" on sex classification.
[f] These are those of a total of 1782 who could be classified as to sex and ethnicity.

and men than there was in the Christie sample. The frequency distributions of scores for male and female white students are presented in Figures 1 and 2, respectively.

Students in New York would be expected to score higher on the Mach scale than Christie's sample, which included college students in non-urban areas. Christie (1970) stated: "The data are consistent...in indicating a relationship with factors associated with an urban rather than rural background and a cosmopolitan rather than a traditionalist way of life." (p. 326)

Final Questionnaire

Question on Enjoyment

A higher proportion of high Machs (61.11%) enjoyed the game "very much" than did low Machs (52.78%). Table 16 presents these figures. More low Machs disliked the game very much. Women disliked the game more than did men, and a lower proportion reported liking the game very much (Table 17). This is consistent with the comments of women during the game. "I don't like this game." "This game makes me feel mean." Women also reported more conflicts of feelings during the game. "I'd like to be a pig and take all the points."

Question on Understanding of the Game

Exactly half the subjects in this experiment reported that they understood the game "about half-way through the first game." A higher proportion of high Machs (58.33%) than low Machs (45.83%) reported this (Table 18). Table 19 indicates that similar proportions of men and women reported understanding the game from various points in the game, e.g., from the beginning, half-way through the first game, etc.

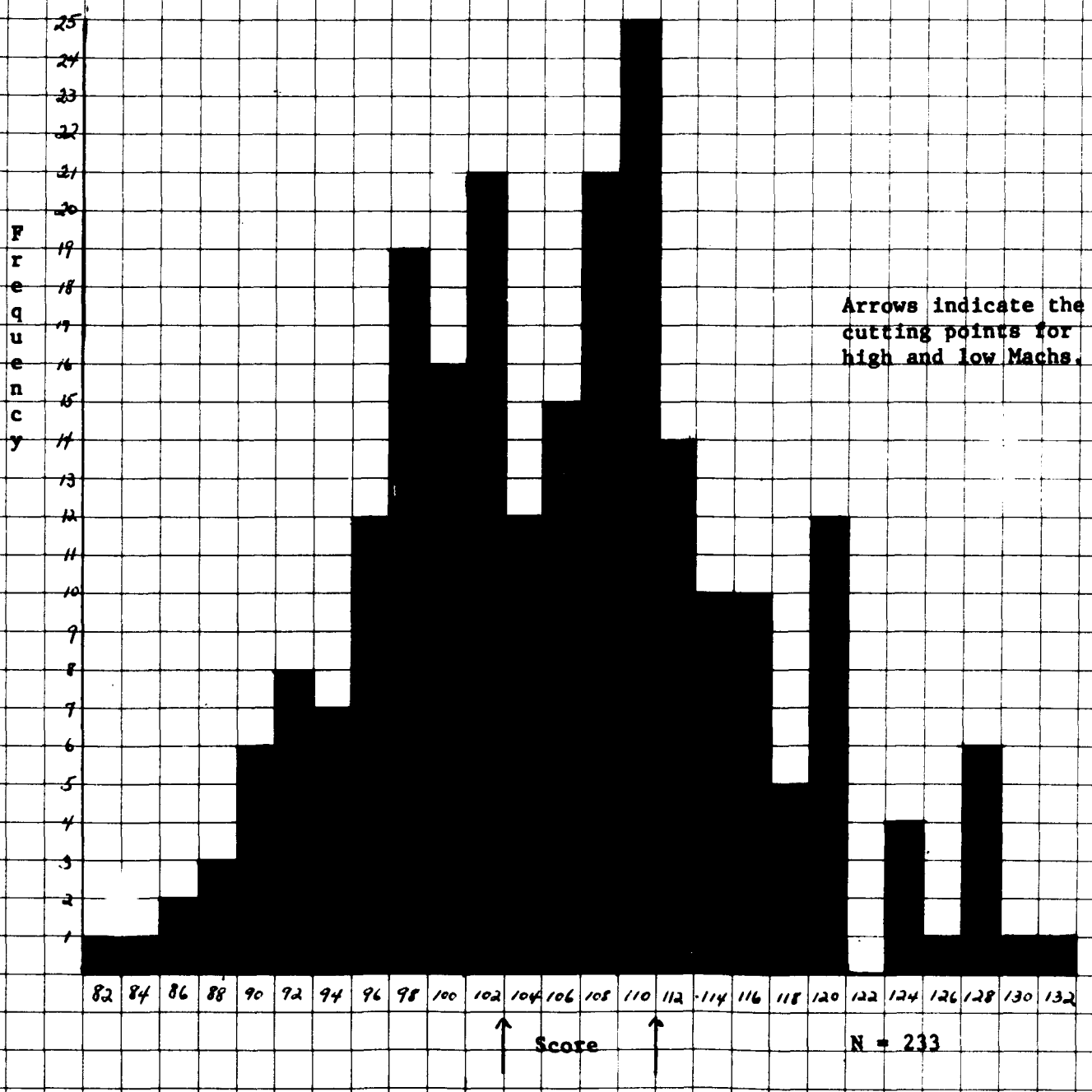

Figure 1 Distribution of Mach V scores of white male students.

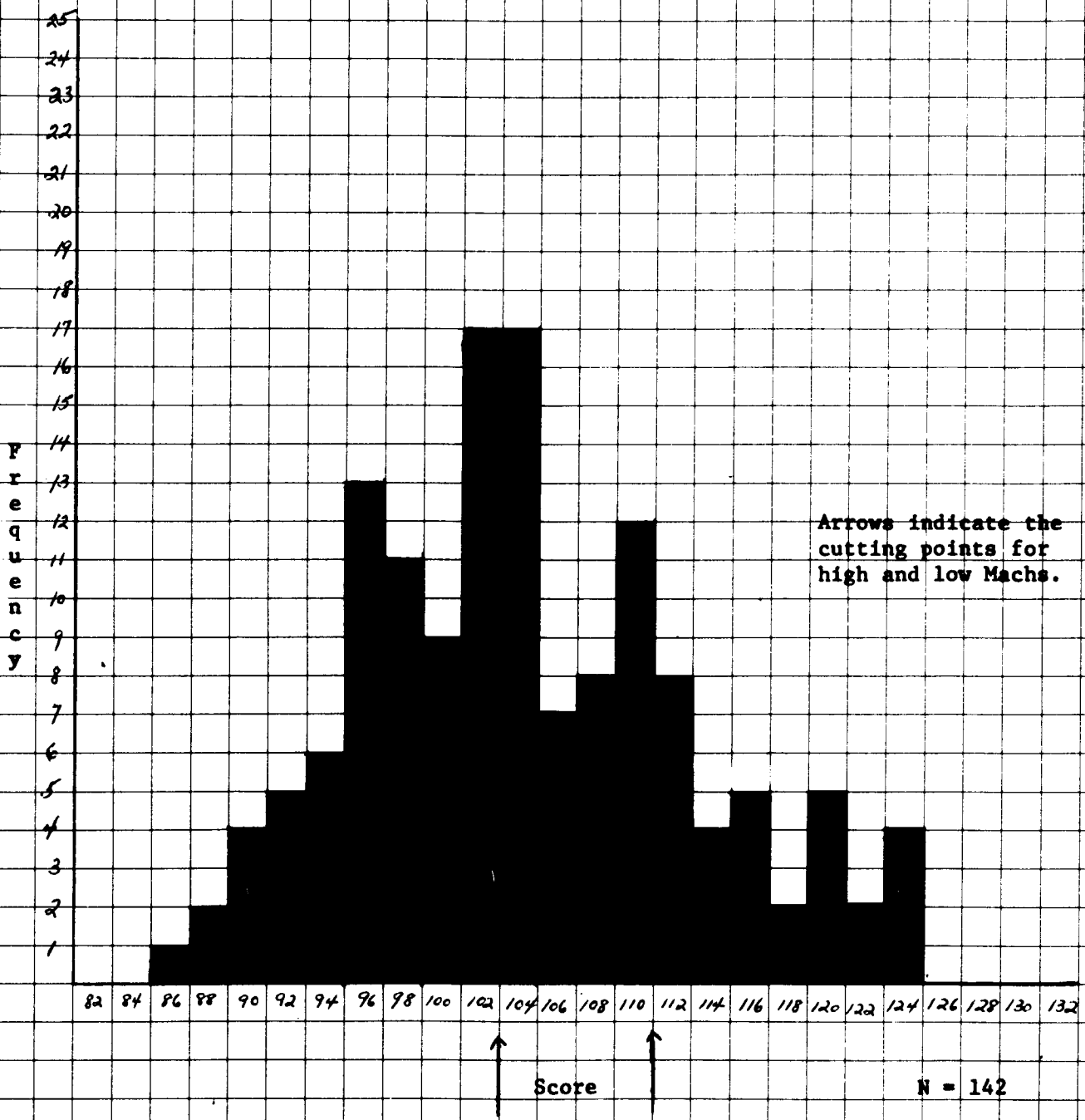

Figure 2 Distribution of Mach V scores of white female students.

TABLE 16

REPORTS BY HIGH AND LOW MACHS

OF ENJOYMENT OF THE GAME

Report by subject "I enjoyed these games"	Subjects			
	High Machs		Low Machs	
	Freq.	%	Freq.	%
Very much	22	61.11	38	52.78
A little	6	16.67	12	16.67
Neutral	4	11.11	10	13.89
Disliked them a little	2	5.55	4	5.55
Disliked them very much	2	5.56	7	9.72
Liked without money, disliked little with money			1	1.39
Total	36	100.00%	72	100.00%

TABLE 17

REPORTS BY MEN AND WOMEN OF ENJOYMENT

OF THE GAME

Report by subject "I enjoyed these games"	Subjects			
	Men		Women	
	Freq.	%	Freq.	%
Very much	43	66.15	17	39.53
A little	12	18.46	6	13.95
Neutral	7	10.77	7	16.28
Disliked them a little	1	1.54	5	11.63
Disliked them very much	2	3.08	7	16.28
Liked without money, disliked little with money			1	2.33
Total	65	100.00%	43	100.00%

TABLE 18

REPORT ON UNDERSTANDING OF GAME BY

HIGH AND LOW MACHS

Report by subject "I understood how to play this game"	Subjects			
	High Machs		Low Machs	
	Freq.	%	Freq.	%
From the very beginning	9	25.00	22	30.56
About half-way through the first game	21	58.33	33	45.83
Towards the end of the first game	5	13.89	13	18.05
During the second game	1	2.78	4	5.56
Not at all	0	-	0	-
Total	36	100.00%	72	100.00%

TABLE 19

REPORT ON UNDERSTANDING OF GAME BY

MEN AND WOMEN

Report by subject "I understood how to play this game"	Subjects			
	Male		Female	
	Freq.	%	Freq.	%
From the very beginning	20	30.77	11	25.58
About half-way through the first game	32	49.23	22	51.16
Towards the end of the first game	9	13.85	9	20.93
During the second game	4	6.15	1	2.33
Not at all	0	-	0	-
Total	65	100.00%	43	100.00%

There was a dramatic difference between the reports of understanding of the game by men who played with verbal instructions and men who played without verbal instructions (Table 20). 50.00% of the men who played with verbal instructions reported that they understood the game from the very beginning, whereas only 6.89% of the men who did not receive verbal instructions reported that they understood the game from the very beginning. The verbal instructions appeared to speed up women's understanding as well (Table 21). 30.56% of the women who received verbal instructions reported understanding the game from the very beginning; none of the women who played without verbal instructions reported understanding the game from the very beginning. Over half of the women who played with verbal instructions (55.55%) reported that they understood the game "about half-way through the first game"; this was not true for women who played without verbal instructions. Only 28.57% of the latter group reported understanding the game "about half-way through the first game." Over half of the women who played without verbal instructions (57.14%) reported that they understood the game later, "towards the end of the first game."

Taking men and women together (Table 22), 40.28% of the players who received verbal instructions reported that they understood the game "from the very beginning." Only 5.56% of those who played without verbal instructions reported this. One-third of the subjects who played without verbal instructions reported that they understood the game "towards the end of the first game." 87.50% of the players who played with verbal instructions reported that they

TABLE 20

REPORT ON UNDERSTANDING OF GAME BY MEN

PLAYING WITH AND WITHOUT VERBAL INSTRUCTIONS

Report by subject "I understood how to play this game"	Men Playing			
	With Verbal Instructions		Without Verbal Instructions	
	Freq.	%	Freq.	%
From the very beginning	18	50.00	2	6.89
About half-way through the first game	14	38.89	18	62.07
Towards the end of the first game	1	2.78	8	27.59
During the second game	3	8.33	1	3.45
Not at all	0	-	0	-
Total	36	100.00%	29	100.00%

TABLE 21

REPORT ON UNDERSTANDING OF GAME BY WOMEN

PLAYING WITH AND WITHOUT VERBAL INSTRUCTIONS

Report by subject "I understood how to play this game"	Women Playing			
	With Verbal Instructions		Without Verbal Instructions	
	Freq.	%	Freq.	%
From the very beginning	11	30.56	0	-
About half-way through the first game	20	55.55	2	28.57
Towards the end of the first game	5	13.89	4	57.14
During the second game	0	-	1	14.29
Not at all	0	-	0	-
Total	36	100.00%	7	100.00%

TABLE 22

REPORT ON UNDERSTANDING OF GAME BY ALL SUBJECTS

PLAYING WITH AND WITHOUT VERBAL INSTRUCTIONS

Report by subject "I understood how to play this game"	Subjects Playing: With Verbal Instructions Freq.	%	Without Verbal Instructions Freq.	%
From the very beginning	29	40.28	2	5.56
About half-way through the first game	34	47.22	20	55.55
Towards the end of the first game [a]	6	8.33	12	33.33
During the second game [a]	3	4.17	2	5.56
Not at all [a]	0	-	0	-
Total	72	100.00%	36	100.00%

$x^2 = 18.24$, df = 2, $p < .001$

[a] The bottom three categories were combined so that the expected frequencies would be more than five.

understood the game before this, either "from the very beginning" (40.28%) or "half-way through the first game" (47.22%). The chi square test of these frequencies shows that this is a significant effect ($x^2 = 18.24$, df = 2, $p < .001$), indicating clearly that subjects understood the game more readily when they received verbal instructions.

Question on Main Problem of Game

Examination of Table 23 indicates that there were some differences in opinion by high and low Machs about the main problem of the game. For example, a higher proportion of low Machs than high Machs considered the main problem of the game forming partnerships, whereas a higher proportion of high Machs than low Machs emphasized bargaining for points as the main problem of the game. But Table 24 indicates a far greater difference between men and women on this question. 6.15% of the men vs. 30.23% of the women reported that maintaining a friendly atmosphere was the main problem of the game!

Question on Social Games

The response to the question on frequency of playing social games has been discussed earlier in this chapter.

There was an amusing contradiction in the answers to the question on frequency of playing social games, and the following question on the specific game most often played. Four women and one man who checked "never" to complete, "I play social games," reported that they played Scrabble most often. No other game was repeatedly reported by subjects who "never" played social games. Six other

TABLE 23

OPINION ABOUT "MAIN PROBLEM OF GAME"

BY HIGH AND LOW MACHIAVELLIANS

Report by subject "The main problem in this game is"	Subjects			
	High Machs		Low Machs	
	Freq.	%	Freq.	%
Maintaining a friendly atmosphere	7	19.45	10	13.89
Forming partnerships	8	22.22	26	36.11
Bargaining for points	14	38.89	21	29.17
Figuring out when to play tiles	3	8.33	10	13.89
Keeping track of each player's score	1	2.78	2	2.78
Other	3	8.33	3	4.16
Totals	36	100.00%	72	100.00%

TABLE 24

OPINION ABOUT "MAIN PROBLEM OF GAME"

BY SEX OF SUBJECT

Report by subject "The main problem in this game is"	Subjects			
	Male		Female	
	Freq.	%	Freq.	%
Maintaining a friendly atmosphere	4	6.15	13	30.23
Forming partnerships	22	33.85	12	27.91
Bargaining for points	24	36.92	11	25.58
Figuring out when to play tiles	7	10.77	6	13.95
Keeping track of each player's score	2	3.08	1	2.33
Other	6	9.23	-	-
Totals	65	100.00%	43	100.00%

Scrabble players reported that they played social games "sometimes" and one played social games "often."

High Machs and low Machs did not differ in the kinds of games that they reported playing.

Hopes and Expectations

Hopes

In Table 25 can be seen how subjects answered the question, "What do you hope to be doing ten years from now?" There wasn't much difference in the proportion of high and low Machs who "hoped" in terms of a profession. A higher proportion of high Machs did not answer this question.

Expectations

The question on expectations that followed the question on hopes also did not reveal many differences between high and low Machs (Table 26). A higher percentage of low Machs (58.33%) gave answers to the "expectations" question that were consistent with their answer to the "hopes" question than did the high Machs (47.22%). Similar proportions of high and low Machs gave more pessimistic answers (8.33% for the high Machs, 9.72% for the low Machs). 5.56% of the high Machs gave a different profession as their "expectation" from the profession given as their "hope." More high Machs than low Machs answered the "expectation" question in terms of life-style, although this was not true for the "hope" question.

TABLE 25

SUBJECT'S HOPES FOR THE FUTURE

"What do you hope to be doing ten years from now?" Subjects answered in terms of:	Subjects			
	High Machs		Low Machs	
	Freq.	%	Freq.	%
A chosen profession	19	52.78	40	55.56
A desirable life-style	6	16.67	20	27.78
How they wish to feel	3	8.33	4	5.55
No answer	8	22.22	8	11.11
Totals	36	100.00%	72	100.00%

TABLE 26

SUBJECT'S EXPECTATIONS FOR THE FUTURE

"What do you expect to be doing ten years from now?" Nature of response:	Subject			
	High Machs		Low Machs	
	Freq.	%	Freq.	%
Answer consistent with hopes	17	47.22	42	58.33
Answer more pessimistic than hopes	3	8.33	7	9.72
Non-professional answer although "hope" was professional	0	-	1	1.39
Professional answer when "hope" was non-professional	2	5.56	3	4.17
Answer in terms of life-style	4	11.11	2	2.78
Answer with profession different from "hope"	2	5.56	0	-
No answer	8	22.22	17	23.61
Totals	36	100.00%	72	100.00%

DISCUSSION

Christie and Geis (1970) had high Mach, middle Mach, and low Mach subjects play mixed-motive games (games in which there were both cooperative and competitive elements) under conditions of ambiguity, and under conditions that were not ambiguous. In "The Con Game", each subject had a set of power cards which were his "weights" in the game. These cards could be used by the person himself, or combined with those of another player in order for each to make additional progress. A successful player formed coalitions that aided his progress, breaking them later in the game in order to reach the FINISH position first. Under the unambiguous situation in the Con Game, all power cards were out in a row, face up, on the table in front of the participants. In the ambiguous situation, the cards were held as in a conventional card game. Participants were not allowed to show the cards to each other, but were permitted to tell their opponents anything they wished.

The high Machs were more successful in winning points in the Con Game when bargaining conditions were ambiguous than when they were unambiguous ($p < .025$). The low Machs were less successful, although not significantly so. As Geis had expected, the high Mach's advantage over the lows did increase (it approximately doubled) from the unambiguous to the ambiguous games. This finding was consistent with Geis' expectation that high Machs would take greater advantage of their skills in interpersonal manipulation when power positions were made ambiguous. Previous studies had indicated that low Machs rely least on manipulation and most on the objective determinants of rewards, e.g., their power position in the group.

In the present study, all the tiles that were not involved in a particular trial were on an upright rack which prevented the other players from seeing them. Only one player - a man - realized that it was simple to look down the score sheet that the experimenter kept in full view, to see what tiles his fellow players had already played and by implication, which tiles they still had in their possession. For a particular round, however, players put out the tile that they were going to use, and that tile was in full sight of the other players. Players had only limited choice of which tile they played, since they had to follow the suit of the player who had the initiative. The initiative of choosing the suit to be played rotated; each player had the opportunity of determining the power relationship (3-3-3, 3-1-1, or 3-2-1) in every third round.

From the point of view of the bargaining situation, therefore, the power conditions of the players were unambiguous. Their potential for achievement later in the game, their not-yet-played tiles, were concealed; this gave the players the opportunity for a long-range strategy. In the short run, their options were limited. There was less opportunity for the kind of trickery that enabled a high Mach in Geis' experiment, playing under conditions of ambiguity, to convince his partner to play a high value card while he held back his own high value cards until the end of the game, at which time he might break the coalition. Players in this experiment were able to hold back high value tiles, but the tile that they contributed to a

particular round was exposed before the bargaining began.

The ambiguity in the present study was created by the type of instructions given. All subjects received a printed sheet which clearly gave all the rules. Subjects had unlimited time in which to read these instructions, and to ask any questions that they wanted to. The first twenty-four triads, the triads that played under varying conditions of opposition (same sex or mixed-sex triads) had, in addition to the written instructions, a verbal orientation. This verbal orientation consisted of the highlighting of points made in the printed instructions, and encouragement to the subject to relax and to enjoy the session. It also explicitly stated the basis for forming a coalition: "The basis for forming a partnership is the agreement between the partners as to how they will share the points that they will win,"...and encouraged bargaining: "Try to get as good a deal for yourself as you can."

When the verbal instructions were given, the games took longer. In the longer games, long-range strategies and bargaining tactics were less successful. It appeared to the experimenter that the low Machs had the time to "find each other" and to join forces against the high Mach. There are many possible reasons for the increased participation of low Machs when verbal instructions were given.

One possible reason for the increased participation may have been the low Mach subject's interpreting the verbal instructions ("Try to get as good a deal for yourself as you can.") as giving the approval of the experimenter to the active participation of the

subjects. This approval would be more important to the low Machs than the high Machs because high Machs are "extremely resistant to social influence" whereas low Machs are "susceptible to social influence" (Christie, 1970, p. 86). Encouraged by these instructions, low Machs bargained at greater length, and were therefore more effective. This is consistent with the longer total time of the game for male players when verbal instructions were given.

The verbal instructions also expressed concern by the experimenter, the "leader" in the laboratory situation, for the feelings of the subjects ("Please relax and prepare to enjoy yourself."). In Freud's analysis of group processes (1960), he contends that the leader is the key figure in every organization, and that the relations between the members of the group are a reflection of the relationship between the group members and the leader. The subjects who received verbal instructions were more friendly to each other, had greater "libidinal ties between individuals" (Mintz, 1958). Several triads set up a group culture in which the feelings of all the members were considered. Triad 13, for example, had two-person coalitions, but gave a "consolation prize" to the third player. When one player was all-powerful, he gave consolation prizes to both the other players. Another indication of the greater friendliness between players was the fact that players equalized the money prizes in at least two triads that received verbal instructions. There was no equalization of prize money in the triads that received written instructions only.

In this amiable atmosphere, there was increased communication and critical comment. This impeded the success of some high Machs who withdrew from deals when a better offer was made, and would bargain a partner down when it looked as if he or she were about to agree to a given point division.

One would expect that subjects would understand the instructions better when they were given both verbally and in writing. The subjects' reports indicated significantly greater understanding under conditions of verbal instructions (see Table 22). This helped the low Mach. Because the high Mach approaches situations logically and cognitively rather than emotionally, he is better able to pick out the key elements. He is better able to initiate and control the structure of a situation than the low Mach (Christie, 1970).

The verbal instructions provided one clue to behavior in the game that the written instructions did not provide ("The basis for forming a partnership is the agreement between the partners as to how they will share the points that they will win.") While the written instructions discussed the possible distributions of points, they did not state that the point distribution was the basis for the formation of the partnership. The written instructions by themselves, therefore, left ambiguities which the subject had to resolve for himself. To the extent that the low Mach was confused, he was a better "mark" (Goffman, 1952) for the high Mach.

"High Machs may not like ambiguity any more (or less) than lows do, but they may cope with it more effectively" (Christie and Geis, 1970, p. 125). Social support for bargaining demands, the recognition of the objective basis for the demands (the power cards),

was present in the unambiguous, not in the ambiguous situation. Geis speculates that the critical element in the greater effectiveness of the high Mach under conditions of ambiguity may be their lesser need for social support for their expectations. In the ambiguous condition, players had only internal resources to back up their demands and counteroffers in the Con Game.

This reliance on internal resources may be a clue to the effectiveness of the high Mach. He was able to steer a successful course when orientation was minimal. This may be one difference between the high Mach individual and the authoritarian personality. The high F individual is more comfortable in a structured situation. His search for structure takes the form of establishing norms in the autokinetic situation more rapidly than non-authoritarian individuals (Block and Block, 1951), accepting stereotypes of ethnic groups within society, rejecting introspection,etc.

A 1964 study of college students revealed a negative correlation between Authoritarianism, as measured by Christie et al's 1958 version of the F scale, and Machiavellianism. Christie (1970) expressed surprise at this negative correlation, but pointed out that: "College students partly as a result of an increase in test sophistication and partly, perhaps, in response to an increasingly sophisticated society, are less prone to agree with F-scale items over time. On the other hand, the evidence suggests that Mach scores are increasing over time...If...it was the more socially sophisticated students who were most alert to these changes, they would tend to rise on Mach and drop on F, thus enhancing the negative correlation" (p. 39).

A difference in ability to tolerate ambiguity may be a factor in this negative correlation. Prejudiced (high F) subjects were judged to be more rigid and also more intolerant of ambiguity than the unprejudiced (Brown, 1965). Frenkel-Brunswik (1959) related intolerance of ambiguity to intolerance of emotional ambivalence, i.e., the inability to be comfortable with contradictory emotions (e.g., love and hate) directed toward the same person (e.g., one's mother). Intolerance of ambiguity, in this sense, is considered to be a lack of acceptance of one's own feelings, based on unresolved psychological conflicts.

In this game, high Mach men gave the impression of playing to win. They did not appear to experience conflict about this. If they did not win under the condition of receiving verbal instructions, it was because of the more active opposition of the other members of the triad. High Mach women were not as outspoken in their desire to win, but Table 3 indicates that the mean scores of high Mach women were consistently higher than the mean scores of low Mach women. This was particularly true when the woman faced two players of the opposite sex.

These results might have been more dramatic statistically had the experimenter been able to select subjects on the basis of both the Mach IV and Mach V, as was done for Christie and Geis' experiments at Columbia University. This consideration is difficult to assess. In an experiment by Geis, Weinheimer and Berger, it was found that "the correlation between scores on the two forms was relatively high (.87)" (Christie and Geis, 1970, p. 193). In addition,

Geis and Levy found that "in general, high scorers on the Mach scale make similar scores on the two forms, but low scorers characteristically score higher on Mach V than Mach IV" (p. 217).

The effect on subject selection of using one scale only is tempered by the fact that no fine distinctions between subjects were made. The mean score on the Mach V for men was 105.79, for women 104.64 and overall, the mean was 105.30. The standard deviation for men was 9.52; for women, the standard deviation was 8.57. The overall standard deviation in scores was 9.13 (Table 15). Since no low Mach, male or female, was higher than 102 in score, and no high Mach was lower than 112, there was more than one standard deviation between the scores of the participants in every triad.

This view is reinforced by the fact that male subjects selected as high Machs did win when there were no verbal instructions. It would be instructive to have women selected as high and low Machs play under differing conditions of instruction. This was not possible with the present sample since there was not an excess of high Mach white women who were willing to participate.

How to Win

What was necessary to win in this game? Best of all was the devising of an over-all strategy. The most reliable strategy observed was to hold back the high tiles (the 3 in the 3-1-1 suit, and the 3 in the 3-2-1 suit) until the end of the game. During the game, this withholding of tiles was not mentioned to the other players so that it was not a factor in the bargaining. The player holding back high

tiles often appeared gracious and "giving" in the course of the game. There was a surprising passivity among the players. Even when the other players sensed that one player was holding back a white "3", they tended not to play the white "1" that would force the player holding the "3" to play the "3". In only one group - an all-male group - did the players force each other to play the white "3"'s early in the second game. In other groups, players frequently discussed the fact that one player seemed to be holding back his high tiles, but did not do anything about it. Future experimentation in this area might use this option (that of using a low-power tile to neutralize a fellow player's high-power tile when the high-power tile is least effective, early in the game) as an operational definition of activity vs. passivity, and relate it to other personality traits or to situational determinants.

An option open to the player who did not feel that he understood all the possibilities in the game was to lead with a neutral tile, e.g., the 3 in the 3-3-3 suit. All players were equal in that suit, and figuring out the relative "weights" was no problem. Only one man explicitly stated his understanding of this option. Subjects had an amazing amount of difficulty with the very simple mathematical relationships of the tiles. Only one group, however, all women (Triad 5), turned the instructions over, and used the blank side of the paper to calculate their "deals".

A valuable tactic was to stall when excluded by an alliance or when the deal offered was unsatisfactory. In the triad that

played the slowest of all triads receiving written instructions only (total time: 48 minutes), players had scores close together at the end of the second game. In this triad, payment was for the second game only. It was proposed by one player that they make the following agreement: one of them would agree to accept second place and receive $3.00, while the other two tossed a coin to determine first and third places, $5.00 and $1.00 respectively. The high Mach in the triad was one of the two players who agreed to toss a coin for first and third places. Every toss went against him. When the first toss went against him, he suggested that they make it two wins out of three. As he continued to lose, he invented one reason after another for tossing again. The low Mach with whom he was competing was late for a job. He continued to toss, however, until the high Mach finally won one toss. The game was then decided, in the high Mach's favor.

Those who were active in the wheeling and dealing generally succeeded. One high Mach woman, S27, made differential offers to the two players with her, basing her offers on their accumulated scores. She won. Another tactic that was helpful was making agreements that a given "split" on one round would be followed by an agreed-upon "split" on a subsequent round. One low Mach male, S45 - who won - had a series of such agreements, with both the other players. In only one case, Triad 21, did a man and woman make a permanent "deal" that resulted in her finishing in first place, and his finishing in second place. The two players involved refused all offers from the third

player on the last three rounds, all 3-3-3 rounds.

Moral Conflicts in the Experiment

Many of the subjects in this experiment interpreted the choices to be made as moral choices. One of the most charming of the subjects, S64, a high Mach male who had worked before attending college, interpreted the verbal instructions as encouraging the chicanery and double-dealing he had observed in the business world. Cooperating with the experimenter, he proceeded to do everything in his power to win, and did so. However, he was one of the winners who gave the loser $2.00, thus equalizing earnings, when the experimenter was out of the room. On a basic issue, the issue of compensation for the experiment, he acted independently of the experimenter.

Other subjects were unable to reconcile what they felt were contradictory pulls: the demand characteristics (Orne, 1962) of the experiment, which appeared to require competitive behavior, and their desire to "be fair" to their fellow triad-members. They cast around for "outs" that would reduce the competitiveness. "Outs" suggested were:

1) Three-way divisions, as equal as possible.

2) Forming partnerships between two players, but giving the third player a "consolation prize."

3) Deciding the final round(s) with a toss of a coin.

4) Deciding each round by a toss of a coin (ignoring the weights on the tiles,and not bargaining). This was the only "out" that was vetoed by the experimenter.

Some subjects had no qualms about winning. They tried hard, and were glad to get the $5.00 prize when they won. They often justified their desire for the money: "The rent for my apartment is due." "I lost money this morning." "I was really broke." One triad, in fact, tried to determine who should win the second game (for which they were getting paid) on the basis of which subject needed the money the most. Other triads discussed their members' needs, but didn't make decisions on the basis of those needs. In one case, subsequent discussion between the experimenter and the subject revealed that the stated "need" had been invented for the occasion.

The over-all qualitative "feel" of the experiment, however, was that competition was no longer respectable, at least among the students at City College. Consciousness III (Reich, 1970) is above grubbing for the dollar. One bearded young man, a low Mach who "disliked the game very much", stated that there was no prize the experimenter could offer that would induce him to compete. Under these circumstances, the effect of instructions which encouraged the active participation of all subjects may have been to bring out their anti-competitive feeling, thereby hampering the tactics of those subjects supposedly more skilled at interpersonal manipulation, the high Machiavellians.

The anti-competitive viewpoint seemed to be stronger among men than among women. As the results indicate, women were, on the whole, not more accommodative than men. This represents a difference

from the conclusions reached by Vinacke in his experiments. This difference may reflect a mood among women in general (Women's Liberation may have contributed to this), or may reflect the different population that was sampled: white urban women in the present experiment vs. an Oriental-dominated population at the University of Hawaii. However, it would be interesting to follow up Vinacke's experiments at the University of Hawaii, to see whether the women would react differently today than they did in the late 1950's.

It is also important to point out that Vinacke found differences between the sexes in his "Game-by-Game" condition (each "game" was equivalent to a "round" in the present experiment). In the "Cumulative Score" condition, when there was a record sheet which showed the total number of points earned as the session progressed, there was a marked reduction of the differences. Few significant differences between the sexes were found, although many comparisons were made. The present experiment is comparable to Vinacke's "Cumulative Score" condition since a score sheet with the accumulated scores was in full view of the players. Vinacke himself points out (1959) that women were far more interested in the "Cumulative Score" condition than they were in the "Game-by-Game" condition.

Another factor in the lack of interest or of competitive spirit of Vinacke's women subjects may have been the absence of prizes. Nowhere in his report does he mention any incentives for winning. An attitude of utilizing the game as a social occasion may have been

an appropriate reaction.

Power-Dependence Relations

The distribution of points within coalitions was more varied than in Emerson's experiment (1964), although results were in the same direction. For example, in the 52 coalitions based on unbalanced cumulative scores, Emerson had 26 even divisions of rewards, and 26 uneven divisions of rewards. In the 26 uneven divisions, the larger proportion went to the stronger member in all 26 cases. (In Emerson's experiment, the stronger member was defined as the member with the lower cumulative score.) The stronger member did not receive the lion's share of points 100% of the time in the present experiment. Table 12 indicates that in 98 unequal divisions of points based on unbalanced scores, the player with the higher cumulative score received more points 21 times; one of these divisions was based on the toss of a coin.

In proportion to their number in the experiment (12), high Mach women were most successful in overcoming the liability of having a higher accumulated score than their coalition partner. High Mach women were one-sixth of the total subject population playing under the condition of receiving verbal instruction. If one excludes the division based on the toss of a coin, the expected frequency of high Mach women receiving more points than their partner despite a higher accumulated score is 3.33 (one-sixth of 20). The obtained frequency was 7, more than twice the expected frequency.

There was one unexpected power relationship that developed.

The third player was sometimes too far behind to place first or second; the first and second players were close together. In that circumstance, whichever player formed a coalition with the third player would come in first; the other player would be second. The third player then had fate-control over the other two players (Thibaut and Kelley, 1959). In two different triads, the third place player realized his position and verballized his delight: "I am really enjoying this." "I could sit here all day." "It's great to have this feeling of power."

Emerson's definition of "power" is based on the accumulated scores of the players. Vinacke, Gamson, and Caplow predict coalitions on the basis of the weights on a particular round. The 3-2-1 round corresponds to Caplow's (1959) triad type seven, A>B>C, A=B+C, for which the predicted coalitions are AB or AC. In this experiment, there were exactly (41) as many 3-2 coalitions formed as 3-1 coalitions, indicating that players realized that the player with the 3 could win through an alliance with the player who had the 1 as well as he could win with the player who had the 2. And the similarity in the distribution of points in the two coalitions (3-1 and 3-2) indicates that when the coalition formed, the "resource" of the player with the lower tile was not a crucial factor in the bargaining. But the resource of the 3 player was important. Table 13 indicates that in the 3-2 coalitions, 78.05% of the distributions favored the 3 player, and that in the 3-1 coalitions, 80.49% of the distributions favored the 3 player. The two figures are amazingly close.

Some players expressed a feeling that the 3 was a scarce commodity and that they should be rewarded for its loss. Why did the other players accept this argument and favor the 3 in the point distributions? One reason may have been the "parity norm", the "belief by the participants that a person ought to get from an agreement an amount proportional to what he brings into it" (Gamson, 1964, p. 88). The reason that subjects expressed most often, however, was that if the 1 or 2 did not form a coalition with 3, 3 could take the entire 100 points if no coalition were formed, and would have 50 points automatically if 2 and 1 formed a coalition, creating a tie. The alternatives of 2 and 1 were limited to the 50 points they would share in a coalition with each other. The emphasis of the players in evaluating power was on the strength of 3's alternatives. This is congruent with the observations of Kelley and Arrowood (1960) who created real power differences by giving the three triad members differential ability to obtain rewards from the game in a 4-2-0 relationship. They concluded that their subjects viewed power as residing in a higher alternative. This is also consistent with Emerson's definition of dependence. "The dependence of actor A upon actor B is (1) directly proportional to A's motivational investment in goals mediated by B, and (2) inversely proportional to the availability of these goals outside the A-B relation."

If one thinks of A as the low Mach player, who is distracted by potentially ego-involving elements in the bargaining context (Christie and Geis, 1970, p. 209), it appears that B, the high Mach who remains detached from such concerns and concentrates on winning,

is in a stronger position. His strategy-oriented approach leads to the exploration of boundaries, with the possible result of uncovering alternate means of reaching the goal. His ability to use this strategy-oriented approach is greatest when ambiguity provides "a protective screen of obscurity which a skillful manipulator might use to conceal the intended effect of his strategies" (p. 111). Clarification of the situation helps to remove that protective screen.

In this experiment, men appeared to be more active than women, both in the devising of an over-all strategy to win, and in resistance to the competitive nature of the game. Even this activity, however, was within the limits set by conditions outside of their control, i.e., the atmosphere created by the presence or absence of verbal instructions. When verbal instructions were given, situational determinants overrode the influence of personality traits, supporting the views of Hunt (1965) on the importance of situational determinants.

Everyday events appear to present a world so full of ambiguities to many individuals that the person with a somewhat cynical, analytical approach to human affairs may be more competent in achieving his goals than the person whose warm-heartedness and empathy cause him to evaluate his own needs less highly, when they collide with the needs of others. History indicates that political figures combine their resources in the struggle to alter a power structure (Machiavelli, 1940). Within the coalition, skill is required to fight for one's own goals while satisfying the demands

of one's partners. This skill involves an alternation of domination and submission appropriate to the interpersonal situation. The person with Machiavellian views is best able to achieve his own goals when unclear conditions increase the submissiveness of his fellow participants.

SUMMARY

Using a game approach, Christie and Geis (1970) found a .71 correlation between scores on a scale of Machiavellianism and success in interpersonal bargaining for undergraduate males. Vinacke's (1959, 1961, 1966) studies of coalition formation have indicated that women tend to follow an accommodative strategy that is more productive than the exploitative strategy that characterizes male players. The use of a power potential (being behind the other players in accumulated score) to negotiate for a favorable division of the reward has been demonstrated by Emerson (1964), who emphasizes the power-dependence relationship.

The present experiment was designed to contrast the effectiveness of high Machiavellian men and women under comparable competitive conditions. In 32 triads, one high Mach faced two low Machs. The low Machs were of the same sex as the high Mach, of the opposite sex, or were one of each sex. Triads played two games, of ten trials each.

The game itself followed the tradition of Caplow's (1956) power conditions, as used by Vinacke and Arkoff (1957) and simplified by Emerson (1964). Players negotiated for coalitions to divide 100 points per trial on the basis of three types of relationships: 3-3-3 in which all were equal, 3-1-1 in which 3 is all-powerful, and 3-2-1. Players rotated the initiative in selecting the power condition in a particular trial. Accumulated scores were kept, with subjects paid according to their final scores.

In 24 triads that received verbal instructions that encouraged participation and clarified the procedure, neither sex, Machiavellianism nor triad formation significantly affected the results, although there was a tendency for high Mach women and low Mach men to be successful. Women were generally not more accommodative than men, although they did form coalitions when all-powerful more than men did. Triads composed of all women played significantly faster than triads composed of all men; this indicated that they bargained less than the all-male triads did. When the verbal instructions were eliminated for eight all-male triads, results were significantly different for male triads that did and did not receive verbal instructions. In triads that did not receive verbal instructions, high Mach males won. The game was significantly faster than in triads that received verbal instructions.

The verbal instructions appeared to be a crucial element in changing the relationship of high Machs and low Machs in the triad so that the high Mach males did not show the superiority in interpersonal manipulation that previous experimentation had indicated. Some reasons for this are suggested: the more active participation of low Machs, the good feeling between members of these triads, and the elimination of ambiguities that disturbed the low Mach more than the high Mach.

APPENDIX

A	-	Statements Used on the Mach IV
B	-	Mach V
C	-	Index Card
D	-	Scoring Key for Mach V
E	-	Questionnaire
F	-	Score Sheet

STATEMENTS USED ON THE MACH IV

1. The best way to handle people is to tell them what they want to hear.
2. When you ask someone to do something for you, it is best to give the real reasons for wanting it rather than giving reasons which might carry more weight.
3. Anyone who completely trusts anyone else is asking for trouble.
4. It is hard to get ahead without cutting corners here and there.
5. Honesty is the best policy in all cases.
6. It is safest to assume that all people have a vicious streak and it will come out when they are given a chance.
7. Never tell anyone the real reason you did something unless it is useful to do so.
8. One should take action only when sure it is morally right.
9. It is wise to flatter important people.
10. All in all, it is better to be humble and honest than important and dishonest.
11. Barnum was very wrong when he said there's a sucker born every minute.
12. People suffering from incurable diseases should have the choice of being put painlessly to death.
13. It is possible to be good in all respects.
14. Most people are basically good and kind.
15. There is no excuse for lying to someone else.
16. Most men forget more easily the death of their father than the loss of their property.

17. Most people who get ahead in the world lead clean, moral lives.

18. Generally speaking, men won't work hard unless they're forced to do so.

19. The biggest difference most criminals and other people is that criminals are stupid enough to get caught.

20. Most men are brave.

CLOSEST	FURTHEST	
1.	1.	1. A. It takes more imagination to be a successful criminal than a successful business man. B. The phrase "the road to hell is paved with good intentions" contains a lot of truth. C. Most men forget more easily the death of their father than the loss of their property.
2.	2.	2. A. Men are more concerned with the car they drive than with the clothes their wives wear. B. It is very important that imagination and creativity in children be cultivated. C. People suffering from incurable diseases should have the choice of being put painlessly to death.
3.	3.	3. A. Never tell anyone the real reason you did something unless it is useful to do so. B. The well-being of the individual is the goal that should be worked for before anything else. C. Since most people don't know what they want, it is only reasonable for ambitious people to talk them into doing things.
4.	4.	4. A. People are getting so lazy and self-indulgent that it is bad for our country. B. The best way to handle people is to tell them what they want to hear. C. It would be a good thing if people were kinder to others less fortunate than themselves.
5.	5.	5. A. Most people are basically good and kind. B. The best criteria for a wife or husband is compatibility - other characteristics are nice but not essential. C. Only after a man has gotten what he wants from life should he concern himself with the injustice in the world.
6.	6.	6. A. Most people who get ahead in the world lead clean, moral lives. B. Any man worth his salt shouldn't be blamed for putting his career above his family. C. People would be better off if they were concerned less with how to do things and more with what to do.
A	A	Do not write in this space.
B	B	
C	C	

CLOSEST	FURTHEST	
7.	7.	7. A. A good teacher is one who points out unanswered questions rather than gives explicit answers. B. When you ask someone to do something, it is best to give the real reasons for wanting it rather than giving reasons which might carry more weight. C. A person's job is the best single guide as to the sort of person he is.
8.	8.	8. A. The construction of such monumental works as the Egyptian pyramids was worth the enslavement of the workers who built them. B. Once a way of handling problems has been worked out it is best to stick to it. C. One should take action only when sure it is morally right.
9.	9.	9. A. The world would be a much better place to live in if people would let the future take care of itself and concern themselves only with enjoying the present. B. It is wise to flatter important people. C. Once a decision has been made, it is best to keep changing it as new circumstances arise.
10.	10.	10.A. It is a good policy to act as if you are doing the things you do because you have no other choice. B. The biggest difference between most criminals and other people is that criminals are stupid enough to get caught. C. Even the most hardened and vicious criminal has a spark of decency somewhere within him.
11.	11.	11.A. All in all, it is better to be humble and honest than to be important and dishonest. B. A man who is able and willing to work hard has a good chance of succeeding in whatever he wants to do. C. If a thing does not help us in our daily lives, it isn't very important.
12.	12.	12.A. A person shouldn't be punished for breaking a law that he thinks is unreasonable. B. Too many criminals are not punished for their crimes. C. There is no excuse for lying to someone else.
A	A	Do not write in this space
B	B	
C	C	

CLOSEST	FURTHEST	
13.	13.	13.A. Generally speaking, men won't work hard unless they are forced to do so. B. Every person is entitled to a second chance, even after he commits a serious mistake. C. People who can't make up their minds are not worth bothering about.
14.	14.	14.A. A man's first responsibility is to his wife, not his mother. B. Most men are brave. C. It's best to pick friends that are intellectually stimulating rather than ones it is comfortable to be around.
15.	15.	15.A. There are very few people in the world worth concerning oneself about. B. It is hard to get ahead without cutting corners here and there. C. A capable person motivated for his own gain is more useful to society than a well-meaning but ineffective one.
16.	16.	16.A. It is best to give others the impression that you can change your mind easily. B. It is a good working policy to keep on good terms with everyone. C. Honesty is the best policy in all cases.
17.	17.	17.A. It is possible to be good in all respects. B. To help oneself is good; to help others even better. C. War and threats of war are unchangeable facts of human life.
18.	18.	18.A. Barnum was probably right when he said there's at least one sucker born every minute. B. Life is pretty dull unless one deliberately stirs up some excitement. C. Most people would be better off if they control their emotions.
19.	19.	19.A. Sensitivity to the feelings of others is worth more than poise in social situations. B. The ideal society is one where everybody knows his place and accepts it. C. It is safest to assume that all people have a vicious streak and it will come out when they are given a chance.
A	A	Do not write in this space.
B	B	
C	C	

CLOSEST	FURTHEST	
20.	20.	20.A. People who talk about abstract problems usually don't know what they are talking about. B. Anyone who completely trusts anyone else is asking for trouble. C. It is essential for the functioning of a democracy that everyone vote.
		PLEASE SUPPLY THE FOLLOWING INFORMATION: Age _____ Sex: Male _____ Female _____ Check one: _____Oriental _____Hispanic American _____Black _____White _____Other _____
A	A	Do not write in this space.
B	B	
C	C	
A	A	
B	B	
C	C	

NAME _____

ADDRESS _____

TELEPHONE NUMBER _____

1041

	Monday	Tuesday	Wednesday	Thursday	Friday
9 - 10					
10 - 11					
11 - 12					
12 - 1					
1 - 2					
2 - 3					
3 - 4					
4 - 5					

CLASS _____

Scoring Key for Mach V (1968)
Points per Item by Response Pattern[a]

Item No.	1	3	5	7
1	A+	B+ A+	B+ C+	C+
	C-	C- B-	A- B-	A-
2	A+	B+ A+	B+ C+	C+
	C-	C- B-	A- B-	A-
3	C+	B+ C+	B+ A+	A+
	A-	A- B-	C- B-	C-
4	A+	C+ A+	C+ B+	B+
	B-	B- C-	A- C-	A-
5	A+	C+ A+	C+ B+	B+
	B-	B- C-	A- C-	A-
6	A+	B+ A+	B+ C+	C+
	C-	C- B-	A- B-	A-
7	B+	C+ B+	C+ A+	A+
	A-	A- C-	B- C-	B-
8	C+	A+ C+	A+ B+	B+
	B-	B- A-	C- A-	C-
9	C+	A+ C+	A+ B+	B+
	B-	B- A-	C- A-	C-
10	A+	C+ A+	C+ B+	B+
	B-	B- C-	A- C-	A-
11	A+	C+ A+	C+ B+	B+
	B-	B- C-	A- C-	A-
12	C+	A+ C+	A+ B+	B+
	B-	B- A-	C- A-	C-
13	C+	B+ C+	B+ A+	A+
	A-	A- B-	C- B-	C-
14	B+	A+ B+	A+ C+	C+
	C-	C- A-	B- A-	B-
15	C+	A+ C+	A+ B+	B+
	B-	B- A-	C- A-	C-
16	C+	A+ C+	A+ B+	B+
	B-	B- A-	C- A-	C-
17	A+	B+ A+	B+ C+	C+
	C-	C- B-	A- B-	A-
18	C+	B+ C+	B+ A+	A+
	A-	A- B-	C- B-	C-
19	B+	A+ B+	A+ C+	C+
	C-	C- A-	B- A-	B-
20	A+	C+ A+	C+ B+	B+
	B-	B- C-	A- C-	A-

[a] Sum for all 20 items and add constant of 20. Range: 40-160.

Summing over the 20 items gives a possible range of from 20 to 140, the same as the scoring system on Mach IV. Similarly, adding a constant of 20 gives a scale with a minimum score of 40 and a maximum of 160 with the theoretical neutral point at 100 as is true of the converted scoring system of Mach IV. This makes it possible to add the two total scores of a respondent and have both contribute approximately equally to the grand total.

QUESTIONNAIRE

Check one answer.

1. **I enjoyed these games:**

   _____ **Very much**

   _____ **A little**

   _____ **Neutral**

   _____ **Disliked them a little**

   _____ **Disliked them very much.**

2. **I understood how to play this game:**

   _____ **From the very beginning**

   _____ **About half-way through the first game**

   _____ **Towards the end of the first game**

   _____ **During the second game**

   _____ **Not at all.**

3. **The main problem in this game is:**

   _____ **Maintaining a friendly atmosphere**

   _____ **Forming partnerships**

   _____ **Bargaining for points**

   _____ **Figuring out when to play the different tiles**

   _____ **Keeping track of each player's score.**

   _____ **Other** _____

   _____

4. **I play social games:**

   _____ **Often - once a week or more**

   _____ **Sometimes**

   _____ **Never**

5. When I do play games, the game I play most often is:

_____ Poker

_____ Pinochle

_____ Other card game _____

_____ Chess

_____ Checkers

_____ Scrabble

_____ Monopoly

_____ Other board game _____

6. What do you hope to be doing ten years from now?_____

_____

7. What do you expect to be doing ten years from now?_____

_____ _____

8. (Women only)

I am _____

am not _____

a member of Women's Liberation.

I have _____

have not _____

attended a consciousness-raising group.

It would be very much appreciated if you did not discuss this game with anyone until the experiment is completed, at the end of the term.

Thank you for your cooperation.

TRIAD NUMBER _____ GAME NUMBER _____

DATE: _____ Players' Identification Numbers:

STARTING TIME: _____ A: _____ B: _____

FINISHING TIME: _____ C: _____

ROUND	INITIATIVE WITH:	SUIT	TILES PLAYED A	TILES PLAYED B	TILES PLAYED C	TRIAL SCORE A	TRIAL SCORE B	TRIAL SCORE C	CUMULATIVE SCORE A	CUMULATIVE SCORE B	CUMULATIVE SCORE C
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											

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