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John Martin Wattendorf, Major (O-4)
HQDA, MILPERCEN (DAPC-OPP-E)
200 Stovall Street
Alexandria, VA 22332

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A thesis submitted to Stanford University in partial fulfillment of the requirements for the degree of Doctor of Philosophy (Sociology)

INTERPERSONAL SIMILARITY/DISSIMILARITY BONDS:

AN EXPECTATION-STATES APPROACH

A DISSERTATION

SUBMITTED TO THE DEPARTMENT OF SOCIOLOGY

AND THE COMMITTEE ON GRADUATE STUDIES

OF STANFORD UNIVERSITY

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

By

John Martin Wattendorf

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This thesis concerns the emergence of power and prestige orders among interactants in collectively-oriented task situations. The focal issue concerns conditions under which an individual in such situations will choose some other person to serve as a referent who provides the basis for the formation of performance expectations for the individual.

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A theory is presented which introduces a hypothetical construct termed an interpersonal similarity/dissimilarity bond which captures the notion that a person may perceive that s/he is so similar (dissimilar) to another person on one or more dimensions, that s/he is also likely to be similar (dissimilar) on other unrelated, but not specifically dissociated, dimensions as well. Under predicted circumstances, a person will form performance expectations for self and others on the basis of these bonds. These expectations will have behavioral manifestations which create an observable power and prestige order. The theory also predicts the concomitant formation of sentiment structures with behavioral consequences.

A laboratory experiment which was conducted as a first test of the theory is described. The results strongly support the notion of interpersonal similarity/dissimilarity bonds and the formation of expectation states. Predictions concerning sentiment structures are less strongly supported; further tests are recommended.

I certify that I have read this thesis and that in my opinion it is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

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Anyone who reads this dissertation and knows anything about expectation-states theories must know that I owe a great debt to Joseph Berger. His influence and guidance permeates my work. No matter how busy he was with his own work, he always found time to help me with my struggles. I am very grateful.

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In closing, I would like to dedicate this effort as I was taught so long ago:

Ad Majorem Dei Gloriam

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CHAPTER I

INTRODUCTION AND LITERATURE REVIEW

A. INTRODUCTION

This thesis presents a theoretical extension to the body of theories known as Expectation States Theories (Berger, Fisek, Norman, & Zelditch, 1977) and describes an experiment designed as a first test of the proposed theory. The elaboration of the expectation-states approach is made possible by the introduction of a hypothetical construct termed as interpersonal similarity/dissimilarity bond which captures the notion that a person may perceive that s/he is so similar (dissimilar) on one or more dimensions that s/he is also likely to be similar (dissimilar) on other unrelated, but *not specifically dissociated*, dimensions.

The proposed theory provides a direct linkage between the research tradition based upon the expectation-states formulation and the body of research dealing with interpersonal attraction (particularly, Byrne, 1971). By integrating the findings from the attraction research with Expectation States Theories, the proposed theory also provides a first attempt to relate the formation of expectation states and sentiment structures.

The basic Expectation States Theory has demonstrated that once an individual forms performance expectations concerning her/his future behavior and the behavior of the other interactants in a collectively oriented task situation, those expectations will serve to structure the observable power and prestige order that emerges in such a situation.

A major topic of interest in this thesis concerns the conditions under which an individual in such a situation will choose some other individual who is not an interactant in the situation to serve as a referent or model who stimulates and drives the formation of performance expectations concerning the interactants. The thesis also addresses the situation where no specific performance expectations are expected to form, but sentiment structures emerge which may have behavioral consequences.

The key issue underlying this proposal concerns the situation where two strangers, about to attempt to collectively solve an unfamiliar, valued task, are made aware of two persons who will not interact in the task situation but are known to be differentially proficient at the task. What are the conditions under which the interactants will use information about the relative task ability of these potential reference persons to structure their performance expectations concerning their own future behavior relevant to the task? For example, if a person becomes aware that some other individual is good at performing an unfamiliar task, what are the conditions under which that individual will come to believe that s/he is also likely to be good at performing that task?

The proposed theory suggests the conditions under which one person will perceive that s/he is so much like a comparison other that s/he will come to expect to perform unfamiliar tasks with an ability similar to that exhibited by the comparison other. One powerful impetus for the perception of interpersonal similarity is the discovery of attitude similarity. The research tradition known as the "attraction paradigm" (Byrne, 1971) provides strong support for this notion and demonstrates,

ceteris paribus, that interpersonal attraction is a direct function of the proportion of perceived similar attitudes. In other words, perceived attitude similarity-dissimilarity provides the foundation for the formation of sentiment structures. Since sentiment structures are also likely to influence behavior, the proposed theory addresses the formation of such structures and predicts their behavioral consequences.

B. EXPECTATION STATES THEORIES - A REVIEW

This review will be organized into two distinct parts. First, relevant portions of Expectation States Theories will be reviewed to secure a firm grasp of those aspects of the issue that have already been explained, and to clearly focus on the nature of the problems that remain to be solved. Second, those areas in social psychology most germane to the issue will be reviewed, with particular emphasis on the area of social comparison processes and interpersonal attraction, in order to uncover possible clues that may lead to ideas suggesting an approach to solving the problem raised in part one. A brief argument will be included to demonstrate how social comparison theory has failed to provide the necessary framework for a cumulative research tradition and to show why we argue that it is necessary to attempt to extend Expectation States Theory in such a deliberately controlled manner.

1. Background Studies

In order to understand the evidence that is already available from Expectation States Theories to help explain the conditions under which persons will form performance expectations on the basis of information from some potential referents, it is important to understand the basic elements of those theories. The pioneering work of Whyte (1943) with

his study of street gangs, and the studies conducted by Sherif, Harvey, and their associates (for example, Harvey, 1953; Sherif, White, & Harvey, 1955) helped form the foundation for the original Expectation States Theory. Whyte (1943) demonstrated that groups have valued behavior standards which are used by group members to evaluate each other's performances and that power and prestige is accorded to members as a result of such evaluations. With his description of the now famous "bowling incident," Whyte suggested that group members' actual behavior may be affected by their relative standing in the group's power and prestige hierarchy.

Harvey (1953) conducted a study which demonstrated that the performance expectations that an individual in a group forms concerning his/her own and other group members' expected behavior are directly related to the individual's position in the power and prestige order of the group. Sherif et al. (1955) demonstrated in a field study that a power and prestige order will develop in an initially unstructured group of relatively homogeneous individuals working on some valued task and that, once such a hierarchy has emerged, the group members' evaluations of each other's performances will be directly related to the power and prestige position held in the group.

A related set of studies was being carried on by Bales and his associates in a laboratory setting at about the same time. Bales' work focused on the interaction patterns in initially unstructured, small, face-to-face groups composed of individuals who were initially unacquainted, status equals in order to determine how a hierarchical structure emerges over time. Experimental evidence soon showed not only that there were clear inequalities in initiated interactions in such

groups but also that there were definite patterns of inequality. The results of studies such as Bales (1953) and Norfleet (1948) indicated that the rank order of performance evaluations (for example, who has the best ideas, who does the most to guide the group, who is the most productive?) in such groups tends to be directly related to the rank order of initiated actions by group members. The study reported by Heinicke and Bales (1953) further demonstrated that the rank order of performance evaluations also tends to be directly related to the rank order of receipt of actions within the group. Bales, Strodtbeck, Mills, and Roseborough (1951) studied task-oriented groups ranging in size from three to ten persons and concluded (p. 468):

> The findings reported here indicate that if participants in a small group are ranked by the total number of acts they initiate, they will also tend to be ranked:
> (1) by the number of acts they receive,
> (2) by the number of acts they address to specific other individuals, and
> (3) by the number of acts they address to the group as a whole.

Studying husband-wife interactions, Strodtbeck (1967) demonstrated that the amount of initiated activity is positively associated with the degree of influence exercised on a decision. Slater (1967) also demonstrated that in Bales-groups, the individual who talks the most and who receives the most interaction is likely to be highly positively correlated with the ranking of the person whose ideas are perceived to be the best and whose ability to guide the discussion is perceived to be the highest. Slater also found that this relationship—the tendency for the same individual to do the most talking, receive the most interaction, provide the best ideas, and demonstrate the most ability to guide the group—is also a function of the amount of status-consensus within the group. The higher the level of status-consensus, the

stronger was the relationship. Heinicke and Bales (1953) showed, however, that over time the individual with highest status in the group may, in some circumstances, reduce the amount of initiating activity so that s/he is not ranked first on this dimension at all times; nevertheless, the high status individual will continue to receive the most interaction and, as Whyte (1943) clearly demonstrated, will quickly reassume her/his dominant position with respect to the initiation of interaction if her/his position of influence is threatened. The research reported above suggests the emergence of a differentiated power and prestige order in such Bales-groups which tend to have interrelated, positively correlated, and observable components which tend to be stable over time.

2. Expectation States Theory

Expectation States Theory (Berger, Cohen, & Zelditch, 1966; Berger & Conner, 1969; Berger, Conner, & Fisch, 1974) was originally formulated to attempt to explain and integrate the findings reported above. Berger and his associates carefully analyzed these studies in an attempt to uncover the basic underlying processes which would explain the various results these small-groups researchers had reported. The product of this effort was the initial formulation of Expectation States Theory, which suggested that the emergent hierarchy in Bales groups can be explained "in terms of an 'underlying' process (involving performance evaluations) by which stabilized performance expectations are formed" (Berger et al., 1974, p. 6). The scope of the basic theory is defined as a situation in which individuals who are initially status equals interact in small, face-to-face groups in order to solve a valued, collective, unitary task. In other words, the task has outcomes

which can be identified as success or failure and the state of accomplishment defined as "success" is preferred; it is appropriate for the actors to take each other's ideas into account when attempting to solve the task, and the task is perceived as having essentially a single ability (the instrumental characteristic) associated with task performance. Later elaborations of the theory extended the definition of a unitary task to include multiple abilities as long as the states of the characteristics associated with these abilities are consistently and similarly valued.

At this point it is useful to briefly consider the nature of the task itself. Group tasks are influenced by both unit and outcome rules. Unit rules have to do with what action is allowed or prohibited concerning task activities, and outcome rules have to do with the evaluation of the proposed task solution. Since these rules will have an impact on interaction within the group, it is useful to examine the source and nature of such rules. If the problem is extrasystemic, the source of the rules is outside the group as a system, and some objective solution to the task is available; both unit and outcome rules are readily available to all members. For example, if the task is to solve an algebra problem, it is possible for all the members to know the basic rules of algebra and to recognize a correct solution. However, when the problem is intrasystemic, the source of the rules is within the group itself, and the solution to the task is subjective in nature. In such a situation—for example, when a group attempts to solve a human relations problem—the rules actually emerge from the interaction, and the results are subjectively evaluated. Thus, the more intrasystemic the problem, the more likely the rules and, therefore, the interaction

will be differentially influenced by persons in a manner consistent with their relative position on the power and prestige order of the group (see Sherif, White, & Harvey, 1955).

Expectation States Theory suggests that as interaction takes place among members of a group in a situation as described above, each individual develops a set of conceptions concerning the relative task-solving abilities of self and others in the group. In other words, a structure of performance expectations develops as a direct result of the interaction process. To understand the emergence of such a structure, it is necessary to introduce the concept of an observable power and prestige order (OPPO). Berger and his associates (1966, 1974) noted that the power and prestige order which emerged in Bales groups can be operationalized as four distinct, observable behaviors which are distributed among the group members and which tend to be highly correlated and stable. These behaviors consist of differential, socially distributed opportunities to perform—action opportunities (AO); actions directed toward task accomplishment—problem-solving attempts (PSA); actions which signal to others whether their performance is positively or negatively evaluated—communicated evaluations (CE); and actions which result in changes in previously made evaluations—exercised influence (I). Expectation States Theory argues that it is the underlying structure of performance expectations that explains the differentially distributed behaviors which determine the power and prestige order.

By way of illustration, consider a situation in which three strangers who are equal in status are attempting to solve a valued, collective, and unitary task such as a problem in interpersonal

relations. Let us describe the situation from the perspective of one member, p, as s/he interacts with the others, o_1 and o_2. As the members interact to try to solve the problem, p is likely to observe that one of the three actors (p is aware of his own actions as well as the actions of others; thus, p observes self, p', as an actor in the situation) seems to contribute more good ideas toward the solution of the task than the others. This may occur because one of the members is in fact more skillful at solving this kind of task, or it may simply be that one of the members happens to talk more in this situation. Because the group members want to successfully accomplish the task, and given the fact that they have no clue as to which of the members is most likely to be able to contribute most to the task accomplishment, the interactants will actively seek information which will help clarify the situation and organize their behavior. Thus, if p, for example, perceives that o_1 is contributing more to the solution of the task than either p' or o_2, p is likely to come to expect o_1 to perform better based upon a series of unit evaluations—"a specific, momentary evaluation of whatever composes the unit" (Berger & Conner, 1974, p. 88), normally the evaluation of some performance output. In other words, p will form a high (+) performance expectation for o_1 relative to p' and o_2.

Once p forms such an expectation s/he is likely to give o_1 relatively more action opportunities, is more likely to positively evaluate o_1's problem-solving attempts, and in case of conflict between o_1 and o_2, is more likely to be influenced by o_1. Given the situation as described, and ceteris paribus, the most probable stable expectation structure to develop over time will be a situation in which o_1 will

come to believe that s/he is better at the task than either p or o_2 and p and o_2 will hold congruent expectations. It is important to note at this point that the concept of expectation states is a theoretical construct. Expectation states are clearly unobservable; however, the concept is useful for explaining the observed behaviors. The formulation argues that the observed behavior in such situations is a probability function of the underlying expectations structure. However, the formulation also argues that the underlying expectation structure is also a function of behavior and the existing expectation state of the actor. In this way, the formulation presents a self-perpetuating process.

In other words, once the differentiated expectations structure has emerged, the behaviors described as the observable power and prestige order become a function of the expectations, and the resulting behaviors reinforce the expectations and make the structure self-perpetuating as long as there are no new inputs to the system in the situation. For example, relative to o_1, o_2 is less likely to make a problem-solving attempt, and, even if s/he does make a suggestion, the problem-solving attempt is less likely to be positively evaluated. Therefore, there is not likely to be much reason for changing expectations about o_2's performance. The theory was presented above in an informal, discursive manner appropriate for our purposes in this review; for a more comprehensive, formal presentation of the theory, see Berger and Conner (1974).

A major advantage of Expectation States Theory is the carefully formulated framework it has provided for the development of a coherent, comprehensive, scientific research tradition which has served to foster

evaluation, extension, and proliferation of the theory. The theory meets all of the requirements of a theoretical framework, as suggested by Cohen, Berger, and Zelditch (1972). The framework is so constructed that it aids in the design of studies to test and elaborate the theory by allowing comparison among the studies. The framework includes a theoretical formulation which specifically identifies those aspects of the research setting which have to be controlled and those which are safely ignored. The chain of reasoning used throughout the formulation is explicitly defined. And a standardized research setting is carefully developed to allow direct comparison among studies which are designed specifically to extend or elaborate the theory. The research setting will be described in some detail later in this review.

By providing a clear framework upon which to build a theoretical research tradition, the theory can be developed to the extent that meaningful generalizations which suggest practical applications of the theory will be possible. Thus, for example, the elaborations of Expectation States Theory to include Status Characteristics Theory and Source Theory have fostered a host of studies which demonstrate the application of the theories to current social problems (see, for example, Cohen & Roper, 1972; Entwisle & Webster, 1972; Lockheed & Hall, 1976; Lohman, 1972).

3. Status Characteristics Theory

Expectation States Theory considers the situation where the group members are originally status equals and argues that performance expectations will be formed based upon unit evaluations. Once a structure of performance expectations is formed for the interactants in a situation meeting the defined scope conditions, this stable underlying

structure will determine the behaviors that are collectively referred to as the OPPO. In other words, the power and prestige order that emerges in such a situation is a function of the underlying structure of performance expectations, and the actual behaviors serve to reinforce and perpetuate the structure. Status Characteristics Theory (Berger, Cohen, & Zelditch, 1972; Berger, Fisek, Norman, & Zelditch, 1977) posits the same results with respect to the OPPO based upon an underlying expectation states structure; however, in this case, the interactants are initially differentiated with respect to status characteristics, and the performance expectations which emerge are a function of the valued states of the status characteristic(s) possessed by each actor.

The development of the extension of Expectation States Theory to include situations where the group members are not initially status equals is the result of an integration of the status category research tradition begun with the work of Simmel and Park with the expectation-states research program begun with the work of Berger. Simmel noted that "all relations which people have to one another are based on their knowing something about one another," and he argued that "the first condition of having to deal with somebody at all is to know with 'whom' one has to deal" (Simmel, 1908; in Wolff, 1950, p. 307). Simmel observed that it is impossible to know everything about another person and that individuals will, therefore, tend to see others as through a veil; in other words, as being in some general category such as occupation, race, or religion (Wolff, 1959, pp. 342-4). Park (1950) continued to develop the notion of social categorization and stereotypes and argued that some form of categorization is ubiquitous with a substantial

amount of agreement among societal members concerning the nature of the categories in a stable society. Hughes and Hughes (1952) continued in this tradition, suggesting that a person's racial group implies a status category and that "'contingencies of life' are different because he is of that category" (p. 100). In other words, the work of these social scientists suggests that persons tend to place other persons into general categories with status implications that result in behavioral consequences that are quite pervasive, consistent, and stable in a given society.

In the 1950s and 1960s, a number of studies were reported which were to provide the link by which status characteristics would be integrated into the expectation-states approach for explaining the emergence of hierarchical structures in human groups. In a study first reported in 1954, Torrance (1967) compared various aspects of the interaction within permanent and temporary three-man bomber crews as they attempted to solve various experimental tasks. The members of the crews were differentiated with respect to status by virtue of their role positions (pilot, navigator, or gunner) and by virtue of their military rank (the pilot and navigator were officers and the gunner was an enlisted man). The subjects attempted to solve four tasks ranging from a fairly extrasystemic task (the "Maier Horse-Trading Problem") to an intrasystemic task with no objective solution. Torrance (1967) found that "on all four problems, influence was directly and clearly in accord with the power structure of the group" (p. 609). The study also showed that the results were similar for both temporary (a "crew" made up just for the experiment) and permanent (actual crews that had flown and trained together) crews when the problem was intrasystematic. When

the problem was clearly extrasystemic, the rank order of influence was more in accord with the power structure of the group in the permanent crews than in the temporary crews. In other words, as Heinicke and Bales (1953) had demonstrated earlier, the position of high status individuals tends to be accepted to a greater degree as the group develops a history. This fact was demonstrated in the Torrance study because pilots in permanent crews were more influential than pilots in temporary crews when the tasks had objective solutions. In general, the pilots were able to exert influence over navigators and gunners even when the task was not related to tasks associated with their roles as bomber crew members and even when the pilot was objectively wrong in his opinion.

Perhaps the most influential early studies concerning status processes in small groups are those conducted by Strodtbeck and his associates (Strodtbeck, James, & Hawkins, 1957; Strodtbeck & Mann, 1956) concerning the effects of status on jury deliberations. These studies demonstrated that, in spite of the norm of equality among jury members, the mock jury members were clearly differentiated on the basis of their occupational status and on the basis of their sex. Strodtbeck, James, and Hawkins (1957) showed that the rank order of rates of participation corresponded with the rank order of occupational prestige, with males participating more than females within each occupational category. The study also demonstrated again that the rate of participation is positively correlated with the degree of influence exerted and the evaluation of the contribution to the group's effort. The data also show that the higher the occupational status of an individual, the more likely that individual is to be chosen as foreman. Women were chosen as foreman only one-fifth as many times as would be expected by chance.

Numerous other studies added to the continually growing inventory of facts concerning the effect of status characteristics on group interaction. Katz, Goldston, and Benjamin (1958) showed that in biracial groups members of the higher status race (whites) speak more often than those of the lower status race (blacks), the lower status persons speak more to higher status persons than vice versa, and the lower status persons speak more to higher status persons than to each other. Hurwitz, Zander, and Hymovitch (1968) reported the results of a field experiment which studied the effects of high and low status based upon occupational prestige on affect relations and interactions. They found that "lows will tend to like highs, to overrate the extent to which highs like them, to communicate infrequently and, when they do talk, to talk mainly to highs" (p. 296). Those who were high in status tended to like other highs and to talk mainly to other highs. They also concluded that "there will be less of a desire among all group members to be liked by lows, and fewer communications will be directed to them" (Hurwitz, Zander, & Hymovitch, 1968, p. 296).

In a study comparing interactions in three different kinds of triadic groups (an actual family made up of a father, mother, and daughter; an experimental "family" composed of a father, mother, and daughter who were strangers, with no actual relationship to each other; and an ad hoc group made up of three fathers, three mothers, or three daughters), Leik (1963) found that the traditional male/female roles that are quite apparent and influential when interacting with strangers tend to break down when interacting with other family members. In other words, the Leik study shows that the status process will probably be modified when there is a long history of interaction among the group

members—the more information one person learns about another, the less that person will rely on general categorizations or stereotypes to structure his/her interaction with that other.

Berger, Cohen, and Zelditch (1972), acknowledging the difficulty of generalizing from these and other related studies because of the significant differences among them, nevertheless suggest that the principal findings may be summarized in the following empirical generalization:

> When a task-oriented group is differentiated with respect to some external status characteristic, this status difference determines the observable power and prestige within the group whether or not the external status characteristic is related to the group task. (p. 243)

Status Characteristics Theory was initially formulated with a scope condition similar to Expectation States Theory with the modification that the group *members* would be differentiated by a single status characteristic which provides a social basis of discrimination in the task situation. It is not necessary for the status characteristic to be relevant to the task as long as the status is not specifically dissociated from the task; in other words, as long as the actors do not believe the characteristic is independent of the task. To say that a state x of a status characteristic is relevant to a state y of a task characteristic is to say that if p perceives that an actor possesses state x of the status characteristic, then p will <u>expect</u> that actor to possess state y of the task characteristic. Again, because individuals will perceive status characteristics differently with different evaluations and different meanings, the theory is formulated from the perspective of a single focal actor, p. In this sense, the theory is described as a p-centric formulation. Also, for ease of explication, we

will describe situations with only two interactants; however, the concepts can easily be expanded to include other actors.

At this point it is necessary to introduce the concept of a diffuse status characteristic (D). In order for a characteristic to be defined as D it must have differentially evaluated states (for example, although progress toward equality has hopefully begun, in the United States race has traditionally been dichotomized into a positively evaluated "white" state and a negatively evaluated "black" state for many people); each state of D must have evaluated states of specific characteristics associated with it (for example, p may believe blacks to have high athletic ability and low intellectual ability); and each state of D must have a general expectation state which is valued the same as the state of D possessed by the actor (for example, in a highly general sense, p may expect blacks to have less ability than whites except at those positively evaluated specific characteristics associated with being black) (Berger et al., 1966, p. 33). It must be emphasized that a diffuse status characteristic is a social construction and, although generally the states of a given D are similarly evaluated in a given culture, there can be wide individual differences.

It is possible to have a specific status characteristic (C); for example, mathematics ability, a characteristic with differentially evaluated states that have associated specific expectation states for p' and o. In other words, a C is similar to a D except for the fact that a C has no associated general expectation state (Berger, Fisek, Norman, & Zelditch, 1977, p. 58). If C is a performance characteristic which is instrumental to the specific group task in question, it is designated as C*.

Consider a situation which meets the described scope conditions with respect to task (call this situation S*) and where group members are differentiated on the basis of a single D. The original Status Characteristic Theory argued that in such a situation D will be activated. In other words, according to the Activation Assumption, D will be recognized as a cue that may be used to help structure the current social situation (this concept is called "salience" in the most recent elaboration of the theory which includes multicharacteristic status situations [Berger et al., 1977, p. 65]). Once the D is activated, according to the Burden of Proof Assumption, unless some specific information is injected into the situation to demonstrate that the status information is not relevant, the status information will be used to define the situation. That is, the burden of proof is on exclusion; the actors behave as if the status information is relevant unless there is strong evidence to show that the information is not relevant in the situation. In later elaborations of the theory, it has been shown that C's are also subject to the burden-of-proof process (Berger et al., 1977). Thus, if a characteristic is not specifically dissociated from the task, the actors will behave as if the burden of proof is to demonstrate why the D or C is not relevant to the task situation.

A concrete example may help clarify the processes presented thus far. Assume two individuals are about to interact to attempt to solve a collectively oriented, valued task. That is, the persons must work together to achieve success and success is the desired end state. There is no status differentiation between the two interactants, except for the fact that one person is thirty years old and the other is eleven years old. Both individuals perceive age to be a diffuse status

characteristic. Specifically, the older person possesses the high state of the status characteristic relative to the younger person, who possesses the low state.

In such a situation, the age of the interactants will provide a cue to each individual that will help structure the situation (activation). Further, unless there is some information to demonstrate specifically that the older person should not perform better in this situation, the age of the interactants will be used to define and structure the situation (burden of proof).

According to the Assignment Assumption, actors will assign performance expectations to self and others in accordance with the possessed states of D. Thus, an actor with a positively evaluated state of D which is relevant to C* (either because of specific information in the situation or through the burden-of-proof process) will be assigned the positive state of C*. Similarly, an actor with a negatively evaluated state of D will be assigned the negative state of C*. According to the Basic Expectation Assumption, once expectation states have been assigned, those behaviors described as the observable power and prestige order will become a function of the underlying expectation structure.

Returning to our example, the theory argues that the interactants will come to form expectations about their own and each other's ability to perform the instrumental task and that these expectancies will be a function of the relative state of the diffuse status characteristic possessed by each interactant. The Assignment Assumption, as applied to our example, means that the older interactant will come to <u>believe</u> that s/he has more task ability than the other, and the younger interactant will come to <u>believe</u> that s/he has less task ability relative to her/his partner.

The Basic Expectation Assumption describes the last step in this status-organizing process. Once the interactants form expectations concerning their own and each other's competence relative to the task, these expectancies become beliefs and the beliefs have behavioral consequences which result in the emergence of a power and prestige order. That is, in the described situation we expect the older interactant to be given more action opportunities, to make more problem-solving attempts, to receive more communicated evaluations, and to exercise greater influence than the younger interactant.

Because this fundamental status characteristics theory is so important to an understanding of the approach we want to take to studying the situation described at the beginning of this paper, it is useful to quote directly the basic elements of the formal theory as presented by Berger, Cohen, and Zelditch (1972):

> Definition 1. (Diffuse status characteristic) A characteristic D is a "diffuse status characteristic" if and only if
> 1. the states of D are differentially evaluated;
> 2. to each state x of D there corresponds a distinct set y_x of states of specific, evaluated characteristics associated with D_x;
> 3. to each state x of D there corresponds a distinct general expectation state, GES_x, having the same evaluation as the state D_x. (p. 244)
>
> Definition 2. (Activation) D is "activated" in S* if and only if p attributes in S* the states GES_x and/or the sets of states y_x to p' and o which are consistent with their states of D. (p. 244)
>
> Assumption 1. (Activation) Given S*, if D in S* is a social basis of discrimination between p' and o then D is activated in S*. (p. 245)

Assumption 2. (Burden of Proof) If D is activated in S* and has not been previously dissociated from C*, and if there is no other social basis of discrimination between p' and o, then at least one consistent component of D will become relevant to C* in S*. (p. 246)

Assumption 3. (Assignment) If any components of an activated D are relevant to C*, p will assign states of C* to self and other in a consistent manner. (p. 246)

Assumption 4. (Basic Expectation Assumption) If p assigns states of C* to himself and o consistent with the states of an activated D, then p's position relative to o's in the observable power and prestige order will be a direct function of p's expectation advantage over o. (p. 247)

In order to discuss the empirical support for this theory and to describe some of the elaborations of the theory that are particularly relevant to the specific issue we want to investigate in this paper, it is useful to describe the standardized research setting that has been used to develop a rigorous cumulative research tradition based on Expectation States Theories.

a. <u>The Research Setting</u>

In a typical expectation-states experiment, subjects are tested in pairs. Each subject is escorted into the laboratory and seated at a desk or small table which is so situated that the subject has a clear view of the experimenter in the front of the room and any charts, projection screens, or other devices to be used in the experiment; however, the subject cannot see her/his partner, who is seated at an adjacent, similar desk but separated by a curtain or other opaque partition of some sort. In this manner, the experimenter is able to make sure that the only information one subject gets about another is that information

provided by the experimenter. In other words, the experimenter is in a position to manipulate the status cues that will be made available in the situation. For example, Moore (1968) used junior college women as subjects and manipulated their perceived diffuse status characteristics by having the experimenter announce something like "I see we have a Stanford (or the name of a local high school) and a junior college student here today." Of course, each subject knows that she is a junior college student and, therefore, assumes that her partner is either relatively higher or lower in status. For example, when the subject believes her partner to be a Stanford student, the subject is manipulated into a low-high (LH) status condition; similarly, when the partner is perceived to be a high school student, the subject is in a high-low (HL) status condition. Berger, Cohen, and Zelditch (1972) used a similar manipulation to make Air Force sergeants believe they were interacting with either a captain (LH manipulation) or an airman third class (HL manipulation).

Specific status characteristics are typically manipulated by having the subjects complete some kind of a test and then having the experimenter publicly announce manipulated scores, often with some additional information concerning how well others typically perform. In other words, using a task with no obvious objectively correct solution, no clear external anchorages (Sherif et al., 1955), the experimenter is free to manipulate the beliefs of the subjects to suit the experimental condition. For example, Berger and Conner (1969) manipulated subjects into HL or LH conditions with respect to their ability to solve the experimental task by having the subjects take a test purported to measure their task ability and then providing bogus feedback on their test

scores. The test was described as measuring "Meaning Insight Ability," the ability to select from a pair of phonetically spelled non-English words the one that is closest in meaning to a given English word. The non-English words were fictitious and designed to result in a nearly equal probability of either alternative being chosen as correct. Since the actual experimental task would present a pair of non-English words with each English word, the test used to manipulate ability (status) reversed the order and used a pair of English words with each non-English word. Each subject was individually given a test consisting of twelve word sets and then informed that his performance was either exceptionally good or exceptionally bad. Each subject also heard his partner's score. Thus, a subject could be manipulated to believe that his ability was high and that his partner's was also high (HH), that his ability was low and that his partner's was high (LH), that his ability was high and that his partner's was low (HL), or that both of them had low ability (LL).

It is also possible, of course, to manipulate the subjects to believe they have high or low task ability concerning specific tasks which are different from the experimental task which they will attempt to solve together. In other words, instead of manipulating the subjects to believe they are either good or bad at the instrumental task, the subjects may be led to believe they are high or low on some other C or series of C's which can be manipulated to be specifically relevant to C* (for example, the experimenter may state that ability at "Contrast Sensitivity"—another ambiguous task requiring a binary choice—is highly correlated with Meaning Insight Ability) or simply presented with no specific relevance manipulation. For example, Freese and Cohen

(1973) manipulated subjects to believe they possessed high or low ability at Meaning Insight and Contrast Sensitivity, and then had them interact with a partner to collectively solve a task requiring "Spatial Insight Ability" (yet another ambiguous task with a fictitious ability; however, as with each other "ability" used in these experiments, the subjects believed an actual ability which could be objectively measured was involved). This particular experiment was further complicated by manipulating the states of a diffuse status characteristic—age. The point is that the setting allows the experimenter to manipulate both diffuse and specific characteristics in whatever way is necessary to meet the requirements of the experiment.

The subjects in these experiments typically interact with each other by electronic means. Each subject has a console in front of her/him which consists of a series of buttons and lights. The consoles are connected to the Interaction Control Machine (ICOM) which is operated by an experimenter. The use of these devices is best explained by a simple sample. The tasks that are typically used in expectation-states experiments require the subjects to make a series of choices (each choice is a trial), often involving the selection of one of two alternatives as in the Meaning Insight Task. In order to meet the scope conditions of a collectively-oriented task, it is necessary that the subjects take each other's opinions into account when attempting to solve the task. This is accomplished by having the subjects first make an initial private choice on each trial by pushing the button on their console that corresponds to their choice, thereby controlling the action opportunities and problem-solving attempts, since each subject is given an opportunity and each must make a choice. When a subject presses a

button on the console, an appropriate light goes on to register the choice on the subject's own console, on the experimenter's monitor, and on the master console. After both subjects have made an initial choice, a bulb lights up on each subject's console, ostensibly indicating the partner's choice; in actuality, the choice is controlled by the ICOM so that the subjects can be made to appear to agree or disagree with each other on each trial in accordance with the preprogrammed experimental manipulation (this controls the number of communicated evaluations). Typically, subjects are made to disagree a high percentage of the time, often on more than four-fifths of the trials. Finally, the subjects make their final choice after having considered their partner's opinion. If the subjects are simply taking a test to manipulate an individual ability, the subjects make a series of private, single choices until all of the trials are completed. The experimenter, who has monitored each subject's choices on the master console, can then "grade" the performances and announce the desired manipulated scores.

On the critical trials, those instances where the subjects perceive that they disagree, it is possible to measure the amount of influence each subject exerts on her/his partner. The subjects are carefully instructed that they are not only allowed but positively encouraged to take their partner's opinions into account when making their final decision on each trial. Thus, if a subject's final choice is different from her/his initial choice, s/he is said to have been influenced by her/his partner. In other words, the subject has made a "change" or "other" response. If the subject stays with her/his initial choice, the subject is said to have made a "stay" or "self" response. The measure of influence typically used in the expectation-states

experiments is referred to as the "probability of an S-response" which is abbreviated as P(S). The P(S) is calculated by dividing the number of stay responses for a given respondent by the number of critical trials. Thus, P(S) is a measure of influence which is calculated from experimental data, while the other behaviors which define the OPPO are experimentally controlled so that they are equal for each subject. Therefore, P(S) is a useful indicator of the observable power and prestige order in the group and provides a good dependent variable for the experiments. However, it should be noted that experiments involving open interaction in which other elements of the OPPO are measured have also been conducted (see, for example, Fisek, 1968 & 1974; Fisek & Ofshe, 1970).

b. The Studies

There are now well over a hundred separate studies in the growing expectation-states research tradition, and it is clearly beyond the scope of this thesis to review all of these studies. (See Berger & Zelditch, 1978, for a comprehensive bibliography of the research tradition and Wagner, 1978, for a more thorough review of the tradition.) However, it is useful to review some of the major findings from a few of the more influential studies as a way of describing how the basic theory has been extended and elaborated. It is through such extensions and elaborations that we can make inferences about the specific interaction situation we described at the beginning of this review.

Berger and Conner (1969) conducted a study in which the subjects were given a test to manipulate their performance expectations about Meaning Insight Ability before the second phase of the experiment when they interacted to collectively complete a series of meaning insight

trials. The subjects were manipulated into four expectation conditions—HL, HH, LL, and LH. The P(S) for each condition was as follows: HL = .78; HH = .67; LL = .65; LH = .44. The results as described by Berger and Conner (1969) clearly demonstrate "that a person expected to perform well relative to another person will accept influence less than one expected to perform poorly relative to a second person" (p. 197). Noting particularly the similarity of the P(S) in the HH and LL conditions, the results also suggest that it is the relative rather than the absolute performance expectations that affect the observable power and prestige order.

One of the first studies that provided empirical support for the original status characteristics extension was the study conducted by Moore (1968). Moore caused his female junior college student subjects to believe that they were interacting with a Stanford student (low status relative to partner, LH manipulation) or a high school student (high status relative to partner, HL manipulation). Additionally, some of the subjects were explicitly informed that those in the HL condition consistently perform better than those in the LH condition; the other subjects were told nothing about the relevance of the status characteristic. Moore found that subjects in a HL condition were influenced less, had a higher P(S), than subjects in a LH condition whether the status was made specifically related to the task or not related to the task. When Moore removed the data of twenty suspicious subjects (who apparently did not accept the status difference required to meet the scope conditions of the theory) from the analysis, the results were even more convincing with the difference between the HL and LH conditions significant beyond the .001 level of significance for both the explicit

and implicit conditions, respectively). Moore (1968) concluded that the data permit "the conclusion that information regarding the existence of a status differential is as potent a factor in leading to differential influences as is explicit information regarding relevant ability differences" (p. 60). This study provided empirical support for the burden of proof assumption; the D was treated as relevant to C* even in the condition where nothing was said to make it relevant.

The study conducted by Berger, Cohen, and Zelditch (1972) provided still more evidence in support of the crucial burden of proof process. The experimenters caused Air Force staff sergeants to believe they were interacting with an airman third class (HL manipulation) or a captain (LH manipulation). In order to specifically test the basic assumptions of the theory, the subjects were further subdivided into three experimental conditions. In one condition the subjects (who had average general classification scores) were told that their partners had higher or lower general classification scores consistent with their rank, in order to induce the activation of the diffuse status characteristic experimentally. In a second condition the subjects received the same manipulation as the first, and, in addition, the subjects were told that persons with higher general classification scores perform better at the experimental task (Contrast Sensitivity). In this way the status characteristic was made explicitly relevant to the task; those with higher status were said to have higher scores, and those with higher scores were believed to have more task ability. Finally, the last condition simply manipulated status with no additional information. The results supported each assumption of the theory. The data indicated that in each condition the "high-low subjects consistently have

higher probabilities of an S-response than low-high subjects" (Berger et al., 1972, p. 250).

The Berger et al. (1972) experiment did have some ambiguities. For example, Fisek (in a personal communication) suggests that it is possible that the providing of information concerning classification scores was more likely the addition of a specific status characteristic rather than an experimentally induced activation of D. However, even if that is the case, the study still provides clear support for the burden of proof assumption.

In all cases in this experiment, the P(S) was rather high. The P(S) ranged from a high of .88 in the explicit relevance condition with a HL manipulation to a low of .74 in the same condition with a LH manipulation. In fact, the LH was essentially the same in all three conditions. The HL manipulation in the condition with no additional information resulted in a P(S) of .82. In this author's opinion, the unusually high level of the P(S) may have been an artifact of the experimental task. The Contrast Sensitivity Task requires subjects to choose which of the two projected patterns made up of black and white rectangles contains the greater proportion of white. Because of the nature of the subject's jobs, it is possible that the task was perceived as being related to an abstract perceptual ability that Air Force personnel <u>should</u> possess. If such was the case, we would expect to find elevated stay responses and less differentiation between HL and LH subjects. The fact that the assumptions of the theory were confirmed in spite of these possible intervening variables provides further support for the theory.

Freese (1970) demonstrated that the burden of proof process will also work if the subjects are differentiated on the basis of two similarly evaluated specific status characteristics which are not made specifically relevant to the instrumental characteristic. Freese caused his subjects to believe that they were either high or low in "Meaning Insight Ability" and "Social Prediction Ability," another ambiguous ability which the subjects were led to believe is closely related to Meaning Insight Ability in the "direct" condition and inversely related in the "inverse" condition. The subjects were actually given a test to ostensibly measure Meaning Insight Ability with fictitious scores used to complete the manipulation. Social Prediction Ability was manipulated by making the subject believe that if she is high on one she will be high on the other (direct condition) or low on both, or that if she is high on one she will be low on the other (inverse condition). During the second phase of the experiment, the subjects interacted with a partner to complete a Contrast Sensitivity Test. No mention was made of the phase one manipulation during this phase; the subjects were led to believe that the Contrast Sensitivity Task was part of a separate study.

The results of the Freese (1970) study demonstrated that the difference between the P(S) of those in the direct high condition (.73) (those subjects manipulated to believe they were good at Meaning Insight and, therefore, also likely to be good at Social Prediction) and the P(S) of those in the direct low condition (.62) (those subjects manipulated to believe they were poor at both abilities) was significant at the .01 level using a Mann-Whitney U Test. There was no difference in the P(S) for the two inverse conditions (.66). Freese (1976)

"suggests that Inverse subjects may have attributionally combined their inconsistent expectations with the effect that they cancelled each other out" (p. 198). Nevertheless, given the previously described scope conditions, Freese demonstrated that if a person believes s/he is better than her/his partner at performing two specific tasks requiring related ability, then that person will come to believe that s/he can perform better than her/his partner at some other task as long as the new task ability is not specifically dissociated from the known abilities. A study (to be described shortly) conducted by Freese and Cohen (1973) also supports the finding that the burden of proof assumption holds for specific characteristics, and a study conducted by Kervin (1975) provides evidence which suggests that the assumption will hold for even a single nonrelevant specific status characteristic.

Berger et al. (1977) cite an unpublished doctoral dissertation by Kervin (1972) which provided some valuable information about the multi-characteristic status situation and also demonstrated that a single specific status characteristic which is made relevant to the task will have behavioral consequences. Kervin conducted an experiment with four conditions as follows: direct HL, in which the subject was led to believe that he (male high school students were used as subjects) was good at the instrumental task (Contrast Sensitivity) relative to his partner; HH-LL, in which the subject was led to believe that he was high in ability relative to his partner on two specific status characteristics which were made relevant to the task; relevant HL, in which the subject was led to believe that he was high in ability relative to his partner on a single specific status characteristic which was made relevant to the task; and HL-LH, in which the subject was led to believe

that he was high on one task-relevant specific status characteristic and low on the other relative to his partner.

The resulting P(S) for the conditions were as follows: direct HL, .77; HH-LL, .73; relevant HL, .65; HL-LH, .58 (Berger et al., 1977, p. 77). The study is presented here because it demonstrates that even a single specific status characteristic that is made relevant to the task will have a differentiating effect with behavioral consequences. However, the study also demonstrated that the more direct the linkage connecting an actor to the task, the greater the inequality the characteristic produces (direct HL compared to relevant HL). Also, given linkages of the same strength, the greater the number of consistently allocated characteristics, the greater is the inequality produced (HH-LL compared to relevant HL). Finally, equal strength linkages with consistently allocated characteristics produce greater inequality than linkages with inconsistently allocated characteristics (HH-LL compared to HL-LH). These findings provided important support for the third elaboration of Status Characteristics Theory, to be described shortly.

Another issue which must be considered concerns the problem of equating information. The question is whether or not equating information has any implications for the formation of performance expectations in a multicharacteristic status situation. For example, if interactants learn that they are equally competent with respect to two specific status characteristics and differentiated with respect to a third specific characteristic, will the performance expectations that form in such a situation differ from expectations which would form in a situation without the equating information? Kervin (1975) experimentally studied such a situation and concluded "that equating information is

used in the formation of performance expectations only when it is specifically relevant to the task characteristic" (p. 14).

As soon as the scope conditions are extended to allow multicharacteristic status situations, an important issue becomes immediately apparent. What happens when an individual possesses more than one status characteristic and the states of these characteristics are not consistent? In other words, the states of the characteristics do not all have the same evaluation; some are high and some are low relative to other interactants in a situation. How will an individual form performance expectations in such a situation? Berger and Fisek (1970) suggest that there are two possible ways of cognitively defining such a situation. A person may use a "balancing" mechanism whereby the situation is cognitively altered so that the information appears consistent; in other words, "the actor will form expectations that correspond to a perceived distribution of states that is consistent or univalent for each individual" (Berger & Fisek, 1970, p. 292). Alternatively, a person may use a "combining" mechanism whereby the available information is not cognitively altered or discarded, but, rather, the information concerning the inconsistent states of the status characteristics is somehow combined to form a resultant expectation state. As Berger and Fisek (1970) argue, "the actor essentially operates as an information processing system, taking into account all information available to him as regards the relevant status characteristics and the task in the situation" (p. 292).

Berger and Fisek (1970) conducted an experiment using the basic expectation-states research setting to try to discriminate between the two alternative cognitive defining mechanisms. Subjects were first

given two written tests to manipulate their Meaning Insight Ability and Relational Insight Ability. The subjects were placed in three different conditions: HH-LL (subject high on both abilities and partner low on both), HL-LH, and LL-HH. The subjects were led to believe that the two manipulated abilities are highly correlated with each other and with the experimental task, Contrast Sensitivity. Both the combining and the balancing arguments predict that the P(S) will be highest for the HH-LL condition and lowest for the LL-HH condition; however, the two mechanisms suggest different results for the inconsistent condition, HL-LH. If a subject utilizes a balancing mechanism, the inconsistent information in the HL-LH condition will be cognitively altered such that a person either sees her/himself as high and her/his partner as low, or vice versa. However, if the subject uses a combining mechanism, the P(S) for the HL-LH condition should be about midway between the P(S) for the HH-LL and the LL-HH conditions.

The results revealed a highly significant difference (well beyond the .001 level of significance) between the HH-LL and the LL-HH conditions and a P(S) for the HL-LH condition in between the other two consistent conditions. Nevertheless, it was clearly possible that approximately half of the subjects balanced in the high-self, low-other direction and the other half in the low-self, high-other direction, resulting in a mean P(S) similar to that calculated in this experiment and predicted by a combining mechanism. Berger and Fisek, therefore, reasoned that if a balancing mechanism were used the frequency distribution of the number of stay-responses per subject in the HL-LH condition would be bimodal; however, if a combining mechanism were used, the distribution would be unimodal. The data showed no indication of bimodality

and the authors concluded that the evidence favors a combining mechanism.

Berger and Fisek noted that it is at least possible that the combining mechanism was used in their experimental situation because the situation was symmetric (each actor possessed one high and one low state of relatively equal status characteristics) and did not provide any real opportunity for a subject to use a balancing mechanism. In order to investigate this possible special condition, Berger, Fisek, and Crosbie (1970) conducted a second similar experiment, but this time two unsymmetrical inconsistent conditions were added, HH-LH and LH-HH. The P(S) for each condition was in the exact order predicted.

Condition	P(S)
HH-LL*	.821
HH-LH+	.718
HL-LH*	.661
LH-HH+	.620
LL-HH*	.533

* condition included in the first experiment
\+ condition added for the second experiment
(Berger, Fisek, & Crosbie, 1970, Table 1)

Again, the distributions were examined for bimodality and none was found. The authors concluded "that the data obtained from these experiments clearly favor the combining mechanism argument" (p. 21).

Freese and Cohen (1973) conducted an experiment that combined both diffuse and specific status characteristics. The subjects were all junior college females. Some were manipulated to believe that they were high (HS) or low (LS) in status relative to their partner by presenting her as either an eleven-year-old girl or a 38-year-old woman. Some subjects were caused to believe they were high on two C's or low

on two C's (Meaning Insight and Contrast Sensitivity), referred to as the high performance (HP) and low performance (LP) conditions, respectively. A final group of subjects received both manipulations. Each subject then interacted with a partner to collectively solve a Spatial Judgment Task. Using these manipulations, the experimenters were able to create six conditions and compare the P(S) of HS (.74) to LS (.57), HP (.70) to LP (.59), and the inconsistent conditions HS & LP (.59) to LS & HP (.69). Freese and Cohen had developed a theory which predicted that the HS & LP condition would not differ from the LP condition and the LS & HP condition would be the same as the HP condition. The results clearly support their prediction. In the presence of two similarly evaluated, related C's, a differentially evaluated D that is inconsistent with the states of the C's possessed by the actors seems to be ignored. In other words, in the inconsistent conditions, the subjects seemed to balance the inconsistent definitions by defining the situation only in terms of the specific status characteristics.

Zelditch, Lauderdale, and Stublarec (1975) reviewed the various balancing arguments and set about to design an experiment specifically engineered to determine whether or not combining or balancing takes place when individuals are faced with inconsistent information concerning specific and diffuse status characteristics. The authors reasoned that the most rigorous test of a combining mechanism would be in a situation that is most conducive to balancing. They suggested that what they termed a "partially relevant multi-characteristic status situation" would meet the requirements. Such a "situation defines at least one status characteristic as relevant to whatever the situation requires; the other characteristics are neither relevant nor irrelevant"

(Zelditch et al., 1975, p. 7). A first experiment was conducted to examine this situation, but the authors argued that the results were confounded by a number of artifacts which precluded an acceptable conclusion. The experiment was redesigned, and a second experiment was conducted which removed all of the recognized artifacts.

The first experiment had revealed a possible use of balancing in one experimental condition, the case where an individual was high on a D (a junior college female with a supposed high school freshman partner—actually a peer) and low on a C, which, in this case, was C* (subjects were tested for Contrast Sensitivity Ability, given a bogus score, and then required to collectively solve a Contrast Sensitivity Task with their partner, who is known to be high or low in Contrast Sensitivity Ability). The partner was in the opposite condition, low on D (a junior college female with a partner presented as a Stanford graduate student) and high on C*. Thus, in this condition a high status individual who is incompetent with respect to the task interacts with a low status individual who is perceived as being highly competent with respect to the task. In this condition the P(S) was .37, exactly the same P(S) as the subjects who were simply low in ability with no information about their relative education (no D). In other words, in this single instance the results were the same as Freese and Cohen (1973) had found. However, the opposite case, where the subject was low on D and high on C* compared to a partner who was high on D and low on C*, showed clear evidence of combining.

The second experiment corrected the artifacts that the authors uncovered, and the condition that showed possible balancing effects was rerun. (For details about the artifacts, see Zelditch, Lauderdale, and

Stublarec, 1975.) This time Stanford male freshmen were used as subjects, and the high D, low C* condition was again compared to the low D, high C* condition. The results were clearly in favor of a combining rather than a balancing mechanism, and the authors concluded that the questionable result of that single comparison in the first experiment was probably an artifact of the technique. In the second instance, the D clearly had an effect on the P(S) when added to the C. Zelditch et al. (1975) concluded by stating, "our tentative judgment at this state of our research is that in a partially-defined multi-characteristic status situation, those whose status and ability are inconsistent combine the two into a single linear-additive status order" (p. 34); and, "the result of the present experiments is that individuals combine all the characteristics that legitimately define the situation for them" (p. 35).

The issue of whether a combining or a balancing cognitive defining mechanism is utilized in these situations is important for applied as well as theoretical reasons. For example, the work of Cohen and her associates and the work of Lohman to attempt to reduce the effects of racial stereotyping and the work of Lockheed and her associates on sexual discrimination all depend upon the fact that persons appear to combine all of the status information available in a situation to form resultant expectations (see, for example, Cohen, E., 1971; Cohen, E., & Roper, S., 1972; Lockheed, M., 1975; Lockheed, M.E., & Hall, K.P., 1976; Lohman, M.R., 1972). The issue also illustrates the importance of extending Expectation States Theories to include all of the variables which may provide additional information that is used in the formation of performance expectations. Information gained from potential referent

others is clearly a possible source of such information, and the area of primary interest in this thesis.

Freese (1974) conducted an experiment that directly involved the notion of a referent or comparison actor who would provide information to the situation without actually being an interactant. The subjects, female undergraduates, were caused to believe they were interacting with an eleven-year-old girl (HS condition) or a 37-year-old woman (LS condition). Additionally, the subjects were caused to believe they had either high or low ability at from one to three specific tasks (three fictitious abilities—Relational Specificity, Contrast Sensitivity, and Meaning Insight). This manipulation was operationalized by testing the subjects on two "traits" for each of the three abilities during phase one of the experiment and then, during phase two, showing on a closed-circuit television a comparison actor who ostensibly was tested for the same traits of one of the abilities, and then announcing the scores of both the subject and the comparison other. If the subject was to be manipulated on all three C's, she would see three different comparison others (one for each task ability); if the manipulation was for only one or two C's, one or two actors would be presented. In each case, if a subject was in a HS condition relative to her partner, all of the comparison actors would have the same low status as her partner and all of the actors would receive high scores relative to the subject on the tests that measured the C's. If the subject was in a LS condition, she was manipulated to believe that she scored high relative to each comparison actor presented. The subjects were told that their partners had not taken any of the tests. After the comparison actor was briefly presented on the screen for the presentation of the appropriate score,

that actor was not seen again. Finally, the subjects were required to interact with their partners to attempt to collectively solve a Spatial Judgment Task.

An example may help to clarify this rather complex manipulation: In one of the six possible conditions (HS versus LS and one, two, or three possible comparison actors to manipulate states of one, two, or three C's), a subject would perceive herself to possess the high state of D (age) relative to her partner but to have seen that three other persons the same age as her partner performed better than she herself did on three separate specific tasks. The results of the experiment expressed as P(S) for each condition, including a baseline condition of no comparison actors taken from the Freese and Cohen (1973) study, are as follows:

	Number of Comparison Actors			
	0	1	2	3
HS	.74	.61	.59	.56
LS	.57	.61	.63	.65

(Freese, 1974, p. 184)

The results are not overwhelming—perhaps the experiment was so complex as to cause confusion; however, the findings do clearly demonstrate that comparison others can be important sources of information. Freese (1974) statistically tested the findings and determined "that with two and three comparison actors, Highs and Lows differ significantly in the inverse direction in that Highs have a significantly lower mean proportion of stay responses than Lows" (p. 185).

Berger, Fisek, and Freese (1976) demonstrated yet another process by which individuals may use status information to structure a situation. In this experiment, subjects were individually manipulated to

believe they were high (HL condition) or low (LH condition) in Meaning Insight Ability and then were paired with a partner having the opposite state of the C. The subjects were led to believe that the Meaning Insight Test was a completely separate study from what followed. Subjects were divided into a "direct relevance" or "path of relevance" condition. In both conditions, subjects were informed that they would work on a group decision-making task (Contrast Sensitivity) and that the procedure generally followed was to administer a Contrast Sensitivity Test to each individual before the subjects worked on the task collectively to determine their relative ability so that a bonus payment of 25¢, 15¢, or 10¢ could be paid for each problem, depending upon the subject's relative ability. The subjects were then told that, in this instance, time prevented the administration of an individual Contrast Sensitivity Test, so the experimenter would use the only information available on which to base the decision concerning the payment of bonuses: the results of the Meaning Insight Test from the previous study. The subjects were told that the bonuses would not depend on correct answers to the Contrast Sensitivity Task; the subject who scored high on the Meaning Insight Test would be paid 25¢ for each problem worked on, and the subject who scored low would receive 10¢. In the path of relevance condition, this completed the manipulation. In the direct relevance condition, the subjects were specifically led to believe that such a bonus plan was fair because evidence shows that those who do well on Meaning Insight Tasks also do well at Contrast Sensitivity and the opposite is also true.

The difference between the P(S) for HL and LH manipulations was significant at beyond the .01 level (Mann-Whitney U Test) for both the

direct relevance and path of relevance conditions, and the difference between the two path of relevance cases, although substantial, was considerably less than the difference between the two direct relevance cases. The results, therefore, clearly indicate that the relevance of information will spread through indirect linkages between an actor and the state of a task and that such linkages may be through rewards (goal objects) as well as status elements or other actors. The findings also demonstrate that direct linkages are relatively stronger than indirect linkages.

A study conducted by Berger and Wagner (1977) demonstrated that relevance will spread even in what they termed "inconsistent conditions." An inconsistent condition was operationalized by manipulating the subjects to believe they possessed high or low Meaning Insight Ability and then informing the subjects, before performing the collective Contrast Sensitivity Task, that the two abilities are inversely related. In other words, subjects who perform well at Meaning Insight usually do poorly at Contrast Sensitivity Tasks and vice versa. The consistent condition was similar to those previously investigated where an individual is led to believe that the two abilities are directly related; a subject who performs well at Meaning Insight is said to usually perform well at Contrast Sensitivity Tasks. The results demonstrated that subjects in the inconsistent conditions formed performance expectations comparable to those in the consistent conditions. In both conditions, the difference between the P(S) of those manipulated to believe they would perform well at Contrast Sensitivity (in the inconsistent case, for example, the subjects who were led to believe they had performed poorly at the Meaning Insight Task) and those led to believe

they would perform poorly was significant at beyond the .001 level of significance (Mann-Whitney U Test).

This review of some of the important contributions to the status characteristics elaboration of Expectation States Theory has been necessarily brief and relatively informal; nevertheless, this discursive approach does provide a broad overview of the issues which are most relevant to understanding the specific situation we are exploring in this thesis and also does illustrate the kind of theory extension by way of a cumulative research strategy that is being proposed. Let us conclude our review of Status Characteristics Theory with a brief consideration of the most recent formulation of the theory.

c. The Latest Elaboration

The latest formulation of the Status Characteristics Theory (the third version, Berger et al., 1977) involves an extensive reformulation of the theory that incorporates the previous findings and includes an explanation of complex multicharacteristic situations both as a substantive theory and as a graph-theoretic model. The Activation Assumption of the original version of the theory is replaced with an assumption describing a "Salience Completion Process" in the graph-theoretic model, and the Assignment Assumption is replaced by the Assumption of Aggregated Expectation States (see Berger et al., 1977). Although a comprehensive discussion of this latest theory would unnecessarily complicate the basic issue being addressed in this thesis, it is useful to briefly consider some of the major developments incorporated and the essence of how Status Characteristics Theory explains the basic situation we are investigating.

The third version of the theory includes the following major theoretical developments which are of interest to our discussion:

1. The theory applies to multicharacteristic situations which may include any number of diffuse and specific status characteristics. Previously described studies have demonstrated that the information in such multicharacteristics situations is somehow combined. This latest version of the theory is concerned with developing theoretical principles which describe the manner in which such information is cognitively processed to explain how the information is combined in a given situation.

The Assumption of Aggregated Expectation States suggests that an aggregated expectations value is formed for an actor by combining all of the status information which is salient in the situation. The combination of the status information is said to be governed by an attenuation principle. For example, the differential effect of adding information about the possessed state of a third specific status characteristic (C_3) to a situation which already has a C_1 and C_2 is less than the effect of adding an additional C to a situation which previously had only one C (assuming the C's are equally significant with respect to the task).

Another important principle which is introduced is the principle of organized subsets. The authors argue:

> The fundamental idea of this principle is that in processing inconsistent status information that is task-relevant, the actor first organizes the inconsistent information within consistent subsets and then processes these inconsistent subsets as organized units of information. (Berger et al., 1977, p. 126)

In other words, according to this formulation, inconsistent information is not processed by somehow cancelling such information on an item-by-item basis until only consistent information remains; rather, the inconsistent information is combined into consistent aggregations in accordance with the attenuation principle, and then each consistent aggregation is treated as if it were a unit of information. These organized units are in turn combined to form a single aggregated expectation value.

2. The theory can be applied to situations involving referent actors who are not interactants in the situation and explains how such referents may affect the formation of performance expectations for the interactants.

3. The notion of relevance (two elements are relevant if possession of one element implies an expectation of possession of the other element) is extensively elaborated so as to enable the theorist to assess the relative strength of status information in a wide variety of status situations. For example, when status information is explicitly relevant to the instrumental task, the effect on the formation of performance expectations is greater than the case where relevance must be inferred.

4. By incorporating a graph-theoretic model, the latest version of the theory readily facilitates the representation of a large variety of different multicharacteristic states situations, including referential structures in which noninteractants provide linkages within the structure and structures in which goal objects (rewards) may be included as elements through which linkages are completed. The graph-theoretic model also allows numerical predictions of the proportion of

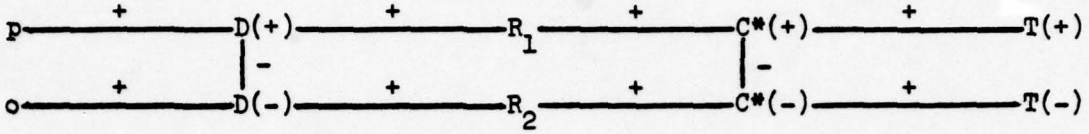
stay-responses in a given situation. Such predictions have been calculated for many of the experiments described above, and the results are consistent with the observed values (see Berger et al., 1977). (This very brief summary is abstracted from a comprehensive review and discussion of the development of Status Characteristics Theory by Webster & Driskell, 1978, and from Berger et al., 1977.)

Although a comprehensive description of the graph-theoretic model developed by Berger and his associates (1977) would unnecessarily complicate this discussion, a graph-theoretic representation of the basic situation we are investigating may help to clarify the manner in which the theory presented later in this thesis is a generalization of the Status Characteristics Theory.

We will graphically depict the situation raised at the outset of this exploration and see what information the latest version of Status Characteristics Theory provides to help solve our problem. The specific issue to be investigated concerns the situation(s) where two or more strangers (p and o) are about to attempt to collectively solve an unfamiliar, valued task (T). The task has two outcome states—success, T(+) and failure, T(-). The interactants, p and o, are aware of two other persons (R_1 and R_2) with whom they are unacquainted and who will not interact in the task situation but who are known to possess differentially evaluated states of the instrumental task characteristic (C*). One of the referents possesses the high state of the task characteristic , designated C*(+), and the other referent possesses the low state, designated C*(-). That is, one of the referents is seen as low in ability, with respect to the instrumental task.

We are interested in determining the conditions under which the interactants will use information about the relative task ability of these referents to structure their own performance expectations relative to the task. The described situation is diagrammed as follows:

Diagram 1



This graph depicts S, a situation which meets the basic scope conditions previously described for Status Characteristics Theory. Two interactants, p and o, are specifically aware of two referent actors, R_1 and R_2. In order to create a concrete example, the following information is included:

1. p and o possess oppositely evaluated states of a diffuse status characteristic. p is a male and possesses the positively evaluated state, D(+), and o is a female and possesses the negatively evaluated state, D(-).[1]

2. R_1 possesses the same positively evaluated state of D that p possesses (both are males), and R_2 possesses the same negatively evaluated state of D that o possesses (both are females).

3. R_1 is known to be high in the ability, C*(+), required to successfully complete the instrumental task, T(+). R_2 is known to be low in such ability, C*(-), which typically results in unsuccessful task performance, T(-). p and o will attempt to complete the task by working

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[1]Although there appear to be some encouraging signs of progress toward equality in our society, gender continues to be a powerful diffuse status characteristic for many persons (see Meeker & Weitzel-O'Neill, 1977).

together. The task may be some unfamiliar game requiring joint effort for successful accomplishment.

The lines linking the various elements on the graph are referred to as relations in the graph-theoretic model. Three distinct relations are possible: Possession, for example—the line connecting p to the positive state of D; Dimensionality, for example—the line connecting the oppositely evaluated states of the same characteristic D(+) to D(-); and Relevance, for example—the line connecting the positive state of C* to the positive state of T. These relationships are formally defined in Berger et al., 1977. The latest version of the Status Characteristics Theory includes a description of linkages based upon generalized expectation states associated with diffuse state characteristics and abstract task abilities associated with specific status characteristics; however, the analysis of these linkages as applied to referential structures is not relevant to the present discussion.

A series of lines connecting an interactant to a task outcome is referred to as a path. The length of the path is a function of the number of linkages. The shorter the path, the stronger the effect on the formation of expectations. All of the linkages are positive except the dimensionality relation, which is negative. The sign of the linkages and the sign of the task outcome are multiplied together to arrive at the sign of the path.

It may be useful to trace a path connecting p to T(+) in some detail for illustrative purposes. A positive linkage exists between p and D(+) because of a possession relation. A positive linkage of possession exists between R_1 and D(+) and another between R_1 and C*(+). Finally, this path is completed by the positive linkage of relevance

connecting C*(+) to T(+). Thus, a path connecting p to T(+) in our example is of length four and is positive (information leading to the formation of a high performance expectation). A path connecting p to T(-) using the dimensionality relation between D(+) and D(-) results in a path of length five, and this path is also positive because the negative sign associated with T is multiplied times the negative dimensionality sign resulting in a positive path. In other words, this information also implies the formation of a positive expectation state for p. The other possible paths can be analyzed in a similar manner.

Referring to the graph depicted above, p might be expected to define the situation as follows: I am a male and that person, who is very good at this game, is also a male. My partner and I will soon be working together to try to solve the game; I want our team to do well. My partner is a female as is that other person who seems quite inept at this game. I don't know anything about this game, but I know I'm a male like this person who has a lot of ability, and my partner is a female like this other person with no ability. Therefore, I expect that I will be able to perform better than my partner because I am a man and she is a woman.

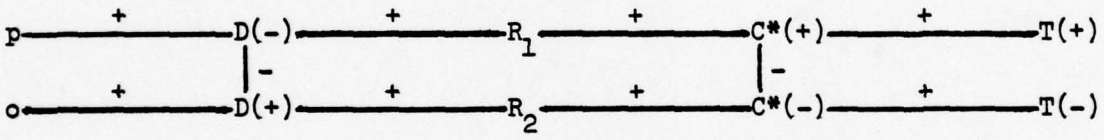
In other words, using this latest version of the Status Characteristics Theory, we can predict that in this situation when p and o interact to collectively solve the task, p will form high performance expectations for himself relative to o, he will come to believe that he will be able to perform better than o, and he will actually behave as if he has more ability than o.

Viewing the same situation from o's perspective, o will form low expectations for herself relative to p, she will come to believe that

she will not be able to perform as well as p, and she will actually behave as if she has less ability than p. That is, those behaviors described as comprising the observable power and prestige order will be functions of the performance expectations formed on the basis of the information derived from the various paths which connect p and o to the task outcomes. Notice that in this instance, because of the burden of proof process, similar results would be predicted even if the referents were not in the situation.

Next, consider a situation that is structurally similar to the one described above, only in this case the states of D are reversed. The following diagram depicts the structure:

Diagram 2



p and R_1 possess D(-), but R_1 is still observed to be high on C* and o and R_2 are D(+) but R_2 is low on C*. As an example, p, a black, sees that R_1, another black, is very high in Meaning Insight Ability while o and R_2 are both white and R_2 is perceived as being very low in Meaning Insight Ability. In this case, race is used as an example of a diffuse status characteristic in the situation.[2]

In such a situation, when p and o interact to collectively solve a Meaning Insight Task, p will be higher on the observable power and

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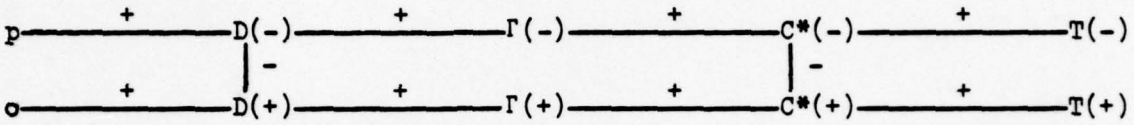
[2]As was the case with gender, empirical evidence demonstrates that race has been a powerful diffuse status characteristic for many persons in our culture (see Cohen & Roper, 1972). While there are some encouraging signs of greater perceptions of equality, it appears as if race is still a diffuse status characteristic in all too many situations. It is important to remember that a diffuse status characteristic is a social construction—it can change.

prestige order than o. This situation is quite different from the previous situation. In this case, if the information about the referents' abilities were not available in the situation, the generalized expectation states associated with the states of D would be activated and the outcome would be reversed. The following diagram depicts the structure without the referents:

Diagram 3



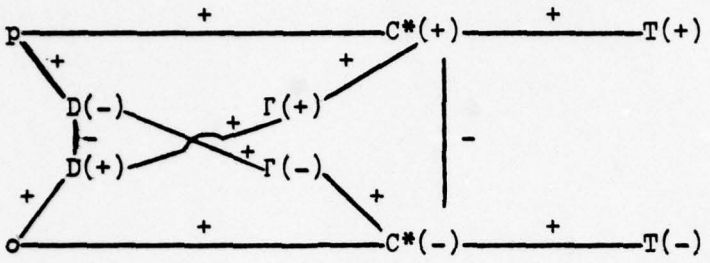
Without the referents in the situation, the generalized expectation states, designated by a capital gamma, provide the linkages to complete the structure, and p will be lower on the observable power and prestige order than o. If the referents were present without any information concerning their possession of states of C*, the structure would be completed as shown above.

The generalized expectation states associated with the states of D are not activated in the example with the referents possessing high and low states of C* (Diagrams 1 and 2) because of the nature of the Burden of Proof Completion Process. According to that assumption, a possessed state of D which is <u>not</u> connected to the task or is connected only by a path of length five or greater will have its associated generalized expectation state activated (Berger et al., 1977, p. 109). When the referents were in the situation, the D was connected to the task, and the generalized expectation state was not activated.

Notice that the described situation is subtly different from one of the situations described in the experiment conducted by Zelditch et al. (1975). In that experiment, p possessed the low state of D and

also possessed the high state of C*; in our example, p possesses the low state of D but infers the high state of C*. Consider the following diagram of the Zelditch et al. situation:

Diagram 4



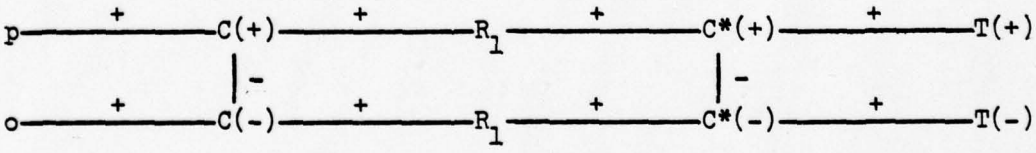
The difference is not inconsequential. In the Zelditch et al. experiment, the burden of proof process is activated with respect to D because D is not connected to the task. In the referential case, the burden of proof process is not activated with respect to D because of the information in the situation which directly associates specific states of D with states of C*. In the Zelditch et al. experiment, the reasoning is as follows: I am a junior college student; my partner is a Stanford graduate student. In general, I would expect my partner to perform better than I perform. However, the task we are to perform together requires an ability (Contrast Sensitivity) which a test has shown I possess to a greater extent than my partner. I will probably perform better than my partner at this task, although not as much better as I would if my partner were also a junior college student with the same test score. In our example with the referents (Diagram 2), the reasoning is somewhat different: I am a black person and my partner is a white person. I see that a black person (just like me) does better at a Meaning Insight Task than a white person like my partner. Black people must be high in Meaning Insight Ability. I will probably

perform better than my partner at this task. In other words, it is possible that in a broader sense p perceives that s/he is somehow similar to, the same kind of person as, R_1 and, therefore, in the absence of any other information, expects to be able to perform in a manner generally similar to R_1. It is also possible (although not in accordance with Status Characteristics Theory in its current form) that the generalized expectation state is activated in our referential structure, but the effect of the more direct information simply overpowers it.

The next situation we will consider is one in which p and o are differentiated on the basis of some C which also differentiates R_1 and R_2 but is not made relevant to C*; R_1 and R_2 are still differentiated on the basis of C*; and there are no other social bases of discrimination in the situation.

Again, let us diagram the structure:

Diagram 5



For example, p believes that s/he possesses unusually high Spatial Insight Ability and notices that some other person, R_1, is also high in this ability. p further observes that her/his partner, like some other person, R_2, is quite low in Spatial Insight Ability. p then becomes aware that R_1 is good at Meaning Insight Tasks and R_2 is poor at such tasks. Again, utilizing Status Characteristics Theory, we would predict p to be influenced less by o than o would be influenced by p when they interact to collectively solve a Meaning Insight Task. As was true in the parallel situation involving a D, if the referents were

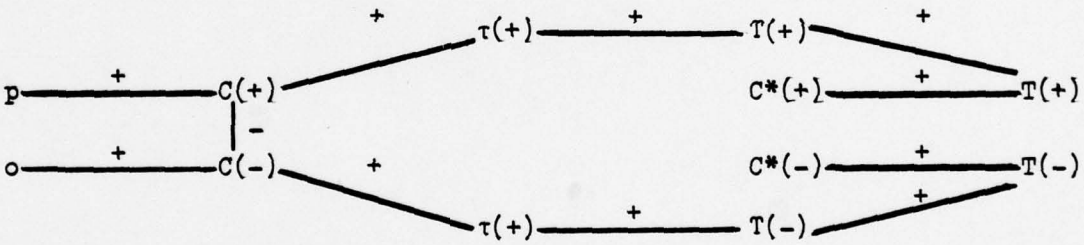
left out of this scenario, the burden of proof process would operate to generate the same general result (cf. Kervin, 1975).

A diagram of this burden of proof process is somewhat different from that described in Diagram 3 because there is no generalized expectation state associated with a specific status characteristic. Instead, two additional concepts are introduced. Berger et al. (1977) argue:

> In the case of possessed states of specific characteristics information associated with these states will be activated, implying for the individual possessing them that they have the ability either to succeed or fail at specified types of tasks, $\tau_i(\pm)$. Success or failure at specified tasks will be seen to imply positive or negative states of abstract task-ability, $T(\pm)$, and these in turn will be seen to imply success or failure outcomes at the group task, $T(\pm)$. (p. 109)

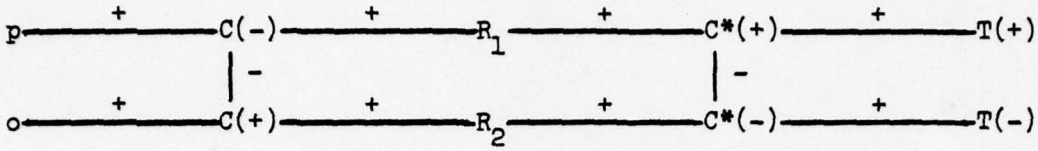
The diagram of this structure is as follows:

Diagram 6



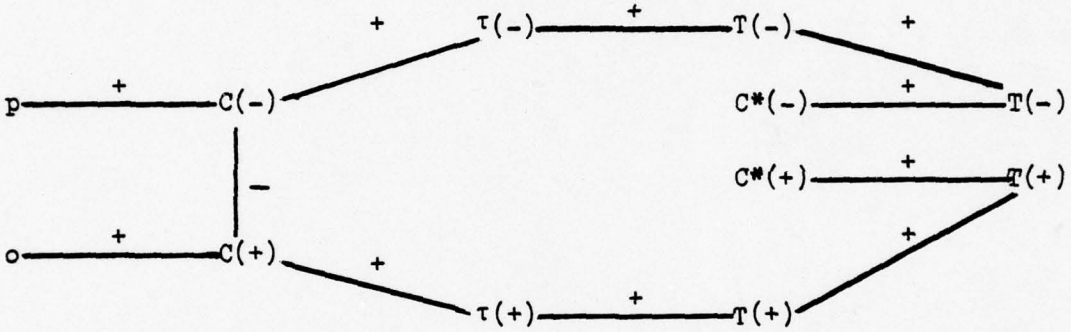
If the situation described by Diagram 5 were altered so that the states of C possessed by the four persons were reversed, the outcome would be the same because, as demonstrated by Berger and Wagner's (1977) findings concerning paths of inconsistent status information, relevance will spread in inconsistent situations and the strength of the bond in such situations will be comparable to those in consistent situations. The following diagram depicts the structure:

Diagram 7



Again, as was the case in the parallel situation involving D, if the information from the referents was not available in this situation, the results would be reversed, as demonstrated by the following diagram:

Diagram 8



It may be informative to consider the kind of reasoning that a person might use in such a situation. We argue that the chain of cognition is essentially as follows: My partner and I are both white females of about the same age, the same as those two other women. I see that one of those women performed very well at the Spatial Insight Task, just like my partner, but that woman also did very poorly at the Meaning Insight Task. I wonder if my partner will also perform poorly at that task? The other woman performed very poorly at the Spatial Insight Task, just like I did; yet she performed very well at the Meaning Insight Task. Evidently, people who do well at Spatial Insight are not so good at Meaning Insight, and people who do poorly at Spatial Insight exhibit a real knack for Meaning Insight. I believe I will perform better than my partner on the Meaning Insight Task.

Clearly, the situations can be made much more complicated by adding additional D's and C's to the structure and/or by adding additional referents and forming aggregated expectations by combining all of the paths in accordance with the techniques elaborated in the latest Status Characteristics Theory. It is important to note, however, that the addition of referents and/or consistently evaluated D's and C's will result in an increase in the strength of the expectancy connecting p and o with the task characteristic.

Now let us turn our attention to situations which are outside the domain of applicability of Status Characteristics Theory to see if we can discover a way to generalize the theory to apply in a wider range of situations. The argument to be proposed in this thesis suggests that it is possible, in a situation involving referent others, that the connection that a person makes between her/himself and some referent may be based upon some more general notion of perceived similarity or dissimilarity, a relationship whereby a person comes to believe that two people are sufficiently similar (or dissimilar) that, in the absence of any other information, it is reasonable to predict, to expect, similar (or dissimilar) task performance. We refer to such a connection as an interpersonal similarity/dissimilarity bond.

Notice that we are suggesting the possibility of a more general process operating in situations involving potential referent or comparison others. We are suggesting that persons may come to formulate performance expectations about self and other on the basis of some perceived similarity between self and other and some potential referent persons as well as on the basis of status characteristics.

At some point in the process of defining a referential structure, p may have sufficient information to decide that s/he expects to perform in a similar manner to some referent not because they are both white, or both good at chess, or both Stanford graduates, or all of the above; rather, p may simply decide that s/he is <u>like</u> the referent, they are the same kind of person, and, therefore, they will probably have similar abilities. The difference is subtle, but important. The idea is that p expects to perform like some other person, R, not because p is black and R is black and, in some general sense, blacks perform with this degree of ability; rather, p expects to perform like R specifically because p believes that s/he and R are alike. Such a perceived relationship is described as an interpersonal similarity bond.

When applied to referential structures like those we have described above using Status Characteristics Theory, the notion of an interpersonal similarity/dissimilarity bond provides a parallel explanation of the cognitive process by which expectation states are formulated when referent others are involved. However, it is a more general formulation because the concept of an interpersonal similarity/dissimilarity bond allows the extension of the theory to situations where the potential referents are differentiated on the basis of possession of differ- states of C*, but no other diffuse or specific status characteristics differentiate any of the actors. In such a case, the interactants, because they are about to attempt to solve a collectively oriented, valued task, will still be strongly motivated to seek information which will help structure the situation, information which will help the actors decide how to behave. It is possible that in such a situation, a person will use some other available information to establish interpersonal

similarity bonds and thereby form performance expectations. The key issue, then, concerns the kind of information that will facilitate the formation of such bonds, the conditions under which such a connection between an interactant and a potential referent will be made.

4. Source Theory

Before leaving the topic of Expectation States Theories, it will be useful to quickly review a particularly interesting and important elaboration of Expectation States Theory which concerns the issue of sources of evaluation. This work was developed largely by Webster and Sobieszek (1974a, 1974b) as an application of the literature on self-evaluation to the expectation-states approach. Source Theory deals with the way in which an individual's expectations concerning her/his own ability are influenced by the evaluations of others. A central issue concerns the attempt to uncover the specific characteristics of other that will result in such a person having influence on self expectations. In other words, borrowing from the concept of a "significant other" developed by Sullivan, Webster and Sobieszek (1974a) attempt to determine when an individual will be "one whose opinions 'matter' to the individual, someone whose approval he desires and whose censure he wishes to avoid" (p. 119). Data from experiments conducted by Webster and Sobieszek (1974b) support their hypothesis that one characteristic of a significant other is the degree of ability that is attributed to her/him. Additionally, empirical findings have also demonstrated that even a low ability evaluator will have some positive influence on an actor.

Source Theory has been extended to situations involving multiple potential evaluators; however, the findings, while interesting and useful, are fairly complex and not directly relevant to the issue being addressed in this thesis. It is important to note, however, that the issue has been extended to situations where potential evaluators were differentiated on the basis of status information instead of relative task ability. In a test of this extension, Sobieszek (1976) reports data which clearly supports the hypothesis that, given a situation with two evaluators possessing differentially evaluated states of a diffuse status characteristic, the evaluator with the relatively higher status will exert more influence on the formation of a subject's performance expectations than the lower status evaluator, even when the task is not relevant to the status characteristic (as long as the D is not specifically dissociated from the task).

The question concerning who is likely to become a source for a person in a given situation is particularly important because it is at the heart of many questions concerning potential influence. The studies conducted by Sobieszek and Webster, for example, have already demonstrated that, ceteris paribus, simply by virtue of the expectations widely associated with being female, a man is likely to become a more significant other than a woman in a situation involving a collectively oriented, valued task.

C. MODELING BEHAVIOR AND INTERPERSONAL ATTRACTION

1. Introduction

We started this chapter with the introduction of a general problem which deals with the issue of referential structures. We described a

situation in which persons are about to attempt to collectively solve a task which requires some specific ability for its successful accomplishment but during which the interactants have no prior knowledge of their own or each other's task ability. Our focal questions concerned when and how interactants in such a situation will use information about referent others to help organize and structure their own behavior relative to the task. The review of expectation-states theories suggested that if the interactants use information about the referent others to form self-expectations and expectations about the other interactants relative to the task, then such performance expectations will have behavioral consequences which may be described as the observable power and prestige order. The review of Status Characteristics Theory formally described how linkages between interactants and referents which lead to the formation of expectation states may be formed on the basis of diffuse and specific status characteristics. We then introduced the notion of interpersonal similarity and dissimilarity bonds as a more general organizing idea to describe such linkages between actors. The use of interpersonal similarity and dissimilarity bonds is fully compatible with the latest version of Status Characteristics Theory and has the advantage of a more general domain of applicability with respect to referential structures.

In this section, we will review some of the literature within the general area of social comparison with emphasis on modeling behavior and interpersonal attraction in an attempt to discover some additional conditions under which persons will form interpersonal similarity/dissimilarity bonds. The studies which follow are directly related to the formal theory which incorporates the notion of interpersonal similarity/dissimilarity bonds, to be presented in the following chapter. A

substantial body of social comparison literature provides additional information which is less directly related to the theory but, nevertheless, provides useful background material. A review of some of this literature is included for the interested reader as Appendix P to this thesis.

2. Modeling Behavior

A major area of theoretical interest which suggests conditions under which interpersonal similarity/dissimilarity bonds may form concerns the issue of modeling behavior. As defined by Seymour Berger (1977), "modeling refers to a change in one person's (observer) behavior that results from his or her observation of someone else's (model) behavior and/or its consequences" (p. 209). Interpreting what Stotland and Canon (1972) referred to as the "generality of similarity schema," S. Berger (1977) suggests that "individuals have a tendency to assume that if they are similar to another person in one way they must be similar in other ways" (p. 217). He argues that "schema analysis starts out with the question: Why do individuals who are alike in one respect act alike in other respects?" (p. 218). He suggests that the approach "answers this question by assuming that individuals have a need to maintain consistency regarding their similarity to others" (Berger, S., 1977, p. 218). (For a brief discussion of schemas, see Appendix P, section 7.)

Stotland, Zander, and Natsoulas (1961) tested the general hypothesis that "the perception of similarity among persons in limited respects leads to the perception of similarity among them in other respects" (p. 250). The authors suggest that imitation might be dependent

on whether the observers perceive the model's attributes as relevant or meaningful. They argue that a person is assumed to have a self-concept consisting of certain attributes. These attributes may be the same as or different from the attributes in her/his concept of some other person. Those attributes in her/his self-concept which are perceived as similar to attributes of her/his concept of another are termed first similar attributes (FSA). Their "key proposition holds that the presence of an FSA creates a tendency for the person to conceive of himself as similar to the model on other attributes, provided that there is no clear evidence to the contrary" (Stotland et al., 1961, p. 250). These other attributes, the ones that are perceived by extension, are called derived similar attributes (DSA). Stotland et al. suggest that the greater the number of FSA's that exist between a person and some other (for example, a potential referent), the greater the number of DSA's that the person will interject into his own self-concept and project into her/his concept of the other.

Stotland et al. (1961) conducted an experiment to empirically test their hypothesis. The experiment consisted of subjects (seventy undergraduate women) working in isolation who were led to believe that they were part of a three-person group. The subject listened to seven pairs of unfamiliar musical compositions and then privately chose her preferred tune for each pair. Each subject then heard, through her earphones, the other two persons in her group, two paid confederates, give their choice on each of the seven trials. The confederates disagreed on five of the seven choices. The number of FSA's was operationalized by subtracting the total number of agreements between the subject and the confederate with whom she agreed least from the number of agreements

between the subject and the confederate with whom she agreed most. Using this technique, the number of FSA's could be five, three, or one, depending upon the subject's particular choice pattern.

Next, each subject indicated her preference on ten pairs of nonsense syllables. However, in this case the procedure was somewhat different. The subject heard the confederates give their choice of first or second syllable on each trial before the subject actually saw the pair of syllables being evaluated. In this way, the subject could not make a private choice before hearing both other group members state their preferences. The confederates disagreed on eight of the ten trials. The subjects were also manipulated to believe that their microphones had gone dead and the other group members would be unable, therefore, to hear their responses. "Each C (subject position) then made her choice after knowing what the choices of the other participants were, but made it in private and with the knowledge that the other persons would not know which syllable she had selected" (Stotland et al., 1961, p. 251).

The DSA's were operationalized using a technique similar to that utilized for the FSA's. The total number of agreements between the subject and each confederate was determined, and the smaller number was then subtracted from the larger. The subjects were then categorized as introjectors, "those whose preferences on nonsense syllables were in five or more instances the same as the ones made by the person with whom they had agreed most often in musical choices" (Stotland et al., 1961, p. 252); nonintrojectors, those who agree with both models four times; and negative introjectors, the remaining subjects. The authors found that significantly more subjects were categorized as introjectors than would be expected by chance.

Stotland et al. (1961) also tested the effect of the relative strength of a subject's preference (subjects rated preference for their musical selection on a five-point scale) and the degree of social support (those subjects whose musical preferences corresponded with the choice of the confederates on both occasions when such choice was possible were defined as receiving relatively more social support) on the number of introjectors. The analysis of the findings demonstrated, "as hypothesized, that the subjects tended to prefer the nonsense syllables chosen by the paid participant with whom they agreed more often on musical preferences, provided that the musical preferences were strong, or provided that the subjects received social support for their musical preferences" (Stotland et al., 1961, p. 256).

In another experiment to study the effects of a model's preference on a subject's behavior, Burnstein, Stotland, and Zander (1961) widened the scope of similarity between the model and the subject. Using grade school boys as subjects, the experimenters created a situation to lead the subjects to believe that an adult deep-sea diver was very similar or quite dissimilar to the subjects in background (for example, raised in the same neighborhood, had same interests, etc.) and other attributes (manipulated by a fake personality test involving such things as choice of preferred drawings and colors). A third group received no similarity/dissimilarity manipulation at all. The diver was presented as being either very proficient or fairly deficient in skills required of a diver. Finally, the diver related some of his idiosyncratic preferences with respect to diving.

The results showed that the subjects having a greater number of FSA's with the model introjected more neutral DSA's than those subjects

having a lesser number of FSA's. In the condition where similarity was not manipulated, the subjects with a model described as highly proficient (a positive model) developed significantly more preferences which were similar to those expressed by the diver than the subjects with a negative model. In his discussion of the study, S. Berger (1977) notes that "the background and interest factors involved in the similarity manipulation do not seem to be related to diving preferences. Nevertheless, similarity with the model was related to imitation of the model's preferences" (p. 219).

S. Berger (1977) suggests that Festinger's (1954) concept of "realm of relevance" may be operationalized in terms of the Stotland et al. (1961) and Burnstein et al. (1961) studies as "the diversity of relevant model characteristics" (p. 219). The argument is essentially that the narrower the realm of relevance, the narrower the range of behavior that will be influenced; the wider the realm of relevance, the wider the range of behavior that will be influenced. Thus, in the Stotland et al. study, where the realm of relevance was very narrow, with similarity based only on the tenuous connection of a perceived agreement on a limited measure of musical preference, it is not surprising that only a modest amount of behavioral influence was exhibited. Whereas, in the Burnstein et al. study, where the realm of relevance is quite wide, with the similarity between the observer and the model based upon a number of parallels in both background and interest, the observer's behavior was significantly influenced by the model. A clear finding from these studies, and a finding of considerable interest to our investigation, is the fact that perceived similarity between a subject and a potential referent, even on so tenuous a basis as similarity in opinion

concerning preference for a few short musical compositions, will have behavioral implications for the subject; that is, interpersonal similarity bands will form in such a situation.

Two studies conducted to study the vicarious partial reinforcement (VPR) effect provide further evidence that the perceived characteristics of the model can be very important indicators of probable influence (Berger, S., 1971; Paulus & Seta, 1975). Paulus and Seta (1975) provide an example of the VPR effect from their experiment which demonstrates that "subjects persist longer on a task in which they receive no obvious positive reinforcement if they have previously observed a model who was successful 25% of the time (on the same task) as opposed to subjects who observed a 75% successful model" (p. 930). Our interest is not with the VPR effect per se but, rather, with the nature of the model.

In an experiment conducted by S. Berger (1971), subjects watched a model, described as either a peer of the subject or as an assistant of the experimenter, perform a task with either a 25 percent or a 75 percent success ratio. When the model was presented as a peer, the subject showed significantly higher perserverance (willingness to continue to perform a task without any successful trials as positive reinforcement) than in the condition where the model was presented as an assistant experimenter. The point of interest for our purposes is the finding that the behavior of the peer model, the model who was apparently similar to the subject, seemed to have more of a personal effect on the subject, whereas the subjects who were exposed to an experimenter's assistant seemed to ignore the potential model and simply react to the situation. In other words, the specific behavior of the dissimilar model made no difference to the subject under these conditions.

The task in both the S. Berger and the Paulus and Seta studies concerned extrasensory perception (ESP), an ambiguous and controversial ability. Paulus and Seta (1975) found that when the model's expressed belief in ESP was different from that of the subject, the VPR effect was not supported; in fact, a slight reversal in effect was evident. Thus, these experiments suggest that a potential referent may be completely ignored if s/he is perceived by the subject as being irrelevant because of some defined characteristic that makes her/him obviously in a different category from the subject, or a referent may have an unexpected effect on the subject if the referent expresses a belief about the nature of the task which is different from the subject's. For example, a subject in an expectation-states experiment seeing a referent perform well at a Meaning Insight Task might not form performance expectations concerning her/his own ability on the basis of that observation, no matter how similar the referent appeared to be on other characteristics, if the referent was known to be an experimenter's assistant. The experimenter's assistant is far too likely to have privileged information to which the subject has no access. On the other hand, for example, if a referent expresses an opinion that there is no such ability as Meaning Insight Ability, success is simply a matter of chance, then that referent is likely to have a different effect on the subject than a referent who apparently believes in the experimental manipulation.

3. Attitude Similarity-Dissimilarity and Attraction

The research in the area of attitude similarity-dissimilarity and attraction is particularly pertinent to the issue we have been

investigating concerning the conditions under which interpersonal similarity/dissimilarity bonds may form, because this tradition provides information which is directly relevant to the formal theory to be presented in the next chapter. Because this research is so important to our theoretical formulation, it is useful to review some of the studies discussed by Byrne (1971) in his extensive, influential work on what he has termed the "Attraction Paradigm." Although Byrne and his associates have been criticized on the grounds that their work is too constrained and obvious, and therefore trivial, we would argue that the so-called attraction paradigm represents one of the better examples in the social sciences of an attempt to conduct basic scientific research within a true cumulative research tradition. The individual steps may be small, slow, and deliberate, but, like the theoretical research program consisting of the set of theories related to expectation states, the attraction paradigm, by adhering to a cumulative expectation strategy, has taken us a long way toward understanding the relationship between attitude similarity-dissimilarity and attraction.

The basic methodology used by Byrne and his associates consists of an experimental manipulation of attitude similarity-dissimilarity while controlling, as much as possible, for other determinants of attraction, such as visual and auditory cues. Attitude comparison is typically manipulated by having the subjects complete a written attitude scale and, some time later (for example, later in the semester), exposing the subjects to strangers whose attitudes are either the same as or different from the subject's on the same scale. The attitude scale consists of a number of issues (for example, the scale used to form the initial empirical base was a 26-item attitude scale) concerning such topics as

belief in God, discipline of children, political parties, and classical music. The subjects respond to each issue on a six-point scale ranging, for example, from "I strongly believe that there is a God" to "I strongly believe that there is no God" (Byrne, 1971, p. 52).

The attraction measure was constructed by adding together the scores from two seven-point rating scales asking whether the subject would like or dislike the comparison person and whether s/he would enjoy or dislike working with her/him. To disguise the attraction measure somewhat, the attraction scales were embedded in a six-item Interpersonal Judgment Scale which also includes "evaluations of the stranger's intelligence, knowledge of current events, morality, and adjustment" (Byrne, 1971, p. 53).

The first experiment using this basic methodology (Byrne, 1961) demonstrated a huge difference in interpersonal attraction with a mean attraction score of 13.00 (the sum of the scores on the two seven-point attraction rating scales) when the stranger was manipulated as being similar in attitude and a mean score of 4.41 when attitudes were perceived as dissimilar. The results were so clear that Byrne (1971) reports, "in fact, the most negative response in the similar attitude group was more positive than the most positive response in the dissimilar attitude group" (p. 53).

An experiment conducted by Byrne and Nelson (1965a) demonstrated that the subjects were responding to the relative number of similar and dissimilar attitudes rather than simply to the absolute number of similar attitudes. Subjects were divided into twelve different experimental groups with attitude scales ranging in size from 4 to 48 items and the proportion of similar attitudes ranging from .33 to 1.00. The results

clearly showed that, within this range of attitudes, it is the proportion of similar attitudes that most affects attraction rather than the absolute number of similar attitudes. A study by Gouaux and Lambeth (1970) provided further support when they demonstrated that complete agreement with a stranger on four, eight, or sixteen attitudes resulted in essentially similar mean attraction responses.

Byrne and Nelson (1964) also collaborated on a study to determine the effect of varying the importance of the items on the attitude scale. Each subject was tested on one of four scales ranging from one that had been constructed from fourteen of the items determined to be most important to one made up of fourteen items found to be least important. The subject later was exposed to a similar scale filled out by a stranger. Again, it was only the proportion of similar attitudes that made a difference in attraction; "topic importance did not even approach significance as a determinant of attraction" (Byrne, 1971, p. 63). In a second experiment, Byrne and Nelson (1965b) exposed subjects to the scales of four strangers, each of whose attitude scales was different with respect to topic importance; the subject had previously completed all four scales. In this way, the authors reasoned, the subjects could directly compare the relative importance of the scales. The findings replicated the first study. Once again, only the proportion of similar attitudes made a different in attraction. Finally, a third experiment to test topic importance was conducted by Byrne, Loudon, and Griffitt (1968). This time the experimenters used an intrastranger design, with each scale having both important and trivial items and the proportion of similar attitudes being varied to agree either with important or trivial items. Only in this situation, with the proportion of similar

attitudes held constant, did the manipulation of topic importance affect attraction. The study demonstrated that "topic importance and/or interest is found to influence the similarity-attraction relationship but only when topics of differential weight are associated with a single stranger" (Byrne, Loudon, & Griffitt, 1968, p. 304). Byrne (1971) argues:

> The three studies together indicate that when all of the information about a stranger concerns a single level of importance, attitude similarity-dissimilarity on either important or trivial issues has the same effect. It is only when a single stranger expresses attitudes on more than one level that differential topic importance exerts an influence on attraction. (p. 69)

A study by Clore and Baldridge (1968) was designed to investigate the possible difference between topic importance and topic interest. In other words, the authors suggested the possibility that a subject may acknowledge the importance of an issue; however, in spite of the perceived importance, the topic might be uninteresting to a subject. Clore and Baldridge found that, using an intrastranger design, the manipulation of differential topic interest yields essentially the same results as manipulation of topic importance.

Byrne also summarizes Nelson's (1965) doctoral dissertation, which added an additional bit of evidence to the growing body of information by experimentally manipulating the degree of response discrepancy within the proportion of similar attitudes. Thus, it is possible for a subject to have a roughly similar attitude as a stranger on all scale items, but to differ on the degree of agreement or disagreement on individual items; persons are more attracted to others who are exactly like them than to others who differ in the magnitude of their agreement.

Byrne, Griffitt, and Golightly (1966) conducted two parallel experiments to investigate the effect of varying the prestige or status of the strangers on the measure of attraction. In one study, the stranger was described as being a janitor, an electrician, or a physicist while the proportion of similar attitudes was manipulated as either .83 or .17. In the other experiment, the stranger was defined as being lower, the same, or higher in rank in the Texas A & M Cadet Corps as the subject with the same two conditions with respect to the proportion of similar attitudes described above. In both cases, attitude similarity-dissimilarity significantly (.001 level of significance) influenced the attraction measure while the difference in occupational level and military rank (which, as operationalized, would correlate highly with both age and educational level) showed no significant effects.

Our primary concern in this search for information is whether or not a subject who perceives that s/he is similar to another person with respect to attitudes will come to believe that s/he is similar to that person on other dimensions as well. In other words, will an interpersonal similarity bond form in such a situation? Is it possible that the perceived similarity in attitudes can generalize to perceived similarity with respect to abilities?

While Byrne and his associates were clearly most interested in the relationship between attitude similarity-dissimilarity and attraction, the research tradition built upon Byrne's (1971) attraction paradigm, nevertheless, provides us with a crucial clue to a possible linkage between attitude similarity-dissimilarity and performance expectations. It was earlier explained that Byrne's attraction measure represents only

two items in a six-item Interpersonal Judgment Scale. One of the other four items on the scale requires the subject to evaluate the stranger's intelligence. Specifically, the subject must check a response on a seven-point scale labeled "Intelligence," with responses ranging from "I believe that this person is very much above average in intelligence" to "I believe that this person is very much below average in intelligence" (Byrne, 1971, p. 426). In the study, which was to form the empirical basis for future experiments, Byrne (1961) found that the mean evaluation response with respect to a stranger's intelligence was 5.65 (where seven represents the most positive response possible—very much above average, and one represents the lowest possible response—very much below average) when the stranger was similar in attitudes and 3.06 when the stranger was dissimilar in attitudes. Similar, in this instance, meant that the stranger responded to the attitude scale items in exactly the same way that the subject responded on all items. Dissimilar was operationalized as the mirror image. "For example, if the subject were strongly against integration and mildly in favor of smoking, the stranger was strongly in favor of integration and mildly against smoking" (Byrne, 1971, p. 51). Clearly, the subjects perceived that strangers with attitudes similar to their own were more intelligent than strangers with dissimilar attitudes. Byrne (1971) reports that "the difference in response to the similar and dissimilar stranger was significant at beyond the .001 level" (p. 246).

Byrne also reports, however, that the intelligence variable did not always, in all experiments in this research tradition, produce the same results as the attraction measure. In the 1961 study, the subjects were told nothing about the comparison stranger other than the

fact that the stranger is also a student and of the same sex and that the person is not in the same psychology class and, to the best of the experimenter's knowledge, not an acquaintance. Byrne suggests that if the subject has reason to believe that the stranger will be high on intelligence on the basis of some information external to the attitude similarity-dissimilarity manipulation, then the rating of intelligence will not be influenced by attitude similarity-dissimilarity. Of course, this is a very important observation for our purposes in this study.

A study conducted by Smith, Meadow, and Sisk (197C) provides further evidence that attitude similarity may generalize to other characteristics such as ability. Smith et al. divided 44 male college students into two experimental conditions. In one condition the subjects were led to believe a stranger expressed similar attitudes on two out of twelve issues (low attitude similarity), and in the other condition the subjects believed the stranger expressed similar attitudes on ten out of twelve issues (high attitude similarity). Next, the subject observed the stranger through a one-way-vision mirror while the stranger (a confederate of the experimenter) participated in a learning experiment involving electric shock. After observing the performance, the subject evaluated the actor's performance and also estimated how painful he judged the shock to be. Of course, the actor's actual performance on the learning task was the same for every case, and the actor was trained to react the same way to the apparent shock (the actor did not know whether the subject was in a high or low attitude similarity condition). The findings concerning the perceived amount of pain from the shock were not significant; however, the results clearly showed that "the high-AS (attitude similarity) group rated the stranger's task

performance more positively than did the low-AS Ss" (.02 level) (Smith, Meadow, & Sisk, 1970, p. 227).

Eisinger and Mills (1968) also demonstrated that under certain conditions persons who believe they are similar in attitude to others will perceive those others to be generally more competent than persons who are dissimilar in attitude. In this experiment, the subjects filled out two 36-item opinion questionnaires, the first time predicting how they perceived a typical student would respond and the second time giving their own opinion on each item. The items covered several broad topics. For example, one topic was intercollegiate athletics, with one of the issues under this topic stated as follows: "Intercollegiate athletics are extremely harmful to education." The subjects rated each item on a scale ranging from strongly agree (+10) to strongly disagree (-10). Next, the subjects were given a partially completed questionnaire (six items pertaining to the intercollegiate athletics topic) and asked to rate the student who had recorded these opinions and then complete the form the way the stranger probably would have completed it. The rating consisted of a form with a number of adjectives intended to measure sincerity, competence, likability, and trustworthiness. Each adjective was rated on a scale of 0 to 20, ranging from extremely inappropriate to extremely appropriate. The adjectives "competent," "expert," and "knowledgeable" were used to define the overall measure of competence.

Eisinger and Mills divided the subjects into four experimental conditions: same-side extreme condition (the stranger had the same general opinion as the subject on each item and the stranger's ratings were all 10's), same-side moderate condition (the same general opinion

and all ratings were 3's), and parallel conditions on the opposite side. The results clearly showed that subjects perceived the competence of strangers whose opinions were on the same-side of the issue as their own as much greater than the competence of persons with dissimilar attitudes (.001 level). The authors also reported that "the ratings for each of the three adjectives included in the measure of perceived competence yielded the same pattern of results" (Eisinger & Mills, 1968, p. 228). The results concerning the difference between the extreme and moderate position were somewhat less clear. Based upon pretesting experience, the experimenter assumed the subjects would express extreme opinions on the questionnaire; however, in fact, the subject's opinions were closer to moderate than extreme. Since the extreme position stranger was rated as more competent, likable, sincere, and trustworthy than the moderate position other, the authors argue that the subject's true position probably was, in fact, extreme as anticipated but that the subject did not want to appear to be an extremist to the experimenter. In any event, for our purposes the findings are very clear—persons are likely to generalize attitude similarity to other characteristics such as perceived competence in general. The implications of these results are very interesting for our problem concerning the potential influence of a referent other with respect to performance expectations.

Miller and Suls (1977) provide some interesting findings to add to our information about attitude similarity-dissimilarity situations. After reviewing six studies which they conducted to investigate affiliation preference, Miller and Suls (1977) conclude that in competitive situations "opponent choices seem to be made primarily along similarity

lines;" whereas "partner choices in cooperative situations demonstrate a preference for superior-ability others" (p. 121). The findings suggest, however, that some comparison will probably take place even in cooperative situations. Thus, the potential threat to self-esteem may stimulate a defensive mechanism to counteract the tendency to choose partners of superior ability. If sanctions are added to the cooperative situation, the potential of gaining rewards or avoiding punishment may outweigh the possible loss of self-esteem and, once again, the choice of a partner who is superior in ability will be preferred. In other words, these studies suggest that in an expectation-states experiment cooperative situation, it may make a significant difference whether or not the actors perceive that their effort will be evaluated as a team and the ramifications and perceived importance of that evaluation. For example, if a desired reward is offered for good performance, the various manipulations are likely to be considerably stronger.

Finally, when a similarity-dissimilarity in attitude dimension was added, the authors discovered that even an inferior subject will likely choose a superior other for a partner if their attitudes are similar. Further, and perhaps most important, "attitudinal dissimilarity prompted avoidance of partners regardless of their ability" (Miller & Suls, 1977, p. 122). In an essay devoted to the issue of dissimilarity, Mettee and Smith (1977) suggest that there is a difference in response to possible comparison with similar or dissimilar others, depending upon whether the purpose of the self-evaluation is to determine or confirm reality. In their discussion of the Byrne et al. (1966) findings, they argue that "when 'reality' is already consensually established, rejection of dissimilar others may occur to render disagreement inconsequential and

thereby maintain existing conceptions of reality" (Mettee & Smith, 1977, p. 71). However, when the determination of reality is the objective, the issue of similarity or dissimilarity may be less important than the value of the information available from one or the other. They argue that in a situation involving observation rather than direct interaction, the comparison is indirect and it is easier, therefore, to choose simply not to compare.

In the situation we are particularly interested in studying in this thesis, the subjects are attempting to establish reality. In particular, p is attempting to find out how well s/he will perform in comparison to o at an unfamiliar, ambiguous task they will soon attempt to complete together. The only possible clues to p's performance ability with respect to o must come from the observation of two potential referent others, of whom one is good and the other is poor at the instrumental (criterion) task. If p comes to believe that one of these referents is like her/him and the other is unlike her/him, the Mettee and Smith (1977) argument suggests that both potential referents will provide useful information because, in order "to fully know reality about oneself, a person must be able to differentiate and contrast himself with those unlike him in order to determine <u>what he is not</u>" (p. 78).

On the other hand, Mettee and Smith suggest that studies such as S. Berger (1971), Leventhal (1970), and Loh and Nuttin (1972) demonstrate that "when factors are not present that make dissimilarity itself significant and relevant, then dissimilar others, being noncomparable, will be perceived as irrelevant, so that information derived from them will have little impact" (Mettee & Smith, 1977, p. 88). For example, Leventhal (1970) found that second-born sons with older sisters tend to

be less feminine than second-born sons with older brothers. The older sister may be viewed as a less relevant comparison other than the older brother. A second-born son with an older sister is free to participate in what have been traditionally masculine pursuits with little fear of comparison with his sister; however, a second-born son with an older brother cannot avoid such potentially unfavorable comparisons if he engages in the same pursuits as his older brother. Therefore, in order to avoid comparison with an older brother that will often be unfavorable, the second-born son facing such a situation may seek alternative areas in which to excel.

From the standpoint of our situation, these findings suggest that both similar and dissimilar referents are important; however, it is necessary to make sure that dissimilar potential referents are not perceived as dissimilar on a dimension that will allow them to be ignored as simply irrelevant.

Byrne, Nelson, and Reeves (1966), after reviewing experimental investigations of attraction, argued that the expression of similar attitudes by a stranger provides consensual validation of attitudes, opinions, and beliefs and, hence, serves as a positive reinforcement for attraction. Festinger (1954) proposed in his Corollary IIB that "when an objective, nonsocial basis for the evaluation of one's ability or opinion is readily available persons will not evaluate their opinions or abilities by comparison with others" (p. 120). Byrne et al. (1966) suggest that "if that proposition is correct, the effects of similarity-dissimilarity of opinions on attraction should also be an inverse function of ease of empirical verification" (p. 100). Byrne et al. experimentally tested their extension and found only partial support for the

hypothesis. They found that similarity-dissimilarity of opinions had the greatest effect on attraction when the issues were unverifiable; however, the effect was not significantly different from the cases where the issues were verifiable (either in the present or in the future). The authors found a main effect for the proportion of similar attitudes but not for verifiability. In other words, similarity or dissimilarity of attitudes is apparently an important factor with respect to interpersonal attraction even when the issues about which the attitude is expressed are in some sense objectively verifiable.

Several other studies related to the general area of attitude similarity provide further evidence of the powerful influence of perceived similarity of attitudes. For example, a study conducted by Stein, Hardyck, and Smith (1965) suggests that perceived attitude similarity may be a more powerful basis for interpersonal attraction than similarity with respect to race. The study was designed to compare the effects of race and perceived similarity of beliefs on measures of social distance and "friendliness" responses. Belief similarity was operationalized by responses to 25 items of the nature: "Do you think teenagers in general <u>ought</u> to..." for example, "have good taste in clothes," "be sincerely religious," or "be good at dancing" (Stein et al., 1965, p. 283). In each instance, the respondent answered by indicating one of five possible choices ranging from "strongly feel they should" to "strongly feel they shouldn't."

Stein et al. (1965) conclude that, "when subjects are forced to evaluate stimulus individuals in terms of their beliefs, then belief congruence is more important than race" (p. 289). The authors also argue that their findings imply that, in the absence of fairly

straightforward information about beliefs, an individual will guess at belief systems of others in terms of whatever information is available. In such a situation, as we have seen in the expectation-states experiments concerning diffuse status characteristics, race effects can be very strong. Stein et al. suggest that their findings "seem to indicate that the inference made by most subjects about a Negro teen-ager, in the absence of other information, is that he is unlike them" (p. 288). The findings demonstrate that perceived attitude similarity can counteract fairly strong barriers to interpersonal attraction.

Rokeach and Mezei (1966) also conducted a series of experiments that demonstrated that attitudes can be a more important predicter of attraction than race. Two of the experiments were conducted using student subjects on campus, and one of the experiments was conducted in a more natural field setting. Because of its difference from the other studies discussed in this review, we will briefly describe the key aspects of the field study.

The subjects for the study were 26 black and 24 white male applicants for jobs at two mental hospitals in Michigan (janitor, laundry worker, attendant, and recreation director). While in a waiting room with two white and two black confederates of the experimenter, the subject and the confederates are presented with a mimeographed paper which presents five topics describing situations related to the potential job. For example, one topic concerned what should be done if a patient misses dinner. In each case, two possible courses of action were provided; one course of action strictly adhered to the "rules" and the other course of action expressed a more permissive alternative. It was then suggested that the "applicants" look at the topics provided while

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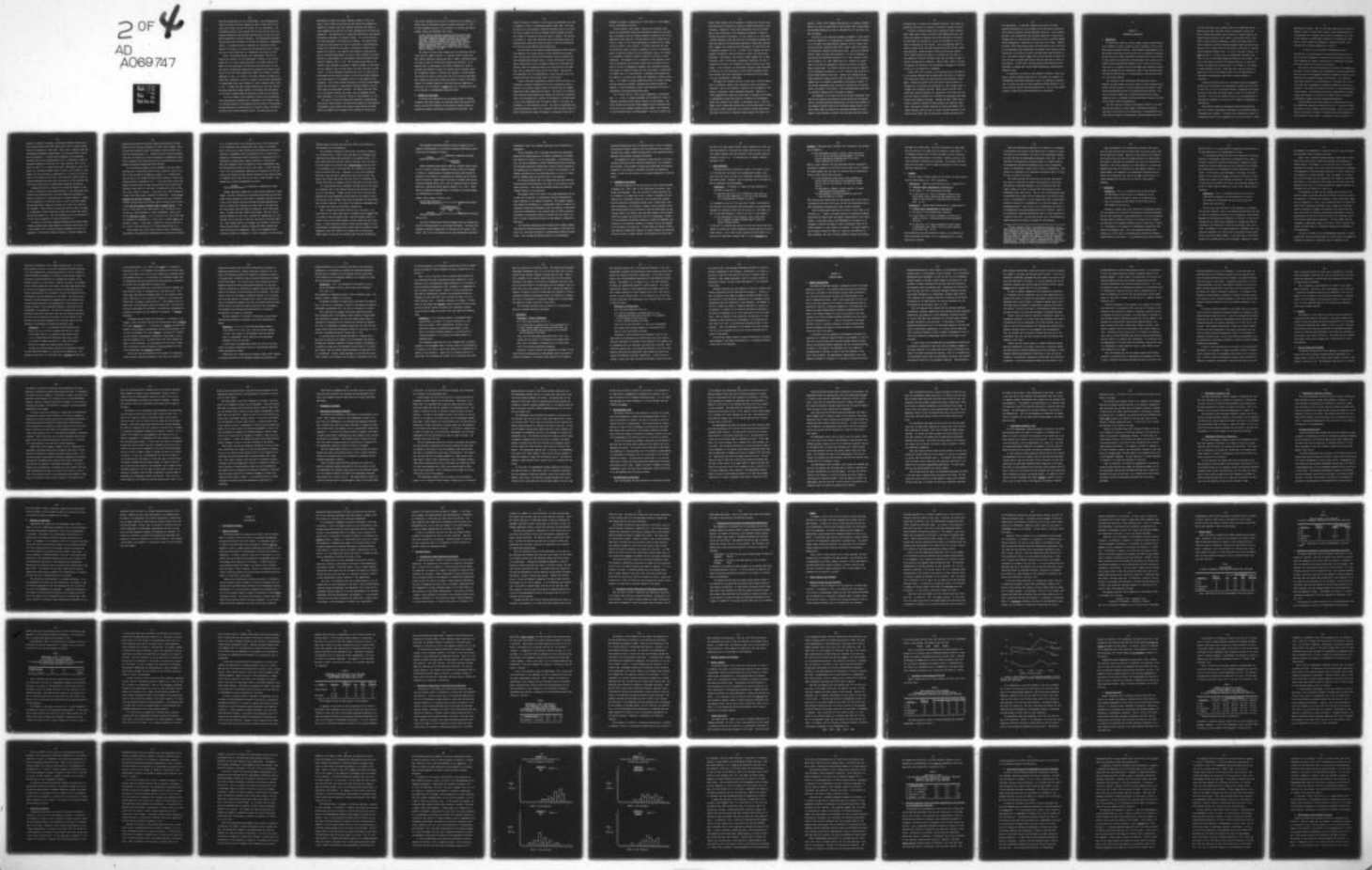


they were waiting their turn to be interviewed. The confederates proceeded to discuss the topics, making sure that at least three of the topics were covered, and drew the subject into the conversation. The confederates argued in such a manner that one black and one white confederate defended the rule-oriented position while the other two accomplices defended the permissive viewpoint. The confederates alternated their position from one subject to the next for purposes of experimental control. An attempt was made to manipulate the conversation sufficiently for a subject to be drawn into the discussion in such a manner that one of the biracial pairs of confederates could agree with him.

After a twelve-minute period, the "experimenter," who was not known by the subjects to be an experimenter, returned to the room and handed out 2 X 4 cards, asking each person to privately indicate the names of the two applicants with whom they would most prefer to work. The results overwhelmingly supported the hypothesis that subjects would choose to work with those persons most similar in attitudes or beliefs regardless of race. As a result of the three studies, the authors concluded that "similarity of belief is clearly a more powerful determinant of interpersonal choice than similarity of race" (Rokeach & Mezei, 1966, p. 169). It seems that when a person observes that some other individual holds essentially similar beliefs or attitudes, that other person is perceived as somehow being the same kind of person as the observer.

Castore and DeNinno (1977) conducted a series of five experiments which were generally concerned with a comparison of the effect of overall attitude similarity or dissimilarity and the effect of task-relevant attitude similarity or dissimilarity on a subject's choice of potential discussion group members/comparison others. Attitude similarity was

manipulated by having the subjects complete a number of items from Byrne's (1971) Survey of Attitudes and then showing them summaries of responses to selected items from potential associates (the number of items compared varied from nine to twelve, depending upon the particular experiment). The proportion of the items that consisted of task-relevant attitudes was different for different studies. Let us look briefly at the fourth experiment of the series as an example. The subjects were divided into three groups such that the proportion of task-relevant attitudes was 25 percent for one group, 50 percent for another, and 75 percent for the third. The "subjects were required to rank and then rate six potential group members in terms of their likability and desirability as a group member in a three-person, same-sex discussion group" (Castore & DeNinno, 1977, p. 139). The discussion group would be required to reach consensus and provide a summary statement of their position on a specific topic (in other words, the group would have to solve a task). Of the six potential associates that could be chosen, two of them agreed with the subject on three of the twelve attitude statements, two of them agreed on six statements, and two of them agreed on nine statements. One of each of these three pairs of potential group members agreed with the subject on task-relevant attitudes primarily, and the other agreed with nonrelevant attitudes. The results were very clear, "as in the previous studies, the overall level of agreement was the major determinant of the subjects' choices for group members" (p. 140).

The results of the five studies were consistent in demonstrating that persons choose potential discussion group members who are generally attitudinally similar rather than similar on task-relevant attitudes. Castore and DeNinno (1977) summarize their findings by stating that

"the results indicated that choices of affiliates who are potential referent others are determined largely by general similarity" (p. 147). In their insightful analysis of the results of the Castore and DeNinno studies, Wheeler and Zuckerman (1977) argue:

> In fact, subjects preferred potential associates with generally similar attitudes and task-dissimilar attitudes to associates with generally dissimilar attitudes and task-similar attitudes. Castore and DeNinno note that these findings agree with an earlier proposition by Israel (1956) that suggested that when similarity can be evaluated along two orthogonal dimensions, choice of a comparison other will be made in terms of the more general rather than the situation-specific dimension. (p. 337)

The results of these studies suggest that the observation that another person is somehow "like me" is a powerful force of attraction that even has behavioral implications when it comes to choosing a person with whom to work in a collectively oriented task situation. Is it possible that, in the absence of any better information on which to structure the situation, a person who observes that a potential referent is generally similar in attitudes and, therefore, a person somehow like her/him will come to believe that s/he will be good at some ambiguous, unfamiliar task simply because the referent is good at that task? Clearly, the evidence presented to this point does not demand such a conclusion, but the findings do <u>suggest</u> that such a situation will lead to the formation of interpersonal similarity bonds.

D. SUMMARY AND CONCLUSIONS

We started this exploration with the primary purpose of seeking information that might suggest the conditions under which persons will seek out and utilize information about potential referent persons to formulate performance expectations concerning self and others. The

specific situation of interest is one in which two individuals are about to interact to solve a collectively-oriented, valued task. The actors are aware of two other persons, potential referents, who will not interact in the situation but who are observed to have different abilities with respect to the task the actors are about to perform. The question of interest is: Under what conditions will the information about the referent actors' abilities provide the basis on which the interactants will structure their behavior during interaction?

The first part of this chapter reviewed Expectation States Theories, with emphasis on the latest version of Status Characteristics Theory. These theories argue that when the interactants and the referents possess differentially evaluated states of either diffuse and/or specific status characteristics that discriminate between the interactants and provide a basis for comparison between the interactants and the referents, then an expectation-states process will result. Specifically, the interactants will form expectations for self and other which will determine the power and prestige order in the situation.

We then introduced a hypothetical construct which we called an interpersonal similarity/dissimilarity bond as an organizing concept to describe a more general linkage between two persons than the linkages described by Status Characteristics Theory. The notion of an interpersonal similarity/dissimilarity bond captures the idea that a person may come to see her/himself as so similar (or dissimilar) to another person on one or more dimensions that s/he comes to expect to be similar (or dissimilar) on other dimensions as well. The idea of interpersonal similarity/dissimilarity bonds fits in perfectly with the latest version of Status Characteristics Theory and suggests a potentially useful way of

extending the domain of applicability of that theory to a more general class of referential structures.

The key question, then, became: What are the conditions under which such interpersonal similarity/dissimilarity bonds will form other than in situations which are already adequately described by one of the Expectation States Theories? The last section of this chapter was devoted to a search of the social psychological literature in an attempt to find an answer to this question. We quickly discovered that with the exception of Byrne's attraction paradigm, in spite of the enormous amount of empirical research that has accumulated, there is no evidence of a cumulative, scientific research tradition in the area of social comparison. (See Appendix P for a discussion of this important issue.) With few exceptions, the individual studies are so different with respect to the use of independent, dependent, and intervening variables, with respect to research settings, and even with respect to definitions of concepts that it is very difficult to synthesize the findings from more than one or at most a few studies into meaningful, coherent conclusions. It is useful to briefly recapitulate some of the major findings from the research we reviewed, including those studies reviewed in Appendix P, before presenting a formal theory embodying the notion of interpersonal similarity/dissimilarity bonds.

The evidence taken as a whole clearly demonstrates a strong tendency for a person to compare her/himself with another and to seek information concerning her/his ability relative to other persons. The work of Thornton and Arrowood (1966) suggests that in situations such as the ones we are studying, persons are more likely to be interested in self-evaluation than in self-enhancement. The work of Arrowood and

Friend (1969) suggests that the tendency to compare with the most desirable other may be overcome by the need for accurate information in such situations. Hakmiller's (1966) study demonstrates that an individual may act quite differently if the comparison information is likely to threaten the person's self-esteem. In fact, Berger et al. (1976) made a similar observation when they noted that the findings concerning subjects with negative self-performance expectations showed high variances which "suggest that situations involving negative self-evaluations may be inherently unstable" (p. 61). As Gruder (1977) suggests, the key is probably the degree to which self-esteem is clearly and specifically threatened. Nevertheless, the evidence strongly suggests that in many situations, even if self-esteem is moderately threatened, the need to evaluate one's ability will overpower the desire to protect one's self-esteem. In our situation, the collectively oriented, valued task makes it difficult for the interactants to avoid seeking information about their relative abilities; furthermore, the abilities are only mildly, if at all, threatening to self-esteem.

Throughout the literature review, we noted that a crucial question that is continually raised in this literature concerns the notion of similarity. Much of the research is concerned with the meaning of similarity in Festinger's (1954) similarity hypothesis. Zanna et al. (1975) suggested that similarity should refer to similarity with respect to characteristics which are likely to be predictive of performance rather than similarity with respect to performance per se. Jones and Regan's (1974) finding that persons have a much stronger desire to evaluate ability before taking part in an activity utilizing that ability than after the activity is completed clearly supports the Zanna et al.

approach. Wilson (1973) suggested the addition of a normative element; persons may look for similarities on what Patchen (1961) termed primary and secondary dimensions in order to determine how well one ought to be able to perform.

The review of the literature presented in Appendix P, while interesting and supportive of our application of Expectation States Theories to our situation involving potential referents, did not clearly identify any specific conditions under which we might expect the formation of interpersonal similarity/dissimilarity bonds. The area of modeling behavior began to provide such information. The work on modeling by Stotland and his associates (Burnstein et al., 1961; Stotland & Canon, 1972; Stotland et al., 1961) demonstrated that similarity in preferences in one area will generalize to perceived similarity of preferences in other areas. The studies indicated that an actor's behavior can be influenced by imitation of a model's behavior when the model is seen as being similar to the actor. However, the findings from the study conducted by Paulas and Seta (1975), as applied to our situation, suggest that if a referent's performance is attributed to chance, if the referent demonstrates that s/he does not believe any such ability exists, the subject is not likely to form self-expectations based upon the referent's behavior even if the model is similar.

The remainder of the review, and by far the most significant findings for our purposes, was devoted to issues dealing with the general topic of attitude similarity-dissimilarity, with particular emphasis on the research tradition known as the Attraction Paradigm (Byrne, 1971). Byrne (1961) began the tradition by empirically demonstrating that a person is more attracted to another with whom that person has similar

attitudes than to a person with dissimilar attitudes. This modest beginning was the birth of an extensive, scientific research tradition.

A series of studies by Byrne and his associates (Byrne & Nelson, 1964, 1965b; Byrne, Loudon, & Griffitt, 1968) demonstrated that similarity with respect to important and trivial attitudes has virtually the same impact on attraction as long as the importance of the attitudes is consistent in the situation. Clore and Baldridge (1968) observed a similar result when they manipulated attitude interest rather than importance. Byrne and Nelson (1965a) and Gouaux and Lamberth (1970) reported empirical evidence to illustrate the fact that it is the proportion of similar attitudes rather than the absolute number of similar attitudes that is important. Nelson (1965), however, did show that persons are sensitive to the preciseness of agreement in attitudes as well as to the proportion of agreement.

Byrne (1961, 1971) provided a very important piece of information to our growing inventory when he demonstrated that there is a high positive association between attitude similarity and attributed intelligence. Persons who perceive that they hold the same attitudes as a stranger tend to attribute more intelligence to that stranger than to a stranger with dissimilar attitudes. Smith, Meadow, and Sisk (1970) showed that attitude similarity will generalize to the extent that persons with similar attitudes will be perceived as performing better than persons with dissimilar attitudes. Eisinger and Mills (1968) found a similar correlation between attitude similarity and perceived competence. The series of studies conducted by Castore and DeNinno (1977) clearly indicated that the level of overall attitude similarity is the crucial factor rather than the proportion of similar attitudes which

are task-relevant. An important finding in this area of attitude similarity-dissimilarity is the strength of the association between perceived attitude similarity and interpersonal attraction. Stein, Hardyck, and Smith (1965) demonstrated that perceived similarity of beliefs has a stronger effect on attraction than similarity of race, a powerful diffuse status characteristic (especially so at the time of the study). Rokeach and Mezei (1966) found similar results in three studies, one of which was a field experiment which demonstrated that persons would choose an actual work partner on the basis of similar attitudes rather than similarity of race. The results strongly suggest that a person observed as having similar attitudes is somehow perceived as being the same kind of person as the observer. In other words, attitude similarity/dissimilarity may be sufficient to trigger what we have termed interpersonal similarity/dissimilarity bonds.

In conclusion, our review of this extensive literature clearly suggests a specific condition under which we can predict the formation of interpersonal similarity/dissimilarity bonds in a referential situation that is outside the scope of extant Expectation States Theories—a situation involving attitude similarity-dissimilarity. The following chapter presents a formal theory that incorporates this elaboration.

CHAPTER II

THEORETICAL FORMULATION

A. INTRODUCTION

We started this thesis by posing a common, general problem dealing with a situation in which a person is about to attempt to solve a task which requires collective effort. The successful accomplishment of the task requires some ability, and the actor has no information concerning her/his own and the other interactants' possessed state of this ability. We then asked how and under what conditions might such a person use information about some potential referent other to structure the situation; that is, we wanted to know how and under what conditions a person might use information about referential others to make decisions about the relative task abilities of the interactants to guide her/his behavior in the task situation.

Our literature review demonstrated that Expectation States Theories, and particularly the latest version of Status Characteristics Theory, provide an answer to how such referential information is used through the mediating effects of an expectation-states process. However, the theories apply only in limited situations—most notably, though not only, in situations involving differential states of diffuse and/or specific status characteristics.

Our next task was to develop a more general solution to the problem that would apply in a wider range of referential situations. A main step in this effort was the introduction of the hypothetical construct which we termed an interpersonal similarity/dissimilarity bond.

In a very real sense, this construct serves as an organizing idea by capturing the notion that, under certain circumstances, persons will come to believe that because they are similar to another person in one respect they are similar to that other in a more global sense as well. That is, under certain circumstances, a person who becomes aware of a fairly restricted, qualified similarity between himself and another person will come to believe that s/he is similar to that other in a global, almost unqualified sense as well. It is as if the person decides, I am <u>like</u> that person. In such a case, an interpersonal similarity bond (ISB) is said to have formed between the person and the referent. Once such a bond forms on the basis of perceived similarity on some dimension(s), the person will actually expect to be similar to the referent on other dimensions as well. Given that such a bond has formed, the person will act as if the burden of proof is on the demonstration of some specific dissimilarity rather than on further evidence of similarity.

A similar two-step process will occur under certain circumstances, resulting in the formation of an interpersonal dissimilarity bond (IDB). In this case, it is as if the person decides, I am <u>not</u> like that person. Once such a bond forms, the person comes to expect to be dissimilar to the other. It is as if the burden of proof is on the demonstration of some specific similarity if the person is to change the expectation of dissimilarity.

The construct termed an interpersonal similarity/dissimilarity bond thus provides a more general explanation of the linkage between an interactant and a referent. The notion of an interpersonal similarity/dissimilarity bond is fully compatible with the latest version of Status

Characteristics Theory. That is, the mutual possession of the same (or opposite) states of diffuse and/or specific status characteristics by an interactant and a referent, under certain circumstances, will lead to the formation of interpersonal similarity (or dissimilarity) bonds which, in turn, generate the formation of expectation states. This structure may be depicted graphically as follows:

D's and/or C's ⟶ ISB/IDB ⟶ Expectation States

The addition of the interpersonal similarity/dissimilarity bonds provides a powerful elaboration of Expectation States Theories by potentially expanding the domain of applicability to referential structures previously outside of the scope of the theories.

The review of the social psychological literature with emphasis on the areas of social comparison and interpersonal attraction demonstrated that our notion of interpersonal similarity/dissimilarity bonds is compatible with the research findings in these areas. The literature search also resulted in the identification of a specific set of conditions under which interpersonal similarity/dissimilarity bonds can be expected to form which are outside of the scope of existing Expectation States Theories. The situation involves the differentiation of interactants and referents on the basis of a specific type of similarity-dissimilarity; namely, attitude similarity-dissimilarity.

Before presenting the formal theory which embodies this notion of an interpersonal similarity/dissimilarity bond, it is useful to discuss the theory in a more informal, discursive fashion. First, let us consider in some detail the specific situation that we are addressing in this elaboration of the theory. Two persons, p and o, are about to

interact to attempt to complete a collectively-oriented, valued task, T, which requires some ability about which p and o hold no previous expectations for themselves or each other. Also, p and o recognize that some instrumental performance characteristic, C*, does exist which is necessary to accomplish T. In other words, possession of the positively evaluated state of this characteristic, C*(+), is expected to result in successful completion of the task, T(+), and, similarly, C*(-) is expected to lead to T(-), failure at the task. Additionally, p and o are aware of two potential referent others, R_1 and R_2, one of whom, R_1, possesses C*(+) and the other, R_2, possesses C*(-). R_1 and R_2 will not interact in the situation with p and o, and there are no other diffuse or specific characteristics that p and o are aware of in the situation that could form a social basis of discrimination among the four persons.

A general idea that our review of the literature suggests is that in such a situation as we have described above, S, the interactants will actively seek information which will help define the interactants as similar or dissimilar to each other and to potential referents. Because of the requirement to collectively solve T, p and o must work together and take each other's ideas into account; both p and o will succeed or fail together. Since the task is valued and the actors want to succeed, it is important to them to accurately assess their own and each other's ability with respect to T. The only available clue in S as described is the fact that R_1 possesses C*(+) and R_2 possesses C*(-).

Our search of the social comparison literature was directed toward finding information that might suggest the conditions under which p and o would somehow come to attribute abilities possessed by R_1 and R_2 to themselves. We uncovered sufficient evidence to strongly suggest the

possibility that perceived attitude similarity/dissimilarity between actors will be sufficient information to create such a linkage. Thus, we argue that information about the referents' and each other's attitudes will become salient in S. Perceived attitude similarity/dissimilarity will be sufficient to cause the formation of generalized conceptions of similarity and dissimilarity which we are describing as interpersonal similarity/dissimilarity bonds (ISB/IDB).

Let us consider an example and the "reasoning" that the interactants may use to cognitively structure such a situation, which we will term S' when attitudinal information is added to S. p becomes aware that s/he and R_1 have similar attitudes toward a number of issues that become available as information in S'. p also notes that o and R_2 have similar attitudes toward the same issues and that their attitudes are dissimilar from p's and R_1's attitudes. We argue that in such a situation p will "reason" as follows: I see that R_1 and I have the same attitudes toward these issues; evidently we think alike. I guess <u>we are basically the same kind of person</u>. My partner and R_2 have completely different opinions about these issues; they are nothing like R_1 and me. I guess <u>they are basically different kinds of persons from me</u>. I see that R_1 is very good at this task on which o and I are going to work and that R_2's task performance is really substandard. Since R_1 and I are the <u>same kind of person</u>, I bet I'll be able to do well at this task, too, especially in comparison to o, since s/he is a person <u>like</u> R_2 who performs so poorly. I must admit, I really don't care too much for o, but I have to work with her/him so I'd better make the best of it.

We also argue that o will follow a similar chain of reasoning to form negative self-expectations concerning her/his task ability relative

to p. In other words, we are arguing that p and o first become aware of the similarities and dissimilarities with respect to attitudes. Then, on the basis of these perceived attitude similarities and dissimilarities, a fundamental shift in perspective occurs, a shift from a perception of constrained, specific similarity or dissimilarity to an expectation of unconstrained, general similarity or dissimilarity. When this fundamental shift in perspective occurs, interpersonal similarity/dissimilarity bonds are said to have formed. We then argue that p and o will form performance expectations for themselves and for each other by attributing the task abilities possessed by the referent others to themselves and to each other on the basis of these linkages. This argument may be depicted graphically as follows:

$$\text{Attitude Similarity/Dissimilarity} \longrightarrow \text{ISB/IDB} \longrightarrow \text{Expectation States}$$

Several additional comments are in order before presenting a formal theory. The work of Byrne and his associates and Stotland and his associates clearly demonstrates that affect or sentiment relations will play a role in any situation involving attitude similarity-dissimilarity. That is, persons whose attitudes are similar tend to like each other more than persons whose attitudes are dissimilar, other things being equal. We argue that when a person likes another, s/he will tend to pay more attention to that other's opinions and feelings and, as a consequence, will be less apt to stay only with her/his own initial opinion. When a person does not like another, the situation is quite different, and the person is likely to ignore the other's opinions and stick with her/his own suggestions. Thus, we are suggesting that a sentiment structure will emerge in S' which is parallel to the previously

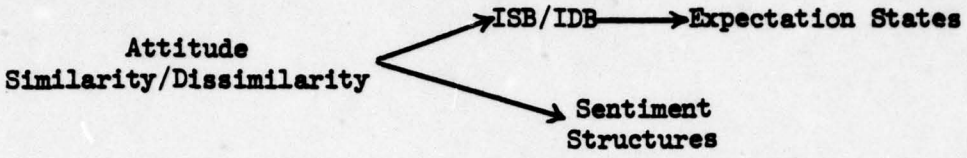
defined cognitive structure and which also affects the definition of the situation for the interactants.

Now, consider a situation in which p and o are about to interact in a situation like S', only in this case there is no information provided about the relative task abilities of the referent others. If p and o become aware that they hold similar attitudes, they will tend to like each other, and we predict that, ceteris paribus, they will tend to be influenced more by each other than in a condition in which they tend to like each other less. Similarly, if p and o hold dissimilar attitudes, they will tend to dislike each other, and we predict that again, other things being equal, they will tend to be influenced less by each other than in a condition in which they tend to like each other.

It is also possible that a sentiment structure may have some impact in a situation like S' with referent others who are perceived as high or low in task ability. However, as may be the case in the situations explained by current Expectation States Theories, the cognitive structure may have a much stronger effect than the sentiment structures which form in these situations. As a result, the behavioral consequences may be so small that they are statistically insignificant.

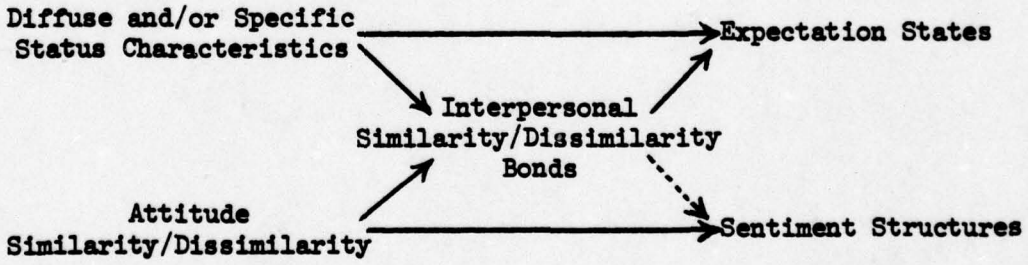
Thus, we argue that although o may not like p very much, o will still defer to p's opinion when there is information which suggests that p is likely to have more ability than o and the situation forces o to interact with p and to define success or failure based upon that interaction. A study conducted by Norfleet (1948) provides support for this interpretation by demonstrating that persons chosen as preferred leisure companions (those most liked) are not necessarily the same persons ranked highest on the power and prestige order (the most influential).

The arguments concerning sentiment structures suggest that our graphical representation of the attitude similarity-dissimilarity situation should be extended as follows:



Before presenting these general ideas as a proposed formal theory, it will be useful to briefly summarize the way in which this proposal is viewed as a generalizing and integrative concept which extends Expectation States Theories by integrating the findings from the literature on attraction, largely based on the body of research known as the Attraction Paradigm (Byrne, 1971), with the cumulative body of research based on an expectation-states approach (Berger et al., 1977). These ideas are summarized diagrammatically by combining our previous graphical representations as follows:

(Berger, Fisek, Norman, & Zelditch, 1977)



(Byrne, 1971)

The solid, directed lines indicate linkages which are formally predicted by existing theories or the proposed ISB Theory. The dotted line indicates a possible linkage which is predicted but not tested in this thesis. That is, we are arguing that any time interpersonal similarity/

dissimilarity bonds form, sentiment structures will be generated as a consequence.

The top horizontal line of the graph indicates that expectation states may be formed directly on the basis of possession of differential states of D's and/or C's by the interactants. As described earlier, the latest elaboration of Status Characteristics Theory describes the conditions under which diffuse and/or specific status characteristics possessed by two interactants will result in the formation of performance expectations for the interactants which, in turn, will determine the emergent power and prestige order in the situation.

The bottom horizontal line of the graph indicates that perceived attitude similarity-dissimilarity will result in the formation of sentiment structures. The Attraction Paradigm describes the empirical findings relating to such structures.

The diagonal lines in the center of the graph demonstrate the way in which the introduction of interpersonal similarity/dissimilarity bonds integrates the two research traditions. This proposal suggests that through the introduction of a hypothetical construct termed an interpersonal similarity/dissimilarity bond, the formation of expectation states may be generalized to any situation where one person perceives her/himself as sufficiently similar to another that s/he comes to expect to be able to perform with about the same degree of competence as that other.

The Attraction Paradigm provides evidence which strongly suggests that perceived similarity/dissimilarity with respect to attitudes will result in a more global perception of interpersonal similarity/dissimilarity. Thus, through the mediating effect of an interpersonal

similarity/dissimilarity bond, the proposed theory is able to integrate the attraction research tradition with the expectation-states research tradition and, thereby, extend the application of the expectation-states approach to more general referential structures.

By extending the scope of Expectation States Theories to include a situation involving attitude similarity-dissimilarity, the formulation also provides a first attempt to specifically acknowledge the potential interaction of the effects of sentiment structures and expectation states. We now turn our attention to the formal presentation of the ISB Theory.

B. PROPERTIES OF THE THEORY

The basic properties of the theory are the same as those described by Berger et al. (1977); that is, the formulation is p-centric, relational and situational. Thus, the situation is always described from the viewpoint of a single focal actor, p (where p' represents p's perception of or orientation toward self), and the description depends upon the particular relationships between p and o (specifically, some other interactant in the situation), between p and any referent others (any noninteractants in the situation of whom the interactants are specifically aware), and between p and some other element of the situation itself—for example, the particular task to be accomplished. Further, p's self-evaluation and her/his evaluation of others are dependent upon, relative to, the particular situation of interest and are not expected to be the same in all situations. In other words, the theory is developed using an interactionist approach by clearly defining the conception of self as social in origin; however, the conception also posits that

the self is not some rigidly defined, stable combination of traits carried from situation to situation but, rather, that the self is a relative concept dependent upon the structure of the particular social environment in which it is to be defined (see, for example, Webster & Sobieszek, 1974).

C. SCOPE CONDITIONS

Although the theory is described in terms of two actors, p and o, it is believed that the process can be generalized to apply to any small group that meets the other scope conditions by analyzing each of the possible dyads. Similarly, only two referents will be included for ease of explanation and understanding.

Definition 1. A situation, S', meets the scope conditions of the theory if and only if:

(1) there are four actors in the situation—a focal actor, p, and some other interactant, o, and p and o are both aware of two noninteractant referents, R_1 and R_2.

It is important to note that the term "actor" refers to any person in the situation, both interactants and noninteractants, and specifically includes p's orientation toward self as an actor, p'. The symbol "X_i" will be used when necessary to refer to any actor in the situation.

(2) the interactants in the situation, p and o, must interact to complete a valued, evaluated task, T, which requires collective effort.

To say that T is evaluated and valued is to say that T has a state recognized as success and a state recognized as failure and that all actors prefer success. To say that the task requires collective effort is to say that the interactants recognize that it is both legitimate and

necessary to take each other's opinions into consideration when attempting to complete T.

(3) the interactants associate a specific status characteristic, C*, with the successful accomplishment of T and have no prior expectations concerning their own or each other's possession of states of C*.

That is, p and o perceive that some particular ability is required to successfully accomplish the task that they will have to try to complete by working together and they enter the situation with no preconceived notion of their relative task abilities.

(4) if the interactants become aware of any information on which to form a social basis of discrimination between any two actors in the situation, the only such information is:
   (a) the states of diffuse (D) and/or specific (C) status characteristics each possesses, or
   (b) the knowledge of attitudes expressed by each actor about the same set of issues.

This condition also implies that the interactants have no prior history of interaction with any of the actors and that the interactants have no prior expectations concerning each other's relative abilities.

When the above-listed conditions are all met, we will refer to the situation as S'. Clearly, the scope conditions as defined are somewhat restrictive and thereby limit the domain of applicability of the theory; however, in this early stage of the development of the theory, it is necessary to restrict the domain to those circumstances where the described processes are most likely to be observed. By clearly restricting the domain initially by means of a carefully articulated set of scope conditions, the lines of future research to extend and elaborate

the theory are already drawn. The scope conditions by no means imply that the theory will not apply when the situation is other than S'. It is altogether possible that the theory may apply in other situations, with or without modifications to the theory. However, nothing is currently postulated concerning such situations. The boundary conditions under which the theory is said to apply are defined by the set of scope conditions described as S'.

D. CONCEPTS

The two formally defined concepts in this theory are taken directly from the latest Berger et al. (1977) formulation:

> Definition 2. (Specific Status Characteristic) A characteristic C is a specific status characteristic if and only if:
>
> (1) the states of C are differentially evaluated.
>
> (2) to each state x of C there corresponds a distinct expectation state, SPE(x), having the same evaluation as the state C(x) and relevant to a specified type of task outcome. (p. 94)
>
> Definition 3. (Diffuse Status Characteristic) A characteristic D is a diffuse status characteristic if and only if:
>
> (1) the states of D are differentially evaluated.
>
> (2) to each state x of D there corresponds a distinct set of states of specific, evaluated characteristics associated with D(x).
>
> (3) to each state x of D there corresponds a distinct general expectation state, GES(x), having the same evaluation as the state D(x). (p. 94)

These definitions have been described in detail in our discussion of Status Characteristics Theory, so it is unnecessary here to further explicate the concepts.

Before introducing the assumptions of the theory, it is necessary to reintroduce a key concept in the theory which is treated as a primitive term in this formulation, the notion of an interpersonal similarity bond (ISB) and an interpersonal dissimilarity bond (IDB). The two terms may be conceptualized as opposite states of a single construct. An interpersonal similarity/dissimilarity bond, like an expectation state, is a hypothetical construct and, as such, is unobservable. This concept is so important to our theoretical formulation that it is worth the time to review it once more.

The concept captures the notion that an individual may perceive that s/he is so much like (or unlike) another person on some fairly well-defined, constrained dimension or set of dimensions that s/he comes to expect to be like (or unlike) that other person in a more fundamental global sense as well. That is, this two-step process takes an individual from a simple state of being aware of an objective similarity (or dissimilarity) to a more complex state which includes expectations of similarity (or dissimilarity) in a much more general, all-encompassing sense.[3] Like the rest of this formulation, the notion of an interpersonal similarity/dissimilarity bond is p-centric. That is, an interpersonal similarity/dissimilarity bond is a state perceived by a specific focal actor. An actor may perceive such a bond between her/himself and some other person or between two other persons.

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[3]Clearly, there are limits to the expected similarity. For example, we do not intend to argue that the notion of expected similarity (or dissimilarity) extends to such physical characteristics as eye color or height or such transitory characteristics as moods. In some sense, we argue that the similarity applies to things which are part of the basic makeup of a person—those general, central characteristics which may be said to describe a certain "kind" of person. Expected similarity is not predicted to apply to phenomenologically peripheral characteristics. Further, more precise explication of the range of expected similarity is left for future elaborations of the theory.

Thus, the formation of an interpersonal similarity bond implies that the focal actor has come to believe that s/he and the similar other are the same kind of person. They are so much alike that the probability is fairly high that they will actually perform in a similar manner. Only specific, contradictory information will alter this expectation of similarity. The two are expected to be alike unless it is clearly demonstrated that they will be different on some specific dimension. In a similar manner, the formation of an interpersonal dissimilarity bond results in an expectation that the two will not be alike unless it is clearly demonstrated that they will be similar on some specific dimension.

E. ASSUMPTIONS

Assumption 1. In S', if p perceives that an actor possesses the same states of the D's and/or C's possessed by X_1 and different states of the same D's and/or C's possessed by X_2, then p will perceive an ISB between the actor and X_1 and an IDB between the actor and X_2.

Assumption 1 asserts that p will perceive an interpersonal similarity bond between any two actors in the situation, including her/himself and the other interactant or some noninteractant, if the actor possesses the same states of whatever D's and/or C's are known in the situation and some other actor possesses different states of these same D's and/or C's. Furthermore, p will perceive an interpersonal dissimilarity bond between the dissimilar dyad. Thus, this assumption requires what Berger et al. (1977) refer to as dimensionality between the possessed characteristics of two actors. If X_1 possesses the positively evaluated

state of some D or C, X_2 must possess the negatively evaluated state of the same characteristic for dimensionality to exist.

It is altogether possible that under some conditions a person may perceive an interpersonal similarity or dissimilarity bond simply on the basis of perceived similarity (dissimilarity) between two persons without the contrast between that pair and a dissimilar pair; however, such conditions are to be determined in future elaborations of the theory. At this stage in the development of the theory, the theory asserts that an ISB and an IDB will form when the conditions of dimensionality are present in the situation as described. The theory does not imply that an ISB cannot form without the concomitant formation of an IDB; it simply does not address the issue at this stage in the development.

> Assumption 2. In S', if p perceives that an actor has attitudes which are similar to X_1 and dissimilar to X_2, then p will perceive an ISB between that actor and X_1 and an IDB between that actor and X_2.

The use of the term "attitude" in this assumption is synonymous with the term "opinion"; that is, any expressed opinion about some item or issue is considered an attitude in this formulation. The attitudes expressed by two persons are considered to be "similar" if they are on the same side of a given issue, regardless of strength; and they are considered to be "dissimilar" if they are on different sides of the issue. For example, if two persons agree with a statement, their attitudes are considered to be similar even if one person strongly agrees and the other only slightly agrees. On the other hand, if one person agrees with a statement and the other disagrees, regardless of whether

the agreement or disagreement is relatively strong or weak, the persons are considered to have dissimilar attitudes.

Byrne's (1971) attraction paradigm provides a great deal of information which may be used to extend and elaborate this assumption in future research. For example, it is quite clear that if the relative importance and interest of the items about which attitudes are expressed are homogeneous in a given situation attraction is a direct function of the proportion of similar attitudes. Thus, for example, it is likely that, given attitudes which are homogeneous with respect to importance and interest, p will perceive an ISB between an actor and X_1 and an IDB between an actor and X_2 if the actor simply has a greater proportion of attitudes which are similar to X_1 than to X_2.

The assumption as stated does not restrict the assertion to any specific number of attitudes that must be similar, nor does it restrict the assertion to attitudes about important or interesting issues (again, from p's perspective). Thus, it may be possible that if all other variables could be absolutely controlled, even a single trivial attitude might be sufficient to trigger the perception of an ISB and IDB; however, such control is obviously realistically unattainable so that the manifestations of the ISB and IDB would likely be so weak that any effects would be empirically insignificant. For this reason, when the assumption is empirically tested, it is useful to test a situation with several attitudes which are "reasonably" important and interesting to the interactants.

The issue of whether or not an interpersonal similarity or dissimilarity bond can be perceived between two actors without the comparative information concerning a contrasting other was addressed in the

discussion of Assumption 1 and is equally relevant here. It is certainly possible—in fact, in the case of perceived attitude similarity it is even probable—that a person may perceive an ISB (or an IDB) between her/himself and another, or between two other persons, simply on the basis of attitude similarity (or dissimilarity) between the two, without reference to a third person. However, once again, for purposes of this initial formulation of the theory, the theory only asserts that an ISB and an IDB will form when p perceives the described contrast. Further generalizations of the concept of ISB and IDB formation will be investigated in future elaborations of the theory. The theory as proposed may be better understood by suggesting that the information concerning attitude similarity (or dissimilarity) is made salient in the situation because of the contrasting information concerning attitude dissimilarity (or similarity). The theory by no means rules out the possibility that other conditions, other than the contrast provided by the fact that both similar and dissimilar actors are present in the situation, may also make information about attitudes salient for the formation of interpersonal similarity/dissimilarity bonds.

> Assumption 3. In S', if p perceives an ISB between an actor and X_1, and if X_1 is known to possess some state of C, then p will expect the actor to possess the same relative state of C; if p perceives an IDB between an actor and X_2, and if X_2 is known to possess some state of C, then p will expect the actor to possess the opposite relative state of C.

Consider the situation where p perceives an interpersonal similarity bond between her/himself, p', and one of the referents, R_2. The assumption states that if p were aware that R_1 possesses the high state

of some characteristic, C(+), then p would expect p' to possess the high state as well. It is assumed, in accordance with the scope conditions of the theory, that p had no prior expectations concerning her/his own possessed state of C. In other words, this assumption argues that an interpersonal similarity/dissimilarity bond transforms a possession by one actor into an expectancy for another actor.

The assumption states that p will expect the actor to possess the same "relative" state of C possessed by X_1, the similar actor. This simply means that when the possessed states of C are viewed as dichotomous, either high or low, or positive or negative, p will expect the similar pair to possess a similar state of C. The assumption does not assert that p will necessarily expect the similar pair to perform with exactly the same degree of proficiency. The behavioral consequences of possession are greater than the behavioral consequences of expected possession.

An example may help clarify this discussion. In Situation A, for example, p and o are given a pre-test which demonstrates that p possesses C*(+) and o possesses C*(-). In Situation B, p expects to possess C*(+) because s/he has formed an interpersonal similarity bond between p' and an actor who possesses C*(+), and p expects o to possess C*(-) because s/he has formed an interpersonal dissimilarity bond between o and an actor who possesses C*(-). We predict that p will have a higher P(S) than o in both situations. We also predict that p will have a higher P(S) in Situation A than in Situation B because possession is a more direct relationship than expected possession.

Notice that when scope condition (4)(a) obtains, the formulation merely provides a parallel explanation to one that can be derived to

explain the situation using the Status Characteristics extension of Expectation States Theory. However, when scope condition (4)(b) obtains, the formulation predicts the formation of expectation states in a situation that is beyond the scope of previous elaborations of Expectation States Theory. The crucial notion is that persons may come to generalize perceived attitude similarity-dissimilarity to form some cognitive construction of similarity in general which then implies similarity with respect to other attributes such as abilities. The interactants, faced with the minimal information available in the situation and the strong pressures to determine their relative task abilities in order to successfully accomplish the task, will perceive ISB's and IDB's between similar and dissimilar dyads as described, and, consequently, will generalize attitude similarity-dissimilarity to similarity-dissimilarity with respect to abilities.

The next assumption of the theory is essentially the previously described Basic Expectation Assumption from Status Characteristics Theory.

> Assumption 4. In S', if p has formed performance expectations relative to C* for p' and o, then the relative ranking of p and o with respect to the observable power and prestige order is increasingly a direct function of the expectation advantage of one over the other.

In other words, once expectation states are formed for self and other, the theory is essentially similar to the previously described Status Characteristics Theory.

Because the work of Byrne and his associates (Byrne, 1977) suggests the strong possibility that a sentiment component may influence the

cognitive definition of the situation described by this theoretical formulation, it is necessary to consider two additional assumptions. Building upon the findings from the research tradition which Byrne (1971) refers to as the Attraction Paradigm, it is possible to formulate the following assumption:

> Assumption 5. In S', if p perceives an ISB between p' and X_1 and an IDB between p' and X_2, then p will be more attracted to X_1 than to X_2.

This assumption is suggested by Byrne's (1971) attraction theory. The essence of Byrne's argument is as follows:

> The greater the number of rewards that p associates with some person, X, the more p is attracted to (likes) X; the greater the number of punishments p associates with X, the less p is attracted to (likes) X.

Then, based upon the argument that persons judge and evaluate their interpretation of environmental events primarily through consensual validation, he argues, "any time that another person offers us validation by indicating that his percepts and concepts are congruent with ours, it constitutes a rewarding interaction," and "any time that another person indicates dissimilarity between our two notions, it constitutes a punishing interaction" (Byrne, 1961, p. 713).

In the case where p has similar attitudes to a referent who is perceived as being low with respect to the instrumental task ability, although the consensual validation of her/his opinions is rewarding, it is possible to argue that the information provided about C* is punishing (clearly, when the similar referent possesses the high state of C*, it is rewarding). However, taking cognizance of the collective orientation induced in the situation and the need for information upon which

to structure behavior, the information provided about C* may be rewarding per se because it reduces ambiguity and helps p decide how to behave in S'.

Thus, it can be seen that, given a situation which provides initial conditions which meet the prescribed scope conditions, S' with condition (4)(b) (differentiation among interactants is on the basis of attitude similarity-dissimilarity only), Assumption 5 is suggested, in part, by Byrne's generalization. However, we are also arguing that even when the interpersonal similarity and dissimilarity bonds are formulated on some other basis (such as shared D's and/or C's as in scope condition (4)(a)), sentiment structures will emerge. In other words, we are arguing that <u>whenever</u> a person forms an ISB with one person and an IDB with another, the person will experience a greater social attraction toward the similar other than toward the dissimilar other.

> <u>Assumption 6</u>. In S', holding constant p's performance expectations about o, the more p is socially attracted to o, the more p will grant o action opportunities, the more p will positively evaluate o's problem-solving attempts, and the more p will accept influence attempts by o; and the less p is socially attracted to o, the less p will behave toward o as described above.

This assumption argues that if p and o disagree about a possible solution to the instrumental task, p is more likely to be influenced by o's opinion if s/he likes o, and is less likely to be influenced by o's opinion if s/he dislikes o. Again, this is a relative notion; p is less likely to be influenced by a person who is relatively less liked

than by a person who is relatively liked. The similarity-dissimilarity experiments demonstrated that those who are less liked tend to be perceived as less competent compared to persons who are liked. There is also a tendency to try to make a person feel good if we are socially attracted to the person; in the event of disagreement with such a person, we are more likely to let that person "win the argument" once in a while than we are with a person we like less. Because the theory addresses a situation in which the interactants are predicted to form interpersonal similarity/dissimilarity bonds, the likelihood of interaction which is influenced by a sentiment component must be acknowledged and taken into account in any test of the theory.

The following derivations from the theory will be specifically tested in a proposed laboratory experiment.

F. DERIVATIONS

Derivation 1 (Ability Information).

In S' with scope condition (4)(b), if:

a) p is aware that R_1 possesses C*(+) and R_2 possesses C*(-),
b) p and o express opposite attitudes from each other, and
c) p expresses attitudes which are similar to one referent and the opposite of the other,

then p will form performance expectations for p' and o consistent with the states of C* possessed by the similar referents, and p's acceptance of influence will be a direct function of the resulting expectation advantage.

Derivation 1 follows directly from Assumptions 1 through 4 of the theory when the interactants are differentiated only on the basis of perceived differences in attitudes (scope condition (4)(b) applies).

This derivation implies that, in the described situation, p will form interpersonal similarity and dissimilarity bonds between the actors with similar and dissimilar attitudes, respectively. On the basis of these bonds, p will form performance expectations for her/himself and her/his partner. For example, if p is similar to R_1, p will form high-self, low-other (HL) expectations relative to her/his partner. As a direct probabilistic function of these expectations, we predict that p will have a higher probability of stay response, P(S), than o when the two interact to solve the group task. If p is similar to R_2, p will form low-self, high-other (LH) expectations, and we predict that p will have a lower P(S) than o.

Derivation 2 (Attitude Only).

In S' with scope condition (4)(b), if:

a) no ability information is provided about R_1 or R_2,
b) p expresses attitudes which are similar to one referent and the opposite of the other, and
c) p and o express dissimilar attitudes,

then p will be less attracted to o, and p, as a consequence, will accept less influence attempts by o than would be the case if p and o had similar attitudes.

Derivation 2 follows directly from Assumptions 5 and 6 of the theory when the interactants are differentiated only on the basis of perceived differences in attitudes (scope condition (4)(b) applies) and no information about the referents' task abilities is provided. This derivation implies that, in the described situation, p will form interpersonal similarity and dissimilarity bonds between the actors with similar and dissimilar attitudes, respectively. p will be more attracted to actors with whom s/he forms an ISB than to actors with whom

s/he forms an IDB. These emergent sentiment structures will have behavioral consequences in the situation. Specifically, if p likes o, p will have a lower P(S) than would be the case in a situation where p dislikes o, other things being equal. That is, the more a person is attracted to another, the more likely that person is to be influenced by the other.

Sentiment structures are also predicted to form in a situation with ability information like that described by Derivation 1. However, in such a situation, even though the negative sentiments between p and o are predicted to have behavioral consequences, the consequences should consistently raise the probability of stay responses. For example, if we wish to compare the amount of deference exhibited by a person in a HL condition to a person in a LH condition according to Derivation 1, any effects of sentiment will be in the same direction for both conditions. That is, persons in both conditions are predicted to be less attracted to their partners and, consequently, to be influenced less than would be the case if the persons had attitudes similar to their partners'. Thus, the difference in P(S) between the HL and LH condition will still be manifest but the P(S) in both conditions will be raised to some degree.

The following chapter presents a detailed description of an experiment designed to test these two derivations in a laboratory setting as a first test of the ISB Theory.

CHAPTER III

RESEARCH DESIGN

A. GENERAL CONSIDERATIONS

The theory as described includes a bifurcation of one of the scope conditions (4a and 4b): the situation where the actors are differentiated only on the basis of diffuse and/or specific status characteristics, and the situation where the actors are differentiated on the basis of expressed attitudes. Since we have argued that the first version of the scope condition (4)(a) results in an explanation which is essentially a parallel, alternative explanation to the explanation provided by the status characteristics extension of Expectation States Theory, this research design will focus on the version of the scope condition (4)(b) which includes expressed attitudes as the only social basis of discrimination in S'. A test of this aspect of the theory provides a test of a possible elaboration of Status Characteristics Theory by extending the theory to include situations not previously within the scope of the theory.

In accordance with the argument we have proposed concerning the importance of a cumulative research tradition (see Appendix P), the design will utilize the previously described standard research setting used in the expectation-states experiments (see the discussion starting on page 21 of this thesis). The experiment will be as simple and straightforward as possible in order to test the usefulness of the basic ideas presented. The hypothesized linkage between p and o and potential referents in situation S' on the basis of perceived attitude

similarity/dissimilarity, which results in a differentiated power and prestige order, is the hypothesis of major interest. As in the previous expectation-states experiments, we will use the P(S) as our dependent variable because it provides a useful measure of influence in S', and influence is highly correlated with the other behaviors described as the observable power and prestige order. Recognizing the criticism of those who argue that such a controlled, deliberate approach provides only minimal information, we, nevertheless, strongly support Byrne's (1971) argument that "misplaced creativity in devising new and different measures of the same construct for each new experiment can only bring empirical and conceptual chaos" (p. 229).

While the empirical data reviewed from the attitude similarity-dissimilarity literature demonstrates that perceived attitude similarity-dissimilarity may generalize to other dimensions including abilities, it is also clear that other information in a situation might overpower and mask the effects of the attitudes. If the effects of attitude similarity-dissimilarity are to be sufficiently manifest to provide data which is statistically significant, it is crucial that the empirical test be carefully designed in order to prevent contamination of the results from uncontrolled informational inputs to the subjects in the situation.

In other words, we are arguing that the experimental situation must be carefully orchestrated to make sure that the essential elements of the scope conditions of the theory are met and that no extraneous information is allowed to influence the subjects. Thus, it is necessary that the interactants believe that the instrumental (criterion) task requires some specific ability for its successful completion. The interactants

must recognize the difference between the states of success and failure with respect to the task, and they must prefer success. If an actor is essentially indifferent concerning the task outcome, s/he does not meet the scope conditions of the theory. It is also necessary that the interactants recognize that the task requires collective effort; success depends upon the combined effort of the interactants.

In order to prevent contamination from uncontrolled information, it is essential that the interactants have no prior expectations concerning their ability to perform the instrumental task and that the interactants have no prior history of interaction between them on which they might base the formation of expectations concerning each other's task ability. The only social basis of discrimination between the interactants should be the perceived difference in expressed attitudes.

Finally, since this theory is explicitly formulated to apply to a referential situation, it is crucial that the interactants are aware of two persons who are not interactants in the task situation, and, in order to test the first derivation, the referents must possess differentially evaluated states of the instrumental task characteristic. Thus, one referent must be perceived as being relatively good at the instrumental task while the other referent is seen as relatively poor compared to each other.

Clearly, the most crucial ideas to be tested concern the second and third assumptions of the theory, which posit a connection between perceived attitude similarity-dissimilarity and the formation of interpersonal similarity-dissimilarity bonds which, in turn, provide the linkage for the formation of expectation states based upon referential information. Since these assumptions embody the real essence of the

proposed extension of Status Characteristics Theory, it is appropriate to focus the research design on the most fundamental aspects of the proposed argument. At this stage in the development of the theory, the important question concerns the proposed linkage between attitude similarity-dissimilarity and expected performance ability. As is true of expectation states, an interpersonal similarity or dissimilarity bond is a hypothetical construct and has no direct, independent metric. We infer the existence of an ISB or IDB from theoretically derived consequences of what ought to happen if an ISB exists (cf. Zimbardo, Ebbesen, & Maslach, 1977).

Possible differences in the strength of the linkage, the interpersonal similarity or dissimilarity bond, which may be a function of differences in the proportion of similar to dissimilar attitudes, the mix of important and trivial attitudes, or the preciseness of agreement on the attitudes, provide interesting questions for future research if the existence of an ISB and IDB is empirically supported (Byrne, 1971; Byrne & Nelson, 1964, 1965a, 1965b; Byrne, Loudon, & Griffitt, 1968; Castore & DeNinno, 1977; Clore & Baldridge, 1968; Gouaux & Lamberth, 1970). However, the first priority must be to examine the conditions under which an ISB and IDB based upon attitude similarity-dissimilarity are most likely to be formed by the interactants. If an ISB and an IDB are demonstrated to be formed under such conditions, then and only then is it appropriate to design empirical tests to study further elaborations suggested by the theory.

Thus, the strategy used for this design suggests that attitude similarity be operationalized by manipulating the expressed attitudes so that p perceives that her/his attitudes are exactly the same as the

attitudes expressed by one of the referents. On the other hand, the attitudes should be as different as possible from the expressed attitudes of her/his partner and the other referent, who express attitudes which are similar to each other's. Conditions one and two of the following experimental situation are designed to explicitly follow the research strategy described above, which tests the first derivation of the theory, the "ability information" derivation. All elements of the situation are painstakingly coordinated in a highly controlled laboratory setting in order to maximize adherence to the scope conditions and provide a controlled empirical test of the central assumptions of the theory.

As we have previously discussed at some length, the use of perceptions of attitude similarity-dissimilarity implies the formation of sentiment structures among the actors. Since we have argued that sentiment structures will have behavioral consequences for the interactants, this formulation provides an excellent opportunity for a first test of such a notion. Thus, another important set of ideas to be tested concerns the fifth and sixth assumptions of the theory, which assert that perceived attitude similarity-dissimilarity results in the formation of sentiment structures which, in turn, have behavioral consequences that are manifested by differences in accepted or rejected influence attempts between the interactants.

In order to test derivation two of the theory, the "attitude only" derivation, it is necessary to create a situation in which nc information is provided about the instrumental task ability of any of the actors. In order to keep the conditions as nearly alike as possible for purposes of comparison, experimental conditions three and four are the

same as conditions one and two except that no information is provided about the referents' task abilities, and, in condition four, the interactants are manipulated to believe that their expressed attitudes are the same instead of different.

Thus, to summarize, the experiment will consist of four experimental conditions. Conditions 1 and 2 are designed to test Derivation 1, the ability information derivation, and Conditions 3 and 4 are designed to test Derivation 2, the attitude only derivation. Conditions 3 and 4 are also designed to be sufficiently similar to Conditions 1 and 2 to allow comparisons among all four conditions for purposes of control and secondary analyses.

B. SUBJECTS

The subjects for this study are all male juniors and seniors recruited from local Catholic high schools. High school students were chosen to lessen the probability that participants had prior knowledge of laboratory experiments and, thereby, to lower the rate of suspicion. Subjects with strong suspicions concerning the experimental manipulations do not meet the scope conditions of the theory and, therefore, do not provide a valid test of the theory. The subjects are all volunteer participants who are paid a standard fee of Three Dollars for their participation.

C. PHYSICAL SETTING AND EQUIPMENT

The physical setting used for this experiment is essentially the same as that used in previous expectation-states experiments (see Berger, Conner, & Fisek, 1974; Berger, Fisek, Norman, & Zelditch, 1977; Webster & Sobieszek, 1974). The experiment takes place in a room where

the subjects are seated at individual tables separated by an opaque partition to prevent the subjects from seeing each other. By separating the subjects in such a manner, it is possible to control the visual cues available to the subjects in S'; however, as in all such experimental controls, there is a trade-off that must be accepted. In this case, by isolating the subjects, the likelihood of suspicion of the experimental manipulations is increased.

If visual cues are not controlled, a subject may form expectations concerning his partner's status relative to his own—for example, by observing the clothes he wears—and thus form performance expectations based upon perceived differences in diffuse status characteristics. Such a situation would constitute a clear violation of the scope conditions, since the only social basis of discrimination allowed in S' (under scope condition (4)(b)) is the perceived difference in expressed attitudes. Other visual cues, such as facial expression and body language, could also introduce uncontrolled variance into S' if the subjects were permitted to see each other during interaction.

Verbal cues, such as manner of speech, can also contaminate the experiment by providing uncontrolled information upon which a subject may base the formation of opinions concerning relative status. Such factors as accent, tonal quality, vocabulary, grammatical correctness, and degree of confidence may all provide clues about a person that could affect the formation of performance expectations. In order to minimize such contamination, the subjects will only interact with each other electronically by means of a console on the table in front of them. The consoles are part of the interaction control machine (ICOM), which also includes a master console, located in an adjacent control

room, for observing subjects' responses and for controlling communications between the subjects, and an experimenter's console, which is located at the host experimenter's table in the front of the room so that the experimenter can monitor the subjects' responses. Although both subjects can see the experimenter, they cannot see the lights on his panel.

The subjects will be performing a decision-making, problem-solving task requiring an initial and a final binary choice for each trial. A subject will signal his choice by pressing a button on his console, which will cause a bulb to light on his own console and on both master consoles. After both subjects have indicated their initial responses, the ICOM will ostensibly allow the subjects to see each other's response by lighting the appropriate response on the subjects' consoles. In actuality, the responses are preprogrammed so that subjects will see either an agreement or a disagreement with their partner in accordance with the experimental design. In other words, the ICOM can be operated to make the subjects believe that their responses are the same or different on any given trial, regardless of the actual choices activated; they can be made to appear to agree or disagree on their first choices as desired. In this way, the experimenter can control the number of action opportunities (the number of trials—the same for each subject), the number of problem-solving attempts (again, the same for each subject, since each must respond to every problem), and the number of communicated evaluations (also the same for each subject, because the experiment is designed to use the ICOM to manipulate a precise number of agreements and disagreements between the subjects). Thus, the first three elements of the observable power and prestige order (OPPO) of the

group—the action opportunities, the problem-solving attempts, and the communicated evaluations—are all experimentally controlled to be identical for each subject.

The final element of the OPPO, influence, is allowed to vary, and serves as the dependent variable for the experiment. After the subjects make their own initial choice and see the initial choice of their partner, the subjects press a button on their console corresponding to their final choice for that trial. Again, a bulb is lit on the subject's own console and on the master consoles; however, in this case, the subjects are not permitted to see each other's choice. On each critical trial, a trial when the subject is manipulated to believe that his partner disagrees with his first choice, the assistant experimenter is able to record the measure of influence by determining whether a subject stayed with his own initial choice or changed his response to agree with that of his partner. A subject who changes his choice after seeing that his partner disagrees is said to have been influenced by his partner.

While verbal cues are not completely eliminated by using the ICOM, since subjects may still speak out to ask the experimenter a question, the use of the ICOM allows the desired control of the elements of the observable power and prestige order and helps minimize other verbal cues. Every effort is made to hold questions or extraneous talking to a minimum, and the post-experiment interview is designed to detect possible violations of scope conditions based upon such contamination. The problem could be eliminated by isolating the subjects in individual rooms and using closed-circuit television equipment to control both visual and audio stimuli; however, it is believed that such a setting increases the suspicion rate and unnecessarily complicates the experiment.

Other items of equipment used in the study, such as a slide projector and tape recorders (for recording the post-experiment interviews), are standard, familiar items which do not require additional description.

D. EXPERIMENTAL PROCEDURES

1. Introduction and General Procedures

The subjects are scheduled to participate in the experiment two at a time. When a subject arrives at the predesignated location, he is met by the host experimenter or an assistant and immediately escorted into a waiting room, where he is seated and asked to complete an eight-item attitude survey (see Appendix C) and a pre-experiment release form (Appendix F). As soon as the attitude survey is completed, the subject is asked to make himself comfortable and read a magazine while awaiting the arrival of his partner. The attitude survey is taken to the control room, where the bogus surveys are constructed in accordance with the experimental condition to which the subject is assigned.

When the second subject arrives, he is given the same two forms to complete and, again, the attitude survey is used to create fictitious surveys for his partner and the two referents in accordance with the assigned experimental condition.

After the bogus surveys have been completed, the surveys are placed in envelopes (marked "high ability" and "low ability" so that the experimenter can recognize them) and put into two different drawers in a file cabinet located in the front of the experiment room where both subjects will be able to see it. The bogus "partner" surveys are placed on opposite ends of the experimenter's table in the front center

of the room. At this point, the setting is prepared, and the subjects can be seated in the experimental room.

Subject number one (the first to arrive) is escorted into the experimental room and seated at one of the tables. The subject is informed that it is important that he and his partner not see or talk to each other during the study for purposes to be explained shortly. The subject is asked to try not to talk and to raise his hand if he has a question. A curtain is then placed in front of the subject so that his partner can be seated at his table without the two participants seeing each other. Subject number two is then escorted into the room and given essentially the same instructions as subject number one (see Appendix B for the actual script used for the study). The curtain is removed from in front of subject one, and the assistant experimenter tells the host experimenter that the participants are ready to begin the study. The assistant then leaves the room.

The host experimenter begins the session by explaining that persons who are previously unacquainted and who know nothing about each other are needed for this study so that the information they receive about each other is standardized for each pair of participants. The subjects are told that they will be working together as a team; however, like many teams in today's modern technological world, the members interact using modern communications devices, which means that members may interact while long distances apart without ever communicating in actual face-to-face interaction. This is explained as the reason for the partition and the use of the consoles.

The experimenter explains that the subjects will be working together to try to achieve the best possible combined score on a decision-

making task which requires a skill called Contrast Sensitivity (CS). The experimenter explains that CS is a unique skill that social scientists have studied throughout the country. He explains that for the purposes of this study, which is concerned with how well persons can cooperate to achieve a maximum combined score, it is important that the task be one which requires a clearly identifiable skill for its solution—not simply luck.

The experimenter next introduces the subjects to the use of the ICOM consoles that they will use to record their answers and to interact with each other. The CS task is introduced, and the subjects see a sample problem projected on a screen in the front of the room. By having the subjects actually push response buttons on their consoles, the experimenter can demonstrate the use of the equipment and explain the experimental task. The subjects are shown how to make an initial choice by pushing a response button, how they will be allowed to see their partner's selection only after both subjects have responded, and how they will make their final decision, which will not be seen by their partner. The experimenter explains that in the case of a disagreement, each subject must decide whether to stay with his initial response or change his response to agree with his partner's choice. The subjects complete a sample problem (trial) exactly like it is conducted for the record.

At this point, the experimenter strongly emphasizes the instruction that the task is a team effort, that it is perfectly legitimate and even necessary to take one's partner's choice into account before making a final choice. The subjects are again reminded that initial choices are not counted and that only the total number of correct final

choices will be tallied to arrive at a team score. The importance of the final choice is emphasized by comparing the situation to one in which two doctors try to diagnose a puzzling disease. It is not important who makes the correct diagnosis; it is only important that the diagnosis is correct.

2. The Experimental Task

The contrast sensitivity task consists of a series of 25 slides, each slide representing a single decision-making problem or trial. A slide is projected on a screen in the front of the room so that both subjects can view it simultaneously. Each slide depicts two distinct patterns of black and white rectangles, one pattern above the other. Each subject must decide which of the patterns contains the greater area of white and signal his selection by pressing a button on his console corresponding to his choice, the top (T) or bottom (B) pattern.

The set of CS slides was carefully constructed and pre-tested to make sure that the binary choice required of the subjects will be as ambiguous as possible. In the case of the slides used in this study, the probability of choosing either the T or B pattern is approximately .50 (see Webster & Sobieszek, 1974, for a discussion of the contrast sensitivity slides). By using such an unusual task, it is also less likely that a subject will have preconceived expectations concerning his ability at such a task. Finally, the task is designed to provide independent trials, with each slide representing a wholly new problem in no way dependent upon the previous problem.

3. The Experimental Manipulation

After the equipment and task procedures are thoroughly explained

to the subjects, the experimenter uses a chart to describe how well a national sample of male high school students performed on a similar series of CS problems which they completed as individuals. The fictitious standards are designed to demonstrate that the achievement of a superior or poor score on the contrast sensitivity task is an unusual or rare occurrence. The chart shows the following distribution of scores for the 25-trial CS test: 21-25, superior; 16-20, above average; 11-15, average; 7-10, below average; and 0-6, poor. The subjects are told that most persons score in the average range and that a superior or poor score is quite rare.

The experimenter next shows the subjects how well two-person teams have been performing at the 25-trial CS task when they are permitted to exchange initial opinions. The team score is the sum of all correct final choices, so the maximum team score is 50. The distribution of scores for the fictitious teams is presented as follows: 48-50, superior; 41-47, above average; 33-40, average; 27-32, below average; and 0-26, poor. The fictitious distribution of scores attained by teams is used to emphasize to the subjects that persons perform much better when they are permitted to exchange first-choice information with their partner. Superior and poor scores are again described as rare. The subjects are asked to note that if both persons guessed the answers and got half of them correct, as we might expect by chance, the team score would be 25 and such a score is not average; in fact, a score of 25 is in the poor range and a rare occurrence. The experimenter explains that as a result of these previous studies it is clear that contrast sensitivity is a useful, measurable skill which is stable over time.

After the national average chart is explained to the subjects, the experimenter begins the manipulations, which are specifically designed to create the four distinct experimental conditions utilized in this study. Since the four conditions have much in common, the scenario will first be described in general terms, and then the specific manipulation relevant to each condition will be explained.

After describing the fictitious score distributions, the experimenter suggests that it might be useful for the subjects to know something about some of these students who participated in the studies concerning individual contrast sensitivity ability. In order to provide such information, the experimenter states that he can let the subjects look at the attitude surveys completed by a couple of these earlier participants.

The experimenter moves from his table to the file cabinet, which is in full view of both subjects, and withdraws a large envelope (containing the bogus surveys for one of the fictitious referents) from one of the drawers which is filled with envelopes and a second envelope (the second referent's survey) from another drawer filled with envelopes. The envelopes are taken to the experimenter's table and two surveys are withdrawn from each envelope, ostensibly the original and a Xeroxed copy of the referent's survey.

The experimenter covers the names on the surveys with masking tape and tells the subjects that the names must be covered to maintain the promised confidentiality of the participants. The forms are labeled "Person X" and "Person Y" so that the subjects will have a means of identifying the respective surveys. After the names are covered, the experimenter pins one X and one Y survey on each of the subject's information boards (the partition separating the subjects).

After the subjects have had a couple of minutes to study the surveys, the experimenter reminds them that it is often the case that members of modern teams never meet each other face-to-face but that, nevertheless, they must somehow evaluate each other's capabilities, often on the basis of limited information, so that decisions can be made. In order to allow the subjects to know something about each other, the experimenter offers to allow the subjects some time to look at the attitude survey that their partner filled out just before starting the study.

The experimenter then takes the surveys from his table and again tapes over the names while reminding the subjects that he must protect their anonymity as promised. This time the forms are simply labeled "partner." Of course, the forms are again fictitious surveys which have been completed in accordance with the appropriate experimental condition being tested. The surveys are again pinned on the information boards, and the subjects are given a couple of minutes to assess this additional information.

Thus, each subject receives three attitude surveys to review, supposedly the surveys filled out by his partner (o) and the two referents (R_1 and R_2, which are labeled X and Y). In actuality, the subjects receive the bogus surveys, which have been carefully constructed to correspond with the desired experimental manipulation. All three forms show the same sex and grade as the subject himself.

After distributing the forms, the experimenter announces that there is one more task to complete before the exercise will begin. He then states that since every pair of participants is really quite different from any other pair it is useful for the social scientists conducting

the study to get an idea of their perceptions of each other. In order to get some idea of their feelings, the experimenter asks each subject to complete a simple questionnaire after looking over the standard forms (see Appendix G). The purpose of the questionnaire is to make sure that the subjects do look at the attitude surveys and to reinforce their perceptions. The questionnaire also provides feedback on the success of the manipulations. After the questionnaires are completed, the manipulation is complete, and the actual data-collection phase of the experiment can begin.

a. Experimental Condition 1 (HL)

The first experimental condition attempts to manipulate the subject into believing that he is likely to be similar to a referent who is known to be high in CS ability and dissimilar to his partner and to the other referent who is known to be low in CS ability. This is referred to as the high-self, low-other manipulation or, simply, HL. The first and second experimental conditions are designed to test the first proposed derivation from the theory, the ability information derivation.

In this condition, before taking the surveys from the file cabinet, the experimenter tells the subjects that the score that the individual achieved when he took the individual CS test is posted on the attitude survey that the participant completed before taking part in the study. The subject is then presented with an attitude survey labeled "Person X" that is filled out with exactly the same responses that the subject made when he completed the form a few minutes earlier. In addition, the survey has the words "UNUSUALLY HIGH SCORE, SUPERIOR" printed in red letters in the top right corner of the page and the notation, "Contrast

Sensitivity Score: 23 correct out of 25," written and initialed at the bottom of the page.

The attitude survey labeled "Person Y" is completed with responses which are the opposite extreme from each of the subject's responses on each item except one, and that item is an opposite "moderate" response. In other words, the subject sees that Person Y's attitudes are dissimilar from his own. In addition, the survey has the words "UNUSUALLY LOW SCORE, POOR" printed in red letters in the top right corner and the notation, "Contrast Sensitivity Score: 5 correct out of 25," written and initialed at the bottom of the page.

Finally, the attitude survey which ostensibly belongs to the subject's partner is filled out so that each response is the opposite extreme of the subject's corresponding response. In other words, the forms labeled "Person Y" and "partner" are exactly the same with respect to attitudes except for one item for which the partner has a more extreme response than Person Y. For example, if Person Y's response to an item is "moderately agree," then the partner's response to that item would be "strongly agree," and the subject's own response would be one of the "disagree" responses. The only reason for the slight difference in responses is to lessen the likelihood of suspicion.

Thus, in Condition 1, the subject is manipulated to believe that he has the same attitudes as a person who performed unusually well at the instrumental task and very different attitudes from a person who performed very poorly at the task. He is further led to believe that his partner and the low-performing individual have very similar attitudes.

b. Experimental Condition 2 (LH)

The second experimental condition attempts to manipulate the subject into believing that he is likely to be similar to a referent who is known to be low in CS ability and dissimilar to his partner and to the other referent who is known to be high in CS ability. This is referred to as the low-self, high-other manipulation or, simply, LH.

This condition closely parallels Condition 1 except that the subject has the same attitudes as Person Y, the referent with the unusually low task ability, and the opposite attitudes from Person X, the referent with the unusually high task ability. Again, the subject is led to believe that he has dissimilar attitudes from his partner, only this time the partner is, of course, similar to the high ability referent.

c. Experimental Condition 3 (dissimilar)

The third experimental condition serves as an experimental control and, when compared to Condition 4, as a means of testing the second derivation from the theory, the attitude only derivation. This condition is essentially like Condition 1 except that no information about either Person X or Person Y's performance on the contrast sensitivity task is provided in the situation.

In this condition, the subject sees that his attitudes are the same as Person X's and different from his partner's and Person Y's, but the attitude surveys for the referents contain no information whatsoever concerning their relative task abilities. The only thing the subject knows is that he and his partner are very different with respect to their attitudes and that there is at least one other person who previously took the individual CS test who is like each of them.

d. Experimental Condition 4 (similar)

The fourth experimental condition provides a means of testing the second derivation from the theory when compared to Condition 3. In this condition, the manipulation is identical to Condition 3 except that the subject is led to believe that his attitudes are exactly the same as his partner's and almost exactly the same as Person X's but the opposite of Person Y's attitudes. The partner's and Person X's attitudes differ slightly on one item—again, only in intensity but not in matter of agreement/disagreement—so that the subject is less likely to be suspicious of the manipulation.

4. The Data-collection Phase

After the subjects have reviewed the forms and completed the questionnaire, the experimenter reviews the information previously presented and the procedure to be followed during the task period, emphasizing once again that only the team score is important and that it is perfectly legitimate to take one's partner's opinion into account when making a final choice.

The actual experimental test consists of 25 CS slides (trials) with twenty trials that are defined as critical, trials in which the subjects will observe disagreement on their initial choices. Disagreements will be controlled by the assistant experimenter through use of the ICOM on a preprogrammed basis, with one agreement randomly placed in each block of five trials. The assistant experimenter, located in the adjacent room with the master console, will record each of the initial choices and each of the final choices made by the subjects (see Appendix E). Influence is operationalized as the probability of a stay response,

P(S), the number of times an individual stays with his initial choice divided by twenty, the total number of times he was faced with a decision because his partner disagreed with his choice.

E. INTERVIEW AND DEBRIEFING

Immediately upon completion of the experiment, each subject is asked to fill out a questionnaire (Appendix H) and is then individually interviewed and debriefed (Appendixes I and K) by the experimenter or an assistant. The purpose of the questionnaire and interview is to make sure that the subjects fulfilled the scope conditions of the theory. For example, it is important to find out if a subject was aware of the fact that his attitudes were similar to one referent and different from his partner and the other referent and that his partner and the other referent had attitudes which were similar to each other. It is also important to determine whether or not any of the subjects were suspicious of the experimental manipulations and, also, whether or not any uncontrolled social basis of discrimination was inadvertantly allowed into the situation (such as a diffuse status characteristic like age or race). The interview is also used to make sure the subjects understood the instructions presented by the experimenter; for example, the fact that only a combined team score is important.

The last step in the experiment is a thorough debriefing. All of the experimental procedures are fully explained to the subjects so that the subjects understand not only what manipulations were involved but also why such arrangements were necessary. A simplified explanation of the purpose of the study and the reason for such a highly controlled test of the theory is also presented as part of the debriefing. Great care is devoted to helping the subject understand the experience he just

completed so that the study is a valuable learning experience for the subject. Subjects are given ample opportunity to ask questions about any aspect of the experience, and the host experimenter is always available to answer questions in cases where an assistant conducts the interview and debriefing. Finally, when the debriefer is satisfied that the subject understands the experimental manipulations and that all questions have been adequately answered, the experiment is concluded. All subjects are requested to refrain from discussing the experiment with anyone until after the completion of all data collection. After signing a data release form (Appendix J), the subject is paid for his participation and released.

CHAPTER IV

DATA ANALYSES

A. DATA EXCLUSION CRITERIA

1. General Discussion

The primary purpose for creating such a highly controlled experiment is to provide a valid first test of the proposed Interpersonal Similarity/Dissimilarity Bond (ISB) Theory. The secondary purpose is to develop a data base which can be subjected to extensive post hoc analyses in order to suggest possible refinements and extensions of the theory and modifications of the experiment to provide more definitive information. In order to provide a valid test of the theory, it is essential that the subjects who participate in the experiment meet all of the necessary scope conditions of the theory. In other words, the scope conditions define the domain of the theory, those situations which the theory is said to explain. Subjects in situations which are clearly outside the domain of the theory cannot provide data which will result in a valid test of the theory.

Because we are interested in testing the theory in a situation to which the theory is said to predict, it clearly is essential that the subjects meet the defined scope conditions in the experimental setting. Nevertheless, it is also true that a researcher runs biasing risks if s/he is not extremely careful to identify the exclusion criteria before collecting the data. The criteria for exclusion of subjects are delineated in the Interview Abstract included as Appendix L to this thesis. These criteria are essentially the same as those used in previous

expectation-states experiments with minor modifications and additions to fit this particular experiment (see Cook, Cronkite, & Wagner, 1974). The criteria are, therefore, well tested and standardized.

It is important to emphasize two points with respect to the issue of exclusion. First, the burden of proof is on the interviewer to demonstrate unequivocally that the subject meets the exclusion criteria. If there is any reasonable doubt as to whether or not a subject's responses should be included in the data for analysis, the decision is to include the data. Although it is likely that such a policy will lessen the probability of demonstrating support of the theory because of the increased variance and the greater likelihood of including subjects whose behavior is actually outside the domain of applicability of the theory, it is less likely that there is any chance of biasing the analyses by inappropriate (selective) exclusion of data.

The second point to be made concerning the exclusion of data is that such a decision is made solely on the basis of the predetermined exclusionary criteria. The actual number of stay or change responses recorded for each subject does not influence the decision to include or exclude the data in any way; that is, a decision to exclude a subject is made independently, without reference to the response data.

Two sources of information were used to assess whether or not the subjects met the scope conditions of the theory: the two questionnaires completed during the experiment (see Appendixes G and H) and the post-experiment interview conducted by the host experimenter or an assistant immediately following the experiment (see Appendix I). If an assistant conducted the post-session interview and decided that a subject should be excluded, or was questionable, the author (host experimenter)

listened to the taped interview and made his judgment. If any doubt still remained, the taped interview (and questionnaires, if necessary) was submitted to a third party for final review and decision. The final judge had over twenty years of experience with this type of experimentation and, in all cases, was unaware of the actual proportion of stay or change responses made by the subject in question.

A total of 89 subjects were run, with data from twenty subjects included in the analyses for each of the four conditions. Nine subjects were excluded from the analyses. Because exclusion of subjects is such an important issue, it is necessary to briefly consider the specific reasons for excluding the data.

2. Excluded Subjects

a. Subjects Who Violated Theoretical Conditions

A decision was made in advance to exclude subjects who are visible minorities. The reasoning for this decision is relatively straightforward. A subject who is a member of a visible minority is most likely to assume that his partner is a member of the majority (simply from the definition of the terms). Status Characteristics Theory predicts that such a situation results in the formation of differentiated expectation states for self and other on the basis of these perceived differences. The work of Rosenholtz and Cohen (1977), for example, demonstrates that the "appearance" of racial difference seems to be a crucial factor in the activation of such status characteristics. Since such a situation violates a scope condition of the theory, which requires initial status equality, Definition 1(4), the decision was made to exclude members of a visible minority group. If there was any doubt as to whether or not

a subject is a member of a visible minority, the subject was included. Two subjects were excluded under the visible minority criterion. Since the subjects had gone to considerable effort to make the scheduled appointment, they were allowed to participate in the study for their own learning experience; however, the data were excluded from the analyses.

The same scope condition, Definition 1(4), also requires that subjects enter the situation with no prior expectations concerning each other's relative abilities. Two subjects clearly violated this condition. The same two subjects also knew that the opinion surveys were manipulated and, therefore, could also be classified as not accepting the experimental manipulations.

These two subjects arrived for their appointment in the same car. The young men later admitted that they were close friends and had worked out a scheme by which they could determine whether they were partners in the same study. Although the experimenter attempted to lead the subjects to believe they had been placed in different studies, the subjects quickly discovered the ruse. The subjects knew the opinion surveys had been manipulated, and they generally "played games" throughout the session. Clearly, the data were useless. However, the incident was not a total loss because it emphasized the need to make sure that participants did not arrive together. It is interesting, and encouraging, to note that no subject—other than the two who knew each other and, therefore, were sure that the situation was manipulated—was suspicious of the experimental situation to the extent that he had to be excluded from the analyses.

Although the data from the four subjects described above were not included in the analyses, it is clear that those subjects need not have

been run at all. The other five subjects who were excluded appeared to be valid subjects until the post-experiment interview revealed that each clearly met the criteria for exclusion.

Two subjects violated the scope condition of the theory which requires collective orientation, Definition 1(2). One of these subjects violated the conditions of the theory by staying with his own response when he thought his partner's response was correct. The subject was not collectively oriented. Instead of trying to get the best possible team score, he stayed with his own initial choice on some occasions, even though he thought his first choice was wrong, so that he could find out how well he performed at the task as an individual. In other words, this subject was not only individually oriented cognitively, he also stated that he <u>acted</u> in accordance with his individual orientation.

The other subject who violated the collective-orientation condition decided to occasionally choose what he thought was the wrong first choice to see if he then would match his partner's response. It is impossible, of course, to determine whether such an individual made a stay or change response on any given trial since his recorded first choice may not have been the choice he thought was correct. Again, the crucial point is that the subject not only thought about giving a wrong response, he stated that he actually behaved in this manner.

b. <u>Subjects Who Did Not Understand the Experimental Conditions</u>

Only one subject failed to understand the experimental conditions to the extent that there were sufficient behavioral consequences to require exclusion. This subject became confused and simply performed the wrong task by attempting to choose the pattern with the greater area of

black rather than white. Since it is unclear what effect such behavior will have on the situation, the data were excluded.

c. Subjects Who Did Not Accept the Experimental Manipulations

The responses of two subjects had to be excluded from the data analyses because the subjects failed to accept the experimental manipulations. One subject in Condition 1 (HL) apparently became confused with the rather large amount of information presented and concluded that he was like Person X (the referent depicted as high in contrast sensitivity ability) and also like his partner. The following is excerpted from a probe during the interview to explicitly clarify his confusion:

Interviewer: "You felt that you had the same opinions as Person X?"
Response: "Uh-huh."

Interviewer: "As well as the same opinions as your partner?"
Response: "Yeah."

In actuality, the subject was shown opinions for his partner which were the extreme opposite of his own. It is not possible to assess the effects of perceived differences in opinions if the subject is confused about the differences.

One subject believed that the opinion survey labeled "Person X" was actually his own survey and the opinion survey labeled "Person Y" was actually his partner's. In other words, the subject did not think that X and Y were referents but that the contrast sensitivity scores were somehow being associated with the subjects' opinions directly. It is not possible to assess the effect of similarity/dissimilarity with respect to referents if the subject believes that there are no referents.

3. Summary

In summary, a total of six out of 89 subjects violated the scope conditions of the theory, and their responses were excluded from the data analyses. Of these six, the two visible minorities and the two close acquaintances could have been dismissed without ever participating in the experiment. The other two subjects actively engaged in game-playing, thereby making their responses useless as a test of the theory. An additional three subjects were excluded for reasons directly related to the experimental instructions or manipulations. One subject simply became confused and performed the wrong task, and two subjects became confused and clearly failed to understand the experimental manipulations.

Thus, a total of nine subjects out of 89 were excluded, and their responses were not included in the data analyses. This exclusion rate of approximately ten percent compares favorably to other experiments in the expectation-states research tradition in spite of the fact that this was a relatively complex experiment with a sizable amount of information for the subjects to process.

B. PRIMARY RESULTS AND DISCUSSION

1. Review of Predictions and Conditions

Condition 1 will be referred to as the high-self, low-other condition (HL). In Condition 1, (HL), it is predicted that the subject, p, will perceive an interpersonal similarity bond (ISB) between her/himself and the referent who is presented as unusually high in contrast sensitivity ability, Person X. The ISB will be perceived because of the attitude similarity between p and X in contrast with the different

attitudes expressed by o (a subject's partner) and Y (the low ability referent) which are similar to each other. Similarly, the subject will perceive an ISB between o and Y and interpersonal dissimilarity bonds (IDB's) between the dissimilar dyads. As a result of the formation of these ISB's and IDB's, p will come to form high performance expectations for himself relative to his partner, o, with respect to the instrumental task as predicted by Derivation 1, the ability information derivation. Status Characteristics Theory (Berger et al., 1977) has demonstrated that once such expectations are formed, the observable power and prestige order that emerges in the situation will be a direct, probabilistic function of the underlying expectation-state structure.

Since it has been demonstrated empirically that the four elements of the observable power and prestige order are highly intercorrelated, it is reasonable to use a measure of influence as an indicator of relative position on the emergent power and prestige order. The empirical determination of the mean proportion of stay responses, P(S), for all subjects in Condition 1 (HL) yields a metric which is a reasonable operationalization of the concept of the ability to resist influence (which is actually a measure of influence) in the situation. Thus, the prediction in Condition 1 (HL) is that p will be higher on the power and prestige order than o, as evidenced by p being less likely to be influenced to change his initial opinion in the event of disagreement than will his partner. In other words, p will have a higher P(S) than o.

Condition 2 will be referred to as the low-self, high-other condition (LH). In Condition 2 (LH) the opposite obtains. In this condition, the subject perceives an ISB between himself and the referent that is presented as unusually low in contrast sensitivity ability (Person Y),

an ISB between his partner and the high ability referent, and IDB's between the dissimilar pairs. Following a similar argument to that presented above, the prediction in Condition 2 (LH) is that p will be more likely to be influenced to change his initial opinion in the event of disagreement than will his partner. In other words, p will have a lower P(S) than o.

Condition 3 will be referred to as the dissimilar attitude condition (dissimilar). In Condition 3, (dissimilar), it is predicted that since the subjects will have no social basis of discrimination other than the perceived attitude similarity-dissimilarity manipulation, they will enter the task situation with no performance expectations about self or other. However, it has been demonstrated that perceived attitude dissimilarity results in low attraction between persons. Therefore, we predict that because p perceives that he and o are strongly dissimilar in attitudes p will not like o. It is also possible that the knowledge that one of the referents has the same attitudes that p holds himself may affect the sentiment structure. Therefore, the referents are included as a control measure in this condition to facilitate comparison with Conditions 1 (HL) and 2 (LH).

In the first three conditions, it is likely that p and o will not be affectively attracted to each other; nevertheless, because of the nature of the situation, the subjects will most likely accept the necessity of working together. In Conditions 1 (HL) and 2 (LH), however, the subjects have additional information which the theory predicts will be used to define and structure the situation. In Condition 3 (dissimilar), there is no <u>additional</u> information upon which to form performance expectations, and the tendency to dislike one's partner may be the most

salient information in the situation. In such a case, we argue that the subjects will be more likely to ignore each other's suggested task solutions than they would if they liked each other. Thus, in accordance with Derivation 2, the attitude only derivation, the prediction for Condition 3 (dissimilar) is that p will accept less influence attempts by o than would be the case if p and o had similar attitudes.

Condition 4 will be referred to as the similar attitude condition (similar). In Condition 4, (similar), we create the situation that allows an assessment of Derivation 2 by providing the information which suggests a direct comparison of the results with Condition 3 (dissimilar). In Condition 4 (similar), like Condition 3 (dissimilar), information is provided concerning the referents' attitudes but no information is provided concerning relative task abilities. However, in this case, p perceives that his attitudes are the same as his partner's, and the resulting tendency to like his partner may be the most salient information in the situation. In such a case, we argue that the subjects will be more likely to take into account and accept each other's suggested task solutions than is the case in Condition 3 (dissimilar) when they tend to like each other less. In Condition 4 (similar), the prediction, in accordance with Derivation 2, the attitude only derivation, is that p will accept more influence attempts by o than would be the case if p and o had dissimilar attitudes.

The primary predictions can be summarized as the predicted order of the mean P(S) as follows:

Condition 1 (HL) > Condition 2 (LH)

Condition 3 (dissimilar) > Condition 4 (similar)

The P(S) is calculated by summing over all critical trials (programmed

disagreements between subject and partner on initial choice) the number of times a subject's final choice is the same as his first choice, divided by the total number of critical trials (the total possible number of stay responses), twenty for each subject.

2. Primary Results

Table 1 and Table 2 summarize the primary findings from the experiment. Conditions 1 (HL) and 2 (LH) are referred to as "Ability Information" conditions because the subjects in those conditions are provided with specific information concerning the task ability of each referent. Conditions 3 and 4 are referred to as "Attitude Only" conditions because the subjects in those conditions receive only information about attitude similarity-dissimilarity and no information about specific task abilities.

TABLE 1

STAY RESPONSES
BY ABILITY INFORMATION CONDITIONS AND ATTITUDE ONLY CONDITIONS

Condition	Number of Subjects	Stay Responses			
		P(S)	Mean	Variance	Coef. of Variation
C1 (HL)	20	.71	14.2	5.64	.17
C2 (LH)	20	.44	8.9	8.31	.32
C3 (dissimilar)	20	.64	12.8	7.12	.21
C4 (similar)	20	.62	12.5	6.68	.21

Note: Based upon 20 critical (disagreement) trials per subject.

TABLE 2

MODE AND MEDIAN OF STAY RESPONSES
BY ABILITY INFORMATION CONDITIONS AND ATTITUDE ONLY CONDITIONS

Condition	Number of Subjects	Stay Responses	
		Mode	Median
C1 (HL)	20	16	14.5
C2 (LH)	20	8	8.0
C3 (dissimilar)	20	10,12,15	12.5
C4 (similar)	20	12	12.5

Note: Based upon 20 critical (disagreement) trials per subject.

3. Discussion of Derivation 1, the Ability Information Derivation

The primary prediction from the ISB Theory (Derivation 1) is that subjects in Condition 1 (HL) will be higher on the power and prestige order that emerges in the situation than will subjects in Condition 2 (LH), as indicated by the relative proportions of stay responses. Specifically, the theory predicts that the P(S) for Condition 1 (HL) will be greater than the P(S) for Condition 2 (LH). The statistics reported in Table 1 and Table 2 show that for all measures of central tendency—the mean, mode, and median—the distributions of stay responses for the two conditions are consistent with the prediction. Both the mode and the median, which are less affected by the distorting influence of extreme responses, show even stronger support for the derivation than does the comparison of means. (See Figure 2 and Figure 3, p. 169, for a graphical presentation of the stay responses for Conditions 1 (HL) and 2 (LH).

The prediction is readily tested by use of the Mann-Whitney U Test. The null hypothesis is that the two experimental conditions yield

results which come from populations with the same distribution of stay responses. The directional alternative hypothesis is that Condition 1 (HL) is stochastically greater than Condition 2 (LH).

A Mann-Whitney U Test of the derivation was conducted, using the correction for ties and converting to "z" (Siegel, 1956, pp. 120-126). The results of this test are summarized in Table 3.

TABLE 3

MANN-WHITNEY U TEST OF DERIVATION 1;
THE PROBABILITY OF A STAY RESPONSE
IN THE HL ABILITY INFORMATION CONDITION
IS STOCHASTICALLY GREATER THAN THE PROBABILITY OF A STAY RESPONSE
IN THE LH ABILITY INFORMATION CONDITION

Predicted Order	U	z	p
C1 (HL) > C2 (LH)	34.5	-4.5	<.000003

Table 3 indicates that the data clearly support the first derivation which tests the notion of interpersonal similarity and dissimilarity bonds. The results of the Mann-Whitney U Test indicate that the difference in the P(S) between Condition 1 (HL) and Condition 2 (LH) is highly significant. The observed distributions of stay responses for the two conditions would occur by chance less than three times in one million if the results came from populations with the same distribution of stay responses.

The strength of the support for Derivation 1 is quite remarkable considering the nature of the experimental manipulations. In this study only a single referent with high ability and a single referent with low ability were used to stimulate the formation of expectation states. Clearly, when there is only a single referent who is "like" a subject,

it is much more likely that the subject will attribute the similarity between self and that particular referent (i.e., one shown to be especially high or low with respect to the instrumental task ability) to mere coincidence than would be the case if even a single additional similar referent were included in the situation. For example, consider a situation with several referents. Some of the referents are high in task ability and express attitudes which are similar to the subject's attitudes. The other referents are low in task ability and express attitudes which are dissimilar to the subject's but similar to the partner's attitudes. In such a situation, the likelihood of attributing the perceived similarities and dissimilarities to mere coincidence is significantly lessened, and the strength of the resultant expectation states is likely to be increased.

We leave the test of such a notion for future research, suggesting, however, that the "attenuation principle" (Berger et al., 1977, pp. 125-126) is likely to be operational. That is, the incremental additional strength of the expectations will be less for each additional referent added to the situation (e.g., adding a second similar referent will have a greater differential effect on the strength of the expectations than the effect observed by adding a third similar referent to a situation that already includes two similar referents). The important point to be made here is that the observed effects in this experiment were remarkably strong even with a single similar referent.

It is also worthy of comment that only eight fairly malleable opinions were used to manipulate attitude similarity/dissimilarity. Also, many of the subjects indicated only slight agreement or disagreement with some of the issues. It is certainly possible that opinions

which are less subject to change, either because they are more strongly held or because they are less subject to some form of objective verification, will have a stronger influence on the formation of interpersonal similarity and dissimilarity bonds. Although the Byrne research tradition suggests that it is the proportion of similar attitudes that is crucial rather than the importance or the interest of the attitudes to the person, the malleability and strength of the opinions may also be significant.

An issue may be both important and interesting to a subject (for example, the legalization of smoking marijuana), and, yet, a subject may feel that s/he does not know enough about the issue to hold a strong opinion. Thus, whatever opinion is held may be easily changed by additional information. Again, the point of this discussion is to demonstrate that the support for the notion of an ISB Theory was found in spite of the use of a rather small number of relatively malleable, often fairly weak, opinions. The effect of increasing the number of attitudes and the nature of the attitudes that are involved is an issue that will be investigated in future elaborations of the theory.

In order to provide a point of comparison to demonstrate the significance of these findings with respect to Derivation 1, the ability information derivation, it is useful to compare these results to those obtained in a previous expectation-states experiment with comparable conditions. A study reported by Webster and Berger (1975) also used male high school students. The portion of the experiment which is of interest for our purposes includes the manipulation of subjects into direct HL and LH conditions. Subjects in the HL condition were caused to believe that they were quite good at contrast sensitivity and their

partners were quite poor as determined by a test of their contrast sensitivity ability. The LH condition caused subjects to believe that they were low in ability while their partners were high in ability. In other words, before the subjects interacted to solve a contrast sensitivity task together, they received direct information about their respective abilities at the instrumental task. Rejection of influence was measured as the P(S) based upon twenty disagreements in 25 trials (the same as the present experiment). The results of this experiment are shown in Table 4 along with the results of the present experiment for comparison.

TABLE 4

COMPARISON OF THE PROPORTION OF STAY RESPONSES FOR EXPERIMENTAL CONDITIONS IN THE ISB STUDY AND THE WEBSTER AND BERGER STUDY (1975)

Study	Condition	Number of Subjects	P(S)	Variance*	Coef. of Variation
Webster/Berger	HL	22	.725	8.38	.20
	LH	22	.414	8.11	.34
Wattendorf	C1 (HL)	20	.710	5.64	.17
	C2 (LH)	20	.445	8.31	.32

*The variance is about the mean number of stay responses.

A comparison of the direct HL and LH conditions from the Webster and Berger (1975) experiment to the HL and LH conditions induced by the formation of ISB's and IDB's in the present experiment dramatically portrays the powerful influence that perceived similarity/dissimilarity can have on the formation of performance expectations. It is also interesting to note the similarity among the variances in the present experiment

and in the Webster and Berger study. Because of the relatively large difference in the mean number of stay responses between conditions, the coefficient of variation statistic is reported to facilitate direct comparison of the relative sizes of the variances (Blalock, 1972, p. 88).

The theory does not make any predictions concerning the expected variance in each condition; however, it is useful to study the relative variances to help understand the underlying structure. Table 1 (p. 148) reports the sample variances about the mean number of stay responses for each condition. Note that Condition 1 (HL) has the smallest variance among the conditions in the ISB study while Condition 2 (LH) has the largest variance. This finding is consistent with the general trend in the expectation-states research tradition; the greatest variance is often found in the low-self, high-other conditions, which is usually interpreted as an indication of instability.

4. Discussion of Derivation 2, the Attitude Only Derivation

Derivation 2 of the theory, the attitude only derivation, deals with the situation where no information is provided about the referents' task abilities. The only social basis of discrimination among the actors is the differences in stated opinions. Based upon the attraction research tradition, it is predicted that subjects in Condition 3 (dissimilar), where a subject perceives that his attitudes are different from his partner's attitudes, will tend to like their partners less than subjects in Condition 4 (similar), where a subject perceives that he and his partner have the same attitudes, will tend to like their partners. Derivation 2 predicts that these differential sentiment structures which emerge in the two conditions will have behavioral consequences which will determine a power and prestige order. The theory

argues that, ceteris paribus, the less one person likes another person the less likely that person is to accept influence attempts on the part of the other. Specifically, the theory predicts that the P(S) for Condition 3 (dissimilar) will be greater than the P(S) for Condition 4 (similar). A comparison of the statistics reported in Table 1 (p. 148) and Table 2 (p. 149) shows that the findings are in the predicted direction; however, the differences between the conditions are quite small in each instance. Figure 4 and Figure 5 (p. 170) present graphical representations of the stay responses for Condition 3 (dissimilar) and Condition 4 (similar).

A test of the prediction using the Mann-Whitney U Test reveals that the distributions of stay responses for the two conditions are not statistically significantly different. Table 5 reports the results of a Mann-Whitney U Test comparing the null hypothesis that the two experimental conditions yield results which come from populations with the same distribution of stay responses to the directional alternative hypothesis that Condition 3 (dissimilar) is stochastically greater than Condition 4 (similar).

TABLE 5

MANN-WHITNEY U TEST OF DERIVATION 2;
THE PROBABILITY OF A STAY RESPONSE
IN THE DISSIMILAR ATTITUDE CONDITION
IS STOCHASTICALLY GREATER THAN THE PROBABILITY OF
A STAY RESPONSE IN THE SIMILAR ATTITUDE CONDITION

Predicted Order	U	z	p
C3(dissimilar) > C4(similar)	188.5	-.31	>.37

The results of this experiment do not support the predictions of the theory described as Derivation 2, the attitude only derivation. The information presented in Table 1 shows that the difference in the P(S) between Condition 3 (dissimilar) and Condition 4 (similar) is in the predicted direction; however, the results of the Mann-Whitney U Test reported in Table 5 clearly show that the difference between the conditions is not statistically significant. If sentiment does, indeed, have behavioral consequences as suggested, this instrument was not sensitive enough to test it. Several explanations are plausible. It is possible that a sentiment structure did not develop in this situation. In the experiments in the Byrne tradition, the strangers whose opinions were compared were not physically present in the situation. In this experiment, the subject's partner was physically present and, although separated from view, the fact that the subject might actually meet this person may have affected the formation of sentiment structures. There may have been so many other conflicting influences, especially those concerning the task and the interactants' relative abilities, that the effect of the sentiment structure was masked in these situations. The emergent sentiment structure may have been so weak in this situation that any effect on the observable power and prestige order (as measured by the rejection of influence metric, the P(S) statistic) was unobservable. We will investigate these possibilities by conducting some secondary analyses of the data to try to find possible explanations for the results relating to Condition 3 (dissimilar) and Condition 4 (similar).

The variances for Condition 3 (dissimilar) and Condition 4 (similar), as reported in Table 1, are noteworthy because they are quite similar to

those resulting from Conditions 1 (HL) and 2 (LH) where the subjects had information upon which to base the formation of performance expectations. In other words, the relatively small size of the variances in these conditions at least suggests the possibility that some status-organizing process is operational in the situations.

C. SECONDARY RESULTS AND DISCUSSION

1. General Comments

The primary purpose of this first test of the theory is twofold: to determine the effect of the hypothetical construct we have termed an interpersonal similarity/dissimilarity bond on the formation of expectation states as manifested by a differentiated power and prestige order, and to determine the effect of sentiment structures on the emergent power and prestige order. Nevertheless, the data generated by this experiment also provide information which may be studied for further clarification of the underlying processes and to suggest possible design modifications for future experiments to refine and elaborate the theory. It is important to keep in mind that these are post hoc analyses intended to generate ideas for future theoretical elaboration and experimental design, and, as such, certain liberties are taken with respect to relaxing underlying statistical assumptions which cannot be accepted in the primary analysis.

2. Trends Over Trials

The theory does not address the issue of changing expectations (or changing influence) over time; however, the possibility of such changes is certainly an issue worth pursuing as an investigative instrument to guide possible revision and refinement of the theory. Previous studies

in the expectation-states tradition indicate that once expectations are formed, typically before the problem-solving task is begun, the behavioral manifestations of those expectations (the proportion of stay or change responses) which follow tend to be quite stable over time. In other words, if, as we predict in Conditions 1 (HL) and 2 (LH), performance expectations are formed before the initiation of the task, the P(S) should be quite stable from one time segment to the next throughout the problem-solving period. The situation in Condition 3 (dissimilar) and Condition 4 (similar) is less clear because the similarity-dissimilarity manipulation is the only differentiating information available to the participant, and the observation of a rapidly accumulating number of disagreements and the high proportion of disagreements may be more salient in such a situation than in the previous conditions where information concerning task ability may be inferred.

Note that the analyses have all focused on the P(S) for the critical trials, those twenty trials where the subjects are led to believe that they disagree with their partner on first choices. However, one agreement trial is randomly interspersed for each subject in each block of five trials. If the data were analyzed by aggregating the data for each fourth of the trials instead of each fifth, the results are even more ambiguous because not only the relative position of the agreement within the block of five trials varies but also the number of agreements is variable. Thus, in any block of five critical trials (i.e., any fourth of the critical trials), it is possible that there will be zero, one, or two agreement trials, and this pattern will vary with the subjects. For example, note the following illustrative pattern of observed (manipulated) agreements (A) and disagreements (D):

DADDD ADDDD DDDDA DDDAD DADDD

If we divide these critical trials into quarters, with five disagreement trials in each quarter, the sequence looks like this:

DADDDAD DDDDD DDADDD ADDADDD

Thus, if we analyze the aggregated data by fifths instead of by fourths (as it is usually done in expectation-states studies), we standardize the number of agreements per period (one per fifth). Although we decrease the sample size of critical trials per period from 100 to 80, the number of agreements per analyzed period is standardized and the effect of the agreement trials is randomized so that there should be no systematic influence in one time-period with respect to another.

a. Proportion of Stay Responses Over Time

Table 6 reports the P(S) for each condition for each fifth of the critical trials.

TABLE 6

MEAN PROPORTION OF STAY RESPONSES
AGGREGATED FOR EACH BLOCK OF FOUR CRITICAL TRIALS
BY ABILITY INFORMATION CONDITIONS AND ATTITUDE ONLY CONDITIONS

Condition	Number of Subjects	P(S) for Each Fifth of Critical Trials 1	2	3	4	5
C1 (HL)	20	.68	.68	.65	.81	.74
C2 (LH)	20	.48	.42	.41	.49	.42
C3 (dissimilar)	20	.65	.60	.60	.68	.68
C4 (similar)	20	.59	.64	.65	.66	.59

The data presented in Table 6 are most meaningful when presented graphically, as shown in Figure 1.

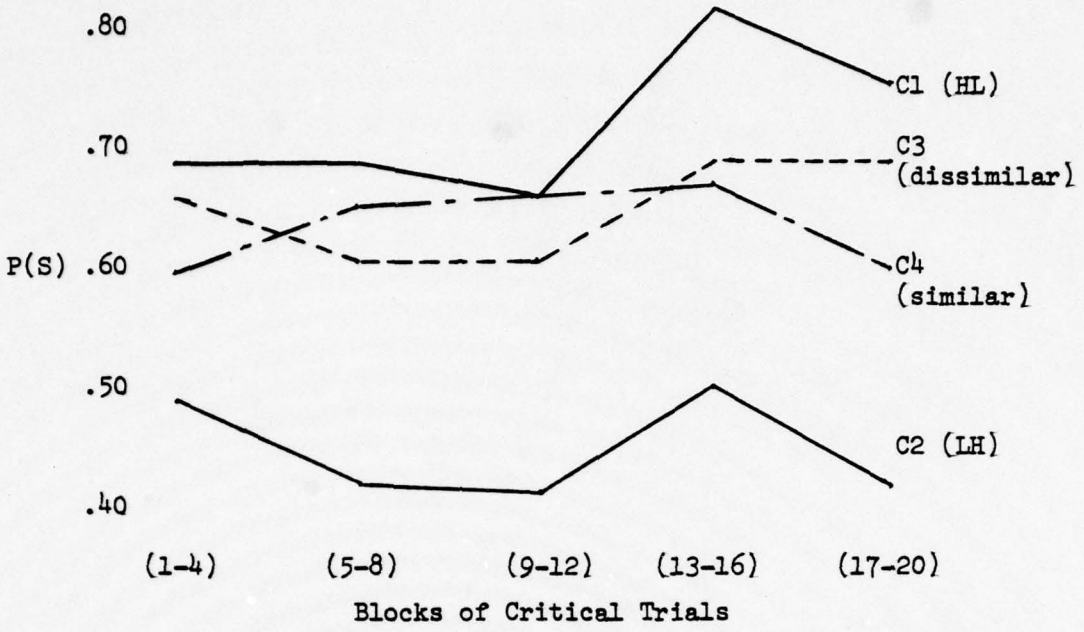


Figure 1.—Mean proportion of stay responses aggregated for each block of four critical trials by ability information conditions and by attitude only conditions.

It is interesting to note that Condition 1 (HL) has the highest P(S) of any of the conditions for each block of four critical trials; there is no overlap between Condition 1 (HL) and any other condition. Similarly, Condition 2 (LH) has the lowest P(S) of any of the conditions for each fifth of the critical trials; there is no overlap between Condition 2 (LH) and any other condition. The general shape of the curves for Conditions 1 (HL) and 2 (LH), where the subjects are provided with ability information, are remarkably symmetric, considering the small number of trials (four) in each time-period.

No significant trends are discernible in the P(S) over time for any of the conditions. However, it is important to note that the status-organizing structures form early in each condition, tend to stabilize quickly, and are generally maintained over all trials. Specifically,

subjects in Condition 1 (HL) demonstrate the highest proportion of stay responses at the outset and maintain this strong tendency to resist influence throughout the task period. In contrast, subjects in Condition 2 (LH) demonstrate the lowest proportion of stay responses at the outset and maintain this strong tendency to be influenced throughout the task period.

Although the curves connecting the proportions of stay responses over blocks of trials for Condition 3 (dissimilar) and Condition 4 (similar) do cross at two points, the responses are quite stable over time and in between the responses resulting from Conditions 1 (HL) and 2 (LH). Appendix N shows the mean proportion of stay responses aggregated for each quarter of the critical trials (five disagreements per quarter) by each of the four conditions for purposes of comparison with previous expectation-states studies. Again, no trend is discernible for the P(S) over time.

b. Variances Over Time

Another informative way of looking at possible trends over the trials is to compare the changes in variance about the mean number of stay responses aggregated for each fifth of the critical trials for each condition. We are particularly interested in looking for significant increases in the variances over time because such increases suggest the possibility of subpopulation formation. That is, if any of the conditions exhibit significant increases in variances over time, such increases may be an indication that one group of subjects in that condition tends to be influenced less by their partners as compared to another distinct group of subjects in the same condition that tends to be influenced more.

In the analysis of changes in variances over time, it is informative to be able to compare observed variances with expected variances. However, each analysis must be made with caution because of the relatively small number of data points in each block of four critical trials and because of the independent trials assumption required for the calculation of expected variances. Nevertheless, the technique is useful for seeking clues about possible underlying processes (cf. Freese, 1969; Sobieszek, 1970).

Table 7 presents the observed and expected (in parentheses) variances about the mean number of stay responses aggregated for each fifth of the critical trials for each experimental condition. The expected variances are calculated by the formula nP(1-P), where n is the number of trials in the period (four) and P is the P(S) for that period. This

TABLE 7

OBSERVED AND EXPECTED* VARIANCES
ABOUT THE MEAN NUMBER OF STAY RESPONSES
AGGREGATED FOR EACH FIFTH OF THE CRITICAL TRIALS
BY ABILITY INFORMATION CONDITIONS AND ATTITUDE ONLY CONDITIONS

Condition	Variances by Fifths				
	1	2	3	4	5
C1 (HL)	.64(.87)	.85(.87)	.67(.91)	.52(.62)	1.00(.77)
C2 (LH)	.62(1.00)	.75(.97)	.87(.97)	.89(1.00)	1.06(.97)
C3 (dissimilar)	.46(.91)	.67(.96)	.99(.96)	.64(.87)	1.17(.87)
C4 (similar)	1.19(.97)	1.11(.92)	.88(.91)	.87(.90)	.77(.97)

*Expected variances are shown in parentheses.

calculation of expected variances assumes that the trials represent independent judgments. A test of this assumption, using a one-step transition matrix for each condition (see Appendix M) reveals that the

assumption of independent trials holds reasonably well for Conditions 1 (HL), 2 (LH), and 4 (similar) but does not hold for Condition 3 (dissimilar). In the case of Condition 3 (dissimilar), the one-step transition matrix yields a chi-square of 5.08 which is significant at the .05 level, indicating that the null hypothesis of independence of sequential trials must be rejected at the .05 level. Clearly, the interpretation of the expected variances for Condition 3 (dissimilar) must be made with extreme caution.

None of the four experimental conditions show any trend in expected variances over time. In comparison, there are some slight trends which may be noted in the observed variances over time; however, none of these trends are statistically significant. Using the Cochran C Test, we find that the hypothesis of equal variances among the five blocks of critical trials within each condition cannot be rejected at the .05 level for any of the conditions (Roscoe, 1975, pp. 290-291).

It is interesting, nevertheless, to note that Condition 3 (dissimilar) shows a fairly consistent increase in variance over the trials (the fourth block of trials is an exception) and is the only condition in which the difference in variances between the first and last block of trials approaches significance. Using an F ratio, the difference between the variances in the first fifth of the critical trials and the last fifth of the critical trials for Condition 3 (dissimilar) is significant at beyond the 0.1 level (two-tailed). Although Condition 2 (LH) shows a consistent trend of decreasing variances, the F ratios comparing the variances in the first block of trials to the last block of trials are not significant at even the 0.1 level (two-tailed).

Thus, our analysis of the variances over time suggests that the variances within conditions are relatively homogeneous with the possible exception of Condition 3 (dissimilar), which shows some indication of a trend of increasing variance over time. Since we have argued that increasing variance over time may be an indication of the emergence of subpopulations, it is useful to inspect a graph of the actual distribution of stay responses by number of subjects for each fifth of the critical trials for each condition. Appendix O presents such a series of distributions for each experimental condition.

An inspection of these distributions suggests the possibility of subpopulation formation in Condition 3 (dissimilar) because the distributions show some evidence of emergent bimodality; however, the number of data points is very small for such an analysis, and the information should only be interpreted as consistent with the possibility of subpopulation formation, not as evidence. The issue will be discussed further in the analyses to follow.

3. Ordering of Conditions

Although the theory does not explicitly predict the ordering of Conditions 1 (HL) and 2 (LH) with respect to Condition 3 (dissimilar) and Condition 4 (similar), such a comparison provides a means of comparing the relative effects of the conditions on the measure of influence used in this study. Because the theory predicts the formation of performance expectations in Conditions 1 (HL) and 2 (LH), the subjects in these conditions are expected to form opinions about their own and each other's actual task abilities. On the other hand, in Condition 3 (dissimilar) and Condition 4 (similar), the subjects are expected to form

sentiment relations with their partners, and these sentiments are predicted to influence behavior; however, no specific information about task ability is provided in the situation. Nevertheless, because of the attitude similarity-dissimilarity manipulations in the situations, the theory predicts the formation of an interpersonal dissimilarity bond between a subject and his partner in Condition 3 (dissimilar) and an interpersonal similarity bond between a subject and his partner in Condition 4 (similar).

Let us first consider what is likely to happen in Condition 3 (dissimilar) where the subject perceives that his partner is dissimilar. The prediction of the formation of an interpersonal dissimilarity bond between a subject and his partner suggests that the subject will expect his partner to be quite different from him. Since no clue to any actor's task ability is available in the situation, any assessment that a subject makes about his own ability is likely to be based upon his own past experiences and his general self-perceptions. If a subject has a generally high self-concept, a feeling that he usually does well at most tasks, then the subject is likely to have a generally high self-expectation in this instance. Following a similar line of reasoning, a subject may expect to perform about average or even below average, depending upon his particular conception of self.

Because of the nature of the contrast sensitivity task, the fact that the task is unfamiliar and quite difficult (remember, it is, in fact, an ambiguous task with no correct solution), it is likely that a subject with no external information about his ability will tend to expect to perform relatively close to the mean rather than at either extreme. That is, because of the situation, we predict that on the

average, subjects will not expect to perform exceptionally well or exceptionally poorly at the task unless some external information is available to drive the formation of such expectations. An example of such external information is the information about the referents' task abilities provided in Conditions 1 (HL) and 2 (LH) of the experiment.

Given that a subject will form some general self-expectation concerning the task, and given that an interpersonal dissimilarity bond is perceived between a subject and his partner, we predict that a subject will come to expect his partner to perform with an ability different from his own. That is, a subject who expects to perform fairly well will probably expect his partner to perform a little below average; conversely, a subject who does not expect to perform well will probably expect his partner to perform a little better than average. Subjects expecting to perform about average might expect their partner to perform a little above or below average. It is possible that a subject may infer something about his partner's ability from the substantive content of the opinions. For example, one subject stated that his partner was probably a conservative person and, since he associated conservatism with intelligence, he expected his partner to do fairly well at the task.

Thus, the reasoning thus far suggests that a person in Condition 3 (dissimilar) will expect to perform differently from his partner; however, the differential strength of the expectations will likely be somewhat less than those formed in Conditions 1 (HL) and 2 (LH) where task ability information is specifically included. We would expect the distribution of stay responses for Condition 3 (dissimilar) to be relatively uniform, with some tendency toward bimodality and a variance

generally in the range of other conditions with expectation states. Since the formation of an interpersonal dissimilarity bond in this situation implies the formation of relatively negative sentiment structures, we would expect the entire distribution to be shifted to the right. That is, we expect a mean P(S) slightly above what would otherwise be the average for the population if sentiments were not included in the situation. It should be noted that "average" does not in any way imply a mean P(S) of .50, since it is very likely that most persons will stay with their own opinion more often than they will change to agree with their partner, even if no information about their partner is available in the situation. For example, in the so-called "no-source" experiment in which the interactants were provided no information upon which to base relative expectation, Webster and Sobieszek (1974) report a mean P(S) of .64.

The structure which is expected to develop in Condition 4 (similar) is quite different. In Condition 4 (similar), the subject sees that his opinions are just like his partner's, and the theory predicts the formation of an interpersonal similarity bond between the subject and his partner. Thus, in this situation we predict that the subject will expect that he and his partner will perform with about the same ability. Whether or not the subject expects that they will both perform above or below some overall average is not the issue in this instance. The important point is that the subject will expect his partner to have about the same ability that he has with respect to the task. Thus, in this case we predict a unimodal distribution, again with a variance generally within the range of variances found in other expectation-states conditions. Because the existence of an interpersonal similarity bond in

this situation implies the formation of positive sentiment structures, we expect a subject to tend to like his partner in Condition 4 (similar) and, therefore, be apt to pay more attention to his suggestions. As a result, we expect the mean proportion of stay responses to be slightly below the mean expected in a similar situation without sentiment structures.

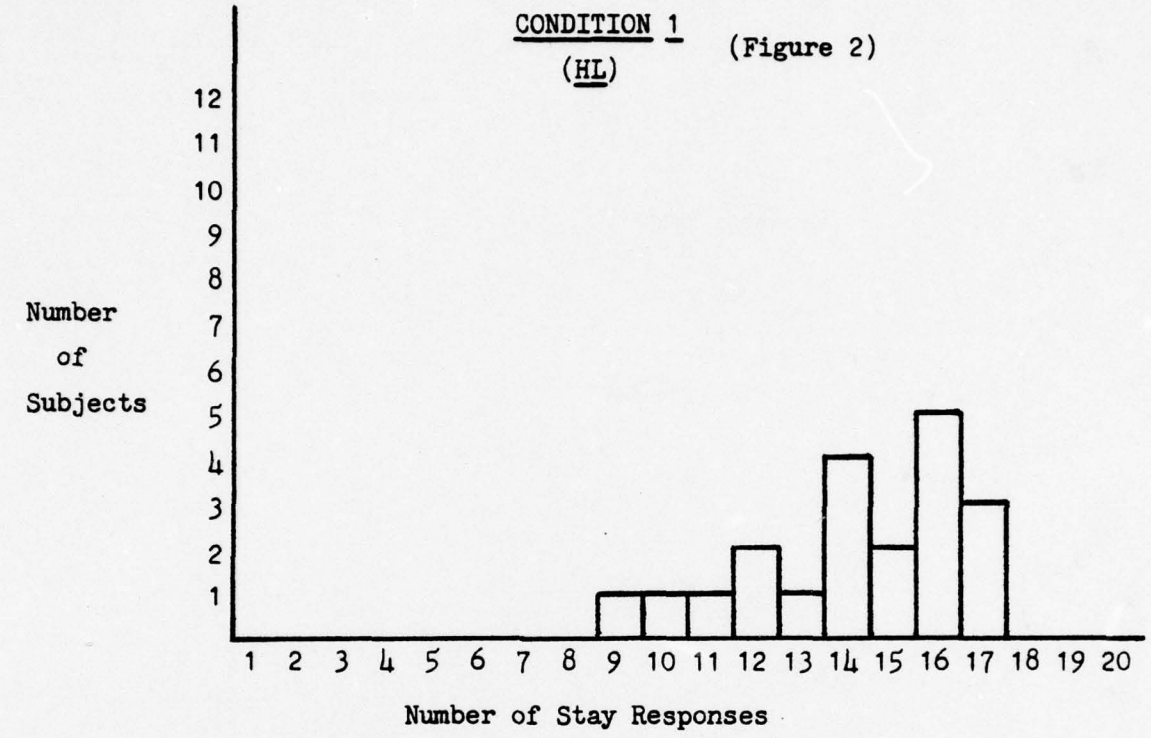
An inspection of the actual distributions of stay responses for each condition provides a useful first test of the reasonableness of the suggested explanation. These graphs are presented as Figures 2 and 3 (p. 169) for Conditions 1 (HL) and 2 (LH) and as Figures 4 and 5 (p. 170) for Condition 3 (dissimilar) and Condition 4 (similar), respectively. The graphs show that the range of stay responses for the four conditions are quite similar, extending from a low of nine for Condition 1 (HL) to a high of twelve for Condition 2 (LH). If the outliers are ignored, all conditions show a range of nine except Condition 4 (similar), which has a range of eight stay responses. Although there is no evidence of bimodality (the number of data points is quite small for such an analysis), it is interesting to note that the attitude only conditions, Condition 3 (dissimilar) and Condition 4 (similar) appear to have a considerably more rectangular distribution than either of the ability information conditions, Condition 1 (HL) or 2 (LH), which shows more of a concentration near the mean. Thus, the actual distributions of stay responses appear to be quite consistent with the line of reasoning presented to explain the emergence of expectation structures in the experimental conditions.

It is also interesting to note that the distribution of stay responses for Condition 1 (HL) is negatively skewed. This observation, coupled with the fact that the relative difference between the P(S)

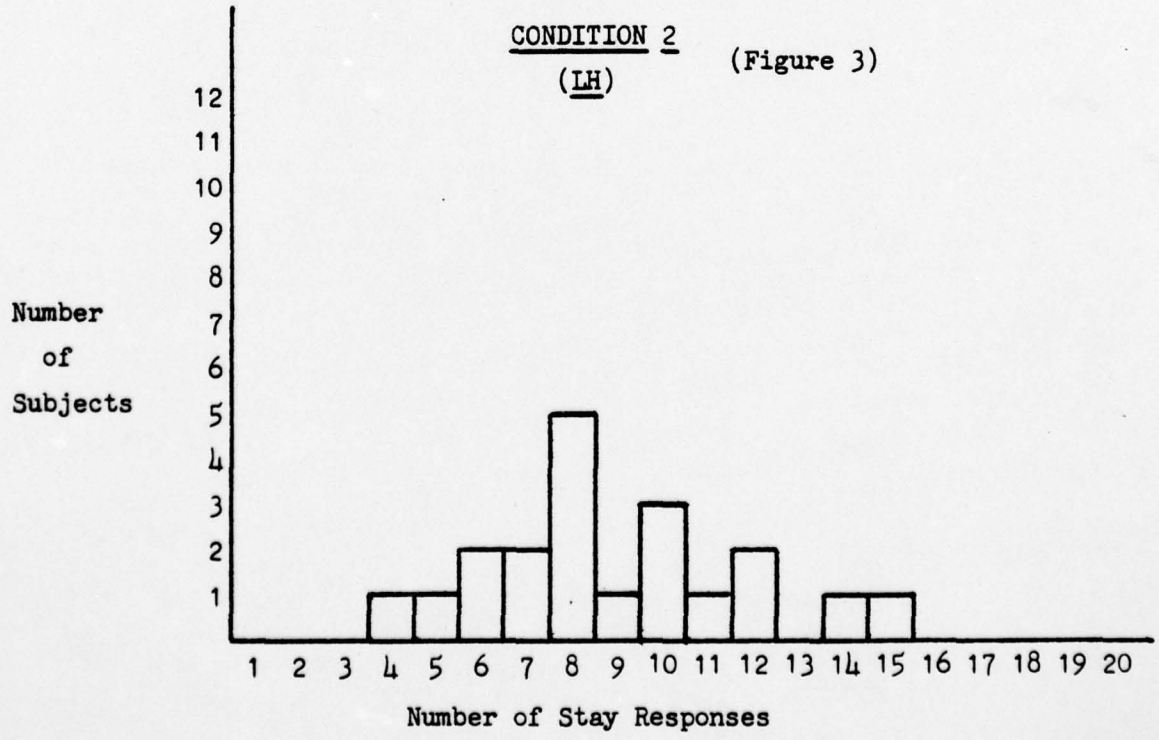
FIGURES 2 & 3

Overall Distributions of Stay Responses for Ability Information Conditions

CONDITION 1 (HL) (Figure 2)



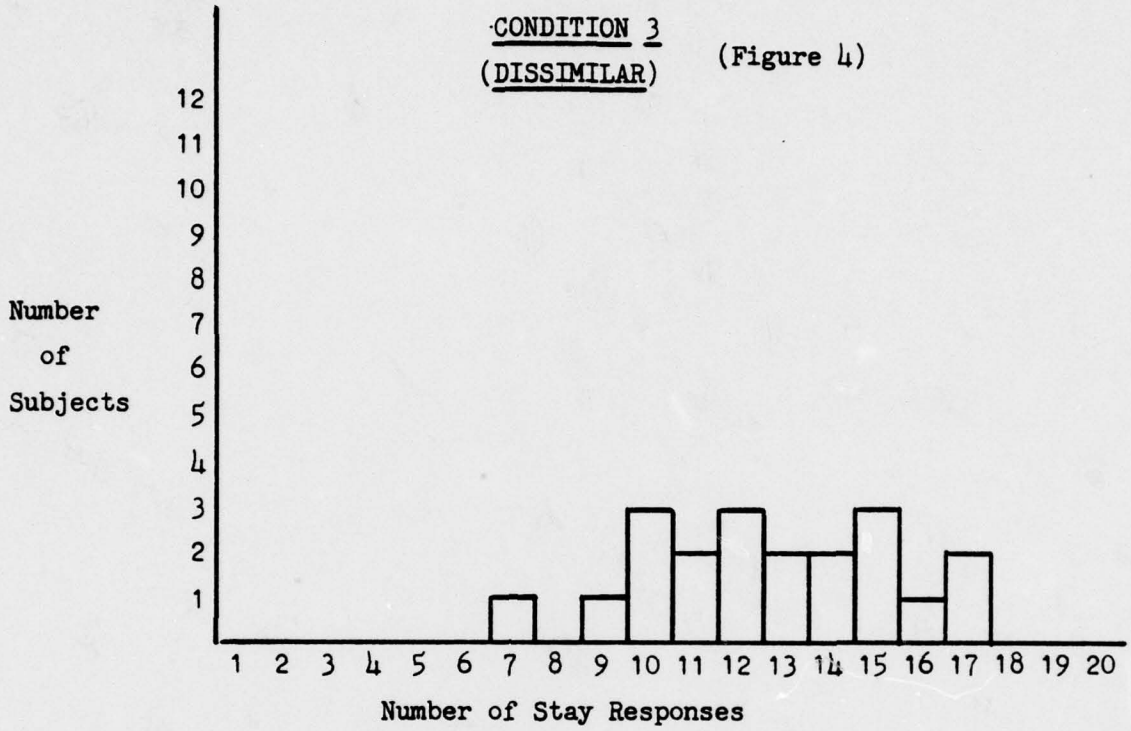
CONDITION 2 (LH) (Figure 3)



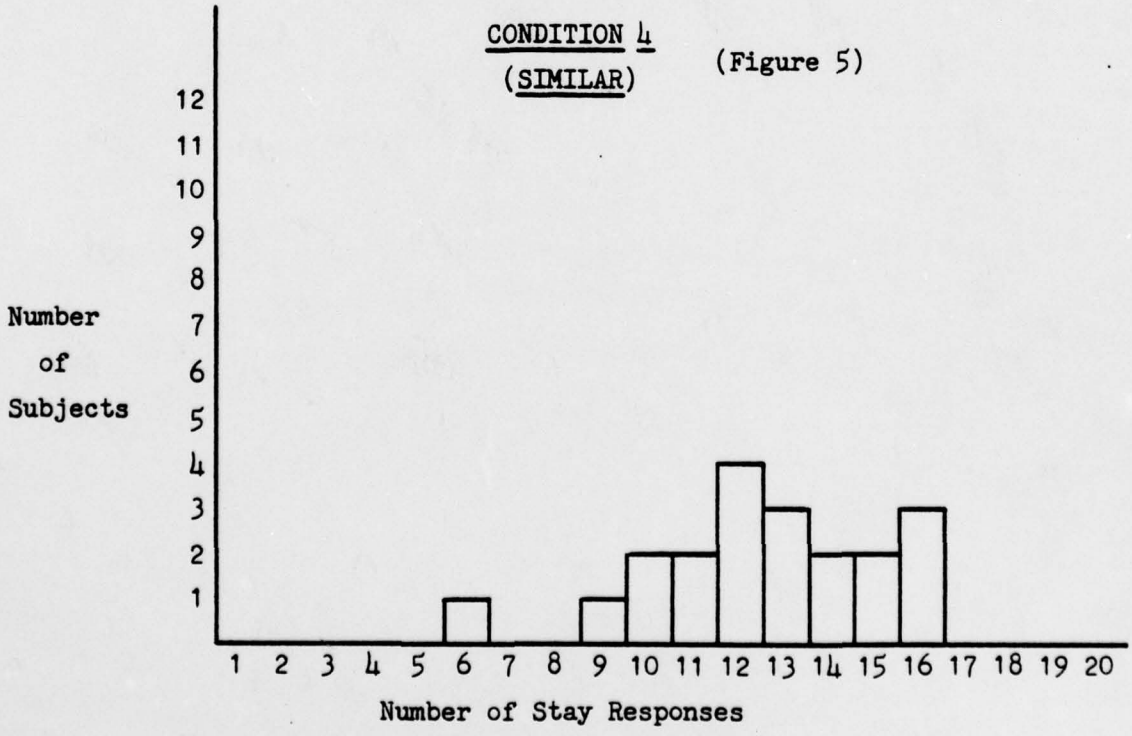
FIGURES 4 & 5

Overall Distributions of Stay Responses for Attitude Only Conditions

CONDITION 3
(DISSIMILAR) (Figure 4)



CONDITION 4
(SIMILAR) (Figure 5)



for Condition 1 (HL) and either Condition 3 (dissimilar) or Condition 4 (similar) is much smaller than the difference between Condition 2 (LH) and either Condition 3 or 4, suggests the possibility that this is a manifestation of some sort of "ceiling" effect for this population. In no case, for any of the subjects in any of the conditions, was the proportion of stay responses above .85. This means that every subject changed his initial opinion to go along with his partner on at least three trials. When we consider that the five agreement trials actually are stay responses of a sort, this means that some subjects stay with their own first opinion 22 out of 25 times, a remarkably high degree of confidence considering that the task requires a binary choice between two responses that are perceptually equal for unmanipulated subjects.

It seems that some norm of fair play may be operational in the situation, which suggests that it is a good idea to let the other person have his say every now and then, even if he does not seem to be very good at the task. During post-session interviews, subjects who thought they had more ability than their partners often stated that if they had no idea of an answer they would go along with their partner's choice. In Condition 1 (HL), a subject has information which suggests that he is like a person who is very good at the task and different from his partner, who is like a person who performed very poorly at the task. In such a situation, a person may come to feel quite secure in his superiority and be even freer, psychologically, to allow his partner to "have his say" once in awhile. In other words, a subject who "knows" he is good has less to prove and may be secure enough in his own ability to allow his partner to influence the situation occasionally. W. F. Whyte (1943) observed a similar phenomenon in his probing analysis

of Doc and his relationship with the "corner boys"; and Heinicke and Bales (1953) later noted that informal leaders, once established, may allow others to make more problem-solving attempts in the group setting.

The possible existence of such a ceiling effect operating to hold down the number of stay responses in Condition 1 (HL), coupled with our earlier explanation of the fact that an expected "average" P(S) is likely to be considerably above .50 when no relative ability information is available to the interactants, provides a plausible explanation for the fact that the numbers of stay responses observed in Condition 3 (dissimilar) and Condition 4 (similar) are closer to those observed in Condition 1 (HL) than to those in Condition 2 (LH).

Using the line of reasoning suggested throughout this section, it is possible to make explicit predictions about the ordering of the experimental conditions as determined by the relative proportion of stay responses for each condition. This reasoning suggests that the HL and LH conditions will result in the formation of stronger expectation states than those formed in the conditions with only attitude similarity-dissimilarity information, and, therefore, the underlying expectation-states in the HL and LH conditions will have a greater effect on the emergent power and prestige order as measured by the proportion of stay responses than the conditions with only similar and dissimilar attitudes. Table 8 depicts the results of Mann-Whitney U Tests of these predicted orderings using the correction for ties as recommended by Siegel (1956).

Table 8 demonstrates clear support for the prediction that Conditions 1 and 2 have a stronger effect on the P(S) than Condition 3 (dissimilar) and Condition 4 (similar) for each pairwise comparison. The findings are completely consistent with the reasoning developed above

and suggest the advisability of further secondary analyses to try to determine the reasonableness of this post hoc explanation of the processes which were operational in Conditions 3 and 4.

TABLE 8

MANN-WHITNEY U TESTS
OF THE PREDICTED ORDERING OF THE ABILITY INFORMATION CONDITIONS
COMPARED TO THE ATTITUDE ONLY CONDITIONS
BASED UPON PROPORTION OF STAY RESPONSES

Predicted Order	U	z	p
C1 (HL) > C3 (dissimilar)	137.5	-1.70	<.05
C1 (HL) > C4 (similar)	122.5	-2.12	<.02
C3 (dissimilar) > C2 (LH)	65.0	-3.67	<.0002
C4 (similar) > C2 (LH)	69.5	-3.55	<.0002

4. Additional Analyses to Explore Possible Explanations of the Findings in the Attitude Only Conditions

The analyses that are presented in this section rely on fewer data points than those described in the previous section and, in some cases, involve the division of the conditions into subpopulations in order to facilitate the search for information about underlying structures or processes. The focal issue to be explored in this section concerns the failure to find a significant difference between the proportion of stay responses for Condition 3 (dissimilar) and Condition 4 (similar) as predicted. Derivation 2 of the theory, the attitude only derivation, argues that subjects in Condition 3 (dissimilar) will be less influenced by their partners' opinions than subjects in Condition 4 (similar), ceteris paribus, because subjects in Condition 3 will like their partners less than subjects in Condition 4 will like their partners. The

following analyses will present some possible reasons for the failure of the findings to support this derivation.

a. The Possible Effects of Disagreements on Positive Sentiments

In order to find differential behavioral consequences resulting from different underlying sentiment structures in Condition 3 (dissimilar) and Condition 4 (similar), it is, of course, necessary that such structures form in the given situations. It is possible that the sentiment structures which formed in these conditions were simply too weak to have observable behavioral consequences. In particular, the experimental situation itself may have contributed to a weakening of the emergent sentiment structure in Condition 4 (similar) where the subjects perceived that they had the same attitudes.

In Condition 4 (similar), the effect of positive sentiments may have been weakened when the subjects became aware of the high proportion of disagreements. It is very possible that a subject would interpret a high proportion of disagreements as meaning that he and his partner are not alike after all. Post-session interviews revealed that some subjects specifically noted the high proportion of disagreements very early in the task period (probably within the first fifth of the trials). Since the information concerning disagreements was based upon actual and current behavior, such information is likely to have been more salient to the subject than was the information concerning perceived attitude similarity. In other words, as the experiment progresses, a subject in Condition 4 (similar) receives information which conflicts with the interpersonal similarity bond and may actually negate that bond over time. In the other three conditions, an interpersonal

dissimilarity bond is formed between subject and partner so the disagreements are confirmatory rather than contradictory.

A comparison of selected information from Questionnaire 1 (Appendix G, administered immediately prior to the performance of the contrast sensitivity task) and Questionnaire 2 (Appendix H, administered immediately following the task) provides a means of determining whether any subjects in Condition 4 (similar) tend to like their partner less after the session than just prior to the task performance. In Condition 4 (similar), a subject's partner is the actor whose opinions are most similar to his own (in fact, they are exactly the same). Person X's opinions differ only on one item and then only in degree. Based upon the findings from Byrne's Attraction Paradigm, we would expect a subject in this condition to be more attracted to his partner than to any other actor in the situation or, if the difference were too small to measure, at least to like his partner as well as Person X.

By comparing the responses to Items 6, 8, and 10 on Questionnaire 1, we can determine whether, in fact, subjects in Condition 4 (similar) reported a feeling that they would probably tend to like their partner at least as well as any other person in the situation. Item 6 states, "If I met my partner in a social situation, I have a <u>feeling</u> that I would probably...." Possible responses range from "tend to like him very much" to "tend to dislike him very much" and "I have no idea." Items 8 and 10 pose the same situation with respect to Persons X and Y, respectively. The responses to these items by subjects in Condition 4 (similar) showed that for all twenty subjects the partner was always listed as being at least as well liked as any other person in the situation (three of the subjects responded with at least one "I don't know" to Items 6 and 8).

By comparing the above findings with the same subjects' responses to Item 12 on Questionnaire 2 (the post-experiment questionnaire), it is possible to see if the disagreements during the session had any effect on the sentiment structure. Item 12 asks, "If you met him socially, which person(s) do you think you would like the most?" The subject may respond with any actor(s) in the situation or "don't know." The responses reveal that only eight of the subjects indicated that they would like their partner best if they met him socially, two subjects would like their partner and Person X equally, four subjects "don't know," and one subject did not respond. However, five subjects, a full fourth of the sample, indicated that they think they would like Person X more than their partner. Thus, after experiencing the high proportion of disagreements during the task session, fully half of the subjects in Condition 4 (similar) failed to indicate that they would tend to like their partner the most or at least as well as any other actor.

It may be possible that subjects tend to react to a high proportion of disagreements in one of two ways. For some subjects, the interpersonal similarity bond which formed on the basis of perceived attitude similarity may break down in the face of conflicting information resulting from the high proportion of disagreements. In such a case, the condition should begin to approximate Condition 3 (dissimilar). In fact, if we study the proportion of stay responses for the five subjects who indicated that they liked their partner less after the experimental trials than before, we find an interesting dichotomy. Two of these subjects have a P(S) of .80 (only one other subject in Condition 4 (similar) has a P(S) this high) and the other three subjects have the following P(S): .60, .60, .50 (only two subjects in this condition had a lower

proportion of stay responses). While it is quite obvious that we are stretching the data to their limit, nevertheless these results are consistent with the possibility that for some subjects the interpersonal similarity bond breaks down and the condition begins to look more like Condition 3 (dissimilar) with subpopulation formation. For the other subjects in Condition 4 (similar), those who apparently continued to like their partners more than the other persons in the situation, the disagreements may simply be perceived as a function of the difficulty of the task rather than as a function of interpersonal differences. Therefore, for such subjects, the interpersonal similarity bond may not be changed to any significant degree.

In any event, we must conclude that it is clearly possible that the high proportion of disagreements may act to weaken the positive sentiment relation expected to form in Condition 4 (similar). As a result, the behavioral consequences of differences in sentiment structures between Condition 3 (dissimilar) and Condition 4 (similar) are diminished.

b. The Strength of the Sentiment Structures

Because the predictions concerning Condition 3 (dissimilar) and Condition 4 (similar) depend upon the formation of sentiment structures, it is necessary to try to find out whether or not such structures were formed in the situation. The subjects in this experiment had to process a considerable amount of information, and it is possible that this volume of input somehow retarded the formation of sentiment structures. Most persons in our culture also seem considerably more reluctant to admit, to themselves as well as to others, that they "dislike" another person. It is much easier to say, "I think I would like that person if

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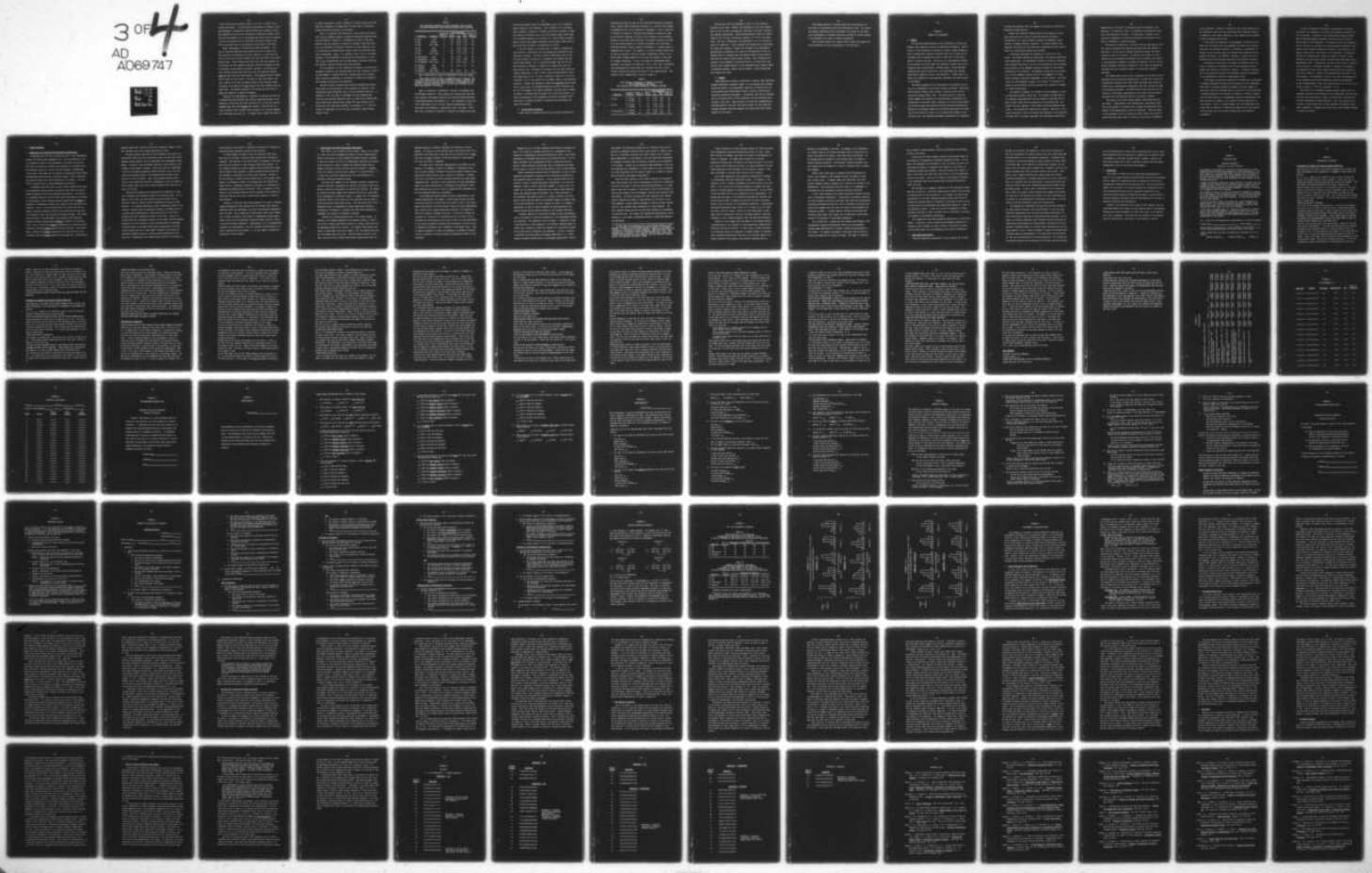

I were to meet her/him socially" than it is to say, "I think I would dislike that person." In the situation confronting the subjects in the ISB experiment, a reluctance to admit disliking one's partner is probably enhanced by the fact that the partner is physically present in the same room and probably will be introduced face-to-face after the session (in fact, the subjects did not meet after the session; however, this fact was not made clear to the subjects at the outset of the study).

Again, Questionnaire 1 provides some useful information. If we look at the three conditions where subjects are led to believe that their opinions are dissimilar from their partner's, we find that only two out of the sixty subjects respond that they would tend to like their partner least. Twenty subjects feel they would like their partner and the referent who also expresses dissimilar opinions (although not quite as dissimilar as the partner's opinions) the same. And fourteen subjects actually indicate that they would like the dissimilar referent less than they would like their partner. The remaining subjects respond with at least one "don't know." The point is that even though a subject's partner is the most dissimilar person in the situation, almost two-thirds of the subjects did not indicate that their partners were the least liked. The physical presence of the partner may have acted to weaken the formation of negative sentiments.

Looking at the Questionnaire 1 responses for subjects who were led to believe that their partners were the most dissimilar persons in the situation, we find that only about one-third (19) of the sixty subjects responded that they would dislike their partner if they met him in a social situation (this includes dislike slightly [14], dislike somewhat [3], and dislike very much [1]). It appears quite evident that there is

at least a reluctance to admit a tendency to dislike another person and that this reluctance is stronger when the other person is physically present than when the person is not present.

Thus, it is possible that Derivation 2, the attitude only derivation, was not supported because, although the necessary conditions were met and subjects in Condition 3 (dissimilar) did tend to like their partners less than subjects in Condition 4 (similar) liked their partners, the difference in subjects' attraction to their partners in the two conditions was insufficiently strong to cause the predicted behavioral consequences. Again, it is possible to get a clue to the reasonableness of this hypothesis by using data from Questionnaire 1, this time to draw subpopulations from the experimental conditions based upon the subjects' reported feelings about their partners.

For this analysis, we will categorize the subjects in the four experimental conditions into groupings based upon their response to Item 6 on Questionnaire 1 (dealing with their feelings about their partner). Table 9 allows an assessment of the effects of varying the strength of the sentiment structures in the conditions.

The data in Table 9 indicate that reported sentiment had a negligible effect on the proportion of stay responses in Condition 1 (HL), although the slight difference noted is in the predicted direction. In Condition 2 (LH), the effect of sentiment was more pronounced and clearly in the predicted direction; that is, subjects who reported that they disliked their partners had a higher P(S) than subjects who reported that they liked their partners—.51 compared to .44. This difference is significant at the .09 level, one-tailed, using the Mann-Whitney U Test.

TABLE 9

STAY RESPONSES AGGREGATED BY STATED SENTIMENT TOWARD PARTNER BY ABILITY INFORMATION CONDITIONS AND ATTITUDE ONLY CONDITIONS

		Stay Responses				
Condition	Sentiment*	Number of Subjects	Proportion	Mean	Variance	Coef. of Variation
C1 (HL)	like	8	.68	13.62	9.41	.23
C1 (HL)	dislike	6	.69	13.83	4.57	.15
C1 (HL)	don't know	6	.77	15.33	1.46	.08
C2 (LH)	like	6	.44	8.83	10.16	.36
C2 (LH)	dislike	7	.51	10.14	2.81	.17
C2 (LH)	don't know	7	.39	7.71	11.57	.44
C3 (dissimilar)	like	4	.62	12.50	.33	.05
C3 (dissimilar)	dislike	6	.71	14.17	5.36	.16
C3 (dissimilar)	don't know	10	.60	12.10	10.10	.26
C4 (similar)	like	18	.62	12.50	7.44	.22
C4 (similar)	dislike	-	-	-	-	-
C4 (similar)	don't know	2	.62	12.50	.50	.06

Note: Based upon 20 critical (disagreement) trials per subject.

*The category labeled "like" is aggregated for all subjects indicating that they tend to like their partners (slightly, somewhat, and very much), and the category labeled "dislike" is aggregated for all subjects indicating that they tend to dislike their partners for the same three degrees of disliking.

Again, in Condition 3 (dissimilar), the data is consistent with the sentiment prediction. Those subjects who reported that they like their partners show a smaller mean P(S) than those who reported that they dislike their partners—.62 compared to .71. The difference in these P(S) is not significant at the .05 level (using the Mann-Whitney U Test, one-tailed, the difference is significant at the .176 level). Since there were no subjects in Condition 4 (similar) who reported that they

dislike their partner before the experimental task, such a comparison cannot be made for this condition. Such a finding is not surprising since a subject in Condition 4 (similar) perceives his partner as being very similar in attitudes, and, as we have already argued, there seems to be a general tendency in our culture to at least outwardly manifest positive rather than negative sentiments toward another unless there is some cause which justifies a manifestation of dislike.

It is also possible to use these data to compare a subpopulation from Condition 3 (dissimilar) with the appropriate subpopulation from Condition 4 (similar). The data in Table 9 demonstrate that the P(S) for those subjects in Condition 3 (dissimilar) who respond that they dislike their partner (.71) is considerably higher than the P(S) for those subjects in Condition 4 (similar) who respond that they like their partner (.62). Although the difference does not quite reach statistical significance at the .05 level (using the Mann-Whitney U Test, with significance at the .05 level, one-tailed, requires a $U \leq 28$; the calculated U is 35), the results are once again clearly in the predicted direction. Although the findings are based upon post hoc analyses using fairly limited data, the findings nevertheless provide consistent support for the argument that negative sentiment structures tend to reduce the amount of influence that one person will accept from another (i.e., raise the proportion of stay responses) and positive sentiment structures tend to increase the amount of influence that one person will accept from another.

c. The Strength of Opinions

A final issue of interest involves the way subjects answered the

attitude survey that was used for the similarity/dissimilarity manipulations. Nelson (1965) showed that attraction is a function of the degree of agreement as well as the proportion of agreement. Since in Condition 4 (similar) the partner's responses were presented as exactly the same as the subject's opinions, the issue is not relevant in that situation. However, in the other three conditions, the partner's opinions are shown to be the extreme opposite of a subject's opinions, and it may make a difference whether a subject slightly, moderately, or strongly agrees or disagrees with an issue. For example, if a subject strongly agrees with an item, his partner is shown as strongly disagreeing; however, if another subject slightly agrees with the item, his partner is also shown as strongly disagreeing. To see if the degree of disagreement made a difference, the subjects in Conditions 1 (HL), 2 (LH), and 3 (dissimilar) were dichotomized into groups made up of subjects with four or more "strong" opinions and subjects with three or less strong opinions. The results of this categorization are shown in Table 10.

TABLE 10

STAY RESPONSES AGGREGATED BY STRENGTH OF OPINIONS
AND BY EXPERIMENTAL CONDITIONS
WITH SUBJECTS AND PARTNERS EXPRESSING DIFFERENT ATTITUDES

Condition	Strength of Opinions	Number of Subjects	Stay Responses			
			Proportion	Mean	Variance	Coef. of Variation
C1 (HL)	$\geq$ 4 strong	10	.75	15.00	2.44	.10
	$\leq$ 3 strong	10	.67	13.40	8.00	.21
C2 (LH)	$\geq$ 4 strong	11	.44	8.82	6.84	.30
	$\leq$ 3 strong	9	.45	9.00	12.00	.38
C3 (dissimilar)	$\geq$ 4 strong	9	.69	13.88	7.62	.20
	$\leq$ 3 strong	11	.60	11.91	5.49	.20

The data show that the difference in P(S) is in the predicted direction in all cases. However, the differences do not reach significance at the .05 level, although both Conditions 1 (HL) and 3 (dissimilar) approach significance. Using the Mann-Whitney U Test with significance at the .05 level, one-tailed, requires a $U \leq 27$ for both Conditions 1 (HL) and 3 (dissimilar); the calculated U is 34 for Condition 1 and 29 for Condition 3. Thus, although the findings are not significant for these small numbers, it appears the strength of the experimental manipulations as measured by its effect on the proportion of stay responses tends to be greater when the subjects express strong opinions than when the subjects express weaker opinions. This finding may be a function of the strength of the opinions per se or it may result from the fact that stronger opinions in this experiment mean a greater degree of difference between a subject and his partner. Future elaborations must resolve this issue.

d. Summary

While they must be viewed as exploratory in nature, these additional analyses demonstrate consistent support for our argument that sentiment structures formed in the experimental conditions as predicted but that the structures were insufficiently strong to result in statistically significant behavioral consequence. The analyses show that the findings are in a direction which is fully consistent with the theoretical predictions in each case. When the data are divided into subpopulations, allowing analysis of the data from those subjects for whom relatively stronger sentiment structures emerged, the results show even stronger support for the theory.

The primary analyses of the data showed very strong support for our notion of interpersonal similarity/dissimilarity bonds. The secondary analyses demonstrated that our argument with respect to the behavioral consequences of sentiment structures, although not proved, appears to be reasonable and worthy of further investigation.

The following chapter will summarize this research and suggest possible directions for future elaborations of the ISB Theory.

CHAPTER V

SUMMARY AND CONCLUSIONS

A. SUMMARY

The central problem addressed in this dissertation concerns the general issue relating to the use of referential information. Specifically, we were interested in situations in which a person attempts to solve a problem which requires collective effort and in which the interactants have no preconceived notion of their own or each other's ability to perform the task. The focus of our investigation centered on the question of how and under what conditions a person will use information about noninteractants, referent others, to make decisions concerning the relative abilities of the interactants and, thereby, guide her/his behavior in such a task situation. A formal theory to answer this question was then developed, presented, and tested as part of this thesis.

The theory presented in this dissertation is principally the result of an integration of two diverse research traditions: Expectation States Theories (Berger, Fisek, Norman, & Zelditch, 1977) and the Attraction Paradigm (Byrne, 1971). The major prediction from this theory suggests that persons will form performance expectations concerning their own and each other's behavior in a collectively-oriented task situation based upon perceived attitude similarity-dissimilarity between the interactants themselves and between interactants and referents who are known to be high or low in ability with respect to the criterion task. The resulting performance expectations will determine

the power and prestige order that emerges in the group as predicted by Expectation States Theories.

Because the Attraction Paradigm predicts the formation of sentiment structures as the result of perceived attitude similarity-dissimilarity, it is also necessary to assess the behavioral consequences of emergent sentiment structures. The theory predicts that sentiment structures will have behavioral consequences for the interactants in a collectively-oriented task situation.

A laboratory experiment was conducted as a first test of the theory. The research design was modeled after the previous expectation-states experiments. The experimental setting to include the criterion task (contrast sensitivity), the use of the interaction control machine, and the measure of the dependent variable is similar to the previous experiments in the tradition. The dependent variable was the probability of a stay response—staying with one's own judgment—on a final choice following a perceived disagreement on first choices. The probability of a stay response is taken to be a measure of influence, one element of the observable power and prestige order predicted to emerge in a task-oriented group.

The subjects (strangers) are studied as dyads attempting to solve a collectively-oriented, valued task. The subjects are made aware of two referents (noninteractants) and the referents' attitudes with regard to eight issues that are unrelated to the criterion task. The subjects are also cognizant of each other's attitudes regarding these issues. Four experimental conditions are created. Conditions 1 and 2 create situations in which the subjects are predicted to form high-self, low-other (HL) or low-self, high-other (LH) performance expectations,

respectively, on the basis of information about the referents' task abilities. In Conditions 3 and 4, no information concerning the referents' task abilities is provided. In these cases, a subject is predicted to be negatively or positively attracted to his partner on the basis of dissimilar or similar attitudes.

The subjects in Conditions 1 (HL) and 2 (LH) are made aware of the fact that the referents have opposite task abilities; one referent is perceived to be very high in contrast sensitivity ability, the other referent is very low in ability. In addition, each subject is led to believe that his attitudes are different from his partner's and similar to the high-ability referent's attitudes in Condition 1 (HL) or the low-ability referent's attitudes in Condition 2 (LH), while his partner has attitudes which are ostensibly similar to the opposite referent's attitudes.

The theory predicts that in such a situation, on the basis of this perceived attitude similarity-dissimilarity, a subject will perceive an interpersonal similarity bond (ISB) between the dyads with similar attitudes and an interpersonal dissimilarity bond (IDB) between the dyads with dissimilar attitudes. The ISB/IDB will provide the basis for the formation of performance expectations for the subject and his partner consistent with the perceived ability of the similar referent.

The results of the study clearly support these predictions from the theory. A Mann-Whitney U Test demonstrated a significant difference in the measure of influence used to compare the behavioral consequences of the manipulations in the two conditions. Given the number of stay responses in the two conditions, such a result would occur by chance less than three times in a million if there were no difference

in the conditions. Subjects in Condition 1 (HL) clearly behaved as if they expected to have more task ability than their partners; subjects in Condition 2 (LH) clearly behaved as if they expected their partners to have the greater task ability.

In the other two conditions of the experiment, subjects were provided with information about the referents' attitudes but no information about the referents' abilities. In Condition 3 (dissimilar), a subject was led to believe that his attitudes were different from his partner's attitudes. In Condition 4 (similar), a subject was led to believe that his attitudes were the same as his partner's attitudes.

The results of the study do not support the prediction that subjects in Condition 3 (dissimilar) will be less influenced by their partner than subjects in Condition 4 (similar). Although the results are in the predicted direction, the difference between the conditions is not significant as tested by a Mann-Whitney U Test.

Even though the prediction dealing with the behavioral consequences of emergent sentiment structures was not supported by this experiment, the results of secondary analyses performed on the data suggest the possibility that this experiment was not a good test of this prediction. A secondary analysis of the subjects in Condition 4 (similar) suggests that the high proportion of disagreements during the experimental trial may counteract the effects of the perceived attitude similarity for some subjects. That is, the data suggest that the interpersonal similarity bond in Condition 4 (similar) may break down for some subjects, with the result that the situation becomes more like Condition 3 (dissimilar).

In order to determine the behavioral consequences of sentiment structures, it is necessary, of course, that sentiment structures form in the situation. An analysis of the questionnaire responses showed that the expected negative sentiment structures were quite weak for most subjects in this experiment. By dividing the data into subpopulations on the basis of subjects who actually expressed sentiments (feelings of like or dislike) toward one's partner, it was possible to formulate a better test of the effects of such sentiments. Dividing the subjects into subpopulations reduced the number of subjects in each grouping so that the results were not statistically significant using a Mann-Whitney U Test. Nevertheless, the results were clearly in the predicted direction. For example, subjects in Condition 3 (dissimilar) who responded that they tend to dislike their partner were compared to subjects in Condition 4 (similar) who responded that they tend to like their partner. The difference in the P(S) for these two groupings was in the predicted direction and approached statistical significance (using the Mann-Whitney U Test, with significance at the .05 level, one-tailed, requires a $U \leq 28$; the calculated U is 35).

The results of the secondary analyses strongly suggest that the sentiment structures which developed in the experimental conditions may not have been strong enough to result in statistically significant behavioral consequences in these situations. When the analyses are restricted to those subjects who at least expressed the predicted sentiments, regardless of strength, the results show a much stronger tendency to support the theory.

B. FUTURE DIRECTIONS

1. Suggestions for Improving the Experimental Manipulations

Considering that this was the first full test of this experimental design, the design worked remarkably well. With the exception of the two subjects who came to their appointment in the same car and knew that they were partners, no subject was suspicious to the extent that his responses could not be used in the data analyses. Nevertheless, future tests of the theory can be improved by making some fairly simple, straightforward modifications of the basic design. Before discussing some possible future tests and elaborations of the theory, it will be useful to specify some of these recommended modifications.

An important area which must be given careful attention when using this experimental design concerns the opinion items which are used to create perceptions of attitude similarity-dissimilarity. The results of a secondary analysis in which subjects were dichotomized on the basis of the strength of their expressed opinions showed that the degree of agreement or disagreement between actors seemed to have behavioral consequences. That is, in the instances where two actors were shown to express dissimilar attitudes, subjects with strong opinions were less like dissimilar others than subjects with weaker opinions. This result was an artifact of the experiment since dissimilar attitudes were created by always showing opposite extreme attitudes for a dissimilar other. Thus, a subject who slightly disagreed with an item would see a dissimilar other who strongly agreed with the same item. On the other hand, a subject who strongly disagreed with an item would also see a dissimilar other who strongly agreed with the same item. The secondary

analysis showed that subjects who were more dissimilar tended to yield stay responses which more strongly supported the theory.

The eight opinion items used for this experiment were chosen from among thirty items which were pre-tested so that the items would elicit generally strong opinions with both agreements and disagreements represented. In spite of the pre-testing, there was a wide variance in the strength of the subjects' opinions. Since the effects are randomized, it does not invalidate comparison between conditions, but it may well lessen the observable effects of the manipulations and make it more difficult to test the theory. Thus, since stronger opinions seem to result in more definitive behavioral consequences, it will be useful to select opinion items which elicit strong responses when using this design in the future.

Post-session interviews also demonstrate the importance of carefully evaluating the substantive content of the opinion items. For example, in this study, the item dealing with giving school and job priority to minority persons may have complicated the issue for some subjects. If a response specifically leads a substantial number of the subjects to believe that the respondent possesses a different state of a diffuse status characteristic, then the activation of the status characteristic will confound the results of the study. There is no evidence that such confounding occurred in this study, with the possible exception of the two subjects for whom the possibility of possessing different states of the same diffuse status characteristic was made salient because they saw a large number of persons in the lobby who possessed different states of a diffuse status characteristic from their own. Nevertheless, such opinion items should not be included in

future studies of this nature to preclude the possibility of making uncontrolled status information salient in the situation.

It would probably be useful to tell the subjects at the outset that they will not meet or even see their partner after the study is completed. This addition to the instructions is necessary so that subjects are less inhibited in their feelings toward their partner. As the findings discussed in the data analysis sections indicated, persons seem to exhibit some reluctance to admit disliking another person who will probably be confronted in a face-to-face situation. Whether or not this failure to express dislike reflects one's true feelings toward another is problematic; however, the findings show that whatever the reason there is a measurable behavioral difference as a consequence of admitting that another person is disliked. Thus, it appears as if the effects of the sentiment structure will be enhanced if the subjects believe that they will not have to confront their partner in a face-to-face situation.

Finally, it would have been very informative to be able to directly compare feelings about their partner and the referents that subjects expressed before the experimental task with those expressed immediately after the task. Such a comparison is particularly useful when attempting to assess the effect of the number of disagreements during experimental trials on the interpersonal similarity bonds formed as a result of perceived attitude similarity. Unfortunately, all of the appropriate questions from Questionnaire 1 were not repeated in Questionnaire 2, so such a comparison was not possible. It is very simple to remedy this situation for future studies.

2. Implications for Future Theoretical Developments

This thesis is by no means an end in itself. Rather, it is viewed as a first step toward expanding the domain of Status Characteristics Theory in particular and other Expectation States Theories in general to take into account the notion of interpersonal similarity and dissimilarity bonds and to begin to examine the potential impact that an emergent sentiment structure may have upon the formation of linkages within the cognitive structure which emerges in a group situation. It is hoped that this modest beginning will form the foundation for a long-term, theoretical research program.

The issue which demands the most immediate attention concerns the predicted behavioral consequences of sentiment structures in task situations in which the interactants are collectively oriented. The secondary analyses strongly suggest that sentiment structures do have behavioral consequences as predicted; however, it appears that the sentiment structures formed by most subjects in this experiment were too weak to yield statistically significant results. The most direct test of this hypothesis might be accomplished by simply replicating Condition 3 (dissimilar) and Condition 4 (similar) with some added information to strengthen the formation of sentiment structures.

Consider the following modifications to the current design. In addition to the changes suggested in the previous section, a subject can be led to believe that her/his partner is a person toward whom s/he has expressed strong like or dislike. For example, when subjects volunteer to participate, they can be asked to list five persons they like and five persons they do not like. When the subject arrives for the test, s/he can be led to believe that either a person about whom s/he

expressed positive or negative sentiments was scheduled as her/his partner. Of course, as in the present study, such subjects will not be permitted to see each other at any time, and the subjects will be told that they will not be allowed to learn the identity of their partner even after the study is completed.

Of course, other, less-direct manipulations of sentiment are also possible. For example, a subject in Condition 3 (dissimilar) can be led to believe (perhaps "overhear") that her/his partner performed some particularly nefarious deed, while a subject in Condition 4 (similar) can be led to believe that her/his partner performed some particularly commendable deed. The point is that essentially the same experimental design with minor modifications to strengthen the formation of sentiment structures can be used to test our assertion that sentiments will have the predicted behavioral consequences.

A more elaborate design includes the direct manipulation of performance expectations (for example, a subject may be given a pre-test which leads her/him to believe that s/he is good or poor at the instrumental task relative to her/his partner) before the actual experimental task, coupled with a strong manipulation leading to the formation of positive or negative sentiment structures. In this way, subjects can be placed in a direct HL or LH condition and will not have to try to structure the task situation on the basis of their own past experiences or the limited information available in the situation, as was the case in Condition 3 (dissimilar) and 4 (similar) of the present study. Then, by adding information to create the formation of sentiment structures, it will be possible to directly observe the behavioral effects of such structures.

Because the use of attitude similarity-dissimilarity confounds the test of the effects of sentiment structures as a consequence of the formation of interpersonal similarity/dissimilarity bonds, a more direct manipulation of sentiments may provide a more definitive test. For example, sentiments can be manipulated directly as described above by having a subject preselect persons they like or dislike and then leading the subject to believe that her/his partner is one of those persons.

Another interesting question arises if sentiments are shown to have behavioral consequences as measured by the differential proportion of stay responses among the conditions. Are the observed behavioral differences a result of altered performance expectations or are such consequences a result of direct behavioral changes? In other words, if a subject in a HL condition, interacting with a partner toward whom the subject has expressed positive sentiment, has a lower proportion of stay responses than another subject in a similar condition, but with a partner toward whom that subject has expressed negative sentiment, then is the lower probability of a stay response the result of a change in expectations or does the subject maintain the same expectations and directly modify her/his behavior because of the sentiment structure?

A possible approach to solving this dilemma involves the manipulation of the degree of collective orientation in the experimental setting just described. Two conditions could be created: a condition in which a high team score is very important to the subjects (perhaps highly rewarded) and a condition in which the subjects are collectively oriented but the team score is relatively less important. In such a situation, if sentiment structures affect performance expectations (i.e., affect behavior through the modification of performance expectations), then we

would expect less difference between the two conditions than would be the case if sentiment structures have a direct effect on behavior only. That is, if sentiment structures only affect behavior and not performance expectations, we would expect to see less behavioral consequences of sentiment structures when the outcome of behavior is more important to the subject. Another way of stating the same hypothesis is that the more important the consequences of a given behavior in such a situation as we have described, the more likely a subject is to behave in accordance with her/his performance expectations.[1]

While the focal question in this thesis concerned the conditions under which persons will form an interpersonal similarity or dissimilarity bond on the basis of attitude similarity-dissimilarity, it is abundantly clear that the results of this effort, like all good theories in such an early stage in their development, raise far more questions than they answer. By strictly defining the scope conditions and, thereby, clearly delimiting the domain of applicability of the theory, we not only suggested a clearly defined strategy for testing the basic assumptions but also provided useful guidelines for future research. The basic research design utilized for this study resulted in a remarkably low suspicion rate. The design, with appropriate modifications, allows testing of a wide range of interesting issues to extend and elaborate the ISB Theory.

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[1]It has come to my attention that a very similar research project has been developed by Joseph Berger (Stanford University) and Murray Webster, Jr. (University of South Carolina). Webster has submitted such a proposal to the National Science Foundation under the title, "Integrating Social Processes," with a desired starting date of June 1979. Although the proposals are quite similar, they were developed independently, and important differences remain.

A major direction for future research concerns the conditions under which interpersonal similarity/dissimilarity bonds will form. Subsequent studies, for example, may refine the theory by investigating the effects of changing: the degree and/or proportion of attitude similarity-dissimilarity, the number of attitudes involved in the situation (can an ISB be formed on the basis of a single attitude?), the perceived importance of the attitudes, and the subjects' interest or personal involvement in the attitudes involved in the situation.

Such issues immediately raise questions concerning the "strength" of interpersonal similarity/dissimilarity bonds. For example, is the formation of such a linkage a phenomenon that either exists or does not exist, or can a bond form with varying degrees of strength with implications of varying degrees of similarity/dissimilarity? Our own "hunch" is that the answer lies in some combination of both explanations. Depending upon the nature of the similarity/dissimilarity observed (such as the kind and number of dimensions involved) and other situational factors (such as the need for self-defining information), interpersonal similarity/dissimilarity bonds either will be formed or not be formed. Once such a bond has formed, a person will have experienced a fundamental shift in perspective from one of possessed specific, qualified similarity to one of expected general, much less-qualified similarity.

However, we also suggest that the degree of the expected similarity/dissimilarity, the "strength" of the interpersonal similarity/dissimilarity bond may be variable. In other words, a person may expect to be generally similar or dissimilar to another whenever an interpersonal similarity/dissimilarity bond forms, but the exact degree of expected similarity with respect to any specific dimension may be a

function of the strength of the bond. For example, in our experiment, if a subject forms an ISB between her/himself and the high-ability referent, the subject will expect to have high ability her/himself. We are arguing that the strength of that bond may affect the degree of ability similarity expected. The previously discussed secondary analysis dealing with the strength of a subject's opinions tends to support this argument.

Another factor which must be considered when investigating the issue of the strength of such linkages involves the number of bonds that a person forms. It appears likely that additional bonds which provide congruent ability information will increase the strength of the expectations. Such expectations are also likely to be aggregated in accordance with the attenuation principle previously described.

A final issue bearing on this general discussion concerns the question of inconsistent information. A particularly interesting direction for future research concerns how and under what conditions interpersonal similarity/dissimilarity bonds will form in situations involving information which suggests that two actors are alike on some dimensions but different on others. A related question concerns how and under what conditions these bonds, once formed, will be destroyed or deactivated because of the addition of conflicting information.

All of these issues dealing with the formation and strength of the interpersonal similarity/dissimilarity bonds can be investigated through simple modification of the basic research design presented in this thesis. For example, the degree of similarity can be varied by varying the proportion of similar attitudes. The number of referents

can be varied by having referents alike on one dimension and different on one or more others.

A major area for future research concerns other possible bases for the formation of interpersonal similarity/dissimilarity bonds. For example, the experiment can be modified so that the actors are led to believe they are similar or dissimilar with respect to such factors as background, leisure-time interests, likes and dislikes with respect to food, or any other such items which can be used to test the generalizability of the theory. The aim is to develop a more general conception of the conditions under which interpersonal similarity/dissimilarity bonds will form.

The ISB Theory also suggests extensions of other Expectation States Theories in addition to the Status Characteristics Theory which has been our central focus in this dissertation. For example, the results have implications for the basic expectation-states process model which addresses the situation where no information is provided on which to form a social basis for discrimination and expectations emerge as a result of the interaction itself. It may well be that the emergence of strong sentiment structures in such a situation will be sufficient to structure the formation of performance expectations.

The findings also have some interesting implications for the Source Theory. It may well be that, holding the performance evaluation of a potential source constant, the more a person is attracted to another, the more that person will be influenced by that other's evaluations.

3. Intervention Implications

While the theoretical implications of this research are of great

interest to the author, and hopefully to other social scientists as well, the implications for applied research and social intervention may ultimately prove to be of even greater consequence. By generalizing the results of the study conducted by Stein, Hardyck, and Smith (1965), we can infer that, in the absence of contradictory evidence, the tendency is for one racial group to assume that, in general, they have different attitudes from, they are unlike, another racial group. Since Byrne's (1971) research tradition has clearly shown that attitude similarity-dissimilarity is strongly associated with social attractiveness, it is possible that the modification of perceived attitude similarity may reduce tension and misunderstanding among different racial and ethnic groups. In fact, work by researchers such as Rokeach and Mezei (1966) has already produced findings which suggest the possibility that some of the dysfunctional effects of racial stereotyping can be modified by the presentation of information which leads to the perception of attitude similarity rather than dissimilarity.

The findings also demonstrate that perceived attitude similarity not only promotes increased social attractiveness but also may imply behavioral consequences which can have far-reaching implications for social intervention based upon an expectation-states approach. For example, by providing information which stresses attitude similarity between groups whose members are differentiated on the basis of the possession of different states of a diffuse status characteristic (for example, gender or race), it may be possible to improve the working relationships among the group members to the extent that the participants not only are more satisfied but also more productive. By actively and consistently seeking out and stressing the attitudes that group members

who are differentiated on diffuse status characteristics hold in common among themselves and with high-ability referents and by carefully avoiding emphasis on attitudinal dissimilarities, managers, teachers, and other group leaders may be able to measurably increase the performance expectations of and for the higher status members.

C. CONCLUSIONS

This thesis is viewed as a first step toward understanding the nature of the linkage between perceived attitude similarity-dissimilarity and the formation of expectation states as explained by the notion of interpersonal similarity and dissimilarity bonds. The strong empirical support for the portion of the theory dealing with interpersonal similarity/dissimilarity bonds allows a significant elaboration of the expectation-states approach by expanding the domain of applicability to include referential structures which are interconnected on the basis of perceived similarity and dissimilarity.

However, as we predicted at the outset of this endeavor, even the supporting evidence has created far more questions than it has answered. Although this thesis represents a sizable first step, it is, nevertheless, just a beginning. The utility and the viability of the approach have been demonstrated; a great deal of work remains to be done.

APPENDIX A

RECRUITING FORM

STANFORD UNIVERSITY

Laboratory for Social Research

The purpose of this request is to ask you to participate in a social science research project being conducted at Stanford University. I believe that this is a unique opportunity for you to see first-hand how such studies are conducted and to learn something about the nature of social scientific research. Many students like you have helped us in the past, and they have found the experience not only valuable but also interesting and fun.

A number of different studies are being conducted at the same time, and I cannot give you details about the specific study to which you will be assigned; however, I can tell you that the general research area involves group problem-solving and decision-making. You will be working on a cooperative task with a partner.

If you agree to help us, you will be contacted by telephone to arrange for a time when it will be convenient for you to come to the Laboratory for Social Research on the Stanford campus. We will need your help for about one and one-half hours, one time only. You will be paid $3.00 for your participation.

If you are willing to assist us, please fill in the information requested below. If you later decide that you cannot or simply do not want to participate, just tell whoever telephones you that you have changed your mind; there will be no hard feelings.

I would like to strongly urge you to take this opportunity to participate in some important research. I promise you that we will do our best to make this a pleasant, valuable experience for you. Your participation has been approved by both Stanford University and the administrators of your school.

Yes, I would like the opportunity to participate in a study at Stanford.

Printed name _____ Phone number _____

Have you ever participated in a social scientific study before? _____
If yes, please explain briefly on the other side of this paper.

Please indicate the time that is probably most convenient for you to attend:

Weekday afternoon ___ Weekday evening ___ Weekend ___

APPENDIX B

EXPERIMENTAL PROCEDURES

PROCEDURES FOR GREETING AND SEATING SUBJECT NUMBER ONE:

(THE FOLLOWING IS NOT READ TO THE SUBJECT VERBATIM FROM A SCRIPT; HOWEVER, THE ESSENCE OF THIS INFORMATION IS PRESENTED TO EACH NUMBER ONE SUBJECT.)

Hi, I'm _____, thank you for offering to help us with our study and welcome to the Laboratory for Social Research. Please come with me.

(ESCORT THE SUBJECT TO THE WAITING ROOM AND ASK HIM TO BE SEATED. GIVE THE SUBJECT THE ATTITUDE SURVEY AND THE INITIAL RELEASE FORM.)

Please complete this survey for us as honestly as you can. The information you provide will be kept in strict confidence; that is, your answers will not be seen with your name attached by anyone but the social scientists conducting the study. Also, please sign this release form after you read it carefully. If you have any questions, I will be glad to answer them.

(AFTER THE SURVEY IS COMPLETED:)

Let me see if your partner has arrived yet. As soon as he completes his form, we will be ready to begin the study. Please make yourself comfortable and wait here until I return to take you to the study room.

(QUICKLY TAKE THE ATTITUDE SURVEY TO THE CONTROL ROOM SO THAT THE EXPERIMENTAL SURVEYS CAN BE COMPLETED. AFTER SUBJECT TWO HAS COMPLETED HIS SURVEYS AND THE EXPERIMENTAL SURVEYS HAVE BEEN PLACED IN THE FILE CABINET, ESCORT SUBJECT ONE TO THE STUDY ROOM.)

This will be your position for the entire study. Please sit down and make yourself comfortable. I will seat your partner in just a minute. Although we have scheduled subjects so that your partner will be a stranger to you, it is important for the purposes of our study that you do not talk to or see your partner face-to-face during our work together. That is the reason for this partition which separates you from your partner's table. His set-up is exactly like yours. All of your communication with your partner will be accomplished by using this

console, which will be fully explained to you after your partner is seated. Please do not touch the console until you are instructed to do so. Also, please try to remain silent as long as you are in this room; however, if you find you want to ask a question, please raise your hand and Dr. Martin will come to your assistance. The instructions have been carefully designed so that you should get all of the information you need if you wait for it. Now I must block your view with this curtain for just a few minutes so that I can seat your partner without allowing either of you to see each other.

(PLACE THE CURTAIN IN FRONT OF THE SUBJECT AND THEN GET SUBJECT TWO AND SEAT HIM.)

PROCEDURE FOR GREETING AND SEATING SUBJECT NUMBER TWO:

(THE FOLLOWING IS NOT READ TO THE SUBJECT VERBATIM FROM A SCRIPT; HOWEVER, THE ESSENCE OF THIS INFORMATION IS PRESENTED TO EACH NUMBER TWO SUBJECT.)

Hi, I'm _____, thank you for offering to help us with our study and welcome to the Laboratory for Social Research.

(GIVE THE SUBJECT THE ATTITUDE SURVEY AND THE INITIAL RELEASE FORM.)

Please complete this survey for us as honestly as you can. The information you provide will be kept in strict confidence; that is, your answers will not be seen with your name attached by anyone but the social scientists conducting the study. Also, please sign this release form after you have read it carefully. If you have any questions, I will be glad to answer them.

(AFTER THE SURVEY IS COMPLETED:)

Your partner is already here. Let me see if Dr. Martin is ready to begin. Please make yourself comfortable and wait here until I return to take you to the study room.

(QUICKLY TAKE THE COMPLETED SURVEY TO THE CONTROL ROOM SO THAT THE EXPERIMENTAL SURVEYS CAN BE COMPLETED. AFTER SUBJECT ONE IS SEATED AND THE CURTAIN IS IN PLACE, ESCORT SUBJECT TWO TO THE STUDY ROOM.)

Your partner has been seated in the study room and we are ready to begin. For reasons that will be explained to you shortly, I must ask you to please avoid talking once we enter the study room. Please come with me.

(AFTER THE SUBJECT IS IN THE STUDY ROOM:)
This will be your position for the entire study. Please sit down and make yourself comfortable. Your partner is already seated at his table on the other side of this partition with a set-up identical to yours. It is important for purposes of this study that you do not talk to your partner directly or see him face-to-face during our work together. This is the reason for this partition separating the two of you and why we put the curtain in front of him. Even though we have purposely scheduled the two of you so that you are strangers, it is also important that you do not see each other. You will be permitted to communicate with your partner only by the use of this console, which will be explained to you shortly. Please do not touch the console until you are instructed to do so. Please try to remain silent as long as you are in this room; however, if you find you want to ask a question, please raise your hand and Dr. Martin will come to your assistance. The instructions have been carefully designed so that you should get all the information you need if you wait for it.
(TAKE THE CURTAIN FROM IN FRONT OF SUBJECT ONE AND TELL "DR. MARTIN" THAT THE PARTICIPANTS ARE READY TO BEGIN.)

INSTRUCTIONS TO SUBJECTS:

(THE FOLLOWING SCRIPT IS READ VERBATIM EXCEPT WHERE OTHERWISE INDICATED.)
Please do not touch the consoles on your table until I tell you to do so. It appears as if we are ready to begin now. My name is Dr. Martin; I am from the Laboratory for Social Research at Stanford University. I see both of you men are high school juniors/seniors; is that right? Fine. I want to thank you again for your willingness to help us. I would also like to apologize for any confusion you may have noticed. We are conducting several different studies at the same time, so we are shuffling participants to various parts of the building. In this particular study, we want partners who are previously unacquainted. That is why, if you came in with someone or were seated with another volunteer in our waiting area, we have placed you in different studies. You may also be wondering why you are separated from each other and why I am reading this script to you. I'm sure it seems a bit unusual, but it

is necessary so that the study is conducted in exactly the same manner for each pair of participants. It is also necessary that we standardize the information that you receive about each other, so please try not to talk until after our work is completed. If you want to ask a question, raise your hand and I will come to you so that you can talk quietly.

Before we begin the study itself, let me take a few minutes to acquaint you with the nature of the task you will be working on with your partner and the equipment that we will be using.

In just a few minutes you will be working together as a team to try to solve a series of decision-making problems that involve the use of a skill which is known among social scientists as contrast sensitivity. Contrast sensitivity seems to be a special skill that some persons possess that somehow enables them to accurately perceive contrasts between figures that are only slightly different. For example, studies conducted by social scientists have shown that when some individuals are presented with two patterns consisting of black and white rectangles they are able to *make judgments consistently* and accurately about the contrasts between the patterns. In other words, such individuals can select the pattern with the greater proportion or area of white, even if the difference in the black and white areas is quite small.

As far as we have been able to determine, the ability to judge contrasts, although a very useful skill, is also a very specialized skill; it does not seem to be related to any recognized familiar skill such as mathematical ability or artistic ability; that is, people who are good at math or art are not necessarily good at tasks which require high contrast sensitivity.

We have arrived at several conclusions about the ability. First, we are very sure that contrast sensitivity is a measurable skill; it is not simply a matter of luck. Second, the ability appears to be quite stable over time. And third, we think it may be a very useful ability for a person to have.

In our work today, you will be working together with your partner to try to solve some problems which require contrast sensitivity ability for their solution. In this case, we are <u>not</u> interested in measuring

your individual ability; rather, we are interested in finding out how well you work together to achieve a maximum team score.

In recent years there have been a number of studies conducted to determine the effectiveness of individuals working as teams rather than alone. The results clearly show that for many kinds of problems teams are much more effective than individuals working by themselves. Today, the two of you will be working together as a team to try to solve some problems requiring contrast sensitivity ability.

With today's modern technological advances, not all teams function as face-to-face groups. For example, the team members may communicate only by telephone over long distances without ever actually meeting or even seeing each other in person. In such cases, team members must sometimes judge each other's ability on the basis of very little information about each other. Along with other social scientists, we are conducting a series of studies to determine if the potential effectiveness of teams using modern communications equipment is equal to the effectiveness of face-to-face groups. Today, the two of you are participating in such a study. The two of you will be trying to solve a series of problems by working on these problems together; however, you will only be able to communicate electronically by means of the devices on the table in front of you.

Now let's look at a sample contrast sensitivity problem together. I will project each problem on the screen in front of you like this.

(PROJECT THE FIRST SAMPLE SLIDE)

Each of the problems will consist of two patterns similar to the ones you see on this slide. Your task is simply to decide whether the top or bottom pattern contains the greater white area. This is similar to the standard task that has been used to measure individual contrast sensitivity. The difference in the proportion of black and white areas is intentionally quite small; nevertheless, some individuals are exceptionally good at consistently making the correct choice by picking the pattern with the greater area of white.

(FIRST SAMPLE SLIDE OFF)

I want to caution you that there is no scheme to the answers. For example, this means that you cannot get the correct answers by simply

deciding that the pattern with the larger, or smaller, rectangles is always the correct answer.

Now look at the console on the table in front of you. Please don't push any buttons until I tell you to do so. This is the device that you will use to record your answer to each problem and to communicate that answer to me and to each other. Notice that the white bulbs on the left side of the console are labeled "T" for top and the yellow or amber bulbs on the right side of the console are labeled "B" for bottom. Now direct your attention to the two small black buttons near the top of the console marked "first choice." If you press the left button, the top "T" light will be lit, indicating that you chose the top response for that problem; if you press the button on the right, the top "B" light will light up. When you are asked to make a choice, please press the button gently.

It is important that you carefully consider your choice before you press a button because once you have pressed a button signifying a choice, the circuit is closed and you cannot change the selection until the circuits are cleared at the end of each problem. Each time that you make an initial or first choice for a problem, you will see your partner's first choice indicated by a bulb lit in the second row labeled "partner's choice" as soon as you have both made your first selections. In other words, because of the way the circuitry has been designed, you will not see each other's response until each of you has pressed a button signifying your first choice. As soon as a first-choice button has been pressed on each console, the circuit is closed and you will automatically see the choice selected by your partner. Since this is the only time that you can communicate with your partner, this is the way in which you are able to inform your partner of your best advice. This is, however, only a first or preliminary choice and you are perfectly free to change your opinion when you make your final choice. As you will see shortly, tests have shown that persons usually increase their scores when they have a chance to see each other's opinion.

The next row on the console includes both buttons and lights again, just like the "first choice" row. In this case, the row is labeled "final decision." After you have had a chance to compare your first

choices, I will ask you to make your final choice. You will not see your partner's final choice, so we will not use the last row of lights for this study.

Some of these slides may seem difficult to answer but in each case, there is a single correct solution. If you are not sure of the correct answer, you should not hesitate to base your judgment on your intuitive feelings and perceptions.

After you have both made your final choices and I have had time to record the final choices, I will clear the consoles and we will be ready for the next slide.

Let's quickly go through an actual practice run exactly the way we will do it in a few minutes for the record. Again, please do not make your selection until I tell you to make your choice. I will give you ample time to study the slide before asking for your choice of the pattern which you believe contains the greater area of white.

(PROJECT THE SAMPLE SLIDE)

(AFTER FIVE SECONDS, ANNOUNCE:)

Make your first choice now.

(SEVEN SECONDS AFTER BOTH SUBJECTS HAVE MADE THEIR FIRST CHOICE:)

Please make your final choice now.

Notice that the bulbs indicate that you and your partner agreed/disagreed on your first choice. So that you can see what a disagreement/agreement would look like, let me talk you through a sample.

(TURN OFF THE SLIDE AND CLEAR THE CONSOLES)

(POINT TO THE SUBJECT ON THE EXPERIMENTER'S LEFT AND SAY:)

Will the person on my left please push a first-choice button signifying a choice of the top pattern. Please push the button now. O.K., that's fine.

(POINT TO THE SUBJECT ON THE EXPERIMENTER'S RIGHT AND SAY:)

Now will you, the person on my right, please push a first-choice button signifying a choice of the top/bottom pattern. Notice that the lights now indicate that you and your partner disagreed/agreed on your first choice.

I think we are all set on the mechanics now. Before starting the actual study, let me tell you a little more about what we are doing today.

In an earlier series of studies involving contrast sensitivity, we were interested in trying to determine what kind of person seems to do well at such tasks and what kind of person does not perform well. In other words, we studied a person trying to solve a series of contrast sensitivity slides by himself. Now we are interested in studying how well a team of two persons can perform when they work together. Will the team be able to take advantage of the skill of one member, if it turns out that one person is better at contrast sensitivity than the others? Will team members be able to accurately determine each other's ability, even if they know very little about each other?

Since we are only interested in the total team score, only your final choice will be scored; that is, your first choice is only a preliminary choice, a way to exchange advice with your partner. You should not hesitate to change your first choice if the other choice seems better after you consider your partner's advice and restudy the slide. On the other hand, if you feel that your answer is correct, that perhaps you have more ability than your partner, then you should stay with your own first choice.

We are attempting to study what in real life might be referred to as a critical choice situation. Let me give you an example of what I mean. When a doctor has a diagnosis to make which is particularly difficult, he will often consult with another doctor to seek his advice. The doctor does not care whose first opinion is correct, the patient's health is the issue, and only the final diagnosis is important, not who made the diagnosis. That is the kind of situation we want you to imagine today. We don't care who makes the correct first choice; the only thing that matters is that you both get the correct final choice so that the team does well.

Before going any further, it might be helpful to show the distribution of scores achieved by high school students like you in various parts of the country when they took a test to measure individual contrast sensitivity ability. Each person who participated took a test consisting of 25 different slides similar to the sample problem we just completed and the task you will be working on together in a few minutes. The results of this series of tests with one person working alone are shown on this chart.

(POINT TO THE CHART SHOWING CONTRAST SENSITIVITY SCORES)

As you can see, a score of 21 through 25 correct responses out of 25 is rated superior. Such a score is quite unusual. An above average score is 16 through 20 correct out of 25. An average score is 11 through 15. Seven through 10 correct responses is a below average score. And, finally, anything less than seven correct responses out of a possible 25 is rated poor. Such a score is also a rather unusual occurrence. As you can see, most individuals score in this average category with a score of 11 through 15, a substantial number of persons score above and below average, and a small number are in the very top superior category and the bottom poor category.

Now let's look at the kind of results we are finding when we allow two individuals to work together as a team. In this case, since the team score is the total of all correct final choices, it is possible for the team to achieve a maximum score of 50; that is, if both individuals get all 25 problems correct on their final choices, the team score will be 50. The team scores show that an individual is able to contribute more to the team score if he is allowed to see the other member's score before making his final choice. When individuals see each other's first choice, and when they are concerned only with making the correct final choice, we find that:

33-40 points out of a possible score of 50 is average; that is, teams usually score in this range.

Above average scores of 41-47 and below average scores of 27-32 do not occur as often.

A superior team score of 48-50 is rare, as is a poor team score of 0-26 out of 50.

Some persons think that if they simply guess each answer they will get an average team score. However, previous studies show this is not the case. If you both guessed correctly half of the time, your score would be 25 and this is a poor team score and a rare occurrence as you can see.

Several things seem to be clear from the results of these extensive studies. The findings indicate that contrast sensitivity is indeed a measurable skill and not simply a matter of luck. The ability is stable; that is, a person seems to score in the same range consistently. And we think the ability is useful.

It might be useful for you to have some information about some of these persons who completed the contrast sensitivity task while working alone.
(FOR CONDITIONS 1 & 2 ONLY:)
Since their scores are recorded on the opinion survey, I will have to cover the names to protect their identity like we promised, but I can let you see the rest of the information.
(FOR CONDITIONS 3 & 4 ONLY:)
I cannot give you the scores they achieved, but I can show you the opinion surveys they completed; however, I will have to cover the names to protect their identity like we promised.
(MOVE FROM THE EXPERIMENTER'S TABLE TO THE FILE CABINET IN FULL VIEW OF BOTH SUBJECTS. REMOVE ONE LARGE ENVELOPE FROM ONE DRAWER AND ANOTHER ENVELOPE FROM A DIFFERENT DRAWER. WITHDRAW TWO FORMS FROM ONE OF THE ENVELOPES AND PLACE A PIECE OF TAPE OVER THE NAMES ON THE FORMS. WRITE "PERSON X" ON THE TAPE—THIS IS THE "HIGH ABILITY" FORM IN CONDITIONS 1 & 2.)
I'll use this tape to cover the names and I'll simply label the forms "person X" so that we have a way to identify them. One of you will get the originals and one of you will get Xeroxed copies, but it shouldn't make any difference. The copies are nice and clear.
(PIN THE FORMS ON THE SUBJECTS' INFORMATION BOARDS. RETURN TO THE EXPERIMENTER'S TABLE AND WITHDRAW TWO FORMS FROM THE OTHER ENVELOPE. AGAIN, COVER THE NAMES WITH TAPE. WRITE "PERSON Y" ON THE TAPE—THIS IS THE "LOW ABILITY" FORM IN CONDITIONS 1 & 2.)
I'll label these forms "person Y" so that we can differentiate them from the other forms.
(PIN THE FORMS ON THE INFORMATION BOARDS. AFTER ABOUT TWO MINUTES:)
As we discussed earlier, in our modern, technological world it is often the case that team members who must interact electronically only get to know very little about each other. Nevertheless, a member of such a team must evaluate the capabilities of other team members so that decisions can be made. We are interested in determining the extent to which one person can form valid judgments about another on the basis of limited information. Therefore, even though I cannot allow you to see each other or to talk to each other, it will probably be useful for you

to know something about each other, so I will let you see each other's attitude survey. Of course, I will have to cover the names again to protect your identity. In this case, I'll just label the forms "partner."

(COVER THE NAMES WITH TAPE, LABEL THEM "PARTNER," AND PIN ONE FORM ON EACH SUBJECT'S INFORMATION BOARD. AFTER ABOUT TWO MINUTES:)

I have one more thing I'd like to do before we begin working on the slides. Since each pair of participants that helps us is really quite different from any other pair—for example, sometimes a pair seems very much alike and other times they are almost opposite kinds of persons, or almost every combination in between those extremes—it is useful for us to have some idea of your perceptions of each other. To help us get this information, I have a short questionnaire that I would like you to complete now that you have had a chance to look over the forms. Your responses to these items will be kept in strict confidence and will not be shown to your partner or to any other participant, so please answer all of the questions and answer them as honestly as you possibly can.

(AFTER THE QUESTIONNAIRES HAVE BEEN COMPLETED:)

I believe that we are ready to begin now. Let me quickly review your instructions. Please pay close attention. The task will consist of 25 pairs of patterns similar to the ones we looked at together a few minutes ago. Each slide presents an entirely new problem; no two slides are exactly alike, although they are, of course, somewhat similar. This means that each slide requires an independent judgment. Some of the problems are quite difficult, but in each case there is a distinct correct answer. Remember, there is no scheme to the answers. Don't hesitate to follow your intuitions or feelings if you are not sure of the correct answer.

Your task, again, is to select the top or bottom pattern that has the greater area of white. After I project a slide on the screen, I will give you about 5 seconds to view the problem and decide on your answer. I will then ask you to make your first choice. Do not press a button until I ask you to make a choice. Be sure to make the best possible first choice so that you are giving your partner your best advice. After you have both indicated your first choice, you will automatically

see each other's selection. I will then give you time to view your partner's opinion and reconsider your first choice before asking you to make your final choice. The lights can be confusing; your partner's choice is always indicated by the second row of lights on your console. Please remember that it is perfectly acceptable to use your partner's opinion. Some persons have told us, after the test, that they hesitated to use their partner's choice when they thought his answer was correct because it somehow seemed like cheating or copying. In this situation, we want you to use his advice if you think it is correct. We have found that persons with high contrast sensitivity ability consistently choose more correct answers than those with low ability. You must decide whether to use your partner's advice or ignore it. Just remember, your first choice is only a preliminary choice, a way to exchange information. It does not matter whether you and your partner agree or disagree on your first choice as long as you make the correct final choices. The team score will be determined by adding together all of the correct final choices that each of you makes. For example, if you each make 20 correct final choices, your team score will be 40. This means that each of you has an equal opportunity to contribute to the team score and each of you has equal responsibility for that score. Of course, in case of disagreement on first choice, the important task is to decide who is right. If the person with the correct first choice stays with his opinion and the person who was wrong changes his choice, the team score will be maximized.

Do you have any questions that you feel you must have answered before we begin the study? If you do, please raise your hand. I must ask you to remain silent during the study and to wait until I ask you to make a choice before pressing a response button.

O.K., I will turn on the projector and we will start.

TEST SEQUENCE:

(PROJECT A SLIDE AND ANNOUNCE:)

Problem number _____.

(AFTER THE SLIDE HAS BEEN ON FOR FIVE SECONDS ANNOUNCE:)

Please make your first choice now.

(SEVEN SECONDS AFTER THE SUBJECTS HAVE BOTH MADE A FIRST CHOICE, ANNOUNCE:)

Please make your final choice now.

(RECORD THE FINAL CHOICES—THE ASSISTANT EXPERIMENTER IN THE CONTROL ROOM WILL RECORD BOTH FIRST AND FINAL CHOICES AND THEN CLEAR THE CONSOLES. WHEN THE CONSOLES ARE CLEARED, THE EXPERIMENTER SHOWS THE NEXT SLIDE AND THE SEQUENCE IS REPEATED.)

(AFTER THE LAST TRIAL, SLIDE 25, PASS OUT THE POST-EXPERIMENT QUESTIONNAIRE AND ASK THE SUBJECTS TO COMPLETE IT. REMIND THE SUBJECTS THAT THE INFORMATION ON THE QUESTIONNAIRE WILL BE KEPT STRICTLY CONFIDENTIAL. WHEN THE SUBJECTS HAVE COMPLETED THE QUESTIONNAIRE, PLACE THE CURTAIN IN FRONT OF ONE OF THE SUBJECTS AND ESCORT THE OTHER SUBJECT TO THE ASSISTANT EXPERIMENTER, WHO WILL CONDUCT THE INTERVIEW AND DEBRIEFING. CONDUCT THE INTERVIEW AND DEBRIEFING WITH THE SUBJECT WHO REMAINS IN THE STUDY ROOM.)

APPENDIX C

ATTITUDE SURVEY

CIRCLE THE RESPONSE THAT IS CLOSEST TO YOUR OPINION

Printed Name_____ Grade_____ Sex_____

1. The United States should have a death penalty for certain crimes.	Strongly Agree	Moderately Agree	Slightly Agree	Slightly Disagree	Moderately Disagree	Strongly Disagree
2. Air pollution is becoming a more serious problem each year.	Strongly Agree	Moderately Agree	Slightly Agree	Slightly Disagree	Moderately Disagree	Strongly Disagree
3. An appreciation for classical music is a sign of intelligence.	Strongly Agree	Moderately Agree	Slightly Agree	Slightly Disagree	Moderately Disagree	Strongly Disagree
4. Life insurance is no longer necessary in today's welfare society.	Strongly Agree	Moderately Agree	Slightly Agree	Slightly Disagree	Moderately Disagree	Strongly Disagree
5. Minorities should be given priority in selection for schools & jobs to make up for past injustices & discrimination.	Strongly Agree	Moderately Agree	Slightly Agree	Slightly Disagree	Moderately Disagree	Strongly Disagree
6. Breakfast has been proved to be the most important meal of the day.	Strongly Agree	Moderately Agree	Slightly Agree	Slightly Disagree	Moderately Disagree	Strongly Disagree
7. Marijuana smoking should be legalized.	Strongly Agree	Moderately Agree	Slightly Agree	Slightly Disagree	Moderately Disagree	Strongly Disagree
8. College athletics does more harm than good.	Strongly Agree	Moderately Agree	Slightly Agree	Slightly Disagree	Moderately Disagree	Strongly Disagree

APPENDIX D

ISB EXPERIMENT LOG

Date/Time	Subject	Condition	Acceptability	P(S)	Total for Condition

APPENDIX E

INDIVIDUAL DATA RECORD

Subject_____ Date/Time_____ Condition___

Total No. Stay Responses_____ P(S)____ Acceptability_____

Trial	D or A	Initial Choice	Final Choice	Stay Response
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				

APPENDIX F

PRE-EXPERIMENT RELEASE FORM

LABORATORY FOR SOCIAL RESEARCH
Stanford University

I agree to participate in a study conducted under the auspices of the Laboratory for Social Research at Stanford University. I understand that this study will require me to complete some decision-making tasks and to participate with another person in a cooperative situation. I furthermore understand that I am free to terminate my participation in this study at any time if I so desire, and that if I am dissatisfied with any aspect of this study I may report grievances anonymously to the Sponsored Projects Office at Stanford University (497-2883).

Printed Name_____

Signature_____

Date_____

APPENDIX G

QUESTIONNAIRE 1

Printed Name_____

The information on this questionnaire is strictly confidential and will be used only by the social scientists conducting the study. The information will be used only as summary data without your name attached to the data in any way. Neither your partner nor any other participant will see your completed form. Please help us by expressing your feelings as honestly as possible.

PLEASE CHECK THE RESPONSE THAT IS CLOSEST TO YOUR OPINION.

1. Which person (or persons) seems to be most like you?

   ___ my partner ___ person "X" ___ person "Y"

2. Which person (or persons) seems to be least like you?

   ___ my partner ___ person "X" ___ person "Y"

3. Which person do you think has the most Contrast Sensitivity Ability?

   ___ myself ___my partner ___person "X" ___person "Y" ___don't know

4. Which person do you think has the least Contrast Sensitivity Ability?

   ___ myself ___my partner ___person "X" ___person "Y" ___don't know

5. If some other person got to know you and your partner very well, would that person most likely say:

   ___ "they are very similar kinds of persons."

   ___ "they are somewhat similar kinds of persons."

   ___ "they are slightly similar kinds of persons."

   ___ "they are slightly dissimilar kinds of persons."

   ___ "they are somewhat dissimilar kinds of persons."

   ___ "they are very dissimilar kinds of persons."

   ___ "I have no idea."

6. If I met my partner in a social situation, I have a feeling that I would probably:

   ___ tend to like him very much.

   ___ tend to like him somewhat.

   ___ tend to like him slightly.

   ___ tend to dislike him slightly.

   ___ tend to dislike him somewhat.

   ___ tend to dislike him very much.

   ___ I have no idea.

7. If some other person got to know you and person "X" very well, would that person most likely say:

___ "they are very similar kinds of persons."

___ "they are somewhat similar kinds of persons."

___ "they are slightly similar kinds of persons."

___ "they are slightly dissimilar kinds of persons."

___ "they are somewhat dissimilar kinds of persons."

___ "they are very dissimilar kinds of persons."

___ "I have no idea."

8. If I met person "X" in a social situation, I have a feeling that I would probably:

___ tend to like him very much.

___ tend to like him somewhat.

___ tend to like him slightly.

___ tend to dislike him slightly.

___ tend to dislike him somewhat.

___ tend to dislike him very much.

___ I have no idea.

9. If some other person got to know you and person "Y" very well, would that person most likely say:

___ "they are very similar kinds of persons."

___ "they are somewhat similar kinds of persons."

___ "they are slightly similar kinds of persons."

___ "they are slightly dissimilar kinds of persons."

___ "they are somewhat dissimilar kinds of persons."

___ "they are very dissimilar kinds of persons."

___ "I have no idea."

10. If I met person "Y" in a social situation, I have a feeling that I would probably:

___ tend to like him very much.

___ tend to like him somewhat.

___ tend to like him slightly.

___ tend to dislike him slightly.

___ tend to dislike him somewhat.

___ tend to dislike him very much.

___ I have no idea.

11. Which person do you think is probably quite high in Contrast Sensitivity Ability?

___ myself ___ my partner ___ neither ___ don't know

12. Which person do you think is probably quite low in Contrast Sensitivity Ability?

___ myself ___ my partner ___ neither ___ don't know

APPENDIX H

QUESTIONNAIRE 2

Printed Name_____

This information is strictly confidential and will be used only by the social scientists conducting the study. The information will only be used as summary data without your name attached. Neither your partner nor any other participant will see your completed questionnaire. It is important that you answer all of the questions and that you answer as honestly as possible.

Please put an X by the response which most nearly corresponds with your opinion.

1. How well do you think you performed at the task on your first choice?

   very well ___
   pretty well ___
   about average ___
   a little below average ___
   very poorly ___

2. How well do you think you performed at the task on your final choice?

   very well ___
   pretty well ___
   about average ___
   a little below average ___
   very poorly ___

3. How well do you think your <u>partner</u> performed at the task on his first choice?

   very well ___
   pretty well ___
   about average ___
   a little below average ___
   very poorly ___

4. Who do you think is most responsible for the team score?

   myself ___ my partner ___ about equal ___

5. Do you feel that it was more important for you to do well as an individual or as a team?

   much more important as a team ___

   a little more important as a team ___

   about the same ___

   a little more important as an individual ___

   much more important as an individual ___

6. How well do you <u>generally</u> do in test situations?

   very well ___

   pretty well ___

   about average ___

   a little below average ___

   very poorly ___

7. If you met your partner socially, do you think you would like him?

   yes, he seems to be the kind of person I like ___

   no, he doesn't seem to be the kind of person I like ___

8. How much Contrast Sensitivity Ability do you think you have compared to your partner?

   I have much more ability ___

   I have a little more ability ___

   We have about the same ability ___

   He has a little more ability ___

   He has much more ability ___

9. How well do you think your <u>team</u> scored?

   way above average ___

   a little above average ___

   about average ___

   a little below average ___

   way below average ___

10. How satisfied are you with your contribution to the test?

very satisfied ___

somewhat satisfied ___

neither satisfied nor dissatisfied ___

somewhat dissatisfied ___

very dissatisfied ___

11. With respect to the two examples you were given, did you think you were more like person "X" or "Y"?

person "X" ___ person "Y" ___ No idea ___

12. Who do you think is <u>highest</u> in Contrast Sensitivity Ability?

person "X" ___ person "Y"___ my partner ___

13. If you met him socially, who do you think you would like the most?

person "X" ___ person "Y" ___ my partner ___

14. How much Contrast Sensitivity Ability do you think you have compared to person "X"?

I have much more ability ___

I have a little more ability ___

We have about the same ability ___

He has a little more ability ___

He has much more ability ___

15. How much Contrast Sensitivity Ability do you think you have compared to person "Y"?

I have much more ability ___

I have a little more ability ___

We have about the same ability ___

He has a little more ability ___

He has much more ability___

APPENDIX I

INTERVIEW SCHEDULE

The interview is conducted to determine whether or not the data obtained from this subject should be excluded from the data analysis because the subject failed to satisfy the predetermined conditions of the experiment. The interview schedule is only a guide; the interviewer must skillfully probe whenever necessary to obtain sufficient information upon which to base a decision with respect to the criteria for exclusion of subjects. Remember, the burden of proof is emphatically upon the interviewer to show unequivocally why the subject should be excluded; otherwise, all data will be included in the analysis.

There are no right or wrong answers to these questions, but it is very important for purposes of our study that you answer these questions as truthfully as you possibly can—we are interested in how you <u>feel</u> about certain aspects of the study you have just completed. Your answers will be kept in strict confidence by the social scientists conducting this study. No information that you provide will later be associated with you as an individual.

1. Have you ever participated in a study like this before today?
   If yes, please describe the study.

   Have you ever read or been told about a study like this?
   If yes, how similar was it? (Did it include deceptions?)
   Did your knowledge of such a study affect your behavior?

   Have any of your friends participated in this study?
   If yes, what did they tell you about it?

   (Probe to determine behavioral consequences of prior experience or knowledge. Did it affect behavior? How? To what extent?)

2. Have you ever met your partner before?
   If yes, how well do you know him?

   (Probe to determine behavioral consequences; e.g., does he usually do well on tests? Is he a friend?)

3. Why do you think some persons are high in Contrast Sensitivity Ability and some persons are low?

   (The intent of this question is to determine whether or not subject really believes such an ability exists; probe as necessary.)

4. What impressions did you form about your partner?

   Did you get any clue about what your partner is like from anything you heard him say during the exercise?

   What information caused you to form these impressions?

   (Probe for the evidence of unintended diffuse status characteristics.)

5. Was it important to you that your team do well on the task?

   (Probe to determine whether or not task was valued and subject was collectively oriented.)

6. How did you decide on the alternatives you chose for your first choices?

   How did you make your final choices?

   Did you develop some sort of strategy for making choices?

   Explain.

7. Did you ever think that your partner made a better first choice than you did?

   If <u>yes</u>, did you ever change your answer in those situations so that your final choice was the same as your partner's first choice?

   If <u>no</u>, if for some reason you had decided that your partner made a better first choice, would you have changed your final decision?

   (Probe to see if the subject would have used anybody's advice or if he was determined to use his own opinion only.)

8. Do you think that you and your partner are the same kind of person or really quite different?

   (Probe to see if attitude dissimilarity was noticed.)

9. Did you and your partner agree on most of your first choices?

   How did you go about resolving your disagreements?

   Did you get a feeling that one or the other of you was most likely correct when you disagreed?

   (Probe to determine whether or not some unforeseen diffuse status characteristic may have become activated.)

How did you decide whether you or your partner was most likely correct?

Did it help you to see your partner's first choice?

Do you think it helped your partner to see your first choice?

Do you think the team score was improved by seeing each other's first choice?

10. How did you react to disagreements; did they bother you?

(Probe for suspicion because of the high proportion of disagreements.)

11. In a very general sense, do you think you are more like person "X" or person "Y"? Why?

Who had the higher Contrast Sensitivity Ability, "X" or "Y"?

(In Conditions 3 and 4, ask the subject who he would say had the higher ability if he had to guess, "X" or "Y"? Why?)

Did the information provided about "X" and "Y" help you in any way?

(Probe—Did the information provided about "X" and "Y" help the subject decide whether he expected to perform poorly or well?)

Did the information provided about "X" and "Y" give you any clue about how well you could expect to perform at the task relative to your partner?

(Probe to see if subject consciously made an assumption that attitude similarity implies similarity in Contrast Sensitivity.)

12. Had you ever heard of Contrast Sensitivity Ability before you came here today?

How much Contrast Sensitivity Ability do you think you had before you came here today?

Do you think your ability changed as a result of this exercise?

13. Please tell me what you think the purpose of today's study was.

(Probe for suspicion—try to determine whether suspicion came during the study or only during the interview. If suspicion is indicated, what were the behavioral consequences?)

14. Since it is likely that one of you was better than the other at performing the task, who do you think contributed the most to the overall team score? In other words, even if you both had the same number of correct final choices, it is possible that one of you made those correct final choices because of the guidance from the other. Considering this possibility, divide the contribution into two percentages adding to 100%.

self _____% partner _____%

15. Why do you think you and your partner disagreed so often?

    (Probe for suspicion as necessary.)

16. Would it bother you very much if you found out that you are low in Contrast Sensitivity Ability?

    (Probe to find out if the manipulation is threatening to the subject's self-esteem. Particularly important in Condition 2—LH manipulation.)

17. If the subject seems suspicious:

    When did the suspicion first occur?

    How strong was the suspicion?

    Was the suspicion stable or did it come and go?

    What were the behavioral consequences of the suspicion?

    Would the subject have acted differently in any way if he were not suspicious? Explain.

Debrief the subject by describing the experiment in sufficient detail to:

1. correct all false information given to the subject as part of the experimental manipulations;
2. provide a general understanding of the purposes of the study and the theory being tested in sufficient detail to satisfy the interest of the subject;
3. answer any questions the subject may have about the experience.

Ask the subject to sign the final data release form. Request that the subject refrain from discussing the experiment with anyone until after the data-gathering phase is completed. Thank the subject for his cooperation and assistance, pay the subject for his participation, and have him sign a receipt for the cash.

<u>BEFORE RELEASING THE SUBJECT</u>:

BE SURE YOU HAVE SUFFICIENT INFORMATION TO COMPLETE THE INTERVIEW ABSTRACT AND MAKE AN UNEQUIVOCAL ASSESSMENT OF THE SUBJECT WITH RESPECT TO THE CRITERIA FOR EXCLUSION OF SUBJECTS.

BE SURE THAT THE SUBJECT HAS BEEN ADEQUATELY DEBRIEFED—HE MUST UNDERSTAND THE DECEPTIONS THAT WERE USED AND THE REASONS FOR USING THEM.

BE SURE THAT YOU HAVE SIGNED COPIES OF BOTH RELEASE FORMS. BE SURE THAT SUBJECT HAS BEEN PAID AND HAS SIGNED A RECEIPT FOR PAYMENT.

APPENDIX J

POST-EXPERIMENT RELEASE FORM

LABORATORY FOR SOCIAL RESEARCH

Stanford University

The study I have participated in today has been fully explained. I understand:

(1) that the true nature of the study involves the effect of perceived attitude similarity/dissimilarity on the formation of expectation states,

(2) the deceptions involved in this study and the reasons for employing such deceptions, and

(3) that my anonymity will be preserved in any public presentation of the data obtained.

I give my consent for the information gathered in this study to be used in the analysis and presentation of results.

Signature_____

Printed Name_____

Date_____

APPENDIX K

DEBRIEFING OUTLINE

This is a brief overview of the major points which must be covered during the debriefing. It is very important that the subject is made aware of every deception that was employed during the study and the reasons for using the deceptions. Try to make the subject feel at ease and encourage him to interrupt and ask questions.

1. Explain the true nature of the study.
   a. How people make decisions when they disagree.
   b. Interpersonal Similarity Bonds based upon attitude similarity-dissimilarity.
   c. The role of affect structures.
2. Explain each deception and why it was necessary to the study.
   a. Manipulations to make him believe his partner was a stranger (e.g., more than one study being conducted at the same time).
      Reason: diffuse and specific status characteristics must be controlled.
   b. Contrast Sensitivity is an ambiguous task.
      Reason: requirement for no prior expectations and no obvious right answer.
   c. Attitude Surveys are manipulated.
      Reason: requirement for attitude similarity-dissimilarity.
   d. Referents are fictitious.
      Reason: requirement for attitude similarity-dissimilarity.
   e. Disagreements are controlled by the ICOM.
      Reason: requirement for the same number of critical trials, disagreements, for each subject.
3. Explain that the study will not be completed before _____ and that it is crucial that other potential participants do not know about the experimental procedures. Ask the subject to assist you by refraining from talking about his experience as much as possible. If asked about the study, he should say he looked at some slides and made decisions with a partner and, if appropriate, that it was a worthwhile experience.
4. Ask if the subject has any additional questions. Make sure that you have a signed post-experiment release form and sufficient data to complete the interview abstract. Thank the subject for his participation.

APPENDIX L

CRITERIA FOR EXCLUSION OF SUBJECTS

Interview Abstract

Condition_____

Classification_____

Subject's Name_____ Date_____

Dyad Number_____ Interviewer_____ Time_____

I. SUSPICION

A. Did the subject entertain belief in at least one of the following?

1. YES (Circle the appropriate response)

a. The task was false or meaningless.

b. There is no such thing as Contrast Sensitivity Ability.

c. The stated purposes of the study were not its real purposes.

d. The person on the other side of the curtain (partner) was not the person described.

e. The attitudes presented were not the partner's real attitudes.

f. Person X and Person Y were invented for the experiment.

g. Person X and Person Y's attitudes were rigged.

h. The disagreements were rigged.

i. The scoring standards were rigged.

j. Other _____

2. NO (Subject cannot be classified as suspicious.)

B. Do any of the following provide evidence of the subject's suspicion?

1. YES (Circle the appropriate response.)

With respect to behavioral consequences:

a. The subject actually tested his hypothesis by behavior consonant with it; e.g., the subject made five choices in a row without looking at the slides, to determine if the machine was rigged.

b. The subject was convinced his hypothesis was correct and, as a result of his hypothesis, behaved in such a way that the conditions of the experiment were violated.

c. The subject was convinced of his hypothesis early in the experiment and remained convinced throughout the experiment, and there is no evidence that he did not behave in accordance with his hypothesis.

d. Other_____

Or with respect to strength:

e. The belief was stated with conviction, early in the interview.

f. The belief was mentioned frequently and consistently during the interview.

g. Information about the belief was volunteered with little or no questioning.

h. The belief was based on prior experience in a deception study.

i. The belief was based on prior knowledge about deception studies.

j. The belief was based on prior information from someone else about the deception in this study.

k. Other_____

2. NO (Subject cannot be classified as suspicious.)

C. In your best judgment, was the subject suspicious? YES NO

(Circle YES only if responses to A and B were also YES.) NOT SURE

If NOT SURE, explain:_____

II. VIOLATION OF CONDITIONS

Task Orientation

A. Did the subject's behavior indicate that he did not attempt or did not believe it was possible for him to achieve correct answers to the problems?

1. YES (Circle the appropriate response.)

a. The subject did not look at the slides.

b. The subject was intoxicated, under the influence of drugs, etc.

c. The subject paid little or no attention to the experimenters.

d. The subject claimed in the interview not to have tried to solve the problems.

e. Other_____

AND

a. The subject's unusual behavior is consistent.

b. The subject's unusual behavior is exceptionally extreme.

c. The subject's claim of non-task orientation was volunteered early in the interview and was mentioned frequently and consistently throughout the interview.

d. Other_____

2. NO (Subject cannot be VC on the basis of non-task orientation.)

Collective Orientation

B. Was the subject concerned more about his own individual performance than about the performance of the team?

1. YES (Circle the appropriate response.)

a. The subject was more concerned about his own score than about the team score.

b. The subject ignored his partner's choices.

c. The subject did not recognize that he and his partner were a team.

d. Other_____

2. NO (Subject cannot be VC on the basis of person orientation.)

C. Do any of the following provide evidence of the subject's person orientation?

1. YES (Circle the appropriate responses.)

With respect to behavioral consequences:

a. The subject refused to look at his partner's choices (e.g., he covered the feedback lights with his hand.)

b. The subject <u>never</u> considered his partner's choices.

c. The subject was concerned <u>only</u> about his own score.

d. The subject believed that he and his partner were in competition with each other.

e. Other_____

With respect to strength:

f. The subject volunteered information about his person orientation with little or no probing or questioning.

g. The subject mentioned his claim frequently and consistently during the interview.

h. The subject mentioned his claim with conviction and early in the interview.

i. Other_____

2. NO (Subject cannot be VC on the basis of person orientation.)

Initial Status Equality

D. Were there any extraneous bases of differentiation between the subject and his partner?

1. YES (Circle the appropriate responses.)

a. The subject had prior acquaintance with his partner.

b. The subject had prior association with his partner.

c. The subject was a member of a visible minority group.

d. The subject had a physical disability which required deferential treatment by the experimenter for him to be able to participate in the study.

e. Other_____

f. The subject was aware that his partner is a member of a visible minority group.

g. The subject was aware that his partner is physically handicapped.

h. The subject believed that he possessed a different state of some diffuse status characteristic from his partner.

AND

a. The subject formed definite performance expectations for his partner on the basis of prior acquaintance.

b. The subject formed definite performance expectations for his partner on the basis of prior association.

c. The presence of any of conditions "c" through "h", above, resulted in definite behavioral consequences.

d. Other_____

2. NO (Subject cannot be VC on the basis of initial status inequality.)

Understanding of Experimental Conditions

E. Did the subject misunderstand some portion of the procedures, scoring, standards, etc.?

1. YES (Circle the appropriate responses.)

a. The subject misunderstood some portion of the procedures.

b. The subject misunderstood the scoring arrangements.

c. The subject misunderstood the scoring standards.

d. The subject misunderstood the stated dissociation of Contrast Sensitivity from other abilities (e.g., mathematics).

e. Other_____

2. NO (Subject cannot be VC on basis of misunderstanding.)

F. Did the subject behave in the experimental situation differently than he would have had he not misunderstood this information?

1. YES (Circle the appropriate responses.)

a. Because of the misunderstanding, the subject's performance expectations were different than they would have been had he not misunderstood (e.g., subject thought that high score meant low ability).

b. The subject performed a task different from the one presented (e.g., looked for the pattern with the greater area of black instead of white).

c. Other_____

2. NO (Subject cannot be VC on the basis of misunderstanding.)

Acceptance of Experimental Manipulations

G. Did the subject entertain the belief that at least one of the experimental manipulations did not apply to him?

1. YES (Circle the appropriate responses.)

a. The subject did not notice that there was a difference in expressed attitudes.

b. The subject understood the stated dissociation of Contrast Sensitivity from other abilities but did not accept or believe it (i.e., specifically associated the instrumental ability with some other ability).

c. Other_____

2. NO (Subject cannot be VC on basis of non-acceptance.)

H. Was the subject's belief strongly held?

1. YES (Circle the appropriate responses.)

a. Non-acceptance was stated with conviction and early in the interview.

b. Non-acceptance was mentioned frequently and consistently during the interview.

c. Information about the non-acceptance was volunteered with little or no questioning.

d. Other_____

2. NO (Subject cannot be VC on basis of non-acceptance.)

III. CLASSIFICATION OF SUBJECT

On the basis of the information above I would classify this subject as:

OK S VC Initials_____

APPENDIX M

ONE-STEP TRANSITION MATRICES

1 = stay response; 0 = change response. For example, cell 1,1 indicates the proportion of stay responses at trial n+1 given that the subject made a stay response at trial n. Numbers in parentheses indicate the expected proportion if trials are independent.

Condition 1

n \ n+1	1	0
1	.689(.716)	.311(.284)
0	.779(.716)	.221(.284)

$\chi^2 = 3.12$

Condition 2

n \ n+1	1	0
1	.418(.455)	.582(.545)
0	.486(.455)	.514(.545)

$\chi^2 = 1.76$

Condition 3

n \ n+1	1	0
1	.592(.634)	.408(.366)
0	.707(.634)	.293(.366)

$\chi^2 = 5.08$

Condition 4

n \ n+1	1	0
1	.616(.624)	.384(.376)
0	.636(.624)	.364(.376)

$\chi^2 = 0.16$

H_o = n and n+1 are independent

H_1 = n+1 depends upon n

Reject the null hypothesis of independence at .05 level if $\chi^2 \geq 3.84$. The data show that we cannot reject the null hypothesis of independence for Conditions 1, 2, and 4 at the .05 level. This test is obviously not proof of even simple one-step independence; however, it does give some indication of the caution that must be exhibited when assuming an independent trials process when evaluating expected variances for blocks of trials. Clearly, the assumption of independence does not hold for Condition 3 and it is possibly in question for Condition 1. (See Goodman, 1962, and Moore, 1966, for a discussion of one-step transition matrices.)

APPENDIX N

P(S) AND VARIANCES BY QUARTERS

TABLE N-1

MEAN PROPORTION OF STAY RESPONSES
AGGREGATED FOR EACH BLOCK OF FIVE CRITICAL TRIALS
BY ABILITY INFORMATION CONDITIONS AND BY ATTITUDE ONLY CONDITIONS

Condition	No. of Subjects	Mean P(S) Aggregated for Each Quarter of Critical Trials 1	2	3	4
C1 (HL)	20	.70	.63	.75	.76
C2 (LH)	20	.48	.38	.50	.42
C3 (dissimilar)	20	.64	.63	.62	.67
C4 (similar)	20	.59	.66	.65	.59

TABLE N-2

OBSERVED AND EXPECTED VARIANCES*
ABOUT THE MEAN NUMBER OF STAY RESPONSES
AGGREGATED FOR EACH QUARTER OF THE CRITICAL TRIALS
BY ABILITY INFORMATION CONDITIONS AND BY ATTITUDE ONLY CONDITIONS

Condition	No. of Subjects	Variances by Quarters 1	2	3	4
C1 (HL)	20	.89(1.05)	1.51(1.17)	.52 (.94)	1.22 (.91)
C2 (LH)	20	.99(1.25)	1.67(1.18)	1.21(1.25)	1.36(1.22)
C3 (dissimilar)	20	.59(1.15)	.66(1.17)	1.67(1.18)	1.82(1.11)**
C4 (similar)	20	1.74(1.21)	.75(1.12)	.83(1.14)	1.00(1.21)

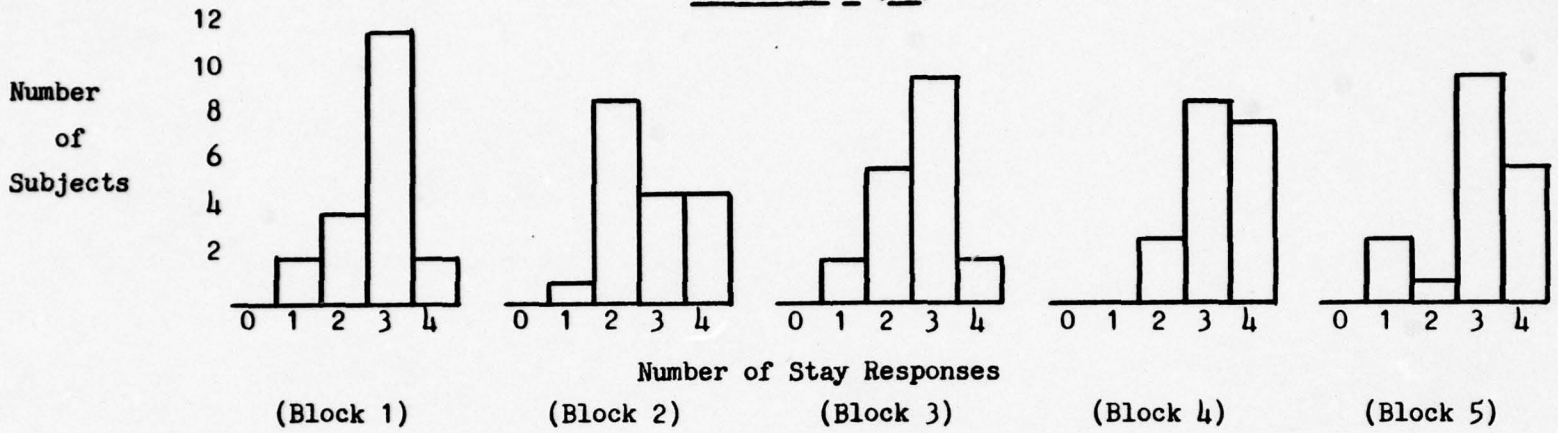
*Expected variances are shown in parentheses.

**Condition 3 does not satisfy the assumption of an independent trials process required to calculate expected variances. All interpretations concerning expected variances should be made with caution. See Appendix M.

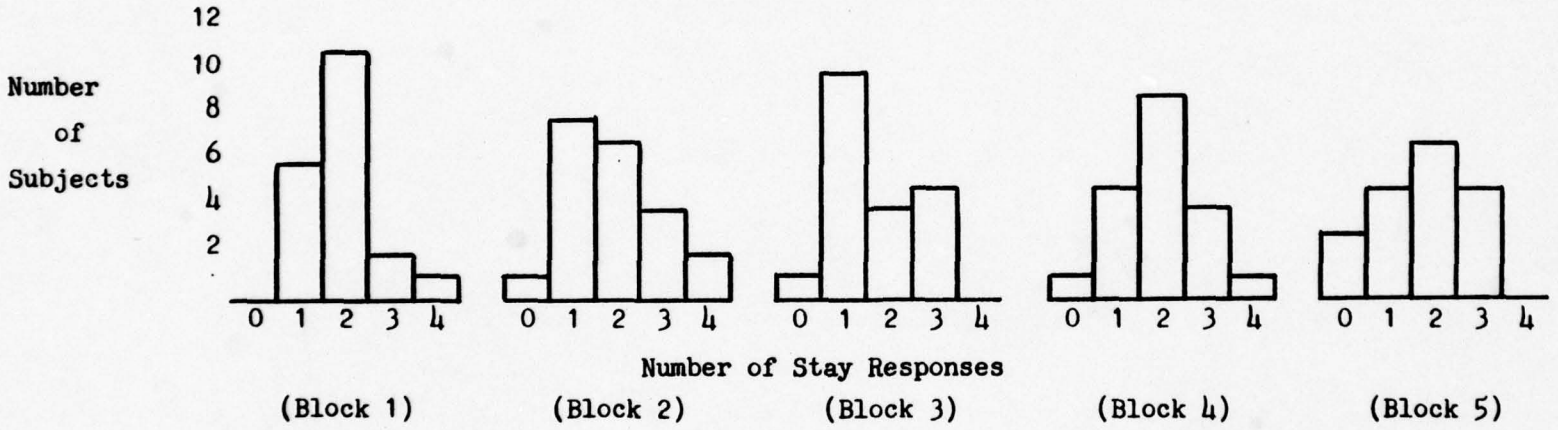
APPENDIX O (p.1)

Distributions of Stay Responses for Each Block of Four Critical Trials for Each Experimental Condition

CONDITION 1 (HL)



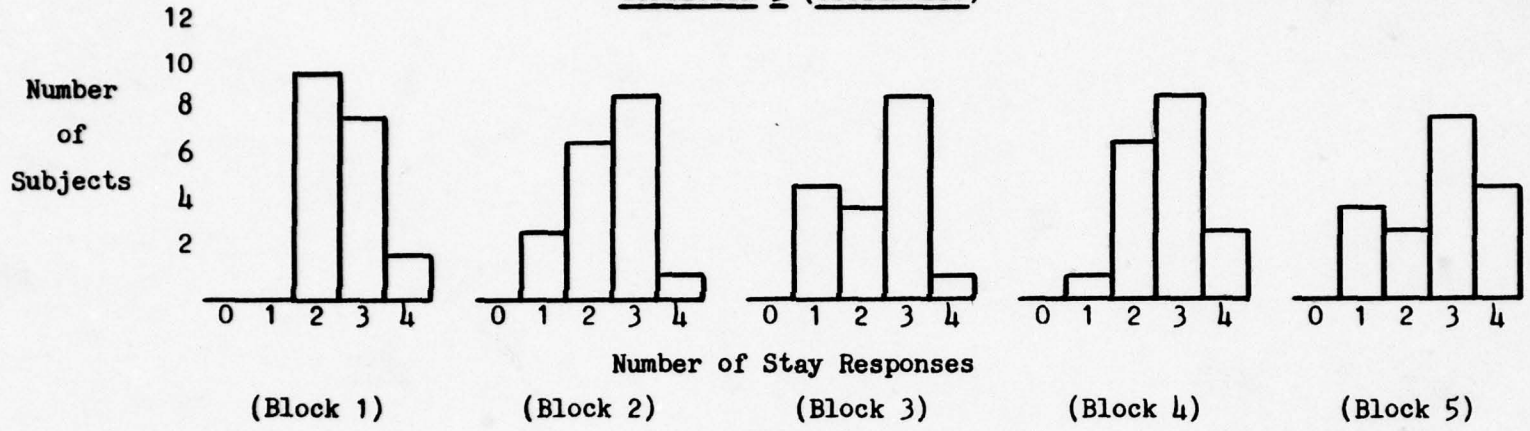
CONDITION 2 (LH)



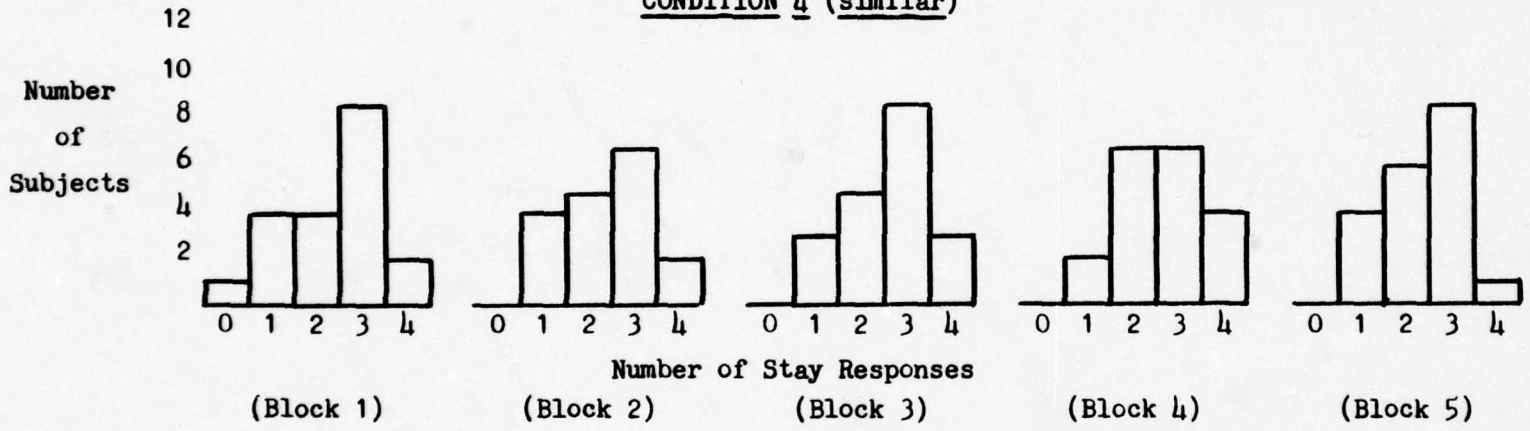
APPENDIX O (p.2)

Distributions of Stay Responses for Each Block of Four Critical Trials for Each Experimental Condition

CONDITION 3 (dissimilar)



CONDITION 4 (similar)



APPENDIX P

SUPPLEMENTAL LITERATURE REVIEW

This appendix is intended to provide additional background and supplemental information to the interested reader. In the following sections, we will review some additional topics in the broad area of social comparison in an attempt to present collateral material which led to the discovery of conditions under which interpersonal similarity/dissimilarity bonds are formed. Because this was an exploratory effort attempting to generate ideas that might lead to a fruitful avenue of approach to the solution of our problem, we will briefly review a wide range of topics, pausing only rarely to delve in depth in any single area. However, we are also interested in arguing for the necessity of a theoretically based, cumulative research tradition which will be a secondary theme running throughout this review.

1. Social Comparison—An Introduction

As Suls (1977) notes in the introduction to his overview of social comparison theory and research, "the question of how people come to understand themselves has always been asked" (p. 1). He reminds us that even the classic Greek philosophers were interested in the subject of social comparison; for example, "Aristotle, in his Nichomachean Ethics, interpreted self-evaluation as a social process in which people compared themselves with other people" (Suls, 1977, p. 1). In this section of the thesis, we will survey some of the most relevant literature in the general areas of social comparison and attraction in search of information that may guide our inquiry into the conditions under which an individual may come to attribute to oneself a perceived task ability, either positive or negative, which is possessed by some other.

As early as the turn of the century, Charles Cooley, in his 1902 work entitled Human Nature and the Social Order, "tried to specify the intimate interdependence of 'person' and 'group' by exploring the personality as continuing adaptation to the evaluations of others—the

'looking-glass self'" (Boskoff, 1972, p. 18). Cooley (1902) was careful to note that the metaphor must be used with caution when he stated that "the comparison with a looking-glass hardly suggests the second element, the imagined judgment, which is quite essential" (p. 152). The crucial role of social comparison in human affairs was further emphasized by George H. Mead when he wrote in his classic 1934 treatise on Mind, Self and Society:

> Selves can only exist in definite relationships to other selves. No hard-and-fast line can be drawn between our own selves and the selves of others, since our own selves exist and enter as such into our experience only insofar as the selves of others exist and enter as such into our experience also. (p. 164)

Mead's work soon fostered empirical efforts to verify his propositions (for a review, see Suls, 1977); however, these early works on social comparison are largely of historical interest and not directly useful for our purposes. Finally, in 1954, "social comparison theory marked an important departure from previous work" (Suls, 1977, p. 2) with the publication of Leon Festinger's attempt to provide a formal, empirically based theory which extended social comparison "to the appraisal and evaluation of abilities as well as opinions" (Festinger, 1954, p. 117).

Festinger bases his entire formulation on the now familiar assumption that human beings have a basic drive to evaluate their opinions and abilities by comparison with other persons (Hypothesis II, p. 118). The third hypothesis, often referred to as the similarity hypothesis, with its related corollaries and derivations, is the hypothesis which has generated so much research and controversy. Because of the importance of Hypothesis III and Corollary IIIA to the research about to be discussed, it is useful to quote Festinger (1954) directly:

> Hypothesis III. The tendency to compare oneself with some other specific person decreases as the difference between his opinion or ability and one's own increases. (p. 120)
>
> Corollary IIIA. Given a range of possible persons for comparison someone close to one's own ability or opinion will be chosen for comparison. (p. 121)

The issue of similarity was to become a matter of heated controversy in the social comparison literature. As Suls (1977) notes, the notion of similar others implied by Hypothesis III and its corollaries

and derivations refers to "similarity on the dimension that is under evaluation" (p. 5). However, he also reminds us that Festinger also used other notions of similarity in his theory. For example, in Hypothesis VIII, Festinger (1954) wrote, "if persons who are very divergent from one's opinion or ability are perceived as different from oneself on attributes consistent with the divergence, the tendency to narrow the range of comparability becomes stronger" (p. 133). Suls (1977) argues that "Festinger appears to be suggesting that other persons who are similar on attributes related to the ability or opinion to be evaluated will serve well for comparison" (p. 5). The controversy over the meaning and implications of the issue of similarity by no means ends here, and much of the review of social comparison literature will relate to this crucial issue.

In his discussion of the rationale for the similarity hypothesis, Festinger argues that a beginning chess player is not likely to compare his/her play to that of a recognized master. However, in rebuttal to the argument, using Festinger's own example of a novice chess player, Latane (1966) suggests that the novice may indeed want to compare him/herself to a chess master in order to gain some perspective of his/her ability in relation to the chess world per se (p. 2). A major body of research has ensued from this issue, and central to this literature is the series of studies which may be broadly categorized as social comparison experiments dealing with the range of potential comparison scores as a major focus of concern. These studies do not directly address the specific comparison problem of central concern to this thesis; the findings are worthy of brief review because they represent a crucial development in the evolution of social comparison theory.

2. The Range-seeking Issue

In a study conducted in 1962, Wheeler (1966) demonstrated that subjects, knowing the general range of scores on a personality test, when given the opportunity to see another person's score will choose another with a similar rather than dissimilar score, and such a choice will be overwhelmingly upward. This latter finding is suggested as support for Festinger's (1954) Hypothesis IV, which predicts a unidirectional drive

upward in the case where abilities are being socially evaluated. However, in another study conducted as part of a dissertation in 1962 by Hakmiller (1966), the results cast a doubt on the generality of this finding.

Hakmiller (1966) manipulated subjects in groups of six so that each subject believed she ranked fifth in the group on a trait that was negatively valued. There were two conditions in this experiment; in one condition the trait was highly negatively evaluated (High-Threat) and in the other condition the negativity of the trait was lessened (Low-Threat). Given the opportunity to see one additional score, the number one ranked score, the person exhibiting the most of the negatively evaluated trait, was clearly the most frequently chosen in the High-Threat condition. The analysis of the results demonstrated that there was more of a tendency for comparison with the most dissimilar other in the High-Threat condition than in the Low-Threat condition. Hakmiller suggested a defensive interpretation of the results, arguing that "this may be interpreted as reflecting the function of comparison in this situation of sustaining or reasserting the favorability of the individual's self-regard" (p. 3). In other words, Hakmiller is suggesting that subjects will choose to compare downward if they feel threatened by a negatively valued trait.

Thornton and Arrowood (1966) attempted to create conditions with both positively and negatively valued traits in the same experiment; however, as Wheeler et al. (1969) report, a methodological flaw caused the results to be ambiguous. Nevertheless, Thornton and Arrowood (1966) introduced the interesting notion that "the social comparison of abilities serves two ends—one self-evaluation and the other self-enhancement" (p. 46). They argue that the two ends may be satisfied by different comparisons—self-evaluation by "comparison with a 'positive instance' of the attribute in question" (in other words, a definitive example of the attribute, whether that example is negatively or positively valued) and self-enhancement by "comparison with someone better off than oneself" (Thornton & Arrowood, 1966, p. 46).

The study conducted by Wheeler, Shaver, Jones, Goethals, Cooper, Robinson, Gruder, and Butzine (1969) attempted to clarify the mounting

confusion. In this study, subjects in groups of nine were tested and provided feedback of their own score on a "new" personality scale. When receiving feedback, each subject was manipulated to believe that his/her score was the median, fifth-ranked, score for the group. The trait that was ostensibly being measured was defined so that it would be positively (POS) valued for some of the subjects (intellectual flexibility) and negatively (NEG) valued for the others (intellectual rigidity). In addition, the subjects were factored so that some of the subjects were provided with the approximate range of scores (R) for the group and others were not given any indication of the range (NR).

After receiving their own score, subjects were allowed to choose one other score they would like to see (SCORE condition) or to choose the person, based upon relative rank order within the group, with whom they would like to interact during the next task (PERSON condition). Subjects were also manipulated to make a second choice in each condition; however, as Arrowood and Friend (1969) point out, there is a methodological flaw in the manipulation such that "second choice means '<u>instead of</u> my first choice' to Person subjects but '<u>in addition to</u> my first choice' to Score subjects" (p. 238). The implication of this flaw becomes crucial to the question of whether individuals are attempting to determine the range as suggested by Wheeler et al. (1969) or the alternative conceptualization of a positive instance as suggested first by Thornton and Arrowood (1966); however, the flaw is not crucial to the other reported findings.

The authors suggest that the results of the study support their predictions that: (1) subjects in the NR condition will first attempt to determine the range by choosing the highest score; (2) subjects in the range condition will choose a score in the positively valued direction—those subjects in the POS condition will choose a higher score, those in the NEG condition will choose a lower score; and (3) given the conditions described in (2), the most frequently chosen score will be the most similar other in the positively valued direction (p. 219).

Arrowood and Friend (1969) suggest that the Wheeler et al. (1969) data may be interpreted with an alternative conceptualization. Building upon concepts introduced in the earlier Thornton and Arrowood (1966)

study, they argue that persons attempting to determine their abilities are interested in answering the following questions: (1) "How much of this characteristic do I have?" and (2) "How far am I from the good guys?" (Arrowood & Friend, 1969, p. 238). Arrowood and Friend propose that the first question "can be answered by comparison with a positive instance" and the second "can be answered with the desirable goal" (p. 238).

With the publication in 1971 of his study replicating the Wheeler et al. (1969) experiment, Gruder joined the fray on the side of those positing a range-seeking hypothesis. Gruder carefully analyzed his data using techniques like those proposed by Wheeler et al. and Arrowood and Friend in order to compare the alternative explanations. Gruder found good support for the Wheeler et al. interpretation and concluded that "these findings indicate that, controlling for desirability and providing the range of scores, subjects were not more likely to choose a score which was a positive instance than one which was a negative instance" (p. 479). Looking at Arrowood and Friend's reanalysis of the Wheeler et al. study, Gruder (1971) argues that their "claim for support of the positive instance hypothesis is based on a difference which also may be accounted for by the range-seeking hypothesis" (p. 479).

Gruder also failed to find support for the desirability hypothesis (persons prefer a score which indicates possession of a positively valued attribute); however, he noted that the replication of the Wheeler et al. (1969) experiment was not the best possible test of Arrowood and Friend's alternative explanation because it required that the subject perceive equal desirability of the highest score in the positive condition and the lowest score in the negative condition. In order to further clarify the issue, Gruder (1971) conducted a second experiment designed to overcome these difficulties. In this experiment, for one group, only the lowest score was the positive instance (the score assigned to the subject exhibiting the most of the measured trait). In one condition the low score was desirable; in the other condition the low score was undesirable. For the other group, both extreme scores were positive instances (in the Wheeler et al. study, only the highest scores were positive instances.) All subjects were in the no-range condition.

The results of this experiment showed consistent support for the range-seeking hypothesis; however, in those instances where both extreme scores were positive instances, the desirability hypothesis was clearly supported when the high score was desirable and the low score was undesirable. When the low score was most desirable and the high score was least desirable (again, both were positive instances), the difference between the number choosing each of the extreme scores was nonsignificant; however, the low score was chosen more often than predicted by chance expectation, but the high score was not. Thus, Gruder (1971) concludes:

> It was apparent from the results of the present experiments that none of the three hypotheses alone—range-seeking, positive instance, or desirability—was sufficient to account for the observed social comparison choices under NR conditions. The positive instance and desirability hypotheses were consistent with some findings, but not with others. (p. 485)

Before discussing the implications of these findings for our specific issue, this branch of social comparison theory will be used to attempt to specifically support our argument in favor of a deliberate, highly controlled extension of Expectation States Theories.

3. The Need for a Cumulative Research Strategy

The usefulness of social comparison theory is directly related to the ability of that theory to explain and/or predict the referents chosen in a situation involving social comparison. The theory as formulated by Festinger (1954) consists of nine distinct hypotheses with associated corollaries and derivations. The purpose of this brief exposition is to suggest some possible reasons why this theory has failed to provide a more useful paradigm on which to build a cumulative body of knowledge, and to use it as an illustrative example in support of our argument for a scientifically based, cumulative research tradition.

By way of example, the argument will focus on Corollary IIIA of the theory. As stated, in the absence of any qualifying scope conditions, the corollary predicts that a person who wishes to compare some ability will choose as a referent some other person with similar ability. Through implication by omission, the theory suggests that such comparison

is independent of the situation and the characteristics of the potential referents, as long as a range of possible persons for comparison is available and one of those persons is "similar" in ability.

Clearly, there is a need for a more carefully formulated "theory" of social comparison processes. The terms must be defined and the scope conditions must be clearly delimited. For example, if the group of potential referents exhibit a range of diffuse status characteristics, will the person seeking to compare abilities prioritize his/her referents on the basis of similarity of ability, as suggested by Festinger, or will the person first seek out another who is "similar" on the basis of the perceived diffuse status characteristic? Other situational variables such as group membership might also make a significant difference. Consider the situation in which groups of executives from several different companies come together for a management training course. If tested on some specific skill, is an executive likely to compare his/her ability to someone with a score similar to his/her score, or will the first priority be to choose a referent from a specific company, one's own or a prime competitor?

Given the same participants, will the nature of the referent choice remain stable from situation to situation, or will extra-personal situational variables also affect the choice of a comparison other? For example, the nature of the task itself may influence the choice of a referent. Thus, a person may evaluate his/her ability by comparison with different persons depending upon whether the task involves competition or cooperation and whether the competition or cooperation is intra- or inter-group.

The point of the specific issues raised above is not whether executives tend to compare their ability on a specific task to executives from their own company or from competitor companies, or any other such explicit or categorical question. The examples are cited specifically to illustrate the fact that such issues may be problematic. Experiments such as those conducted by Hakmiller (1966), Wheeler et al. (1969), and Gruder (1971) clearly demonstrate that Corollary IIIA is not true in all situations. Because of the lack of clear definitions and definitive scope conditions, it is only possible to conclude that Corollary IIIA

is either not true or that it is true in some undetermined, specific situations. Such a conclusion is not very useful for the development of a cumulative body of knowledge concerning social comparison processes.

Cohen, Berger, and Zelditch (1972) suggest that "scientifically (and, hopefully, practically) useful general knowledge soundly buttressed with empirical support" (p. 45) is accomplished as the result of a cumulative research tradition. The real problem with social comparison theory is that it does not provide the necessary framework to foster the development of such a research tradition. According to Cohen et al., the framework should be developed to aid in the design of studies to test and elaborate the theory by allowing comparisons among the studies. The framework includes a theoretical formulation which is required to specifically identify those aspects of the research setting which have to be controlled and those which are safely ignored. They argue that it is essential to explicitly identify the chain of reasoning used in the formulation. Finally, a standardized research setting is needed to allow the direct comparison of studies that is essential to the growth of a cumulative body of knowledge as the theory is evaluated, extended, and elaborated.

Let us turn our attention, now, to a specific attempt to elaborate and extend the social comparison theory, the study conducted by Wheeler et al. (1969). The failure of the theory to provide an adequate framework for developing a cumulative research tradition is clearly demonstrated by the introductory discussion of the different research strategies used by Hakmiller (1966), Thornton and Arrowood (1966), and Wheeler (1966). Nevertheless, Wheeler et al. argued that the studies were sufficiently similar to conclude that Festinger's Corollary IIIA should at least be modified to include scope conditions requiring that the range of abilities be known by the person making the comparison and the presence of a "highly similar other in the positively valued direction" (p. 221).

It is at least possible to argue that when Festinger (1954) stated, "Given a range of possible persons for comparison...," he implied that the range of abilities would be known by the person making the comparison (p. 121). But such possible implication is precisely the crux of the argument being proposed. If Festinger had clearly identified the

scope conditions of Corollary IIIA, those researchers attempting to evaluate and extend the theory would have been able to proceed in a systematic manner, building on the accumulating body of knowledge from study to study. Without the framework for a cumulative research tradition, studies can only result in a shotgun pattern with little hope for developing a comprehensive, coherent theory.

Festinger cites a study conducted by Whittemore (1925) as providing some empirical support for Corollary IIIA. In the Whittemore study, the subjects indicated that they chose a similar referent other to compete against while working in a group setting. On the other hand, in the Wheeler et al. study, the subjects were instructed to choose a partner to work with on a cooperative task. Will persons choose the same comparison others when the nature of the task is competitive as they do when the task requires cooperation, or does the nature of the task make a difference? Such a question is confounded by the fact that, as Wheeler et al. argue, the choice of an interaction partner is not the same as the choice of a referent for social comparison. It is possible for a person to seek evaluation of ability concerning a task in a competitive or a cooperative situation; however, none of the studies referenced in this paper compare the two conditions in a systematic manner. Again, the point is not that these specific questions are not answered but, rather, that no set of general questions, as suggested by Cohen and his associates, are formulated by an appropriate cumulative research strategy to guide the theory development.

Although there was no indication that such diffuse status characteristics as race or age were controlled, the Wheeler et al. study used groups consisting of male undergraduates from an introductory psychology course. Thus, even though the subjects did not know which person was paired with any letter (used to rank order scores), a person seeking a comparison other would know that the others were all similar to him in at least some ostensibly important respects. Such a situation may yield different results from a situation where some of the potential referents are female, or from a local high school, or different in some other recognizable way. There is nothing "wrong" with the choice of subjects used by Wheeler et al.; however, the choice of subjects clearly affects

the scope conditions and should be systematically, purposefully selected to fit the framework of the overall research strategy.

Wheeler et al. suggest that Corollary IIIA may be true if the person making the comparison knows the range of abilities; however, the subjects in this study were also provided with a measure of central tendency. If no such measure is provided, will the person first seek information about the range or some measure of central tendency such as the median score or the average? Hakmiller's (1966) study might suggest that the range is preeminent but that the finding is confounded by the possibility of a defensive comparison. Again, the need for a cumulative research strategy is clearly indicated.

It was not our purpose in this discussion to criticize the study conducted by Wheeler et al. (1969). Our purpose was to argue for the need for a clearly articulated framework on which to base a cumulative research strategy which will enhance the evaluation and elaboration of a social scientific theory. If Festinger's theory of social comparison processes provided such a framework, the potential to develop a cumulative body of practical, scientific knowledge might have been more successfully fulfilled. It is for these reasons that it is argued that it is important that Expectation States Theories be expanded in a logically developed, methodical manner. While critics may decry the narrow focus and extreme control of Expectation States Theories, social comparison theory demonstrates the chaotic alternative.

4. The Similarity Question

Let us now return to our primary objective, which is to seek information as to the conditions under which interactants will use information about the relative task ability of some potential reference persons to structure their performance expectations, the conditions under which interpersonal similarity/dissimilarity bonds will form. The social comparison studies described thus far clearly involve a different situation from the specific situation of interest in this thesis. In the described studies, the subjects have already performed the task when they seek to evaluate their relative ability compared to some other person. In our situation, the subject is anticipating interaction

with another person and seeks to evaluate his/her own ability and the ability of the other before attempting to solve the task in order to know how to behave toward that other.

An experiment conducted by Jones and Regan (1974) clearly demonstrated that persons are more interested in evaluating their ability before they have to make a decision concerning use of that ability than after the decision has been made. Thus, it appears as if the subject's desire to evaluate his/her relative ability is likely to be even stronger in our proposed situation than in the situations like the one utilized in the range-seeking genre of studies.

Even though the situations are markedly different, the studies described do support the general notion of social comparison and seem to indicate that, at least when self-esteem is not seriously threatened, individuals seek fairly specific, accurate information about their ability relative to others. However, evaluating the Hakmiller (1966) study, Gruder (1977) does remind us that it appears "that when self-esteem is clearly and specifically threatened, subjects respond by attempting to protect their self-esteem rather than by trying to evaluate the nature and extent of their feelings" (p. 26). Thus, the findings suggest that one of the conditions under which a subject may ignore information about the relative task ability of a potential reference other is in a situation where the information suggests that the subject is low in ability and where the knowledge of being low in this ability is seriously threatening to this subject's self-esteem.

Considering the scope conditions defining the situation of concern in this thesis, particularly the fact that we are restricting our attention to collectively-oriented task situations, it seems reasonable to assume that subjects will be more interested in self-evaluation than in self-enhancement (Thornton & Arrowood, 1966). Under these conditions, the arguments of Arrowood and Friend (1969) seem to suggest that the tendency toward comparison with the most desirable other may be outweighed by the desire for accurate information. Thus, in the situation where accurate self-evaluation is seen as important to successful accomplishment of some valued task, it is not unreasonable to assume that subjects may compare themselves with others of relatively low task ability.

In their concluding remarks, Wheeler et al. (1969) address the question of opinion comparison rather than ability comparison and suggest that "we do not merely seek out someone with an opinion similar to ours but rather seek out someone who ought to have, by virtue of similarity to us on attributes related to the opinion issue, a similar opinion" (p. 231). It seems to this author that a similar argument can be made with respect to ability comparison. Zanna, Goethals, and Hill (1975) directly confront this issue by proposing that the problem in testing Festinger's similarity hypothesis is in the way similarity is operationalized; they ask, "should a comparison other be similar in his performance or should he be similar on personal characteristics which are relevant to and, perhaps, predictive of that performance?" (p. 87).

Zanna et al. (1975) attempted to answer their question by conducting an experiment in which undergraduate subjects were administered a test at which either males (logical reasoning test) or females (verbal acuity test) were said to excel. After the test, the subject was given her/his own score and the opportunity to make a first and second choice from among four groups of score distributions that s/he would like to see. Two of the groups were all-male groups and two were all-female; one of the all-male and one of the all-female groups was composed of students, and the other two groups were nonstudents.

The results of this experiment were clear. The first choice was overwhelmingly for a same-sex group (97%). Additionally, those "subjects in conditions where the opposite sex excels switched to compare with a group of the opposite-sex on their second choice more often than did subjects in conditions where their own sex excels" (Zanna et al., 1975, p. 91). Although the authors do not provide much data concerning the choice of student or nonstudent groups, they do state that when the subject had an academic major or occupational plan that coincided with one listed as being on a reference group (each group listed seven persons and their major or occupation as appropriate), that reference group was the first choice in 87 percent of those cases.

Thus, Zanna et al. conclude that an individual will make the available comparison that will provide the most information about the ability in question. They argue that Festinger implied that similarity means

more than similarity with respect to ability. "Festinger's analysis and the present result suggest that the most informative comparison is with others who are perceived to share characteristics predictive of performance" (Zanna et al., 1975, p. 92).

A study conducted by Suls, Gastorf, and Lawhon (1978) reached essentially the same conclusion as the Zanna et al. study. The experiment used both sex and age as attributes which were manipulated to be related to task ability. The age variable was operationalized by defining a good performer as either a high school freshman or senior, or a college senior. All subjects were high school seniors. Clearly, this unusual operationalization of the age variable must have made the status related to different educational attainment particularly salient; however, despite the fact that subjects may have been responding to similar educational background rather than to age, the general conclusion to be drawn from the results remains valid. After being provided with their own score, the subjects picked a first and second choice group whose score distribution they most desired to see. By far the most frequently chosen group as a first choice was the same-sex, same-age (education) group. Suls et al. (1978) concluded, "when others who are similar on related (to performance) characteristics are available, as in Zanna et al. and the present study, similar others are the preferred comparison option" (p. 3).

In the introduction to a recent experiment, Feldman (1977) reminds us that "social comparison strategies must be explored in order to assess what information persons are actually pursuing when they seek ability comparison with others" (p. 2). The studies we have reviewed thus far clearly support Feldman's admonition. In order to even begin to understand the nature of social comparison, it is clearly necessary to investigate the conditions under which the comparison is made and the purpose of the comparison. For example, Patchen (1961), while concerned primarily with the comparison of social rewards, also argued that social comparison really involves two distinct comparisons, one along the primary dimension being judged (for example, the ability in question) and the other along some secondary dimension (for example, age or education). Notice the similarity to Berger and his associates' concepts of specific and diffuse status characteristics.

Wilson (1973) used Patchen's work as a foundation to develop his conceptualization of social comparison as involving ability evaluation and self-evaluation. Whereas other students of social comparison (Thornton & Arrowood, 1966; Arrowood & Friend, 1969) had viewed self-evaluation as the process by which one answers a question such as "How much of this attribute or ability do I possess?", Wilson suggested that self-evaluation involves answering a question such as "How well am I performing in comparison to how well I should perform?". In other words, Wilson has added a normative element to the concept of self-evaluation. Pettigrew (1967) reminds us of yet another dimension when he suggests that self-evaluation which is concerned with the self-esteem component will seek answers to a question such as "What sort of persom am I for possessing that much X?" (p. 246). Wilson also suggests the concept of "ability evaluation" to describe the descriptive comparison of ability. Thus, he argues, "ability evaluation pertains to determining one's standing relative to others on a dimension consisting of others' performance of this ability" (Wilson, 1973, p. 602).

Wilson suggests that questions concerning ability evaluation can be answered by referring simply to what Patchen termed the primary dimension; however, if one is interested in answering self-evaluative questions, it is necessary to make comparisons on both the primary and secondary dimensions. Again, the shifting definitions of concepts suggests the need for a clearly articulated framework upon which to build a cumulative research tradition; nevertheless, Wilson's formulation seems particularly useful for the situation of primary interest in this thesis. In our referential situation, given the absence of any information about how good I am with respect to an ability which I must evaluate sufficiently well to decide whether to trust my own ability or defer to my partner's ability, information about how good I should be may be sufficient to trigger the formation of performance expectations concerning how good I am. In other words, if p observes that R_1 is good (or poor) at the task, and if p, for whatever reason, believes that if R_1 is good (or poor) at the task it follows that p' ought to be good (or poor) at the task, then p will form performance expectations in accordance with that belief—p will come to believe that s/he is as good

(or poor) at the task as R_1. Of course, the crucial question remains: what are the conditions under which p will believe that s/he ought to have ability similar to some other person?

In a study reported in 1973, Samuel introduced the notion of global similarity and suggested its importance in the selection of a comparison other. In Samuel's (1973) experiment, one group of subjects was manipulated to expect to score superior, average, or inferior on an ill-defined test supposedly designed to measure certain kinds of problem-solving abilities. The subjects were manipulated by providing them with phony information, supposedly from the university files. Another group of subjects was not manipulated in any way with respect to performance expectations. After testing, the subjects indicated others whose scores and tests they would most like to see during a future session when the subjects would be provided with their own scores and the score plus the tests of one other person (a referent or comparison other). The subjects were told that their task at that time would be to attempt to accurately evaluate their own performance by using this one comparison. The similar score was referred to as "nonevaluated similar other" because the subject would not receive any evaluative information other than the test results; in other words, the subject would not even know the general rank order of the similar other. Global similarity was operationalized by identifying the potential comparison other as being from the same school (SUNY at Stony Brook) or from another school (The University of Chicago).

The authors tested their manipulation of global similarity by asking each subject to "rate 'the degree to which you feel University of Chicago students and Stony Brook students are similar to yourself in terms of such general things as appearance, interests, outlook on life, etc.'" (Samuel, 1973, p. 455). The subjects did perceive themselves as more globally similar to other Stony Brook students. It is possible that the University of Chicago students were perceived as generally superior to Stony Brook students, a possibility which Samuel recognized, but which was not tested. In other words, being a Stony Brook student may well have represented the negative state of a diffuse status characteristic relative to University of Chicago students.

The data indicated that "overall, superior scorers were most sought for comparison, followed by the average scorers, with the inferior and nonevaluated similar scorers being about equally avoided ($p<.01$)" and the "comparison with fellow Stony Brook students was preferred over comparison with those from the University of Chicago ($p<.01$)" (Samuel, 1973, p. 457). Thus, Samuel argues that the overall findings provide "support for Festinger's 'unidirectional drive upward' as well as a replication of the overchoice of the most extreme other" (p. 464). The results also provide support for the importance of global similarity to the subjects in the choice of comparison others.

Specific findings concerning the subjects who were not provided any information about their expected performance are particularly interesting for our purposes, since this is more like the situation facing the subjects in the situation of primary interest in this thesis. The no-information subjects indicated superior others as their first choice, followed by average, inferior, and nonevaluated similar scoring others, in that order. Of significance is the fact that "no appreciable differences were found between SUP (those subjects manipulated to believe they would get a superior score) and NI (no information) subjects in their preferences for each of the comparison others" (Samuel, 1973, p. 459). No-information subjects were not asked to rate their own expectations; however, the data suggest that they expected to perform in a superior manner. Thus, for our purposes, it appears as if a subject will tend to prefer the referent other who is perceived as most globally similar to him/her and, in the absence of intervening information, a referent who performs relatively well.

5. Conformity

Another source of potential interest is suggested by the conformity literature as it relates to social comparison. In their discussion of conformity experiments, Allen and Wilder (1977) remind us that Festinger (1954) predicted that a person will have less of a tendency to make comparisons with other persons as the difference between their opinions and abilities increases. However, they also note the important point that "the broader the dimensions of similarity and comparability between the subject and the group in this situation should not be

overlooked" (Allen & Wilder, 1977, p. 189). For example, conformity experiments typically demonstrated that a subject with an extreme position does engage in social comparison as indicated by a change in position toward the group (for example, Asch, 1952; Crutchfield, 1955). However, "an important feature of this situation is the strong degree of similarity on several dimensions among all the group members, and subjects are aware of the similarity" (Allen & Wilder, 1977, p. 189). In other words, the subjects are quite similar on what Patchen (1961) described as a secondary dimension, such as age, sex, and education. Because of these other similarities, Allen and Wilder argue that it is difficult for a subject to avoid making social comparisons. Thus, even though the two potential referents in the situation we are investigating are presented as being very different in ability, that difference is not likely to preclude social comparisons in the situation because of the strong similarities on secondary dimensions.

Conformity also raises another issue. Crutchfield (1955) found that conformity effects are much more pronounced when the task is ambiguous (such as those tasks used in expectation-states experiments) than when the task has a more obvious, objective solution such as in the Ash experiments. However, Allen and Wilder (1977), summarizing two studies they conducted, provide evidence to suggest that conformity pressure can be resisted when a supportive partner is present. In fact, their findings suggest that the supportive partner need not be physically present as long as the subject is aware of such a person; they argue, "it does not appear necessary for the subject to see the partner respond or for the partner to be present at any time in order for the partner to be effective as a comparison other" (Allen & Wilder, 1977, p. 201). Thus, a referent other who is perceived as similar to a subject and high in task ability may provide sufficient support for that subject to resist influence from other interactants in the situation.

6. Attribution Theory

Another informative perspective on the general area of social comparison is provided by attribution theory. Goethals and Darley (1977) make the important point that ability cannot be observed, it can only

be inferred from the observation of some behavior, and other nonability factors such as effort, luck, and perceived degree of difficulty will intervene to make ability evaluation problematic. A basic principle of attribution theory, the discounting principle, is particularly appropriate to this process by which an ability is inferred. Kelley (1972) defines the discounting principle by stating, "the role of a given cause in producing a given effect is discounted if other plausible causes are also present" (p. 8). Thus, this principle suggests that a subject may not attribute a good performance on the part of some potential referent actor to that actor's ability if alternative causes are available in the situation. On the other hand, Goethals and Darley (1977) note that the augmentation principle is defined as a variant of the discounting principle which has essentially the opposite effect. This principle suggests that if some causal factor is perceived in the situation which is likely to inhibit the observed effect (good performance), then, if the effect is in fact observed, the effect is even more likely to be attributed to the actor's ability. Attribution theory, therefore, clearly indicates the importance of the situation surrounding the subjects and potential referents and, in particular, the sensitivity of the subject's perception of the nature of the task. If the subjects perceive, for example, that the task performance is more a function of luck than ability, it is unlikely that a subject will attribute high ability to a potential referent who performs well.

Attribution theory also suggests another phenomenon which is interesting for our purposes—the so-called actor observer effect. Jones and Nisbett (1972) argue that "there is a pervasive tendency for actors to attribute their actions to situational requirements, whereas observers tend to attribute the same actions to stable personal dispositions" (p. 80). Thus, the subjects in our described situation who observe some potential referent others performing a task are likely to attribute the relative performance of the referents to some rather stable traits or characteristics of the referents themselves rather than to some extra-personal situational factors. This finding is significant for our formulation because if the causal attribution were situational there would be no basis for assuming that one should exhibit the same ability

as a similar other unless the situation were perceived as exactly identical in both cases.

7. Cognitive Social Psychology and Schemas

A final area of theoretical interest which adds to our information concerning conditions under which interpersonal similarity/dissimilarity bonds may form is Stotland and Canon's (1972) cognitive approach to the study of social psychology using their concept of a schema (this is similar in approach to what Abelson [1976] refers to as a categorical script). The authors suggest that schemas are relatively abstract and generalizable rules which persons generate "regarding certain regularities in the relationships among events.... Whatever their source, once established they serve as a guide to behavior and as a framework which influences the manner in which relevant new information will be assimilated" (Stotland & Canon, 1972, p. 67). They further define the concept by suggesting that "more technically stated, a schema consists of positions on conceptualized dimensions, and of the relationships among them" (p. 99).

In the process of schema formation, an individual perceives a number of commonalities in various separate experiences and combines these common dimensions into a new conceptual dimension which, in a sense, is reified and accepted as reality quite distinct from the actual experiences. While it is clearly beyond the scope of this review to present a full discussion of the concept of schemas, it is useful to at least provide a denotative definition of the concepts of higher order and lower order schemas. Stotland and Canon describe a situation where a child notices on numerous separate occasions that one child seems to do most of the talking when her/his group is together. The child will likely form a lower order schema about this general situation. If the child later observes that other groups—for example, a group of construction workers and a bridge group which met in her/his home also seem to have their conversations dominated by one individual—the child will also develop schemas about these groups. At some point in her/his experience, the child will observe an individual dominating the discussion in a group, and the observation will arouse not only the schema

for that particular group but also the similar schemas that were formed about other groups. Stotland and Canon (1972) argue:

> This simultaneous arousal then can lead to the development of another schema based on these three schemas. This new schema would be, 'Whenever there are groups of people together, one person does all the talking.' This new schema is called a higher order schema because it is based on and incorporates other schemas. (p. 106)

A common higher order schema which is particularly relevant to our problem is what Stotland and Canon refer to as the liking-similarity schema (this schema posits that similarity and liking are usually associated positively). The authors argue:

> ...an individual will tend to believe that he has the same level of ability as someone whom he likes has; that he, too, can engage in the same activities as can the person he likes. The effect helps explain why it is that, at times, simply observing another person engage in some activity will lead the observer to immediately believe that he also can do it, while at other times the conclusion will be that only the other fellow can do it and he himself cannot. (Stotland & Canon, 1972, pp. 253-4)

In other words, translating this argument to the situation we have been returning to throughout this thesis, the liking-similarity schema suggests that, as Byrne and his associates also demonstrated, if p perceives that s/he is similar to R_1 because they both have the same attitudes toward some mutually recognized issues, then p is likely to be positively attracted to R_1, to like R_1. Further, if p likes R_1, then, according to the liking-similarity schema and ceteris paribus, p is likely to come to expect that s/he will be able to perform whatever task p sees R_1 perform and at the same general level of ability. Similarly, as long as her/his self-esteem is not seriously threatened (Hakmiller, 1966), following a similar chain of reasoning, o is likely to come to believe that s/he will probably perform at the same level of ability as R_2, if R_2 is perceived as having the same attitudes as o, even if R_2 is relatively low in task ability.

The work of Stotland and Canon (1972) suggests that the chain of reasoning may be even more direct than described above using the liking-similarity schema. They argue that perceived similarity tends to be generalized such that "if a person perceives that two people are similar

in one respect, he will tend to perceive that they are similar in others as well" (p. 263). We have already argued that a person can and often does perceive him/herself as an actor in a situation. Thus, it is clearly possible that a person perceiving similarity between her/himself and a referent on one dimension may come to expect to be similar to that other person on other dimensions as well.

Stotland and Canon (1972) also direct our attention to another factor of interest, the situation where a person does not know what to expect concerning her/his performance ability. The authors suggest that when there is no schema to guide behavior, a person is likely to become anxious because of the uncertainty. "Therefore, if the individual finds himself in a situation in which he does not know 'what to do,' he is highly likely to seek out other people, especially if they are similar to him or are people he likes" (p. 362). Thus, if p is uncertain about her/his task ability concerning some activity in which s/he will soon be involved, and if p notices that some potential referent R is in some way similar to her/him, then p is likely to seek information from R to help structure the pending situation. In other words, we argue that such a condition will lead to the formation of interpersonal similarity bonds.

APPENDIX Q

RAW DATA

(1 = Stay Responses; 0 = Change Responses)

CONDITION 1 (HL)

Subject Number	Responses	
01	00100110111011111111	
02	01101000011011101000	
03	11010101101110111001	
04	10111111010111111101	
05	11011100111111000111	excluded -- did not accept experimental manipulations (no referents)
06	11011011110101110111	
07	01101111100111111111	
08	01111010111111110111	
09	10111011101111111111	
10	01011111010011010001	excluded -- violated theoretical conditions (game playing)
11	11101010110111011011	
12	10111111101101111101	
13	01011001001001010111	
14	11011001100111111000	
15	11011111110111110111	
16	10111110001011110010	
17	11111010110111011101	
18	01001111101011101111	
19	01110111111110111111	
20	10000010101010101000	excluded -- did not accept experimental manipulations (saw partner as same opinions)

CONDITION 1 (HL)

Subject Number	Responses	
21	11100111011101101011	
22	11111100111010111111	
23	00111001001101011101	

CONDITION 2 (LH)

01	01100101101010101010	
02	10001011000111000010	
03	01010011110101011011	
04	01101100000101000000	
05	11001001001011100011	
06	10100010110101001011	
07	01100101001100000100	
08	10001111010001110111	excluded -- violated theoretical conditions (game playing)
09	11011111001001001111	excluded -- violated theoretical conditions (visible minority)
10	10111000001000010000	
11	00010100100100111100	
12	01001000000101000000	
13	01001001010001101000	
14	01101001100010101001	
15	01100111101111101110	
16	01101101100101110100	
17	00111000001010011010	
18	01000001000111101001	

CONDITION 2 (LH)

Subject Number	Responses
19	11111011111001101011
20	00100100000000010101
21	01110001011110011011
22	01100000100011111000

CONDITION 3 (DISSIMILAR)

01	01111011111110111111	
02	11010001100010001101	
03	11111111101111110011	
04	10111010101111111101	
05	11010100110110110111	
06	11010101000111110011	
07	10101011010001010111	
08	01100011110010011111	
09	10110110001011001001	
10	11101011110111101111	
11	10110011111001110010	excluded -- violated theoretical conditions (visible minority)
12	10101101011110111000	
13	01101101101010111011	
14	10111010110101011111	
15	10101011101110011101	
16	10010101110011101000	
17	11110101110001110111	
18	11001110111111100111	

CONDITION 3 (DISSIMILAR)

Subject Number	Responses	
19	00110001010010100100	
20	01011011101101111111	
21	10011101110110100100	

CONDITION 4 (SIMILAR)

01	00000100011100100100	
02	10101111011101011110	
03	11100111001111111110	excluded -- did not understand experimental conditions (chose greater black area)
04	10111111011111011011	
05	01110111101011110101	
06	11001110011000101111	
07	01110011010101101010	
08	10001111010011001110	
09	11011110110011001101	
10	01000111100011110001	
11	01000111100011110001	
12	10111000011111111010	
13	11111100111110110111	
14	10110001110111100111	
15	10011010101001101000	excluded -- violated theoretical conditions (made wrong first choice)
16	01110100110011110101	
17	10011111011111010111	
18	11111011111011101001	
19	10001010110110010010	

CONDITION 4 (SIMILAR)

Subject Number	Responses	
20	01000011111111000100	
21	10101011101011011011	excluded -- violated theoretical conditions (stayed with wrong first choice)
22	10111110001011011001	
23	01010110011100110111	

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