Status Characteristics and Participation in Small Groups:
Effects on Leadership

by

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ABSTRACT

The purpose of this study was to look at the effects of status characteristics and participation on leadership in small groups. Based on previous research and expectation states theory, two new hypothesis were tested using path analysis. The first hypothesis was that those high on status characteristics would be high on leadership ratings through the intervening variable of participation. The second hypothesis was that those high on participation rates would be high on leadership ratings. The study employed secondary data from research conducted by Dr. Paul Baker in 1979. In the study, four, five and six-person groups were used to form mock juries. In a laboratory setting, these mock juries discussed a mandatory retirement case for up to one hour. Subjects were observed from behind a two-way mirror, and the number of seconds each person spoke was recorded. In addition, background information on four status characteristics (sex, age, size, and SES) was gathered before the study began. A post-deliberation questionnaire on leadership ratings was administered to all of the subjects after their discussion had ended.

The results indicated that a significantly large proportion of the variance in leadership ratings was explained by all the other variables in the model (R-squared = .35, $p < .0001$). The indirect effects of the four status characteristics on leadership ratings, acting through the intervening variable of participation, were .09 for SEX, .21 for AGEZ, .05 for SESZ, and .02 for SIZEZ, while participation in the first minute had a direct effect of .49 on leadership, controlling for the status characteristics. The final path

model, for the most part, supported both expectation states theory and the two new hypotheses quite well.

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Chapter One

Literature and Theory Review

Introduction

Generally, the problem to be discussed in this thesis is the effect participation has on leadership in small groups. The paper will begin with a literature and theory review, followed by a discussion of methodology and data analysis, and conclude with a discussion of the results. Also, there will be a path model constructed to represent how participation effects leadership. The thesis being undertaken does have its limitations, but these are due to the desire for parsimony. By using only those variables which have been reliable in past studies, it is hoped that the path model will be both accurate and unambiguous. Therefore, the research will only look at two measures of participation (participation in the first minute and total participation), and one measure of leadership (nomination by others).

The study itself is both a replication and extension of previous research. The replication is of two hypotheses put forth by Baker (1988a; 1988b). The first hypothesis is based on the assumption that status characteristics will directly affect leadership ratings. This first hypothesis predicts that those high in status will be chosen as leaders more often. The second hypothesis is based on the assumption that status characteristics will directly affect the amount an individual participates in a group, and predicts that those high in status will be high in participation rates.

The extension of Baker's work is looking at both the direct effect participation rates has on leadership ratings, and also the indirect effect of status characteristics on leadership ratings through participation rates (see Figure 1). There are two "new" hypotheses that emerge from the extension. The first hypothesis predicts that those high in participation rates will also be more often chosen as leaders. The second hypothesis predicts that those high in status will be chosen more often as leaders through high intervening participation rates. The predictor variables chosen for this research were those that were found to be most important in both Baker's studies (see Figure 2). In this study, it is important to point out that the unit-of-analysis is the individual, and not the group. For a more detailed discussion of these specific variables consult Chapter Two.

Before continuing any further a point must be made about the linguistic use of "participation *rates*." The point to be made is that although the term "participation rates" is conventionally used in the literature, a more appropriate term is "participation *proportions*." This is because we are not discussing participation per time unit, but rather amounts of verbal participation standardized relative to the total group participation. However, having clarified this point, I intend to use the term "participation rates" and adhere to its widespread conventional usage in the small group literature.

Chapter One is the literature and theory review, and will be organized into five sections. The first section will discuss classic studies on leadership in small groups. Section II will center on the measurement of leadership in informal groups. In section III, Burke's analysis of turn-taking will be looked

at. Next, section IV will discuss expectation states theory. And finally, the discussion in section V will pose an initial model for participation's effect on leadership.

I. Classic Studies on Leadership in Small Groups

Many of the studies in small group research involving leadership have been conducted with military personnel. From these studies it appears as though leadership functions may be divided formally or informally among several group members. One common division in the literature is (1) task leader----primarily concerned with task performance; and (2) social-emotional leader---- primarily concerned with affective relationships and member satisfaction. The social-emotional leader, or "best-liked" individual, is an important part of the group. Often, the social-emotional leader is the second-ranked individual on leadership ratings, and therefore has a large amount of influence. The social-emotional leader provides others in the group with opportunities to participate because of his/her influential position, and by helping maintain member satisfaction with the task leader's actions, he/she legitimates the task leader's position.

In a study conducted in 1974, Burke investigated how small discussion groups "choose" between scapegoating and social-emotional leadership. The concept of role differentiation (Bales and Slater, 1955; Burke, 1969) refers to the different roles of task leader and social-emotional leader, and is an important concept in the discussion of leadership. Also, scapegoating, which takes place when the low-status member of a group becomes the object of

tension release for the others, is an important concept for this discussion. The two responses of scapegoating and social-emotional leadership, for Burke, are complementary alternatives: one occurs at the expense of the other. Whether scapegoating or social-emotional leadership occurs depends on whether or not the task leader tends to be supportive of the low-status member of a group. The low-status member will become a scapegoat if the task leader's interaction towards him/her is nonsupportive or hostile, and this role becomes legitimized. Burke (1967; 1968) also postulated that in conditions of low task legitimation it is much more likely for the task and social-emotional leadership roles to be separate, however, one person is likely to hold both roles in conditions of high task legitimation. The results indicated that in the unsupportive condition there is a separation of roles. However, in the majority of the supportive conditions, both roles were held by the same person.

For the most part, the studies concerned with leadership tend to focus on the task-oriented group and its task leader. Hemphill (1949) reported that there are five functions common to leaders of all groups: (1) advancing the purpose of the group; (2) administrate; (3) inspire greater activity or set the pace for the group; (4) make the individual member feel secure of his/her place in the group; and (5) act without regard to one's own self-interest. Trapp found that the leader's perceptions of others tend to be more accurate than those of the average member. Also, the leader is usually superior to nonleaders and isolates in ability to judge group opinion on issues which are relevant to the group's activity (Trapp, 1955). Hemphill (1961) found the following conditions generally facilitate attempts to lead: (1) large rather

than small rewards promised for task success; (2) reasonable expectations of successful task completion; (3) acceptance by others of the individual's leadership attempts; (4) tasks requiring a high rate of group decision; (5) possession of superior task-relevant information; and (6) previously acquired status as group leader.

One of the most consistent findings in the small group literature is the strong relation between an individual's amount of participation in the group discussion and his/her leadership or influence in that group. There is a convincing body of research which indicates that the member who participates most actively in group discussion, where no one has been appointed or elected to lead, is most likely to emerge as leader. Also, Hollander (1978) concluded that to emerge as leader one needs to participate early. In most discussion groups in which members have approximately equal amounts of information, the leadership rank is established by the relative amount of talking of each member. The person who talks the most generally wins most of the decisions and becomes the leader (Strodtbeck, 1951; Bales, 1953; Strodtbeck, 1954a; Hare, 1976). Bales (1950) reported that one of the most reliable findings in small group research is that the people seen as leaders talk a great deal. Furthermore, Bales (1953) reported a clear tendency for the member who does the most talking to be credited by his/her fellow-members with having contributed most to the solution of the problem. Bass (1949; 1954a; 1955b; c) and Sherif (1935) found that in leaderless group discussion the group member who talked most tended to emerge as leader, and time spent talking in discussions correlated between .65 and .96 with rated success as leader. Hollander (1978) noted that effective

leadership depends upon receiving, processing, retaining, and transmitting information, much of it through talking with others. It has also been found that participatory leadership results in more group agreement, greater and more permanent influence of the leader on the members, and more interest and enjoyment in the task for both leaders and followers (Preston and Heintz, 1949; Hare, 1953). In addition, Bates (1952), Bass (1954a), Borgatta and Bales (1956), Berkowitz (1956b), and Riecken (1958) reported results which indicated that the group member who emerges as leader tends to exhibit a high rate of activity in initiation of structure and in directing the activity of others. The above studies are generally interpreted as supporting the idea that leadership and influence in a group are a function of the individual's participation rate, i.e., that influence is a result of high participation. Analyses generally find a high correlation between the sheer amount of talk by leaderless group discussion participants and the scores they earn for successful leadership. According to Stogdill, leaders, in general, tend to be more talkative, more industrious, and more likely to participate in group activities.

In an experimental study by Bavelas, Hastorf, Gross, and Kite (1956), the sociometric structure of a leaderless group was altered by raising the verbal output of a target person, which, in turn, resulted in an increase in his/her selections as leader by the other group members. In this study, the experimentally-induced positive relation between talking and leader choices confirms much of the previous observational research reported. Furthermore, it could be concluded that duration of speech did, in fact, have a great effect on leadership choice, certainly a greater effect than quality of

speech or correctness of decisions in a Leaderless Group Problem-Solving situation. Bales (1953) found that the order of the basic initiating rank on total amounts of participation is fairly highly correlated with the order produced by their own ratings of each other as to productivity, i.e., who has the best ideas, and who does the most to guide the discussion effectively. A similar finding was reported by Norfleet (1948), who found a correlation of about .95. High ranking individuals tend to have more proactive participation and to address more acts to the group as a whole than lower ranking individuals, while low ranking individuals have more reactions, both positive and negative, and address more of their acts to specific individuals. Task leaders spend a high percentage of their time giving suggestions, giving opinions, and asking for opinions (Slater, 1955; Mann, 1954).

A related issue with regard to participation rates and subsequent leadership or influence is the latency of verbal response (LVR). Willard and Strodtbeck (1972) feel that the determination of "getting the floor" first depends on the shortness of the LVR. Furthermore, their model asserts that LVR simultaneously affects both the amount of participation in the group discussion and the attribution of leadership qualities to the speaker. The person with short latency is perceived by his/her fellow group members as both competent and confident.

As group size increases a larger proportion of the activity tends to be addressed to the top individual, and larger groups tend to demand more skill from their leader. Further, the communication pattern tends to centralize around a leader through whom most of the communication flows. Persons

who wish to assume leadership in a group will tend to occupy the more central and visible positions, and those who occupy these positions, regardless of personal characteristics, will tend to become leaders (Strodtbeck and Hook, 1961; Hare and Bales, 1963; Lott and Sommer, 1967). Central persons tend to have influence over other group members, and the influence of a member in the informal structure will be enhanced if he/she is placed in a formal position of leadership. Gerard (1957) summarized this by stating that an individual will try to exert more influence if he/she is placed in the leader role. In general, leadership is more apt to emerge when there are large differences in the degree of centrality in the group (Goldberg, 1955), and especially if group members are told to direct all communications to the person in the center (Abrahamson and Smith, 1970).

In the long run participation tends to become differentiated, and a small fraction of the group's members will account for most of the participation (Strodtbeck, James, and Hawkins, 1958; Hawkins, 1962; Zimet and Schneider, 1969). Strodtbeck et al. found that in 82% of their twelve-man juries the top three participators accounted for half or more of the total acts. Also the foreman was responsible for approximately one-quarter of the total acts. In one-third of the deliberations, the person who opened the discussion and sought either to nominate another, or to focus the group's attention on their responsibility in selecting a foreman, was him/herself selected foreman. The research conducted was based on the premise that high participation indicates greater ability to influence others. Results from this study confirmed this premise; more active jurors shifted their predeliberation

position less often than less active jurors in the process of reaching a unanimous group verdict.

In conclusion, the individual that tends to become leader is generally the one: (1) who initiates the most action; (2) who receives the most interaction (Miller and Butler, 1969); (3) who has the best ideas; determined by rankings of other members; and (4) who does the most to guide the discussion; determined by rankings of other members. However, the group member who tends to be best-liked by other members is not the leader, but rather the second-ranked individual.

II. The Measurement of Leadership in Informal Groups

In this section, the different research methods used for measuring leadership will be discussed. In this area of measurement there are both subjective and objective measures that can be used to determine leadership in a small group. Over the years, the objective measures have become more exacting with the advancement of technology. Furthermore, the subjective measures have also improved through the refinement of questions that are posed to group members. The types of measurement that are generally used for leadership in small groups are: influence, which generally is the ability to change others' opinions; perceived leadership, which generally is the group members' opinions on who led the group; and participation, which generally is the amount an individual talks or takes part in the discussion. In order to get a better understanding of what is involved in each of these measurements, they will be discussed separately. In addition, Burke's idea of

turn-taking, which is part of the conversational act, will be discussed in section III, and expectation states theory's action opportunities, which are chances to participate, will be discussed in section IV.

First, the discussion will focus on influence as a measure of leadership. Influence is a measure that can be used both objectively and subjectively. Subjectively, one can measure influence by asking the group members if they were influenced by any of the other group members and how much. However, this measure can be open to biases, and the objective measure of influence tends to be more reliable. The biases of the subjective measure can emerge in the responses of the subjects. The subjects may respond the way they think the researcher wants them to, they may not actually remember and just guess, or they may pick someone they know or get along with as leader. The objective measure of influence can be accomplished two ways: (1) through a pretest; and (2) as part of the experiment. The pretest method is carried out quite often in mock jury studies; it is a way of finding out an individual's opinion or position on something before any group discussion takes place. In the mock jury condition, there are predeliberations carried out to find each group member's position on the case to be discussed. Those members who change their position from the predeliberations to the actual deliberations are said to have been influenced, while those who do not change their positions are said to not accept influence from others (Strodtbeck, 1958). Measuring influence has also been conducted as part of the experiment itself. The classic scenario has four people seated around a table, however they cannot see one another. Each member gives their answer to a question through the pushing of a button on a panel in front of them.

After responding correctly to the original question, the three confederates all respond with the same incorrect response. If the naive subject changes his/her response to the incorrect one of the other three, then he/she has been influenced; if he/she stays with the correct response then influence has not occurred. Generally, an individual who does not accept the influence of others and whose opinion influences others, tends to become the leader of the group.

The second type of measurement to be discussed is the perceived leadership approach. Here the researcher relies on the perceptions of group members to determine who was the leader. There are two approaches used in this kind of measurement: (1) self-nomination; and (2) nomination by others. Both of these measures are administered at the end of the group discussion. Measuring leadership this way is intended to uncover the aspects of group discussion which cannot be seen by researchers, yet are important in determining not only leadership but also group structure. Self-nomination is a straight-forward measure; those who thought they led the group choose themselves as leaders. This measure can tend to be a measure of egoism and is not always an accurate reflection of the leadership structure of a group. The reason it is not accurate is because the others in the group may not agree that the self-nominated person is actually the leader. Conversely, the nomination by others measure provides a more reliable account of leadership. Each group member nominates a group member as leader of the group discussion. This nomination is often based on questions asked by the researcher, such as: Who guided the discussion?; Who had the best ideas?; Who contributed most to the solution of the problem?; and Who

was the most helpful or group leader? Generally, the nomination by others measure is an accurate reflection of the leadership structure which emerges in a small group. Also, as reliability theory points out, more measures, when averaged or combined, are by definition more reliable.

The final aspect of measurement to be discussed is that of participation. This measure is usually one of an objective nature, which centers on participation rates of group members. Generally, participation tends to be viewed as one's "talk," measured by amount of time speaking or turns taken. Those who are high participators talk most often and the longest in a discussion. Specifically, the measurement of participation tends to be based on: (1) first to participate; (2) participation in the first minute; and (3) total participation. First to participate refers to the first individual in the group to participate in the discussion. It is assumed that the individual who opens the discussion will tend to become the leader. However, Baker (1988a) has shown that the first to participate does not tend to become the leader of the group. Participation in the first minute refers to each individual's amount of participation in the first minute of discussion. It is assumed that those who participate most in the first minute will become leader; it has been shown that those with high participation rates in the first minute do in fact become leaders (Baker, 1988a; Hollander, 1978). Total participation refers to each member's total amount of participation in the discussion. This measure has been consistently correlated with being selected as group leader (Bales, 1950; Borgatta, 1954; Hare, 1976; Strodtbeck, 1954a; Bass, 1981). It appears as though the participation in the first minute of discussion tends to be a good indicator of total participation, that is, the

rates of individual's participation are consistent across the entire discussion. Generally, high perticipators tend to become the leaders of the group.

Participation also needs to be discussed as a cause of leadership versus as a measure of leadership. Leadership is caused by the participation rates of group members. If there were equal participation by all group members then no one individual would lead the discussion. However, if there were inequalities in participation rates then a leadership structure would emerge; the group member who participated most would become the leader. Participation is used as a measure of leadership because those who are rated as leaders tend to participate the most. That is, high participation rates are a reliable measure of leadership; an important aspect of leadership is the ability to participate, and participate often. Therefore, to get a better understanding of leadership one needs to measure participation.

In conclusion, it can be seen that each of these aspects provides a good measure of leadership, and using two or more of them in one study can only serve to enhance the understanding of a group's emerging leadership structure.

III. Burke's Analysis of Turn-Taking

Turn-taking is an aspect of participation that needs to be considered as it provides a nice micro-analysis of how conversations actually develop or unfold. Through conversational turns an individual can increase his/her participation rates, and possibly increase his/her leadership ratings. Also, expectation states theory incorporates this, as turn-taking is structured or

explained by status characteristics. That is, those with higher status will be given more turns or opportunities to perform. However, I am not interested in this level of analysis for my own research, but take it as a given that participation rates will reflect or summarize this turn-taking process.

Burke (1974) argues that the conversational turn is an appropriate unit of analysis for researchers studying the distribution of participation, because it focuses on the socially regulated turn-taking process. Burke reports that previous participation distribution studies used three units of analysis: the act, the participation, and the minute. First, the act (Bales, 1950) is a simple "subject-predicate combination" or its nonverbal equivalent, such as a laugh or nod. Secondly, the participation (Stephan and Mishler, 1952) is the word, sentence, or longer statement of an individual, or an individual's uninterrupted contribution. Finally, the minute of participation (Chapple and Arensberg, 1940) is simply recording the amount of time a person talks. Two basic factors seem to account for variations in the amount to which people participate: the number of times they get the floor to participate, and the amount they talk once they do get the floor.

Duncan (1972) argues that turn-yielding signals and attempt-suppressing signals are used by the current speaker to control his/her right to continue speaking. Others have the right to speak if the current speaker gives a turn-yielding signal and no turn-suppressing signals. These conditions imply that in normal conversation, the current speaker controls access to the floor, and the basic social unit is the "turn." Burke (1974) speculates that at least three processes are at work in determining participation distribution. these three processes are (1) getting the floor, (2)

keeping the floor, and (3) back-channel communication which is legitimate speaking that does not constitute "having a turn." With regards to number of turns each participant has in a discussion, Burke found that they are not distributed equally. Also, as Duncan (1972) pointed out, when a person has a turn in a conversation, often the previous speaker turned the floor over to him/her. Therefore, an important determinant of participation distribution is the distribution of such designations. Furthermore, the distributions of designations are slightly more unequally distributed than the distribution of turns; the important point is that both distributions are unequal, and the subsequent participation distribution is unequal as well. Burke (1974) discovered that the best predictor of who was designated as the next speaker was others' amount of activity in the discussion: the average correlation across all participants was .70; the second best predictor was leadership ranking. Further, Burke argues that activity is likely a common cause of both designation and leadership, as the average correlation between amount of activity and perception of leadership was .81. It seems that the more a person talks, the more he/she is designated, and then he/she talks even more; the process becomes circular. Furthermore, Burke points out that as group size increases, the proportion of turns obtained by "stealing" or taking undesignated turns increases.

In conclusion, Burke argues that in order to understand participation distribution, there must be three levels of analysis used: the conversational turn, the level of the act, and the level of the interchange.

IV. Expectation States Theory

Expectation states theory is a family of interrelated theories that can be called a theoretical research program. Expectation states theory was originally concerned with explaining the emergence of hierarchies in informal task-oriented groups. Hurwitz, Zander, and Hymovitch (1960) found that informal status structures were as powerful as formally instituted ones in determining power and prestige orders. Typically, in expectation states experiments the tasks are both valued and collective. That is, if a task has a right or good answer defined as "success" and a wrong or bad answer defined as "failure," it is a valued task; a task in which it is necessary or legitimate to use whatever opinion one believes is right is a collective task. A group oriented to a collective, valued task is a task-focused or task-oriented group.

Expectations states are self-other relational structures that organize behavior among interactants. These states arise out of the conditions and behavior that activate the process, and they are created as interactants confront specific situational demands. From the self-other aspect of the theory it can be deduced that expectation states favors a Cooley (1902) orientation to self-image. That is, the theory asserts, along with Cooley, that it is from the opinions and evaluations of others that the individual develops a particular set of ideas concerning him/herself. Miyamoto and Dornbusch (1956) found strong support for the assertion that self-evaluation is highly correlated with actual ratings by others in the immediate group.

Bales (1950) found that marked inequalities emerged in task-oriented groups whose members were initially status equals. Furthermore, these inequalities emerged in relatively short periods of time, and became highly stable. Also, various aspect of the group's hierarchical structure tended to be directly related to each other: rank positions on such components as rates of talking, rates of receiving, and rank positions on evaluations of best ideas and guidance. In addition, under the condition of the "idealized interaction process," rank positions of received action opportunities and received rewards would each tend to coincide with rank positions on overall performance evaluations, and the latter would coincide with the ranked positions of initiated problem-solving behavior.

The power and prestige order of the group is reflected in the inequalities which develop in activity initiated and received and in ratings members make of who had the best ideas, who guided the group discussion, and who demonstrated leadership (Bales et al., 1951; Bales and Slater, 1955). Berger and Conner (1966) argue that members of task-groups come to develop, through time, stable conceptions of the performance capacities of each other. These conceptions, or performance expectations, are beliefs about the relative task abilities of individuals that the members of these groups come to hold. Typically these expectations are differentiated; that is, they represent conceptions of inequalities in the task abilities of group members. If differentiated, these performance expectations legitimate and determine inequalities in opportunities to perform, in performance rates, in evaluations of members' contributions, and in the relative influence of different members on the decisions of the group.

Status orders in task-oriented groups are assumed to be deference orders rather than dominance orders; high status is not exacted by the high status member, but rather is given by the low status members. The basic notion involved is that an actor will tend to defer to actors for whom he/she has high expectations. The action opportunity is passed from actor to actor down the expectation structure of the group until it is accepted, if it is not accepted then it will return to the top actor. Generally, the basic finding is that inequalities develop over time in the rates at which members participate in the group discussion. Webster and Driskell (1985) found that the higher the expectations associated with a given actor: (1) the more likely he/she is to receive and to accept chances to perform; (2) the more likely he/she is to receive agreement and other types of esteem from other members; (3) the more likely his/her performances are to be evaluated positively; (4) the more likely he/she is to be influential and the less likely he/she is to accept influence from others in case of disagreement; and (5) the more likely he/she is to receive votes as most helpful or as group leader. As Berger and Fisek (1974) point out, when it is true that the members of the group use the evaluations and performance information associated with status characteristics as cues to organize and define their immediate social situation, we say that the status characteristics have become salient in that situation. Once activated, the prior order determines in the new situation the distribution of opportunities to perform, evaluations, and influence (Harvey, 1953; Sherif, Harvey, and White, 1955; Whyte, 1943).

In this area of theory it is believed that individuals combine available status information about others when that information is inconsistent.

Therefore a white male with medium socio-economic status will be expected to perform at a higher level than a black male with high socio-economic status. Overall, the combining assumption tends to be supported in much of the work conducted in this area. As an example, two experiments by Berger and Fisek (1970) and Berger, Fisek, and Crosbie (1970) found that subjects combine rather than balance status information.

Expectations lead the group's members not only to offer opportunities to participate and to appreciate the contributions of those who have valued characteristics, but also to withhold both opportunities for participation and appreciation from those who have disvalued characteristics. Also, those with disvalued characteristics will be reluctant to seek or take advantage of opportunities to participate. In task-oriented groups, diffuse status characteristics behave as though they symbolize prior status orders that are activated in the situation. It was discovered that the external status characteristics of group members produced the same result that prior experience of members interacting with one another produced in the Bales' groups (Zander and Cohen, 1955; Ziller and Exline, 1958). Further, the external status characteristic operates not only when it is directly related to the task of the group, but often even when it has no obvious or direct bearing on the group's task. The rates of action opportunities, performance outputs, and so on, will tend to be greater for the actor to whom the high state of specific performance expectation is attributed than for the actor to whom the low state is attributed.

Another aspect that needs to be considered is the difference between specific and diffuse status characteristics. Specific status characteristics are

abilities that are a relevant for specific tasks in the group; some examples are mathematical and mechanical ability. Diffuse status characteristics are characteristics that an individual brings with them into the group which tend to be visible through physical clues, dress, manners, and so on; some examples are age, sex, race, and physical attractiveness.

Lockheed (1985) suggests that sex is a diffuse status characteristic, and that males exhibit greater activity, influence, and leadership in small groups than women. However, Brown and Geis (1984) found that legitimization of a female leader and endorsement of her competence by authority figures and nonverbal peer reactions have a great deal of influence on evaluation of female competence. In juries, it has been found that sex and occupation determine participation, election to foremanship, and evaluation of competence as a juror (Strodtbeck, James, and Hawkins, 1958; Strodtbeck and Mann, 1956). Also, Caudill (1948) found that positions in the occupational hierarchy of a psychiatric hospital determine participation rates in ward rounds. Moore (1968) found that subjects who believed that they had more education than their partner had a higher probability of a stay response, that is, they were less readily influenced than those who believed they had a lower educational status.

Within adult discussion groups the members with higher status tend to participate more. In jury deliberations, those with higher SES were found to talk more and to have more influence on other members, and were perceived by fellow jurors as more competent for the jury task (Strodtbeck, James, and Hawkins, 1958). Also, men originated significantly more acts than women in each SES level. Strodtbeck and Mann (1956) found that

higher status persons originated more acts and participated more heavily in the group discussion, confirming previous findings by Strodtbeck (1951) and Caudill (1948). Using Bales' twelve categories for interaction process analysis, it was discovered that women were significantly more likely to give positive reactions, while men were significantly more likely to attempt answers through the giving of opinions and orientation. That is, men tend to pro-act, while women tend to react. The findings from this 1956 study by Strodtbeck and Mann confirmed their hypothesis that there is a continuance in jury deliberations of sex role specialization observed in adult family behavior (Strodtbeck, 1951).

Status categories used in these experiments have at least two properties in common: (1) differences in status always appear to imply differential evaluations of individuals, and (2) differences in status always provide the basis for inferring differences in one or more other capacities or characteristics possessed by the individual. Also, the status difference determines the observable power and prestige order within the group whether or not the status characteristic is related to the group task.

Generally, one consistent finding is that high status actors are more likely to participate, and their contributions are perceived as more valuable and therefore worth making, that is, they have more influence in the group.

Research evidence indicates that males and females are genetically equipped with different chemical systems, specifically in growth and sex hormones, such that the average male is universally larger (D'Andrade, 1966; Garai and Scheinfeld, 1968). Size difference may account for the near-universal sex differences in aggression and status-dominance (Gray and

Drewett, 1977; Rosaldo, 1974). Biologists could certainly argue for the size effect, citing that size is not only important in primate dominance orderings but is important among lesser sociocultural species, such as chickens and mice, as well (Wilson, 1975). Furthermore, Crosbie (1979) created a path model for status ranking, and upon inserting a path between size and status rank his model provided a better fit to the data than without the inserted path. The size variable in Crosbie's research not only helped to account for a major proportion of the sex effect but was an important status determinant in its own right. In conclusion, there is considerable evidence available to support the inclusion of physical size as a status characteristic (Feldman, 1975; Staffieri, 1967, Strongman and Hart, 1968; Stogdill, 1974).

V. An Initial Model

In this final section, an attempt to provide an initial model of participation and influence will be made. The model will be based on findings from previous research as well as expectation states theory. Furthermore, the model will be broken down into four blocks of variables. The reason for this breakdown will be discussed, and also a general path diagram will be provided showing the expected results. At this stage of the discussion specific variables will be avoided; these will appear in more detail in Chapter Two. Generally, the four variable blocks will be: (1) status characteristics; (2) participation in the first minute; (3) total participation; and (4) leadership measures. The main reason for keeping this discussion to four blocks of variables is parsimony. In addition, the first three variable blocks

used have been shown in previous research to affect the last variable block (leadership) in a consistent way.

The first variable block is composed of status characteristics. The reason for the use of these variables can be found in the work of expectation states theory. Research has found time and again that status characteristics affect participation and influence. Status characteristics are important variables because a stable status hierarchy emerges regularly and early in small groups (Bales, 1950; Fisek, 1968; 1974). This status hierarchy affects both participation rates and influence of group members. The status characteristics affect influence or leadership directly, as those who are high in the emergent status hierarchy will be seen as more competent and more helpful than those low in the hierarchy. That is, those high in the hierarchy are expected to perform at a higher level just because they have high status relative to others. In addition, status characteristics affect influence or leadership indirectly, as those who are high in the emergent status hierarchy will be given more opportunities to perform, and hence will tend to have higher participation rates than those low in the hierarchy (Webster and Driskell, 1985).

The above ideas lead into the discussion of the next variable blocks of participation measures. The participation measures are important ones to include in the model because of the consistent findings in the literature of their effect on leadership. The consistent findings are that high participators are more often chosen as leaders. That is, participation rates directly affect leadership, as those with high participation rates are seen as more competent, and as contributing more to problem solution than those with low

participation rates. The amount of participation of an individual has even been shown to be more important than the quality of participation (Bavelas et al., 1956). The importance of adding these variable blocks in determining leadership has been demonstrated in the literature. The task for this paper will be to determine which measures of participation account significantly for leadership choice.

The fourth and final variable block is leadership. The task here is quite similar to the task of the participation variable blocks. That is, to determine which measure of leadership to use, or which measure of leadership fits the model most adequately. One aspect that is known at this time is that leadership will be the main dependent variable of the model, and that it will be a measure of perceived leadership.

In conclusion, there are two new general hypotheses that can be made from the general path diagram to represent the model (see Figure 1 below).

Hypothesis 1: Those individuals high on status characteristics will be high on leadership ratings through the intervening variables of participation.

Hypothesis 2: Those high on participation rates will be high on leadership ratings.

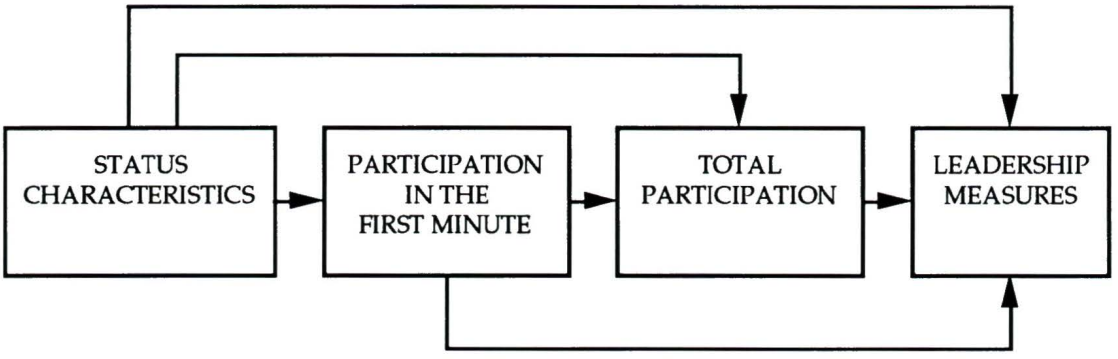


Figure 1: General Path Diagram

Chapter Two

Source of Data and Method of Analysis

Introduction

The second chapter will provide an overview of the methods used in gathering the data. For the purposes of this paper, the work will be based on secondary data from Dr. Paul Baker's research conducted in 1979. Because of this, the methods described will be based heavily on that research. Also, in this chapter the specific variables in the path model will be operationalized.

The reason for the use of the variables selected is because of the results from two previous studies conducted by Baker (1988a; 1988b). These studies used mock juries to look at participation and influence in small groups. In the first study, the effects of social, physical, and situational predictors on total participation was investigated. Specifically, these predictor variables were sex, SES, age, size, participation in the first minute (P1), first-to-speak (F), and participation in the first five minutes (P5). In the second study, the effect of sex and age on perceived influence was looked at. I am building on these studies by using both participation and perceived influence as dependent variables. In addition, I am dropping the F and P5 variables due to their insignificant relation to participation and influence or leadership.

Chapter Two will be organized into five sections. The first section will discuss the task that was given to the subjects. Section II will center on the subjects and background variables. In section III, measures of participation

will be looked at. Next, section IV will discuss the measure of influence being used in the study. And finally, the discussion in section V will focus on the statistical analysis to be used.

I. The Task

The participants were told they were a mock jury, and were given summary arguments by the plaintiff and the defendant. The case involved a hypothetical mandatory retirement suit brought by a 65-year-old professor against his university. The mock juries were asked if they felt the university should give him his job back. After the jurors had read the arguments, they were asked to state their initial opinions on the case and then were allowed to discuss the case for up to one hour. After the case was discussed, each member was asked who they felt had led the group. The questionnaire given to the subjects will be provided in the appendix.

II. The Subjects and Background Variables

The participants in the study were volunteers invited to take part in a mock jury study. Most of them were young adults from UVIC, with about a quarter of them being older individuals (over 24 years) from the local community. Upon arrival, subjects were asked a few background questions and then allowed to choose a seat in the study room. Initially, there were 17 four-person groups, 17 five-person groups, and 18 six-person groups, with a total of 261 individuals. Missing data occurred only for the SES and size

variables; there were 31 missing cases for SES, and 10 missing cases for size. Missing data replacement by regression was used on these variables. First, missing data were estimated for the SES variable; the predictors were size, age, and sex. Then estimates of missing data were made for the size variable; the predictors were age and sex. Ages ranged from 17 to 40, with 80% being between 17 and 24 years old; age was coded as a continuous variable. However, it is relative age within the group, and not absolute age, which is being looked at, and when age is standardized it is not skewed noticeably. All of those over the age of 40 (10 subjects) were deleted from the analysis as it has been shown that the diffuse status characteristic of age reaches its peak at 40 (Baker and Graham, 1989). That is, the status by age relationship is represented by an inverted-U, such that from five onwards there is a steady increase in status until age 40. After the age of 40, there is a steady decrease in status until the age of 100+, where status again increases.

The breakdown of these 10 deleted individuals from their groups is as follows: 3 from 4-person groups, 4 from five-person groups, and 3 from six-person groups. Also, only two individuals came from the same group, and all "z" measures were calculated before the old subjects were dropped from the analysis. This resulted in a final N of 251 individuals, of whom 171 were females and 80 were males. The mean age was 21.99, with a standard deviation of 4.90.

The next discussion will center on the issue of groups composed of strangers versus acquaintances. Generally, in small group research it is common practice to have all groups consist of individuals who are unacquainted. The reason for this is because "established" groups are

composed of individuals who are already familiar with the hierarchy that exists in their group. That is, they have already formed appropriate ways to communicate with other group members. In established groups the norms are already in place, while groups composed of unacquainted individuals must still establish their norms. The mock juries used in Baker's research were for the most part strangers; however, there were a few members (fewer than 10 percent) who were acquainted with others in their group. This was determined by asking the subjects individually, if they knew others in their group. The mock juries used in this research are only marginally different from groups used in previous status characteristics research, and therefore no individuals or groups will be excluded from the data. Further discussion of this point appears in the conclusion of this thesis.

No attempt was made to control or randomize either seating position or the sex composition of the mock juries. This was because of the difficulties in scheduling participants and also to avoid suspicion about the importance of seating position or gender. In addition, individuals were not randomly assigned to the three group size conditions. The research started with six-person groups, but not all subjects showed up; sometimes only four or five were available. Therefore, a balance of four, five, and six-person groups was sought. A check of the sex distribution of seating position showed no significant bias due to sex. This check was done by running a cross-tabulation, resulting in no significant chi-square values. However, there were eight all-female juries, and one all-male jury. An analysis of various correlations with and without these same-sex juries showed no significant differences, and so these juries were included in the final analysis.

Furthermore, sex distribution across groups is not important in this study, as the focus is on relative participation and influence of individuals in the group.

Age, sex, SES, and size were measured prior to the discussion. Crosbie's method (1979) was used to measure size, it was calculated as the product of the individual's height (in inches) and weight (in pounds); the mean for size was 9453.8, with a standard deviation of 2157.0. SES was an unweighted index of the individual's level of education, father's occupation (a five-point occupation group scale), and father's level of education; the mean for SES was 34.7, with a standard deviation of 10.7. As most of the participants were university students, their anticipated level of education was used.

The reason for combining education and occupation into a single SES index should be justified. First, they are no longer accessible as separate variables because the original data are no longer available. Secondly, and more importantly, a composite measure is always more reliable. However, having made the above points it is necessary to admit that there is a certain amount of measurement error in using this index. Further, Baker (1988a) erred in not pointing out the possible measurement error. Instead of using "expected education" perhaps completed education should have been measured, and in place of "father's occupation" one might have asked the subjects what their expected occupation was. Furthermore, when operationally defining SES as "expected education" and "father's occupation" this leads to difficulties with older versus younger subjects. For the younger subjects these definitions could work, but for the older subjects they may not

apply so readily. Unless older subjects have gone back to school, "expected education" is something that has been achieved many years ago. Also, "father's occupation" is likely to be irrelevant to older subjects as their fathers are likely to be retired or deceased. These weaknesses, along with the relatively low variance (see Table 1), probably seriously hinder the validity of the SES measure.

All variables being used, except for sex which is a dummy variable (1=male, 0=female), are standardized relative to group mean and standard deviation. However, these are not the usual "z-scores." To explain the rationale for this an example should prove helpful. Suppose the mean age of all subjects were 25, then someone aged 25 would have a conventional z-score of zero; if age has any effect on influence then one could say that a 25-year-old would have an average amount of influence. However, in a group of four, if one person were 25 and everyone else were 18 then the 25-year-old would have a positive z-score, and would be expected to have more influence. On the other hand, in another group of four, if one person were 25 and everyone else were 30 then the 25-year-old would have a negative z-score, and would be expected to have less influence. The examples show that the conventional z-scores are meaningless in this research. The reason for this is because age relative to others in the group is what is important, not age relative to all the subjects in the study. The reason the variables are standardized relative to group means and standard deviations is because relative status and relative influence *in each group* is important. The work of Crosbie (1979) in this area stimulated the use of these variables in the analysis.

Table 1

Univariate Statistics For All Variables***

Variable	Mean	Minimum	Maximum	S.D.	Valid N
INFL	.180	.000	1.000	.297	251
PT	359.067	5.100	1669.600	276.681	251
PTZ	-.026	-1.729	1.821	.891	251
P1	11.271	.000	74.300	15.073	251
P1Z	-.015	-1.432	2.040	.890	251
SEX	.319	.000	1.000	.467	251
AGE	21.988	17.000	40.000	4.899	251
AGEZ	-.062	-1.456	2.016	.855	251
SIZE	9453.797	5700.000	17280.000	2147.037	241
SIZEZ	.004	-1.493	2.011	.896	241
SIZEZ**	-.012	-1.493	2.011	.882	251
SES	34.718	9.500	48.000	10.658	220
SESZ	.008	-2.014	.689	.876	220
SESZ*	.005	-2.014	1.689	.821	251

* With missing data replacement by regression, estimate predictors were size, age, and sex.

** With missing data replacement by regression, estimate predictors were age and sex.

*** For a more complete description of the variables in this table see Appendix D.

Table 2

Zero-Order Correlations

	AGEZ	SEX	SIZEZ	SESZ	P1Z	PTZ	INFL
AGEZ	1.00	.175	.200	-.148	.187	.432	.340
SEX		1.00	.631	.020	.099	.258	.202
SIZEZ			1.00	-.032	.110	.222	.146
SESZ				1.00	-.090	.036	-.009
P1Z					1.00	.397	.286
PTZ						1.00	.577
INFL							1.00

Valid N=251

III. Measures of Participation

Measures of participation were made by a trained observer, looking through a two-way mirror. The VIPER coding system was used (Baker, 1981). This is a keyboard that uses frequency modulation to encode the time, speaker, and target onto audiotape for subsequent digitization by an analog-to-digital minicomputer. Test-retest and interobserver reliability of participation rates both averaged above .70 (.74 and .77 respectively) using videotaped group discussion from another study; none of the present study's sessions were videotaped. Participation rates were measured in seconds. Speech acts of less than one second were disregarded.

There are two participation measures being used, P1 and PT. P1 is the amount of participation in the first minute, in seconds; the mean of P1 was 11.3, with a standard deviation of 15.1. PT is the total amount of participation, in seconds; the mean of PT was 359.1, with a standard deviation of 276.7. Since all of the variables have been standardized, the actual variables used will be P1Z and PTZ. As with the SES variable, individual scores were transformed to group-normed z-scores, relative to the group mean and standard deviation. Complete univariate statistics will be provided for these variables, as well as a histogram for both P1 and PT, and P1Z and PTZ (see Figures 4 through 7). The other participation measures previously looked at (Baker, 1988a), were a first-to-speak dummy variable, and the amount of participation in the first five minutes. However, these variables will not be included in this discussion because they were

previously found to be insignificantly related to total participation and leadership.

The path model will be a "causal chain," such that status characteristics cause participation in the first minute (P1), which in turn causes total participation (PT), which then in turn causes leadership ratings. This is in contrast to a "latent variable" approach in which both P1 and PT would be considered indicators of an unmeasured variable, "participation." In the present research, P1 and PT will not be considered as indicators of participation as a latent variable, but rather P1 and PT will be used as two separate variables in a causal chain. This distinction between initial and total participation is an important one, as the two are conceptually distinct, and in this data set, share only 16 percent common variance (r =.42).

Figure 4

Histogram for Participation in the First Minute (P1)

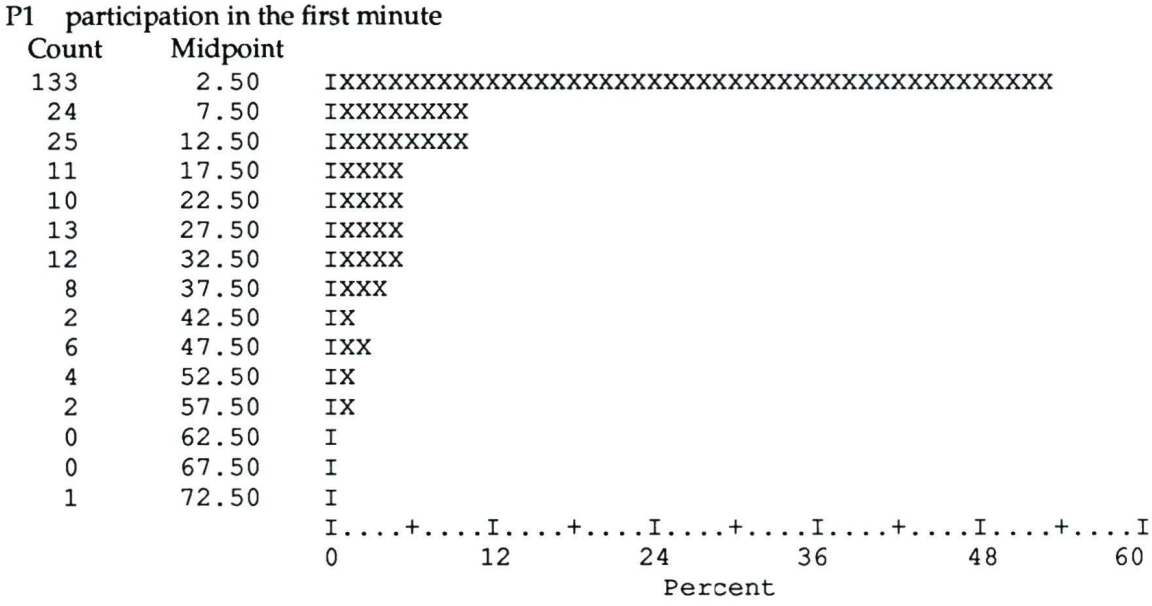


Figure 5

Histogram for Standardized P1 (P1Z)

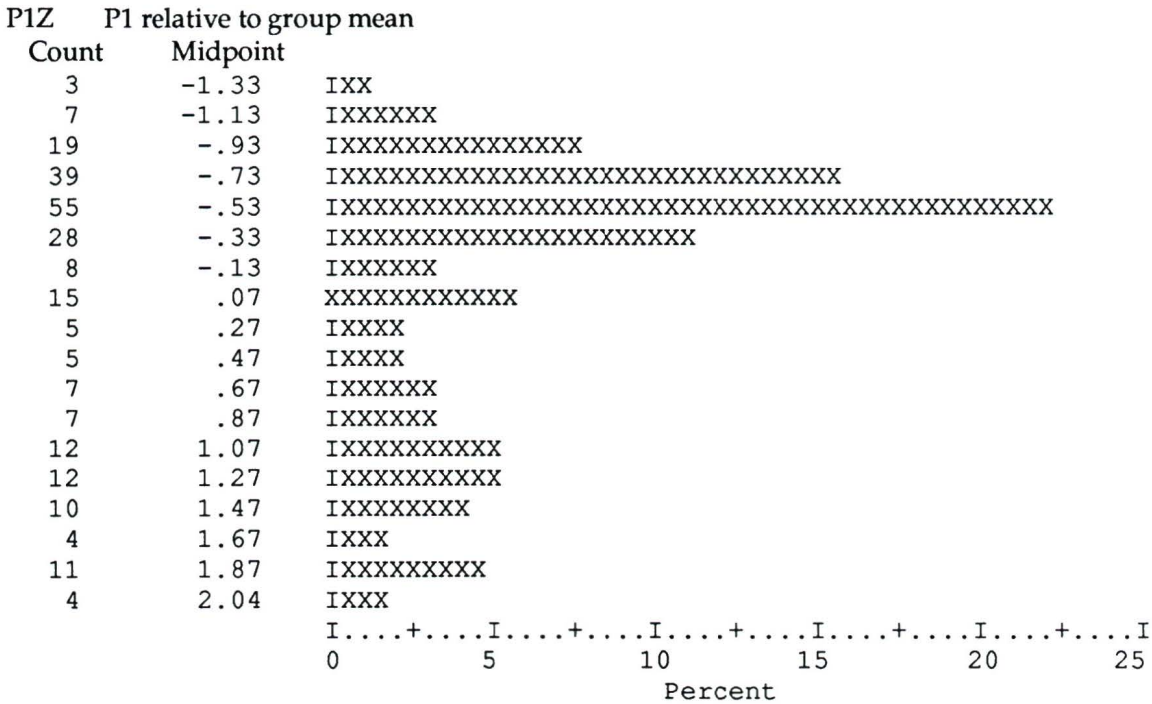


Figure 6

Histogram for Total Participation (PT)

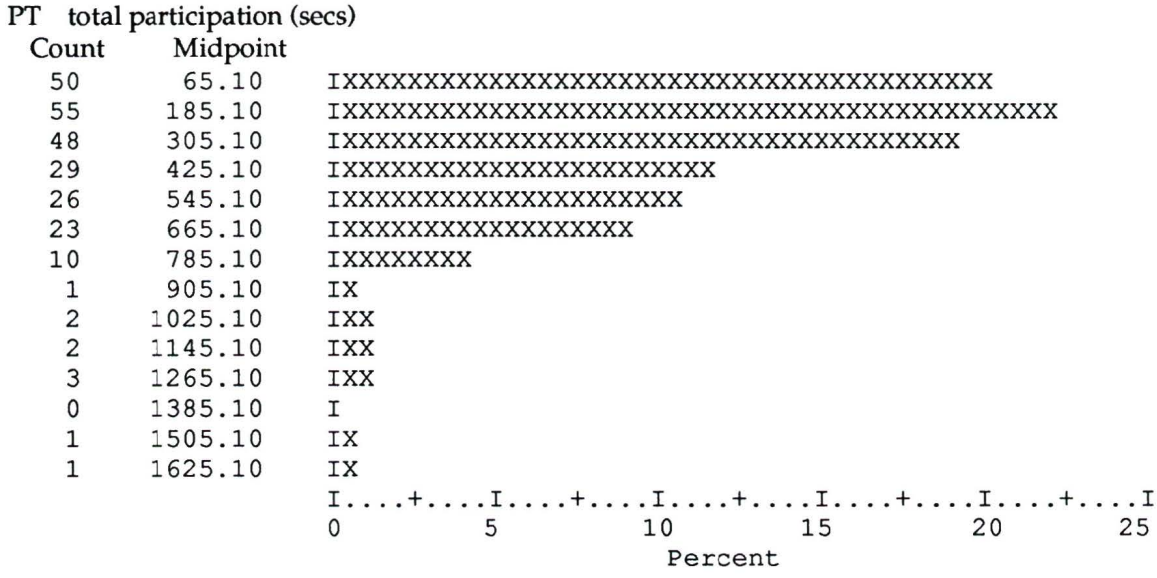
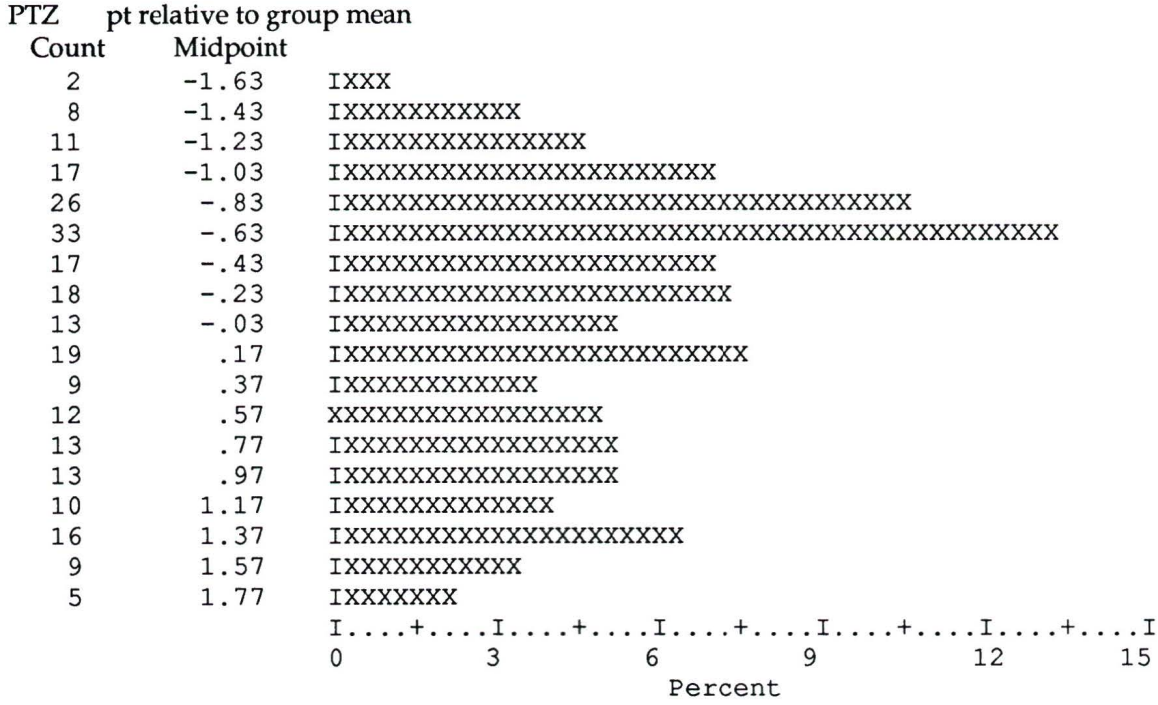


Figure 7

Histogram for Standardized PT (PTZ)



IV. Measure of Influence

The measure of influence or leadership that will be used is perceived influence. Perceived influence is measured s the proportion of others naming a person as most influential, or nomination by others. The data for this variable were gathered by individually asking each group member who they thought led the group. Specifically a questionnaire was distributed to each group member asking them who appeared to have the most influence on the group decision. The variable ranges from a minimum of 0.0 to a maximum of 1.00; although each group member could nominate himself or herself, self-nominations were considered too unreliable for inclusion. As an example, if in a six-person group one member received three votes, he or she would receive a score of .60 (3/5 votes), while a member who received all five votes would receive a score of 1.00. As Table 1 shows, the mean for the influence measure was .180, with the standard deviation being .297.

V. Statistical Analysis

Statistically, the research will use path analysis. The reason for this is because the direct, indirect, and total effects of each variable on participation and influence can be assessed. Path analysis is a way to use ordinary multiple regression analysis, in combination with a pre-specified causal model of the relations among variables, to calculate various statistics. Path coefficients are simply multiple regression coefficients (usually beta's). These are also called direct effects. They measure the direct effect of one variable

on another, controlling other direct effects. In path analysis, there are normally at least two dependent variables.

One important advantage of path analysis is the ability to decompose an observed correlation into its various components. All path analysis must begin with an explicit causal model of the relations among the variables. This model is drawn as a path diagram, which specifies how the observed correlations are theorized to be a result of direct effects, indirect effects, spurious components, or unanalyzed components. This is probably the major advantage of path analysis.

Another advantage of path analysis is that it provides evidence concerning the fit of the path model to the observed correlations. If any hypothesized direct effects are in fact close to zero, it may be necessary to delete paths. If very little variance can be explained in an endogenous variable, some additional paths may need to be added. The maximum number of paths one can have in basic path analysis is (NV) (NV-1)/2— where NV is the number of variables in the model.

In order to write regression equations, one needs to find the path coefficients (direct effects) and the residuals. Once a conventional multiple regression has been run, the beta's become the direct effects. Each endogenous variable is regressed on all of its direct causes. The residual for each endogenous variable is the square root of 1-R-squared. If an endogenous variable has only one direct cause, then one can use the zero-order correlation as the path coefficient.

There are three basic criteria for assessing how good a given path model is. These three are: (1) the amount of variance explained in each

endogenous variable; (2) how many of the predicted direct effects are greater then .05 in absolute value; and (3) the closeness of the fit between implied and observed correlations. A "just-identified model," or "fully recursive model," makes use of all the possible correlations among variables in calculating effects, and therefore the total effects (implied correlations) will be exactly equal to the observed correlations (within rounding error). The advantage of this model is that in the absence of a more specific theory it suggests ways in which the atheoretical, complex model can be simplified without significant loss of explanatory power.

In this study, the general model will regress perceived influence on both participation and status variables, then I will trim this model to delete any trivial paths (less than .05 in absolute value). In addition, an effects table will be provided to show why some variables were deleted from the analysis, and some retained. The discussion will now turn to the actual regressions that will be run; for convenience at this point these regressions will be given as simple functions: (1) SIZEZ'=f(SEX); (2) P1Z'=f(SEX,AGEZ, SIZEZ, SESZ); (3) PTZ'=f(SEX, AGEZ, SIZEZ, SESZ, P1Z); and (4) INFL'=f(SEX, AGEZ, SIZEZ, SESZ, P1Z, PTZ).

After running the above four regressions the model will be "trimmed." All of those path coefficients that are less than .05 in absolute value will be trimmed or deleted from the path model, while those path coefficients that are equal to or exceeding an absolute value of .05 will be retained in the path model.

The main difference between the significance test of .05 and the conventional path analysis criterion of .05 for the absolute value of a path

coefficient, is that the significance test is dependent on the sample size; and is only useful if one is relating the results to a finite population. AS Labovitz (1970) points out, significance tests do not aid the researcher in analyzing data for a variety of reasons. Briefly, they are: (1) the inapplicability to the goals of science; (2) the triviality of tests as they pertain to the null hypothesis; (3) the overriding effect of sample size; and (4) the nature of "samples" and scientific knowledge. However, having made the above points, exact significance levels for multiple regression coefficients and R-squared will be reported, due to their confentional use in the field.

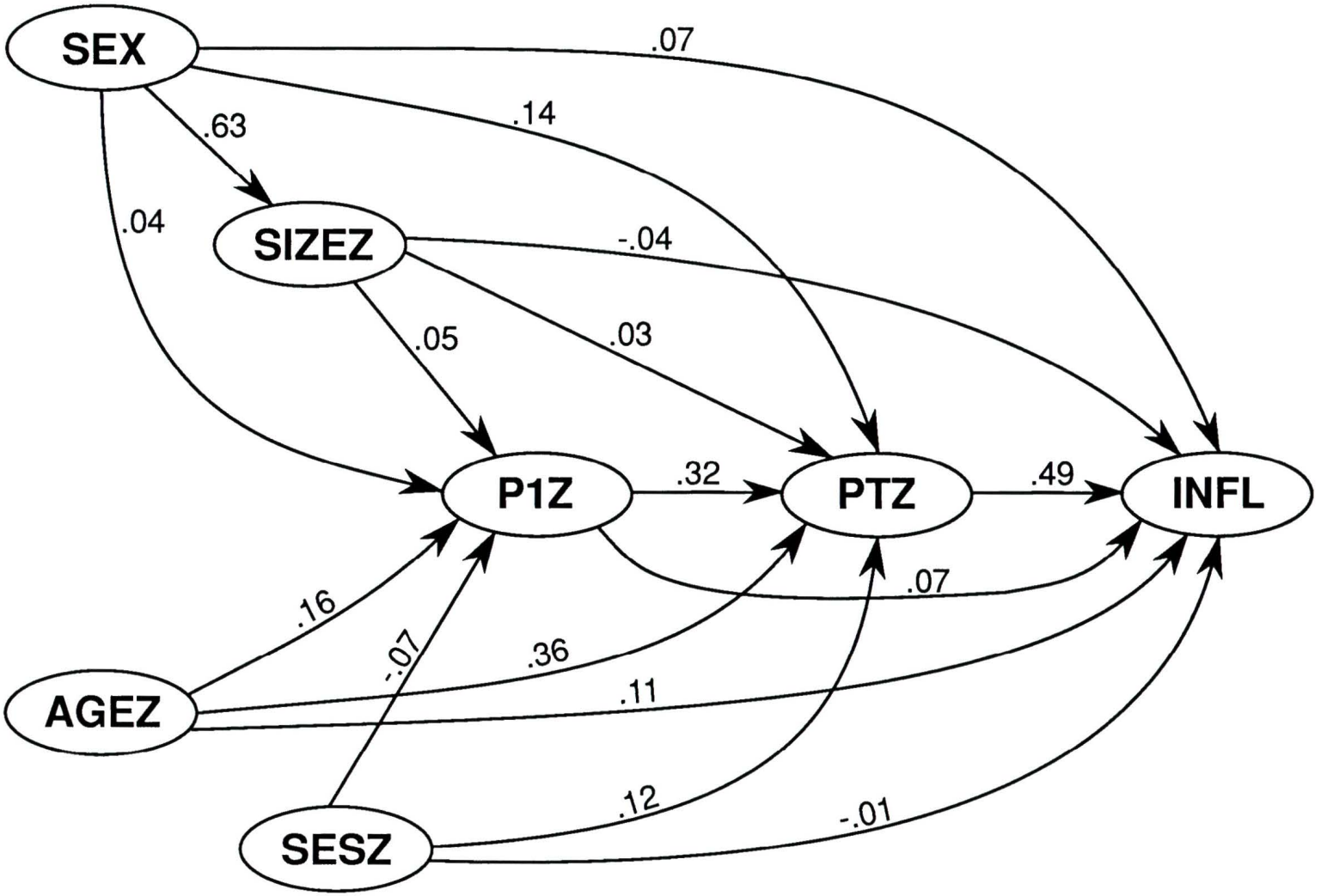


Figure 2: Model 1

Chapter Three

Analysis of Data

Introduction

In this third chapter, the analysis of the data will be presented. It is important to note that when the term "significant" is used in this work, it means "statistically significant" by conventional criteria of inferential statistics. For each model, the analysis will follow the same breakdown. The endogenous variables will be discussed in causal order, that is, participation in the first minute will be discussed first, then total participation, and finally influence. Next, the R-squared for each endogenous variable will be described. These R-squared values are unadjusted; the adjusted R-squared attempts to correct the optimistic bias of the sample R-squared to more closely reflect the goodness of fit of the model in the population. However, in both of the models presented the adjusted R-squared differs little from the R-squared because of the large N of 251. Thirdly, the direct effects and indirect effects of each variable on the three main endogenous variables will be discussed; followed by the discussion of the non-causal components. Finally, the fit of observed and predicted correlations will be described for each model.

Furthermore, residuals for both models will be discussed after the analysis of Model 2. And in addition, a comparison of the effects of status characteristics and participation measures on influence will be looked at.

I. Model 1 (see Figure 2)

Testing Model 1: Effects Table

The discussion that follows is taken from the effects table for Model 1 (see Table 4). This initial model is "over-identified," as not all possible paths are accounted for. The R-squared value for the effect of SEX on SIZEZ is .40. This value is determined by squaring the zero-order correlation between the two variables, as there is only one direct effect. The SEX-SEZEZ relation is a causal part of the model, but it is not the focus of the study. Therefore, although it has the same effect in Model 2, the SEX-SEZEZ correlation will only be mentioned here.

Participation in the first minute is not explained well by the four exogenous variables (R-squared=.05, $p<.05$), but AGEZ is a statistically significant predictor ($p=.01$). It appears that AGEZ has the only significant direct impact on who participates most in the first minute. At this stage of the model there are virtually no indirect or non-causal effects to speak of. However, there was one unexpected aspect at this stage of the model, and that was the *negative* effect that SESZ had on participation in the first minute. Although this negative effect was insignificant, it was predicted at the outset that SESZ would have a positive effect on participation in the first minute. The effects analysis shows that all of the observed correlations are predicted quite accurately at this stage of the initial model, with the largest absolute difference being .03.

Table 3

Regression Equations For Model 1

---

(1) SIZEZ' = .631 (SEX)

R-squared = .40 p<.005

---

(2) P1Z' = .042 (SEX) + .161 (AGEZ) + .050 (SIZEZ) - .065 (SESZ)

R-squared = .05 F = 2.93388 Sig. F = .0214

R-squaredc = .32 p<.05

---

(3) PTZ' = .143 (SEX) + .357 (AGEZ) + .029 (SIZEZ) + .116 (SESZ) + .323 (P1Z)

R-squared = .33 F = 24.12076 Sig. F = .0001

R-squaredc = .32 p<.0001

---

(4) INFL' = .074 (SEX) + .108 (AGEZ) - .040 (SIZEZ) - .008 (SESZ) + .067 (P1Z) + .493 (PTZ)

R-squared = .35 F = 21.85849 Sig. F = .0001

R-squaredc = .33 p<.0001

Table 4

Effects Analysis For Model 1

Dependent Variable	Predictor	Direct Effect	Indirect Effect	Non-Causal	Total Effects	Observed Correlation	Absolute Difference
SIZEZ	SEX	.63	---	---	.63	.63	.00
R-squared =.40							
P1Z	SEX	.04	.03	---	.07	.10	.03
	AGEZ	.16**	---	---	.16	.19	.03
	SESZ	-.07	---	---	-.07	-.09	.02
	SIZEZ	.05	---	.03	.08	.11	.03
R-Squared =.05							
PTZ	SEX	.14*	.04	---	.18	.26	.08
	AGEZ	.36**	.05	---	.41	.43	.02
	SESZ	.12*	-.02	---	.10	.04	.06
	SIZEZ	.03	.02	.10	.15	.22	.07
	P1Z	.32**	---	.06	.38	.40	.02
R-Squared =.33							
INFL	SEX	.07	.07	---	.14	.20	.06
	AGEZ	.11	.21	---	.32	.34	.02
	SESZ	-.01	.04	---	.03	-.01	.04
	SIZEZ	-.04	.03	.09	.08	.15	.07
	P1Z	.07	.16	.05	.28	.29	.01
	PTZ	.49**	---	.08	.57	.58	.01
R-Squared =.35							

* Regression coefficient significant at p<.05.

** Regression coefficient significant at p<.01

Total participation shows much more explained variance than participation in the first minute (R-squared=.33, p<.0001), and here the statistically significant predictors are SEX, AGEZ, SESZ, and participation in the first minute (P1Z). AGEZ and P1Z are by far the most important variables with regard to predicting total participation. In addition, there is very little indirect effect to speak of, but the relation between SIZEZ and total participation has a large non-causal component (.10), mainly because of its high correlation with SEX. The effects analysis shows that all but three of the ten observed correlations at this stage are predicted accurately by the initial model.

The most important endogenous variable is influence, which has a fairly high R-squared value (.35, p<.0001). The only statistically significant predictor was total participation, with AGEZ approaching significance (p=.07), whereas SESZ and SIZEZ have no direct impact on influence. AGEZ has a large indirect effect of .21 (through participation in the first minute and total participation), as does participation in the first minute of .16 (through total participation). Also, correlations of influence with SIZEZ and total participation have fairly large non-causal components of .09 and .08, respectively. In addition, there was also an unexpected *negative* effect for both SIZEZ and SESZ on influence; although both of these negative effects were insignificant, they were hypothesized to be positive. The effects analysis shows that all but five of the sixteen observed correlations are predicted accurately by the initial model. The observed correlations between total participation and SEX, SIZEZ, and SESZ differed from predicted correlations by .08, .07, and .06 respectively. In addition, the observed

correlations between influence, and SEX and SIZEZ differed from predicted correlations by .06 and .07 respectively.

II. Trimming Model 1

The test of the initial model of participation and influence suggests that a more parsimonious model could be used, with little loss of predictive power. Therefore, as mentioned in Chapter Two, all paths less than .05 in absolute value will be deleted. Following the above guidelines, these four paths were deleted: (1) SEX to P1Z; (2) SIZEZ to PTZ; (3) SIZEZ to INFL; and (4) SESZ to INFL. The deletion of the above four paths leads to the revised model of participation and influence presented in Model 2.

III. Model 2 (see Figure 3)

Testing Model 2: Effects Table

The discussion that follows is taken from the effects table for Model 2 (see Table 6). Participation in the first minute is still explained poorly by the three exogenous variables (R-squared=.05, $p<.01$), and AGEZ remains a statistically significant predictor ($p=.01$). It appears that AGEZ still has the only significant direct impact on who participates most in the first minute. There still remains virtually no indirect effects to speak of, and what little non-causal component there was, was taken up into the direct effect of SIZEZ. The unexpected negative effect of SESZ on participation in the first minute does however still remain in the revised model.

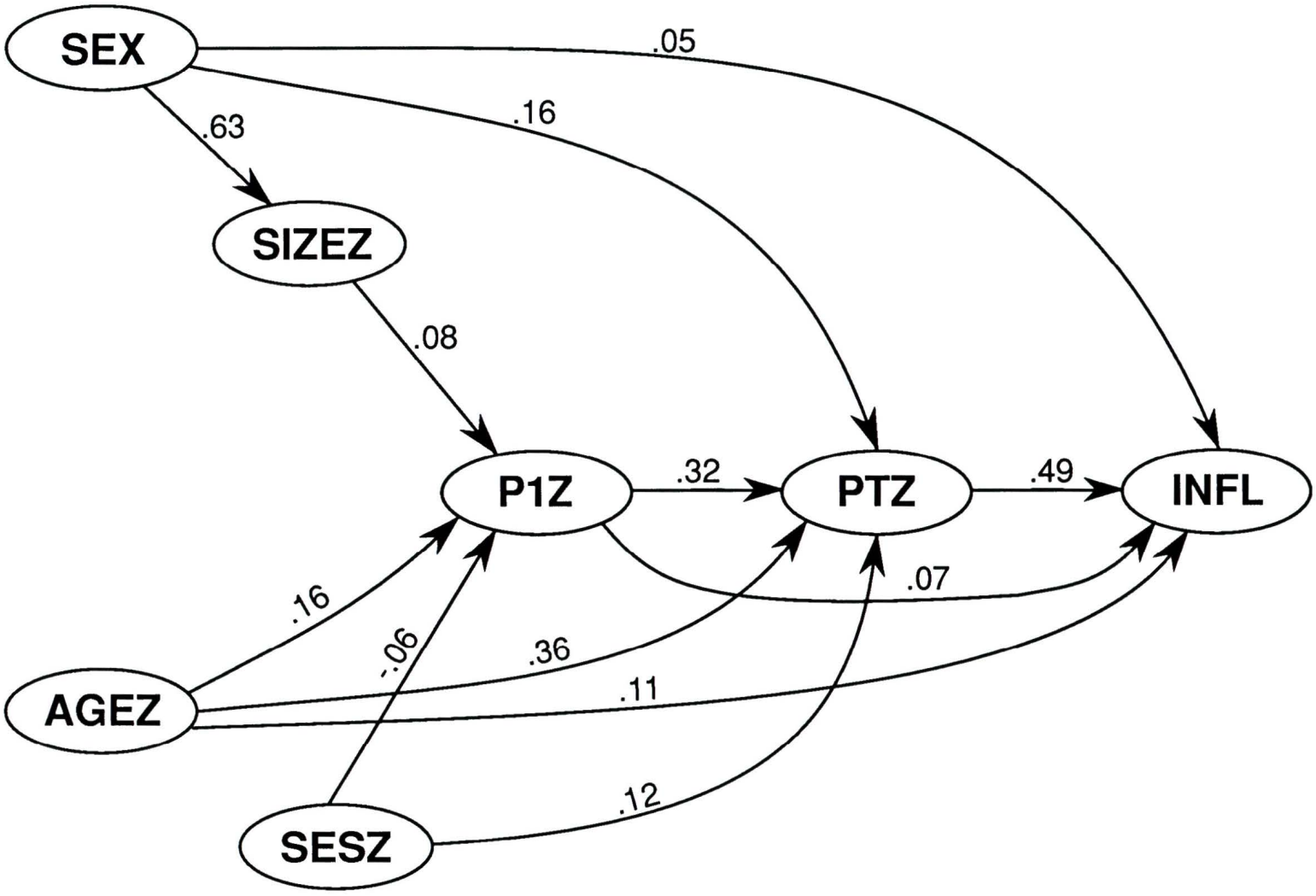


Figure 3: Model 2

Table 5

Regression Equations For Model 2

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(1) SIZEZ' = .631 (SEX)

R-squared = .40 p<.005

---

(2) P1Z' = .163 (AGEZ) + .080 (SIZEZ) - .063 (SESZ)

R-squared = .05 F = 3.83450 Sig. F = ..0104

R-squaredc = .03 p<.01

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(3) PTZ' = .161 (SEX) + .360 (AGEZ) + .115 (SESZ) + .324 (P1Z)

R-squared = .33 F = 30.20699 Sig. F = .0001

R-squaredc = .32 p<.0001

---

(4) INFL' = .050 (SEX) + .107 (AGEZ) + .067 (P1Z) + .491 (PTZ)

R-squared = .35 F = 32.91293 Sig. F = .0001

R-squaredc = .34 p<.0001

Table 6

Effects Analysis For Model 2

Dependent Variable	Predictor	Direct Effect	Indirect Effect	Non-Causal	Total Effects	Observed Correlation	Absolute Difference
SIZEZ	SEX	.63	---	---	.63	.63	.00
R-squared =.40							
P1Z	SEX	---	.05	---	.05	.10	.05
	AGEZ	.16**	---	---	.16	.19	.03
	SESZ	-.06	---	---	-.06	-.09	.03
	SIZEZ	.08	---	---	.08	.11	.03
R-Squared =.05							
PTZ	SEX	.16**	.02	---	.18	.26	.08
	AGEZ	.36**	.05	---	.41	.43	.02
	SESZ	.12*	-.02	---	.10	.04	.06
	SIZEZ	---	.03	.10	.13	.22	.09
	P1Z	.32**	---	.06	.38	.40	.02
R-Squared =.33							
INFL	SEX	.05	.09	---	.14	.20	.06
	AGEZ	.11	.21	---	.32	.34	.02
	SESZ	---	.05	---	.05	-.01	.06
	SIZEZ	---	.02	.08	.10	.15	.05
	P1Z	.07	.16	.05	.28	.29	.01
	PTZ	.49**	---	.08	.57	.58	.01
R-Squared =.35							

* Regression coefficient significant at p<.05.

** Regression coefficient significant at p<.01

Total participation still shows much more explained variance than participation in the first minute (R-squared=.33, p<.0001), and here all of the predictors are statistically significant (SEX, AGEZ, SESZ, and participation in the first minute). AGEZ and P1Z are again by far the most important variables with regard to predicting total participation. In addition, again there is very little indirect effect to speak of, but the relation between SIZEZ and total participation has a large non-causal component (.10), because of its high correlation with SEX.

The most important endogenous variable (influence) still has a fairly high R-squared value (.35, p<.0001). The only statistically significant predictor is still total participation, with AGEZ approaching significance (p=.06). AGEZ has a large indirect effect of .21 (through participation in the first minute and total participation), as does participation in the first minute of .16 (through total participation). Also, correlations of influence with SIZEZ and total participation have fairly large non-causal components of .08 each.

The effects analysis shows that all but five of the sixteen observed correlations are predicted accurately by the revised model. The observed correlations between total participation and SEX, SIZEZ, and SESZ differed from predicted correlations by .08, .09, and .06 respectively, while the observed correlations between influence, and SEX and SESZ both differed from predicted correlations by .06. These are not large discrepancies, however. The explained variance in all four endogenous variables remained the same, with the significance levels for SIZEZ, total participation, and

influence also remaining the same. The significance level for participation in the first minute actually became better, moving from $p<.05$ to $p<.01$.

As can be seen from comparing the two effects tables (Table 4 and Table 6), the deletion of those paths less than .05 in absolute value created a revised model that was more parsimonious, with no loss of predictive power.

IV. Residuals for Model 1 and Model 2

There are three points that must be clarified before discussing the residuals of both Model 1 and Model 2. First, all of the residuals discussed will be standardized residuals. Second, in order for the residuals to be considered "outliers," they must exceed an absolute value of 3.00. And finally, the residuals for both models turned out to be the same, and so they will be discussed at the same time. The residuals for participation in the first minute were all less than 3.00 in absolute value; therefore, there were no "outliers" for this endogenous variable in either model. The residuals for total participation were also less than 3.00 in absolute value; therefore, there were no "outliers" for this endogenous variable in either model as well. There were three residuals for influence that were greater than 3.00 in absolute value; however, a check of Cook's D shows that none of these three "outliers" significantly affect the regression equation in either model.

Cook's D is a measure of the extent to which an individual case affects the *regression coefficients* in a multiple regression equation. Each case is omitted from the analysis and the regression equation run without that case; then the vectors of original and revised regression coefficients are compared.

If a case has no effect on the regression equation, removing it from the data set should cause no change in the vector of all regression coefficients. Cook's D is a *distance measure* which sums the squared differences for the two vectors of regression coefficients, and then standardizes that sum of squared differences. It is the Euclidean distance between the original and revised equations, with and without each case. A significance test is also calculated which takes into account the N and provides inferential statistical information, in the form of an F-test and an associated probability level. The null hypothesis is that there is no difference in the two sets of regression equations. Normally, you want to accept (not reject) this null hypothesis (Cook, 1982).

V. A Comparison of Status Characteristics and Participation Measures

The analysis will now turn to a discussion of the effects of status characteristics and participation measures as predictors of influence. To accomplish this comparison two extra regressions were run; influence was regressed on SEX, AGEZ, SIZEZ, and SESZ, and influence was also regressed on P1Z and PTZ. The diffuse status characteristics (SEX, AGEZ, SIZEZ, and SESZ) together did not explain influence very well (R-squared=.14, $p<.0001$). Alternatively, the participation measures (P1Z and PTZ) explained influence quite well (R-squared=.34, $p<.0001$). As can be seen from the significance levels ($p<.0001$), both diffuse status characteristics and participation measures account for a significant amount of explained variance of influence.

However, it would appear that the participation measures account for a significantly larger portion of the explained variance. It could be concluded, that although the diffuse status characteristics used in this study are important determinants of influence, the participation measures are much more important in determining influence in a small group.

Chapter Four

Discussion

Introduction

This chapter is organized in six sections. The first section will provide a review of the final path model. Section II will focus on the role of turn-taking in the process of status evolution. In section III, group size as a possible confounding factor will be looked at. Next, section IV will discuss the aspect of strangers versus acquaintances. Section V will center on the measurement and predicted effects of the SES variable used in the study. Finally, section VI will describe the sample and research design which might be appropriate for an improved study.

I. Review of the Final Path Model

In this section, the accuracy of the two "new" hypotheses will be discussed in light of the final path model. Also, the relative impact of status characteristics and participation measures (behaviors) on influence will be looked at. Finally, since this research is based on theory, there will be a discussion of how well the final path model supports expectation states theory.

It can be seen from looking at both Figure 3 and Table 5 that the final path model provides support for both of the new hypotheses. The new

hypotheses were that those high in participation rates would be more often chosen as leaders, and that those high in status will have higher participation rates and also be chosen more often as leaders. Status characteristics and participation measures (behaviors) explain a significantly large proportion of the variance in influence (R-squared=.35, p<.0001). Also, with the exception of one path, all path coefficients in the final path model are in the expected *positive* direction. Furthermore, the final path model provides a good fit to the observed data (see Table 6). All of the above points lend support to the new hypotheses.

In addition, the relative impact of status characteristics and participation measures (behaviors) on influence provides support for the two new hypotheses. The first hypothesis, that those high in participation rates will also be more often chosen as leaders, is given additional support through the direct effects participation (P1Z and PTZ) has on influence. Both of these variables have direct effects which exceed .05 in absolute value (P1Z=.07 and PTZ=.49). The second hypothesis, that those high in status will have higher participation rates and also be chosen more often as leaders, is given additional support through the indirect effects status characteristics has on influence. All of these indirect effects, with the exception of SIZEZ (.02), have absolute values greater than .05 (SEX=.09, AGEZ=.21, and SESZ=.05).

Overall, the results would seem to indicate that participation is a more important determinant of influence than diffuse status characteristics. However, when both measures are used together they are both important determinants of influence. That is, although participation is more important in determining who has the most influence in a group, diffuse status

characteristics are important as well, as it would appear from the final model that diffuse status characteristics determine influence both through participation rates and directly.

For the most part, the final path model supports expectation states theory quite well (see Figure 3). The only status characteristic that does not work well in the final model is SES. High SES does lead to high total participation rates, but this is the only effect it had. However, given the poor measurement of SES in this study, which will be discussed later, this is not surprising. The rest of the model seems to support expectation states theory. Of the remaining status characteristics, physical size has its main effect on participation in the first minute. That is, those individuals who are larger tend to participate most in the first minute, as is predicted by expectation states theory. Age and sex are clearly important status characteristics, as it can be seen that males participate most and have the most influence, while those who are older tend to participate most and have the most influence.

Generally, those individuals in this study who were high on the status characteristics used, tended to participate most in the first minute, have the most total participation, and also have the most influence. That is, the consistent finding in the literature that high status actors are more likely to participate and have more influence in the group, is supported by the findings of this research. The final model accurately reflects the formulations of expectation states theory.

II. Turn-Taking in the Process of Status Evolution

Turn-taking (Burke, 1974) is an aspect of participation that provides a nice micro-analysis of how conversations actually develop or unfold. This analysis is important because through conversational turns an individual can increase his/her participation rates, and possibly increase his/her leadership ratings. It is also important to incorporate expectation states theory into this discussion, as turn-taking is structured or explained by status characteristics. Generally, those with higher status will be given more turns or opportunities to perform. Also, the turn-taking ideas have not been pursued by subsequent researchers.

In a group of initial status equals, the status hierarchy has yet to form. Through *turns*, or opportunities to perform, status inequality will emerge in a group. In the language of expectation states theory (Berger, Wagner, and Zelditch, 1985), members of groups, who are initially status equals, will be given action opportunities, followed by their performance outputs, which are followed by another action opportunity, and finally a reward action is given by the other group members. This reward action can be acceptance (positive reward action) or rejection (negative reward action). Depending on how the other members view one's performance outputs, that member will either have high or low performance expectations from the others in their group.

These performance expectations form rapidly and become a stable part of the group's functioning (Bales, 1950). Those members with high performance expectations accrue high status in the group. Since status orders are deference orders, others in the group will defer turns to those they

have high expectations for. Ultimately, the difference in rates of positive reward actions results in the differentiated power and prestige order of a group.

Generally, an individual who is expected to perform at a high level has control of the turn-taking mechanism. That is, he/she can take a turn whenever they want to because others in the group will defer to them. Also, if he/she does not feel like taking a turn they can leave it for others in the group who have less status. When all members are status equals, it is the group member who takes a turn, receives a positive reward action, proceeds to take more turns followed by more positive reward actions, that receives high performance expectations and becomes a member of the group with high status. Generally, the turn-taking *process* is reflected in the participation rates of a group, as the participation rates are an indicator of which members control the turn-taking in a group. And subsequently, the turn-taking *process* leads to status differentiation, and the existing status hierarchy of a group.

III. Group Size as a Possible Confounding Factor

In this section, there will be two main points of discussion. First, the effect of different group sizes will be looked at. That is, an attempt will be made to answer the question: Do different group sizes affect the results differently? Second, there will be a discussion of the possible effects due to the lack of random assignment for seating position and sex composition in this study.

The original intent of this study was to have all groups composed of six individuals. However, to maintain an adequate sample size, groups of four and five were also used. The reason for this was poor turnout at some of the meetings. The reasoning behind choosing six-person groups initially was because it is exactly half of a conventional jury, and in some cases six-person juries are used; also, the laboratory used could not accommodate larger groups. However, given that this is a group problem-solving task, having groups composed of four and five individuals is acceptable.

The discussion will now turn to the question of whether different group sizes affect the results differently. It has been shown by Burke (1974), that as group size increases there are fewer opportunities to participate. However, it has also been shown that the effect of group size reaches its maximum at four people (Bass, 1981; Stogdill, 1974). That is, groups of three or less people are less stable and do not have much of a leadership structure, while groups of more than four people have structures similar to those composed of four people. Therefore, one can feel confident that the results from this study would be consistent across all group sizes used.

The lack of random assignment for seating position and sex composition will now be discussed. The reason for the lack of random assignment in these conditions was because of the difficulties in scheduling participants and also to avoid suspicion about the importance of seating position or gender. A check of the sex distribution by seating position, through cross-tabulations, showed no significant chi-squared bias due to sex.

First, subjects were allowed to choose their own seat in the laboratory; they were not randomly assigned to seats. This open seating allows the

possibility of an individual choosing a seat next to someone they may be acquainted with, leaving room for contamination of the results; this will be taken up in the next section. However, since there were so few individuals acquainted (fewer than 10 percent), it is not likely that this adversely affected the results. Previous research has indicated, those individuals who wish to assume leadership in a group will tend to occupy more central and visible positions (Strodtbeck and Hook, 1961; Hare and Bales, 1963; Lott and Sommer, 1967). In this study, it is possible that while these seats were taken first, others who came later may have taken these seats had they been available. Therefore, the individuals in the central and visible positions would likely have become the leaders and participated more, while those who would normally assume that role may participate less and not become leaders. This, it would seem, is the major adverse effect of not randomly assigning seating position.

Second, the sex composition of the groups was not randomly assigned in this study, and although there was no significant bias due to sex found, this could be a potential problem. In this study, there were eight all-female juries, and one all-male jury. In these juries there could not have been any effect of sex, and so in the total sample, the impact of sex was reduced somewhat. It is possible that groups with only one male or one female might have operated quite differently from those with a more even sex distribution. "Token" males or females could have acted differently than they would have in groups with a more balanced sex distribution.

Generally, the main pitfall of not using exclusively mixed-sex groups, and using groups composed mainly of university students, is that the

generalizability of the results to the larger society is limited. That is, these groups could be substantially different from a problem-solving group or jury that was formed from the larger population. However, it is important to note that random seat assignment does not occur in normal problem-solving groups or juries.

IV. Strangers versus Acquaintances

This section will be dealing with two main points of concern. First, the discussion will focus on the possible contamination of the results by those members who were acquainted with one another, and if no contamination exists, how might acquainted individuals contaminate the results? Second, the question will be asked: What if all group members were acquainted?, that is, are established groups different?

Subjects were told to look at the members in their group, and asked if they knew any of them. There were only a few members (fewer than 10 percent) who were acquainted with others in their group. It is believed that because so few people actually knew others in their group, that those acquainted in this study would not have contaminated the results. This belief is predicated on both the minimal amount of acquaintance, and on the fact that these acquaintances were no more than that, acquaintances. However, having made the above point, it must be conceded that it is possible for acquainted individuals to contaminate results of a study such as this one.

The main way that acquainted individuals can contaminate the results is through interaction with one another. That is, in a group of strangers, if one person knows another they would likely direct all questions and answers to that other, and vice versa, because this alleviates some of the tension of a new environment. The fact that acquainted individuals direct their interaction to each other, could, and probably will, exaggerate the amount of participation they have in the group. That is, if two individuals are acquainted, and all others are strangers, they would likely have high participation rates through interaction with one another, and be perceived as leaders of the group. However, if these same two individuals were in groups where all members were strangers, they would likely each have low participation rates, and not even be considered as leaders of the group.

The discussion will now center on the question: Are established groups different? First, to get a better understanding of the kind of group that is normally sought, there will be a description provided. As Berger and Zelditch (1985) point out, initially the members of the group must not hold performance expectations for each other. In addition, there must be no social or personal basis such as prior acquaintance that can serve as a basis for developing such expectations. That is, all members of the group must start out as status equals. The simple answer to the above question is that established groups are different from unacquainted ones; they key word being "established."

In an established group, the norms, communications, and all other group functions are already established. In an unacquainted group, there is a feeling-out process that must take place, and then the group functions

become established through interaction among the group's members. The established group has already gone through this process, and all members of the group know where they stand in relation to the others. The reason established groups are not used in this area of research is because one could only get an understanding of how a group functions regularly. However, by studying unacquainted groups, one can not only get an understanding of how a group functions, but also how these group functions emerge. In other words, by studying unacquainted groups, researchers can understand not only the structure of a group, but also how a group's structure emerges, or becomes established.

Fisek and Ofshe (1972) suggest that hierarchies emerge very quickly (within a few minutes) in unacquainted groups. One could consider the data collected here as examples of the results of the status evolution process after a single meeting, while "established groups" have simply had more meetings. Further research directly comparing these two types of situations is needed.

V. SES: Measurement and Predicted Effects

The measurement of the SES variable in this research was, admittedly, poor. The flaw of this measure was in the original questions and how they applied to young and old respondents. The problems arise, for the older subjects, with the questions about expected education, father's occupation (a five-point occupation group scale), and father's level of education. First, for older subjects education was something achieved years ago and is no longer expected. Second, father's occupation is likely irrelevant because these

subjects' fathers are probably either retired or deceased. Finally, these subjects may not know what their father's level of education was. However, it must be remember that secondary data does have constraining effects.

Furthermore, it is important to note that the individual measures were combined into a more reliable index (a composite measure). Also, most subjects were young students with clear educational goals, had knowledge of their father's level of education, and had fathers who were still employed in their chosen occupation. Therefore, for the younger subjects, the questions of expected education, father's occupation, and father's level of education are reasonable.

The poor measurement of the SES variable may account for its lack of importance in the final model. As was mentioned in section I, the SES variable did not, for the most part, follow its predicted outcome. It was predicted from expectation states theory, and previous research, that those high on the SES variable would participate more, and be chosen more often as leaders. In this specific model, SES was predicted to directly affect both participation measures and influence in a positive way. That is, high SES was predicted to lead to more participation in the first minute, more total participation, and more influence in the group. However, in the final model, high SES only led to more total participation. In addition, high SES had a negative effect on participation in the first minute, and no effect on influence. That is, in the final model, those high on SES had lower participation rates in the first minute, and no influence in the group. It is believed that had the SES variable been measured more precisely, the results in the final model would

be more congruent with both expectation states theory and previous research.

VI. The Next Study

In this final section, there will be several points made on how to enhance the present study. After each of these points is made, there will be reasons given as to why these changes are beneficial, the difficulties in making these changes, and the results that are expected. And finally, this section will end with a discussion of whether or not there have been historical changes in the significance of age and sex as diffuse status characteristics, and whether there will be any changes in the future.

The first change made to the present study would be having all of the groups be composed of six individuals. By using all six-person groups, the results are likely to be more consistent. That is, if all the groups are the same size, then one can eliminate any possible contaminating effects due to differing group sizes. As mentioned earlier, it is not felt that different group sizes would contaminate the results, however, by using all groups the same size, any doubt about this possible contaminating effect would be removed. Also, since this was a mock jury study, having six-person groups is a more realistic jury setting. The main difficulty with this proposed change is due to the lack of subjects. That is, one may have six people scheduled, but not all are guaranteed to show up. To alleviate this, it might be possible to have a back-up list of subjects who could come to fill in for those absent. This

change will give the study a more realistic mock jury, and is more likely to provide consistent results across all of the groups.

The next change would be to use random assignment to seats. The major advantage of this is for control of the possible bias of dominant people choosing prominent seats. Furthermore, it would be necessary to make sure that all of the subjects in each group were unacquainted with each other. This would control for the bias due to acquainted people talking to one another. By making these two adjustments, one can eliminate the possible contaminating effects that might result from individuals choosing more visible and central seating positions, and from individuals directing a disproportionate amount of their interaction to one they are acquainted with. The difficulty with random assignment is that it might arouse suspicion about the importance of seating position. The difficulty with getting all unacquainted individuals in each group is that it might seriously hinder the sample size. By introducing these changes, it is hoped that groups could be studied after they become acquainted, and the results could be generalized to natural problem-solving groups; these natural groups normally become acquainted because they have to meet on more than one occasion.

Another important change would be to improve the sex distribution of the groups. That is, have an even number of groups that are all-male, all-female, and mixed-sex, which are ideally composed of equal numbers of males and females, because the unit-of-analysis is individuals in groups. By making this change, the researcher can better study the effects of sex. If the theory is correct, then the researcher should find that there is no sex-effect in any of the all-male and all-female groups, while the males should have

higher status in the mixed-sex groups. This approach makes it easier to study and pinpoint the actual effect sex has. The main difficulty in making this change is similar to that mentioned above. That is, to try to use all six-person groups with the desired sex distribution could seriously hinder the sample size. However, if it could be accomplished, it would provide a much better measure of the sex-effect. The only sex-effect in this structure would be in the mixed-sex groups, where males would exhibit a higher level of status.

As can be seen from the data, 80% of the subjects used in this study were between the ages of 17 and 24. Because of this, it would be beneficial to try for a wider age distribution. Along those lines, it would also seem useful to try to get a sample more representative of the larger population; fewer university students should be used if possible. The reason for these changes is to make the groups more representative of the larger population, and therefore make the results more generalizable. Also, by having a wider age distribution one can see more clearly the effect age has. If the age distribution was evenly spread out, one could see the inverted-U of status in the results, and be sure that age had the expected effect. The difficulty with both of these changes is again similar to the above. That is, by trying to get a wider age distribution, with fewer university students, the sample size may be seriously hindered. It could be very difficult to get enough people from the larger population to commit to a study, let alone needed people of different ages for a wider age distribution. However, if these changes were accomplished, the results would become much more generalizable to natural problem-solving groups.

Another change that would be beneficial to the present study would be to use three different task types. That is, one that is "young," such as a student appealing a grade, "old," such as the retirement suit used in this study, and "neither," such as a group developing a problem for a study of group communication; which is one that is not age-based. The reason for this change is that it is possible that the task could contaminate the results. In the present study, the older subjects have an advantage over the younger ones in that they likely know much more about retirement. This knowledge could lead them to have more influence in the group, based solely on their knowledge of this one topic, not an actual higher status. The same could be true if the task was oriented toward the young, leading to their increased influence when it might not normally be at that level. Age is normally a diffuse status characteristic, which is a visible characteristic brought with the individual into the group. However, in these examples, age is relevant to the task and gives those with an expertise in the area higher performance expectations. Therefore, age becomes a specific status characteristic in young and old tasks. By using a task that is not age-based, one can eliminate the possible confounding effects that the task may have. The only difficulty with this change is developing a task that is not age-based. However, assuming this can be done, the results of this change can only be to strengthen the validity of the study.

The next change that seems desirable to make is having several sessions with each group. That is, there should be several sessions with the same group, not just a single one-hour session, until a unanimous decision is reached, or until the debate leads to a "hung" jury. This adjustment would

provide some much needed realism to the group's task. Also, it provides a check of reliability, in that it would be possible to see if the status hierarchy, participation rates, and amount of influence were consistent over each session. The major difficulty with this adjustment is that of mortality or attrition. That is, it is difficult to induce the subjects to return on more than one occasion. Therefore, unless the subjects really enjoy the study for itself, or all the groups reach unanimous decisions in the first session, there are bound to be some groups who are missing members at the next session. However, if no mortality or attrition takes place, then this change would really strengthen the study, and provide some reliability to the results.

The final change that will be introduced is that of providing a better measure of SES. Because of its poor measurement in this study, it is the one variable that had the most adverse effects on the results. It was suggested in Chapter Two that perhaps completed education should have been measured instead of expected education. Also, that father's occupation be replaced by subjects' expected, or possibly desired, occupation. Whether these suggestions are used or not, it is clear that the SES measure employed in this study needs to be replaced by a better measure. There are no difficulties in changing this measure. However, the researcher must be careful in selecting an adequate SES measure. The result of such a change can only strengthen the study. A better measure of SES would likely improve the fit of the final model, as well as providing results that support expectation states theory's prediction of the effects of SES.

The discussion will now turn to possible historical changes in age and sex as diffuse status characteristics. The diffuse status characteristic of sex

has been shown to maintain the same significance over the years, as indicated by Strodtbeck's findings in 1951 and Lockheed's findings in 1985. These findings indicate that males have maintained a higher degree of status than females in small decision-making groups. Although one could postulate that with the increased interest in women's issues the future may hold some changing trends in this regard, Lockheed's review of dozens of studies over the last three decades gave conclusive evidence that there have been no basic changes in the male dominance of small groups.

Age as a diffuse status characteristic in small groups has also maintained a consistent level of significance over the years, as indicated by Bales' findings in 1950 and Baker's findings in 1988. These findings indicate that age is a strong determinant of the status accorded an individual. The relationship of status as an inverted-U will, however, probably change in the future. Studies of the relationship between age and status have indicated that from mid-life to old age, status decreases. The change in this relationship will be due to the increasing age of the population. Although this change could be just a function of numbers, it is likely that as more people enter the different older age groups the peak of status will also increase, as there will be more positive role models for the older people in society.

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Appendix A

Letter of Introduction

Jury Study

Dr. P.M. Baker
Small Groups Laboratory
Department of Sociology
University of Victoria

Welcome to the Small Groups Laboratory. You will be participating in a study on how juries make their decisions. We are using 6-person juries because of obvious space limitations. The case to be decided is about mandatory retirement. The case of Dr. Smith vs. Adanac University is fictional, but your deliberation and decision are important in helping us understand how real juries will act. As in all juries, no expertise is needed, because you are representing the general population and are only responsible for making a judgement in accordance with your own principles.

When you first arrive, you will be given a description of the case, and a brief questionnaire concerning your initial opinions about mandatory retirement. While other jury members are busy with this material, each of you will be shown the room where the observer will sit, and the recording equipment we are using. In addition, we will gather a bit of background information from you.

When we have all the background information, and you have all finished reading the case and answering the opinion questionnaire, you will be "sequestered" to try to come to a unanimous decision. This should take less than an hour.

Finally, when the deliberation is over, each of you will be given a final questionnaire to fill out, and then your part in this study is complete.

If you have any questions about the study, you can discuss them with the researcher before you begin your deliberations.

THANKS FOR PARTICIPATING!

Appendix B

Description of the Task

MANDATORY RETIREMENT CASE: Dr. Smith vs. Adanac University

1. Instructions

The purpose of this study is to examine how juries reach their decisions. Your will be a member of a small jury, and will be asked to deliberate on the case described below. This is a civil suit involving mandatory retirement, an issue which has been the centre of much public debate recently. Dr. Smith has just been retired from Adanac University, and has brought a civil suit against the university. It is very important that you treat this deliberation seriously: the results of this study may have profound implications for the justice system in Canada. Your decision has to be made on the basis of the evidence in the specific case at hand. Once you have read this case description, the jury will be left in isolation. You will not be able to ask questions of the researcher during the deliberation process, which should take less than an hour. Note that the jury's decision must be unanimous.

Appendix C

Post-Deliberation Questionnaire

Please answer the following questions as quickly as possible. You will be using the same green answer sheet as before, starting at #15. DO NOT DISCUSS YOUR ANSWERS WITH OTHER JURY MEMBERS. Use a pencil only, and do not mark this question sheet.

Please answer question A through F as they apply to all the jury members, including yourself. Use the scale below to indicate exactly how you would rate each person:

Not at all 0123456789 A great deal

A. How much did each person help to guide the discussion and keep it moving effectively?

15. Person 1
16. Person 2
17. Person 3
18. Person 4
19. Person 5
20. Person 6

B. How much did each person help to keep relationships between members cordial and friendly?

21. Person 1
22. Person 2
23. Person 3
24. Person 4
25. Person 5
26. Person 6

Not at all 0123456789 A great deal

C. How much did each person stand out as a leader in the discussion?

27. Person 1
28. Person 2
29. Person 3
30. Person 4
31. Person 5
32. Person 6

D. How much was each person liked?

33. Person 1
34. Person 2
35. Person 3
36. Person 4
37. Person 5
38. Person 6

E. How much did each person provide good ideas for the discussion?

39. Person 1
40. Person 2
41. Person 3
42. Person 4
43. Person 5
44. Person 6

F. How much did each person make tactful comments to heal any hurt feelings which arose in the discussion?

45. Person 1
46. Person 2
47. Person 3
48. Person 4
49. Person 5
50. Person 6

G. Finally, we would like some background information yourself:

51. Who appeared to talk the *most* in the group? (enter the seat #)

52. Who appeared to have the *most* influence on the group decision? (enter the seat #)

53. the group's decision was...(enter decision # or "3" if hung or "4" if out of time

54. What seat # are you in?

55. Overall, how satisfied were you with the jury's decision?

Very Dissatisfied				Neutral			Very Satisfied	
1	2	3	4	5	6	7	8	9

Appendix D

Description of the Variables

INFL is influence, and is measured as the proportion of others naming as most influential.

PT is total participation of each individual, measured in seconds.

PTZ is total participation standardized relative to group mean and standard deviation.

P1 is participation in the first minute of each individual, measured in seconds.

P1Z is participation in the first minute standardized relative to group mean and standard deviation.

SEX is either male or female, and is a dummy variable (male=1, female =0).

AGE is age in years of each individual.

AGEZ is age in years standardized relative to group mean and standard deviation.

SIZE is the size of each individual, calculated as the product of the individual's height (in inches) and weight (in pounds).

SIZEZ is the size of each individual standardized relative to group mean and standard deviation.

SES is each individual's socioeconomic status, it is an unweighted index of the individual's level of education, father's occupation (a five-point group scale), and father's level of education.

SESZ is each individual's socioeconomic status standardized relative to group mean and standard deviation.

VITA

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