GROUP MEMBERSHIP
and
CONFORMITY PROCESSES

JAY M. JACKSON and HERBERT D. SALTZSTEIN

A Report of An Experiment
conducted under contract Nonr-1224(11)
with the Office of Naval Research
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GROUP MEMBERSHIP AND CONFORMITY PROCESSES

It has been characteristic of the development of theory in social psychology that one-factor explanations have proven inadequate. Imitation, suggestion, conditioning, and other such inclusive concepts have broken down into more complex multi-conceptual processes when confronted by systematic empirical data. The task of current research, therefore, is frequently to question the purity or unitary nature of existing concepts with a view to a more differentiated understanding of the postulated processes. In the experiment reported here, two such concepts, conformity and group membership, are the object of investigation.

There seem to be at least two different kinds of social conformity implied by the findings of recent experiments and the theories employed to explain these results. Some suggestion is frequently encountered in the literature that theoretically different processes underly conformity behavior, yet little explicit recognition that the difference makes a difference.¹

¹ Deutsch and Gerard have recently called explicit attention to normative and informational social influences upon an individual's judgment (7). This distinction and the theorizing which justifies it is in many respects the same as our formulation, although not available to us when our research was initiated.
This paper reports an experiment designed in part to determine whether or not we are justified in assuming two distinct conformity processes, and if we are to explore the conditions under which each can be expected to occur.

One such conformity process is represented by Sherif's well-known studies of the convergence of judgments of an unstructured stimulus in the presence of other persons (23). Characteristic of this type of situation is the lack of overt attempts by persons to influence other persons in the situation. The convergence, or "conformity to the norm" as it is often called, seems to occur as a result of the subject's own alertness for whatever relevant cues he can discover which to base his judgment. This appears to be the experimental paradigm for many experiments on social conformity, for example those of Gorden, Bovard, Asch and others (1,2,4,13). Results from such experiments are customarily interpreted within a theoretical framework including terms such as "group pressures", "group influence", and "group norms". Yet an examination of the experimental designs fails to yield evidence that any group forces necessarily existed. This does not mean that they did not exist, however, but only that they were not controlled or systematically varied. ²

² In addition to Deutsch and Gerard, already mentioned, (7) an experiment by Kelley and Shapiro is also an improvement on the typical procedure (17). Both these studies control and vary subjects' relationships to the group.
In contrast to those experiments which have studied individuals confronted by others' divergent attitudes, opinions, and judgments, let us consider the experiments of Festinger, Thibaut, Schacter, and others (8,9,22). Processes of conformity characterized by overt exertion of influence, pressures towards uniformity within a group, and rejection from the group for non-conformity, are demonstrated in this research. The group standard or norm in these experiments is not only an object of consensus, but it has been endowed with a quality of "rightness" and "oughtness". It is prescriptive and has attendant sanctions.

There is evidence that conformity processes of both these types occur. The first is more appropriately referred to as an individual rather than a group phenomenon: the person is scanning his environment for relevant information to be utilized in making decisions. But no pressure is being exerted upon him by others. No organized group need exist, with regulatory norms and sanctions for deviation. All that is required for this process of conformity to occur is the presence of a number of other persons who provide data which is divergent from the subject's own view of the world, and which is weighed more heavily by him.

The second type of conformity process is a group phenomenon. Groups can be conceived as having explicit or implicit goals, and means for moving toward these goals called norms, about which relative group consensus has developed. Members of groups are expected by other members to conform to the norms and thereby to make a contribution, i.e. help move the group in the direction of its goal.
To the degree that a person is motivated to belong to a group, he will tend to conform to its norms. And to the degree that a group is cohesive, its members will attempt to influence other members towards conformity (3).

Festinger recognized two such separate processes, calling them "social reality" and "group locomotion", respectively (8). He stated, however, that essentially the same influence and conformity behavior should result from both. Considering the distinctions referred to above, though, it does not seem likely that a systematic variation of relevant conditions would find the effects of each conformity process perfectly correlated with those of the other. In fact, such findings would obviate the necessity of maintaining a distinction between the two processes. To determine the relevant conditions for each postulated process of conformity, and to investigate the effects of systematic variation of these conditions, appears therefore to be a theoretical problem of some importance.

Group membership and other person-group relationships

In order to distinguish between processes of conformity which derive from forces in a person on the one hand, or forces in a group, on the other, some systematic consideration must be given to the problem of group membership. Like so many terms in social science which originate in everyday usage, group and group membership have been used in diverse ways to refer to a broad range of phenomena. Lewin (18) has argued for a more precise, constructed definition of group which would include as part of its meaning the idea of interdependence.
As one attempt to treat this definitional problem with greater logical coherence and rigor, a two dimensional phase space\(^3\) was constructed for ordering the diverse relationships that can occur between a person and a group (14). The two dimensions or coordinates of this space, seen in Figure 1, are attraction to the group, and acceptance as a member.

According to Lewin (18, pp200-2) "the phase space is a system of coordinates, each corresponding to different amounts of intensities of one 'property'." It does not presume to represent all the forces in the social field, but is a useful analytical device for representing, "by way of graphs or equations, the quantitative relation between these few properties, variables or aspects of the field, or of an event in it."

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The concept attraction, defined as the resultant force acting on an individual to remain in or locomote into a group, is a familiar one in the literature of group dynamics (3, 5, 20). Acceptance has been used to signify recognition of a person's belongingness (18), or attribution to a person of ability to contribute to the group (17). We wish to give it a somewhat more specialized definition which appears at the same time to be compatible with those stated above: the degree to which there exist role prescriptions in a group regarding an individual's behavior. Thus we intend to signify that from a group member's point of view, accepting a person is placing him within the power field of the group, that is seeing him as subject to the sanctions attendant on adherence to or deviation from group standards.

Any pair of values on the two coordinates in Figure 1 will define a person's position in relationship to a group. Thus the person who has high positive attraction to a group and high positive acceptance is differently related to the group than the person who has zero acceptance and high negative attraction. Although we shall speak of person-group relationships in this paper as if they were discrete classes of phenomena, this is merely for convenience of exposition. What we refer to as a distinctive type of relationship is really a "segment" of the phase space with an appropriate label, and

4. Lewin used the concept power field to refer to the "possibility of inducing forces" on another person (18).
the characteristics attributed to a type are considered to be the modal attributes of the "segment". The phase space, divided by dotted lines into nine such segments is shown in Figure 2. A more detailed development of the thinking and consideration of each type of person-group relationship, both theoretically and empirically, is provided elsewhere (14), with a discussion of the meaning of the negative values of the coordinates, not used in the present experiment.

![Diagram](image)

Figure 2. The phase-space divided into nine "segments", each typifying a particular person-group relationship.

For our present purpose, let us consider four "types" of relationship that occur between a person and a group.

1. **Psychological Membership**: (High positive Attraction, High positive Acceptance) The person is highly accepted as a member of
the group by the other members. By definition, they expect him to adhere to a member's role, to conform to the norms of the group, contribute to its goal, and so on. The person is highly attracted to membership, thus motivated to take the role of member. The group is a "psychological group" for the person.

2. **Psychological Non-Membership**: (Zero or near-zero Attraction, zero or near-zero Acceptance) The person has little or no acceptance as a member by the others, for whatever reason. In addition, he has little or no attraction to membership in the group. In no sense can this person be said to "belong" psychologically to the group.

3. **Preference Group Relationship**: (High positive Attraction, zero or near-zero Acceptance) As in Psychological Non-membership, the person has little or no acceptance as a member by the others. But his attraction to the group is highly positive, implying some perceived direct or indirect need-fulfilling characteristic of the group. Thus the person is kept "outside" the group, but would prefer to be "inside".

---

5. This relationship is similar in some respects to certain aspects of the meaning of "reference group" used in the literature. See (16). Since, however, we are defining only a structural relationship between a person and a group, with no necessary implications for the person's attitudes or behavior, it seems preferable to coin the above term. This leaves us free to specify the conditions when a person in a preference group relationship will or will not refer his attitudes to the group. For a more detailed consideration of this question, see (14).
4. **Marginal Group Relationship:** (Zero or near-zero Attraction, High positive Acceptance) As in Psychological Membership, other members of the group highly accept this person as a member. But he has little or no attraction to membership in the group. His position corresponds, in terms of these two dimensions, to that of Simmel's marginal man: in the group but not of it. 6

**Normative and Modal task conditions**

If two distinct processes of conformity occur, then it should be possible to specify distinctive conditions when one will occur but not the other. It will be necessary first to discuss in greater detail the characteristics of each postulated process, and then to specify the conditions when it should or should not occur.

The process referred to previously as "group locomotion" conformity arises from the necessity in a group that progress be made towards a group goal. Such locomotion cannot occur without relative consensus among the members both with respect to the goal and the means for achieving the goal. When such consensus is reached, it constitutes a *norm* for members' behavior. Conceptualized within field theory, the approach taken in this study, a norm is a field of forces which induces on persons a direction for moving from their present position

6. This relationship, although often not distinguished from psychological membership, seems to us to be distinct, and to permit different predictions about the behavior and feelings of a person thus related to a group.
or psychological state to one closer to the group goal. These forces will be induced by members on those seen to be within the group's power field. As represented within each person's life space, they are group locomotion forces.7

Conformity resulting from group locomotion forces should occur, therefore, only under certain conditions. There must be: 1. a group of interdependent persons, 2. relative consensus about a group goal, and 3. pressures perceived to adhere to a group norm. The situation thus described we refer to as a normative situation.

The conformity process referred to as "social reality" arises from a person's need for information in a problem-solving situation. As pointed out by Festinger (8), a person can obtain information indirectly via the opinions and actions of other persons, in addition to the information available to him by directly perceiving some aspect of his environment. To the degree that the directly perceived "physical" reality provides inadequate information, the person requires information from "social" sources, that is to say, has a need for social reality. When the latter information plays a larger part in the determination of the person's choice in the problem-solving situation than the directly perceived information, it is usually said that the person is "conforming to social influence." These tendencies

7. The authors are aware of a number of unsolved formal or syntactical problems regarding the relationship between forces in a social space and forces in one or more life spaces. For a discussion of these problems, see (18). The formulation presented here, however, is perhaps adequate for the theoretical purposes of the present experiment.
to behave similarly to other persons, however, can be conceptualized as own forces rather than as forces induced by the other persons. We shall refer to them as social reality forces.

Whether or not a person is a member of a group, or how attracted he is to a group should not be a determinant of the magnitude nor direction of social reality forces to conform. We think of the process as essentially a question of the person's adaptation to his environment by the utilization of relevant cues. If a person's judgment in such a situation is influenced by the modal judgment of others, one cannot speak of conformity to a "group norm", but rather to a "social mode" (15).

Conformity resulting from social reality forces should occur, therefore, whether or not there is a group, a group goal, or pressures to adhere to a group norm. In order to isolate these forces from group locomotion forces to conform, however, the following conditions should exist: 1. the person is not a member of a group, 2. he is in a problem-solving situation, and 3. he is aware of the judgments or behavior of other persons with regard to the problem he himself is confronted with. To distinguish this situation from the one called normative, we refer to it as a modal situation.

Theoretical hypotheses

From the discussion in the previous section, it should be clear that a process of conformity as conceived here is not synonymous with conformity behavior. Using field theoretical constructs, a conformity process is coordinated by us to a psychological force or
tendency to locomote, whereas conformity behavior is coordinated to locomotion from one region or psychological state to another (18). Since locomotion occurs in response to the total field of forces in the person’s life space, an analysis of the person’s conformity behavior must stipulate the direction and magnitude of the component forces to conform. Our theoretical method will be to state basic postulates about the two kinds of forces discussed above, and then from these to derive theorems in the form of testable hypotheses about conformity behavior.

From previously stated reasoning about the nature of conformity forces arising from a need for social reality, they should not be affected by a person’s attraction to or acceptance in a group. Nor should it make any difference to the forces towards conforming which arise from this source whether the situation is modal or normative. Specifically, the following assumption can be stated:

**Postulate I. Forces to conform arising out of a need for social reality will exist equally in both normative and modal situations, and regardless of the person-group relationship.**

Let us now consider the situation when group locomotion is the basis for a person’s conformity. It was specified above that forces to conform would arise from this source only in a normative situation. These forces should be induced only for accepted persons, assuming veridical perception, since by definition they alone are within the power field of the group. Group locomotion forces should also be positively related to the accepted person’s attraction to the group. The above can be stated in the following assumption:
Postulate II. Forces to conform arising out of the necessity for group locomotion will exist only for positively accepted persons in a normative situation, and will be positively related to such persons' attraction to the group.

The above two postulates are made graphic in Table 1, to assist the reader with the derivations which follow. The symbols are employed to represent the types of forces postulated and their order of magnitude. There is no presumption of the number system: two symbols of the same type are greater than one symbol of that type, but not necessarily twice as great. The only other assumption made is that both types of force have the same direction and point of application, so that according to field theory, their ordered magnitudes are

Table 1

<table>
<thead>
<tr>
<th>Person-group relationship</th>
<th>Experimental conditions</th>
<th>Normative situation</th>
<th>Modal situation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychological membership</td>
<td>(High Attraction, High Acceptance)</td>
<td>*##</td>
<td>*</td>
</tr>
<tr>
<td>Marginal group</td>
<td>(Low Attraction, High Acceptance)</td>
<td>*##</td>
<td>*</td>
</tr>
<tr>
<td>Preference group</td>
<td>(High Attraction, Non-Acceptance)</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Psychological non-membership</td>
<td>(Low Attraction, Non-Acceptance)</td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

* Social reality forces as stated in Postulate I.
# Group locomotion forces as stated in Postulate II.
additive. In spite of these restrictions, which are inherent in our postulates, the following theorems are derivable. The source of each derivation is stated in parentheses, and can be followed easily in Table 1.

Th. 1. Conformity behavior of Members will be greater in normative than in modal situations. (P.I, P.II)

Th. 2. Conformity behavior of Marginals will be greater in normative than in modal situations. (P.I, P.II)

Th. 3. Conformity behavior of Preferences will be of equal magnitude in normative and modal situations. (P.I)

Th. 4. Conformity behavior of Non-members will be of equal magnitude in normative and modal situations. (P.I)

Th. 5. Conformity behavior of Members will be greater than that of Marginals in a normative situation. (P.I, P.II)

Th. 6. Conformity behavior of Members in a normative situation will be greater than that of Marginals in a modal situation. (P.I, P.II)

8. For brevity of exposition, persons in the four person-group relationships will be referred to in the text as: Members, Marginals, Preferences and Non-members.
The reader will be able readily to derive a number of further theorems by an inspection of Table 1. It is possible, however, to make one summary statement about the relative order of conformity behavior for all four person-group relationships in both task conditions, as follows: Members (High Att.-High Acc.) Normative > Marginals (Low Att.-High Acc.) Normative > Preferences (High Att.-Non-Acc.) Normative = Non-Members (Low Att.-Non-Acc.) Normative = Members (High Att.-High Acc.) Modal = Marginals (Low Att.-High Acc.) Modal = Preferences (High Att.-Non-Acc.) Modal = Non-Members (Low Att.-Non-Acc.) Modal.

EXPERIMENTAL DESIGN AND PROCEDURES

Subjects

The subjects of the experiment were 100 male undergraduates who volunteered to participate in a group dynamics experiment. They were scheduled in groups of 4 to 6, with previous acquaintance among subjects in a group minimized. Altogether, 21 such groups were run. Fourteen of the subjects indicated during or immediately after the experiment, by their experimental behavior or in a post-experimental interview, that they had seen through the deceptions. Their data were

9. In the initial design for this experiment, it was intended to have all subjects perceive themselves as positively accepted, regardless of their actual acceptance, and to permit them to engage in face-to-face interaction. On the basis of those experimental conditions, the initial theoretical statement predicted for the normative situation the following order for conformity behavior, from the greatest amount to least: Members, Preferences, Non-Members and Marginals. Since it was not feasible to carry out the original design, the hypotheses stated in the text above are correct for the design actually used, and do not constitute any change in the theoretical assumptions underlying the experiment.
not included in the analysis, which was based on data from the remaining 86 subjects.

Overview of the experimental design

Each experimental group remained in the laboratory approximately two hours. During this period, these events occurred, in the following sequence:

1. Brief introduction of the study, using a plausible but spurious description of its purpose.

2. The attraction variable was induced. For subjects in half of the groups a high degree of positive attraction was created. In the other groups low positive attraction was created.

3. The acceptance variable was induced. In each group, one person, randomly selected by the experimenters, had no acceptance by the other persons. The latter all had high positive acceptance as members of the group.

4. The normative situation was induced. Subjects were told that the "group members", i.e. the accepted persons only, would be given a group score on the task to follow, and would be compared as a group with other groups.

5. Questionnaire I was filled out by the subjects.

6. The normative task was performed by subjects. This consisted of 10 "social vision" problems projected onto a screen. Subjects

10. Experimental instructions, questionnaires and other materials are fully reproduced in the Appendices.
made an initial and final judgment on each problem, with opportunity to communicate to other subjects between the two judgments.

7. Questionnaire II was filled out by the subjects.

8. The modal situation was induced. Subjects were told that each would be given an individual score on the task to follow, and would be compared with all the other persons in his "position". Each subject sat before a small table. These "positions" were lettered consecutively, A, B, C, etc. In the modal condition, subject A was told he was competing against all the other A's in the experiment, subject B against all the other B's, and so on. It was emphasized that "there is now no group". Each person was on his own, trying to maximize his own score. But he was not competing against the others present.

9. The modal task was performed by subjects. This consisted of another set of 10 "social vision" problems, matched for difficulty to the 10 problems that comprised the normative task. In all respects the conditions for the two tasks were identical. The only difference between the two was in the instructions which created either a normative or a modal situation.

10. The subjects were told that there would be a brief reversion to the normative situation for a short set of "social vision" problems, immediately following a third questionnaire. This was to permit us to reconstitute the group, psychologically, as a frame of reference for asking certain necessary questions.

11. Questionnaire III was filled out by the subjects.

12. It was announced the experiment was complete. Subjects
were questioned about their feelings, thoughts and perceptions regarding the experiment. Then explanation of the deceptions, exposition of the theory and design, and opportunity for subjects to express their feelings were provided.

13. The subjects were impressed with the necessity of secrecy regarding the experimental design, and made a commitment not to divulge it to others.

Procedures

Creation of the independent variables

1. Attraction to the group: It was decided because of difficulties in the exploratory stages of the study in creating sizeable differences in the attraction conditions, to utilize simultaneously many of the different determinants of attraction. In the high attraction condition, subjects were told that they would be a highly congenial group that would probably work well together, since they were highly matched on certain "preference" data we obtained from their recruiting forms. They were also told that this was an important study sponsored by a national foundation. In addition, they were told about cash prizes (for the best group in the normative condition, and best individual in each position in the modal condition) prior to the experimental tasks. Finally, they were told that each would have mailed to them a readable report of the experimental results and conclusions, as soon as the study was complete. Thus we tried to increase the positive valence of the group as mediated by the members, prestige value of the task, and as a means of obtaining rewards.
In the low attraction condition, subjects were told that attempts to match them had been unsuccessful, and that "they probably wouldn't have too much difficulty working together." The importance of the research was minimized, and no mention made of sponsorship. They were also told that the data from their group could not be included in the study proper, because we had been unable to create a highly congenial group, but that "we were going to run it anyway." However, they would not be eligible for prizes ordinarily offered for the best group and individuals participating in the study, but that "they should try to do their best in spite of this." Finally, it was indicated that they should not expect much of a learning experience, since they would not be told about the results. Thus we tried to maximize the differences between the high and low attraction conditions.

2. Acceptance in a member's role: When the last subject to arrive made his appearance through the outside door and began to walk down the long hall leading to the laboratory room, the investigator began a few preliminary remarks to sound as if he were beginning the instructions.

"Now that we're all here," he would say, "we might as well begin. Let me tell you a little about..."

At this point the final subject would walk in. The experimenter, interrupted and a little surprised, would motion to his assistant to set out another table and chair in the semi-circle, greet the newcomer, check his name off a list, and give him a position-letter. He would then begin his "instructions" over. Thus it would begin to dawn on all but the newcomer that the investigator did not
expect the arrival of the final person.

After the attraction induction, the experimenter says he has one more matter to settle before beginning the task. He points out the difficulty usually experienced in getting experimental subjects to come to the laboratory at the appointed time and in the correct number. Often at least one subject failed to show up the previous semester, and many groups had to be cancelled, "since in this type of work you always need the same number of persons in every group."

The experimenter then states the number required as one less than the number of subjects present. He points out that "this semester we always schedule one more person than we require. Usually this procedure works fine, and we get the exact number of persons we need, since one person fails to show up. Occasionally, however, like today, everybody comes. This raises a different kind of problem. We now have one more person than we need." The experimenter goes on to say that this had happened several times already that semester, so that a procedure had been developed to eliminate one person "in a way that will be fair to all."

The subjects are then told they will be given a set of six "social vision" problems, must indicate their answers on the answer sheet provided after which they will be scored quickly by the experimenter's assistant. The scores will be announced and the subjects will then vote privately on which person they think should be excluded. The basis of the "scoring" procedure was explained, and spurious scores were announced, after a disappearance into the adjacent office and a reappearance, which indicated that one person's score was about 20
points lower than the others, which were all high and closely bunched. The person with the low score had been randomly selected (second table from the right) by the experimenters. In nearly every case, the subjects unanimously decided that the person with the low score should be excluded from the group.

At this point the non-accepted person often rose to leave the room, and the experimenter had to request that he remain, participate in the task, because "later on you will have an opportunity to work on an individual task, and we want you to have the same experience and practice as the others." The effect of this somewhat complex manipulation was to have a group of interdependent subjects who thought of themselves as a group, about to work for a common goal, and one other subject, physically located in the group, but psychologically not accepted. These conditions were reinforced by the instructions immediately preceding the experimental task: "Although you are to participate the same as everyone else, your score will not contribute to the group score, and of course, if this group wins the $25.00 prize, you will not share in the prize. Later on, however, you will have an opportunity to work for an individual prize, although you will not be competing against the others here." In the low attraction condition, no mention was made of cash prizes, but only that the person would be required for a subsequent part of the experiment where he would work on an individual problem. In neither High Attraction nor Low Attraction conditions was any expectation offered that he would become part of the group; but he was kept in the laboratory working on the same task as the others, but not interdependent with them.
3. Task conditions: Normative and Modal

The first set of 10 "social vision" problems constituted the Normative condition. Instructions to the Accepted subjects were designed to make them perceive one another as members of a group, working for a common reward based on a group score. Their group was competing against all the other groups in the study.

For the Modal condition, instructions were that each person was on his own for the 10 "social vision" problems that were to be done, working to maximize his individual score. It was also stressed that they were not competing against one another, but doing identical tasks individually. In the High Attraction condition, they were told that the best person in each position in the study would receive a $5.00 prize. In the Low Attraction condition they were told they were ineligible for any prize. (At the end of the experimental session, this misinformation was corrected.) In this way the Modal task was run, using 10 different but matched problems, and all conditions except the instructions identical to the Normative condition.

The "social vision" problems

The problems used in the Preliminary set, and the Normative and Modal conditions, were all variations of the problem shown in

11. In the Normative condition, the amount of the prize for the best group was varied, depending upon the number of persons present, so that each person would receive $5.00 if his group won. Thus the rewards a person could receive were the same in the Normative and Modal conditions. At the conclusion of the entire experiment, $50.00 in prize money was actually distributed to the group and those individuals who had the most accurate perceptions, based on initial responses.
Figure 3. A "social vision" problem. Subject must judge which is the shorter path from START to the GOAL.
Figure 3. This maze-type figure was designed for this study, and is a somewhat more complicated and adjustable version of Asch's well-known problem. The subject is given the following instructions, while looking at an illustrative problem projected onto a moving-picture screen at a distance of approximately 20 feet:

"This is a typical 'social vision' problem, but you can think of it as a kind of maze. Here's what you have to do. Pretend you are standing at the starting point, marked 'Start'. You must get from there to the goal, marked by the black arrow, by the shortest possible path. Notice that the 'Start' is not on the circle, so that you must set out along one of the paths marked a, b, c, or d. When you get to the circle, you can turn around the outside of it to the arrow."

The subjects are then asked which is the shortest path from Start to the goal on the illustrative problem. Since the distances are extremely unequal and the shortest path obvious, all the subjects give the same response. The experimenter points out that, in essence, they had to choose between two paths of the four possible ones. He emphasizes that all the problems will involve a similar choice: "What it boils down to is, which is the shorter of two paths from the Start to the goal."

It can be seen that this problem is analogous to Asch's, who asked subjects to compare three lines of unequal length with a criterion line, and decide which line was most similar to the criterion (1, 2, 3). He used confederates of the experimenter, posing as subjects, to make the subject feel that his own judgment was a deviant one. Since in our experiment we wished to study patterns of communication as well as conformity behavior, it was desirable to have an experimental design without confederates. We therefore used the system of substituting notes to the subjects, leading each one to believe that all the others were in disagreement with this initial judgment. Since
it was not possible for us to control subjects' initial judgments, and since the substitute notes were prepared in advance and standard from group to group, we could not be sure that the subject was always being asked to conform to unanimously and strongly held divergent judgments. In most of the trials, however, the shortest path was obvious, so that by feeding back the obviously incorrect answer we could create the desired situation. The actual operation for measuring conformity will be described in the following section.

By varying the position of the arrow around the circumference of the circle, 26 problems were constructed which varied in their degree of difficulty or ambiguity. Some problems were completely obvious, some quite difficult to decide. Each set of 10 problems included a range from one extreme to the other. Although our original theory did not include statements about ambiguity, this factor does contribute to the analysis and the effects of its variation upon forces to conform will be reported in the appropriate section.

**Procedure for running a trial**

Subjects were told that they were about to have 19 "social vision" problems projected onto the screen. They would have the opportunity to see each one for three seconds. After a problem had been exposed for that period, they were given the following instructions: "You must now fill out at least two notes, and as many more as you feel like!" They were each provided with a pad of "notes". The rules of the "game" were:

1. They could not send more than one note per trial to a person.
2. Each time they sent a note they had to indicate the problem number, what they thought was the correct answer,
and how confident they were of their answer, on a 10 point scale.

3. They could indicate whom they wanted a note delivered to, or they could leave the address blank.

4. They were not to sign their name or letter to their notes. (The senders of notes could be identified by the experimenters, however, by the position of the staple in each note-pad.)

5. They could write any message they cared to and had time for. (The note writing period for each trial was limited to one minute.)

The rationale for requiring each person to write at least two notes whether or not he wished to address them to another person, was that if only some persons were writing and not others, it would be possible to identify the note senders, and we wished to preserve anonymity. In fact, it was necessary to have notes from each person since they provided information as to each subject's initial judgment of the stimulus.

The notes were collected, taken into an adjacent office for sorting, and deposited into a data file. Substitute notes, previously prepared, were delivered after a suitable time interval. Each subject received the same number of notes on a trial, identical in all respects to those received by other subjects. They were asked to read their "mail" quickly and to toss the notes into a cardboard carton which was then emptied into a waste basket. (Notes were retrieved at the end of the experiment, and sorted for the next group).
Subjects were then asked to watch the screen, and the same problem was exposed for a second time for three seconds. They were then asked to write their answer, and how confident they were of it, on the answer sheet provided.

This procedure was repeated for each of the 10 problems in the Normative and Modal conditions. For the Preliminary set of six problems, which was used only as part of the Acceptance induction, subjects saw each problem only once and immediately wrote down their answer without any opportunity for passing notes.

**Measurement of dependent variables**

1. **Conformity:** The model for our operational definition of conformity is illustrated by Figure 4. Consider that on a problem the choice is obviously between following paths a or b. The subject indicates whether he thinks a or b is correct, and on a 10 point scale checks his degree of confidence. Thus he could be Very Confident that a is correct, or Very Confident that b is correct, or anywhere in between these two extremes. If the former is scored a 10, and the latter
scored b-10, these extremes are considered to be 20 score points apart on a continuum, by inserting a zero between the two scales, to indicate a point of complete balance or indecision.

It is possible to measure the number of degrees that a subject's final response had shifted in the direction of the spurious consensus reported to him, and use this as a measure of his conformity on that trial. For example, if a subject's initial response had been a-9, and his final response b-10, then his conformity score for that trial would be 19. If his initial response had been a-2, and his final response a-1, (assuming a spurious consensus reported back of b-10) then his conformity score would be 8.

Only these trials were utilized for the conformity score where the spurious consensus was at least 4 scale points from the subject's initial response. This assumes that an induction had to be sufficiently distant from a subject's initial position to constitute an influence attempt, that is, to provide a test of whether or not the subject would conform under the particular experimental conditions.

For each set of 10 trials, a subject's Conformity score was the mean of all his scores on those trials. In 4 trials of each set, no test of conformity was made, since the subject was reported back the correct answer, to prevent him from becoming suspicious.

2. Communication sent: For each experimental category of subjects, the mean number of notes sent was computed, corrected for the number of possible recipients. This provided a measure of the volume of communication sent by Accepted subjects to other Accepted, to Non-Accepted subjects, and so on. These indices were computed by
individual groups, taking into consideration the size of the group, and then the mean for the groups in each cell was computed.

3. Communication received: For each experimental category of subjects, we computed the proportion of notes expected on a random distribution basis that was actually received. This measure took into consideration the number of notes sent in a given group, and the number of possible recipients. If the sending of notes had been on a random basis, the mean proportion of expected actually received in each category would be 1.00.

RESULTS

Validation of experimental conditions

Essential to any conclusions drawn from this experiment is the verification that experimental conditions stipulated in the design were in fact created. It is possible for an experimenter to engage in certain procedures without affecting the psychological world of his subjects sufficiently in the desired manner, relative to other uncontrolled sources of variability, to reproduce adequately the conditions necessary to test his theory. In the following sections, therefore, we shall present independent evidence that the stipulated experimental conditions did exist psychologically for the subjects.

1. Acceptance as a member: It will be recalled that our conceptual definition of acceptance involved placing the accepted person within the power field of the group; or more simply, recognizing him to be a member of the group. The following question was
included in Questionnaire I, asked immediately preceding the introduction of the Normative task:

"Please indicate what contribution you think that each member of the group will make to the total group score on the GROUP PRIZE task you are about to do."

Respondents were asked to rank order the members of the group, excluding themselves. An appropriate validation of acceptance or non-acceptance by others is whether or not a subject was included as a member of the group, that is, was assigned any rank whatsoever on this item. Only the responses of Accepted subjects are considered in Table 2, which tabulates the data from the above question, since we wish to compare judgments made about Accepted and Non-Accepted recipients. Although the relationship presented here is not perfect, the hypothesis of independence can be rejected with

Table 2

Frequency with which others in a group were included as members by those in the "High Acceptance" condition, prior to the Normative task

<table>
<thead>
<tr>
<th>Experimental Condition of Recipient</th>
<th>Responses on Questionnaire I, #2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not Included</td>
</tr>
<tr>
<td>High Acceptance</td>
<td>10</td>
</tr>
<tr>
<td>Non-Acceptance</td>
<td>43</td>
</tr>
</tbody>
</table>

\[ x^2 = 10.36 \]
\[ p = \text{approx.}.002 \]

a high degree of confidence. Non-accepted subjects were significantly less often included as a "member of the group".

-30-
Immediately after completion of the Modal task, a third questionnaire was administered, in which almost the identical question appeared. Responses to this item indicate whether or not the Acceptance conditions that obtained at the beginning of the experiment persisted until its conclusion. In order to be able to ask the subjects certain questions, they were told that a brief reversion to the Normative task would follow Questionnaire III. This explains the wording of the item used as a measure of acceptance:

"Predict for each member of the group how much contribution he will make to the second Group-Prize set of problems which follows."

The instructions provided were the same as in Questionnaire I.

It is apparent from Table 3 that essentially the same acceptance conditions obtained at the conclusion of the experiment as at its inception, and that we had been relatively successful in creating the desired Acceptance conditions.

Table 3

Frequency with which others in a group were included as members by those in the "High Acceptance" condition, after completion of the Modal task

<table>
<thead>
<tr>
<th>Experimental Condition of Recipient</th>
<th>Responses on Questionnaire III, #/11</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not Included</td>
</tr>
<tr>
<td>High Acceptance</td>
<td>5</td>
</tr>
<tr>
<td>Non-Acceptance</td>
<td>44</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 12.54 \]

\[ p = < .001 \]
2. Attraction to the group: The conceptual definition of attraction stated earlier was "the resultant force acting on an individual to remain in or locomote into a group." A number of items were designed to elicit information about subjects' attraction to the group, and included in the three questionnaires. They were asked how well they thought they would enjoy working with one another, how much benefit they thought they would receive from participating, and other similar questions. The item that corresponds most closely to our theoretical definition is the following, which was included in all three questionnaires:

"If you were given the opportunity at this point to change to a different group of fellows meeting next door, what would you do?"

The possible alternative responses, on a 10-point scale, varied from "I'd very much want to remain a member of this group," to "I'd want very much to change to another group."

Table 4

Mean desire to remain in the group rather than change to a different group, at the beginning, middle, and end of the experimental tasks

<table>
<thead>
<tr>
<th>Experimental Condition of Respondent</th>
<th>N*</th>
<th>Beginning (I, #7)</th>
<th>Middle (II, #2)</th>
<th>End (III, #9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Attraction</td>
<td>42</td>
<td>7.4</td>
<td>8.7</td>
<td>8.3</td>
</tr>
<tr>
<td>Low Attraction</td>
<td>43</td>
<td>7.3</td>
<td>7.6</td>
<td>7.7</td>
</tr>
</tbody>
</table>

*There are slight variations in these N's from questionnaire to questionnaire, because of incomplete response.
The mean attraction scores presented in Table 4 are consistently in the desired direction, those subjects in the High Attraction condition having greater preference for their own group than those in the Low Attraction condition. Only on the second questionnaire, however, are the differences between means significant, at approximately the .006 level of confidence using the t-test. We were, therefore, successful in creating differences between the two Attraction conditions, but not very large differences.

If we consider, however, that the best estimate available of subjects' attraction during a task is the mean of their pre-task and post-task attraction, we find somewhat more acceptable evidence for validation of the Attraction conditions. In Table 5, responses on Questionnaires I and II to the same item have been averaged to provide a mean for the Normative task condition, and similarly, responses on Questionnaires II and III for the Modal task condition.

Table 5
Mean desire to remain in the group during the experimental tasks, measured by the means of initial and terminal questionnaires

<table>
<thead>
<tr>
<th>Experimental Condition of Respondent</th>
<th>N</th>
<th>Normative task Condition</th>
<th>Modal task Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Attraction</td>
<td>42</td>
<td>8.1</td>
<td>8.5</td>
</tr>
<tr>
<td>Low Attraction</td>
<td>43</td>
<td>7.5</td>
<td>7.6</td>
</tr>
</tbody>
</table>

Even the differences in this table, although in the desired direction, are not very large, and this fact will have a bearing on
our subsequent analysis and discussion of results. Differences between means for the Normative condition are significant at the ^ .10 level, and for the Modal condition at the > .05 level, using the two-tailed t-test.12

3. Task conditions -- Normative and Modal: Definitions of two task conditions were presented earlier in this report. A Normative task condition was one in which persons were interdependently seeking a common goal and exerting pressures towards the group norms. A Modal task condition was one in which persons were independently seeking their individual goals, and in receipt of information about the modal judgments of others in the same situation. In Questionnaire III, at the completion of both experimental tasks, we asked the following question:

"How much do you think that the members of the group wanted to influence your answers on the Group-Prize set of problems?"

Subjects were asked to respond on a 10-point scale, from "Very Much" at one extreme to "Not at All" at the other. The same question was also asked in that questionnaire with reference to the "Position-Prize" set of problems. Group-Prize and Position-Prize were our appellations for the Normative and Modal task conditions, respectively.

Although the evidence is less direct, seen in Table 6, responses to the above questions provide indirect evidence of the validity of the two task conditions. If a group power field existed,

12. For a discussion of why we were not more successful in creating large differences in attraction to the group with our manipulations, see p. 48.
as we assumed in the Normative condition but not in the Modal, then more pressures from other persons should be perceived in the former situation. It is quite clear in the Normative task condition the attribution to other members of the desire to influence the respondent was significantly greater than in the Modal task condition. This constitutes some evidence of the validity of our manipulation of task conditions.

Table 6

Mean perceptions by accepted persons that other members of the group wanted to influence their answers to problems in the Normative and Modal tasks

<table>
<thead>
<tr>
<th>Experimental condition of respondent</th>
<th>Normative task condition</th>
<th>Modal task condition</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Attraction</td>
<td>33</td>
<td>7.2</td>
<td>6.2</td>
</tr>
<tr>
<td>Low Attraction</td>
<td>34</td>
<td>6.9</td>
<td>5.9</td>
</tr>
</tbody>
</table>

* Not all the subjects provided responses on the items in question.
** p < .001

The conformity results

The mean conformity scores for each person-group relationship under the two task conditions are presented in Table 7. Let us examine these results with regard to the theoretical predictions elaborated earlier in this report. Two postulates were stated, dealing with two different sources of forces to conform, a person's need for social reality, and the necessity for group locomotion in a problem-solving group. A number of theorems about conformity behavior
were derived from these two postulates. Since our data are behavioral, we can test these theorems and thus seek to provide support for the postulates.

Table 7

Conformity to the unanimous judgment of the majority by 86 undergraduate subjects in four different relationships to a group, under two task conditions

<table>
<thead>
<tr>
<th>Person-group relationship</th>
<th>Experimental conditions</th>
<th>N</th>
<th>Normative task condition</th>
<th>Modal task condition</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychological membership</td>
<td>(High Att. High Acc.)</td>
<td>33</td>
<td>9.93</td>
<td>6.68</td>
<td>4.05**</td>
</tr>
<tr>
<td>Marginal group</td>
<td>(Low Att. High Acc.)</td>
<td>35</td>
<td>8.52</td>
<td>6.34</td>
<td>2.51*</td>
</tr>
<tr>
<td>Preference group</td>
<td>(High Att. Non-Acc.)</td>
<td>10</td>
<td>8.54</td>
<td>9.45</td>
<td>#</td>
</tr>
<tr>
<td>Psychological non-membership</td>
<td>(Low Att. Non-Acc.)</td>
<td>8</td>
<td>9.23</td>
<td>8.36</td>
<td>#</td>
</tr>
</tbody>
</table>

** * p < .001
* p < .01
# Differences between means not significant, by inspection.
1 In the Modal task condition, both the Marginal group and Psychological Non-membership conditions had one less subject than indicated above.

Theorem 1 stated that "conformity behavior of Members will be greater in normative than in modal situations." The results in Table 7 are in accordance with this prediction, the difference in means being significant at the < .001 level of confidence.
Theorem 2, that "conformity behavior of Marginals will be
greater in normative than in modal situations" is also supported by
the data, at the <.01 level of confidence.

Theorems 3 and 4 stated that conformity behavior of Preferences,
and of non-members, respectively, will be of equal magnitude in
normative and modal situations. Since the differences in mean conform-
ity, seen in Table 7, for either of these two conditions are slight
between normative and modal tasks and far from conventional levels of
significance, these predictions, too, are supported by the results.

Theorem 5, that "conformity behavior of Members will be greater
than that of Marginals in a normative situation" is given only weak
confirmation in these data, the value of t being 1.26, which yields
a p of .21.13

Theorem 6 stated that "conformity behavior of Members in a
normative situation will be greater than that of Marginals in a modal
situation." The results are clearly in accordance with this prediction.

Thus of the six theorems tested, five receive strong support
and one weak support by the results in Table 7. Since these theorems
were all derived from the two stated postulates, the evidence makes
these postulates more tenable. Let us examine, however, our results

13. Although the above results were predicted in advance by the
theory, two-tail tests were used throughout. The more moderate estimate of probability
seems warranted, in view of small N's and the difficulty of
ascertaining whether or not all the assumptions of small-
sample statistical technique were met."
in conjunction with the summary prediction made which incorporated all possible theorems derivable from the two postulates. That prediction was stated as follows: Members (N) > Marginals (N) > Preferences (N) = Non-Members (N) = Members (M) = Marginals (M) = Preferences (M) = Non-Members (M).

It is clear if this ordering of conformity behavior be compared with the actual results in Table 7, that it is only partially correct. The prediction seems to be more accurate in predicting the order of conformity means for Accepted persons than for Non-Accepted. This becomes apparent when the ordering hypothesis is stated separately for Accepted and Non-Accepted persons:

1. Accepted persons
   Members (N) > Marginals (M) > Members (M) = Marginals (M)

2. Non-accepted persons
   Preferences (N) = Non-Members (N) = Preferences (M) = Non-Members (M).

The differences between any pair of means for the four non-accepted conditions do not approach conventional levels of significance, so that all four means can be considered not significantly different from each other. Each of these ordering hypotheses, taken separately, predicts the results in Table 7 with relative accuracy. The original ordering hypothesis failed, however, to state correctly the relative magnitudes of conformity behavior when comparing Accepted and Non-Accepted persons. How can we account for the unexpectedly high conformity behavior of Non-Accepted persons in both normative and
modal conditions? An unanticipated additional force to conform seems to have been acting on these subjects.

Our observation during the running of this experiment led us to believe that the non-accepted persons were experiencing considerable anxiety. They were greatly relieved, almost without exception, when informed in the post-experimental interview about the deception that led to their exclusion from the group. A closer examination of the psychological situation of the person who is not accepted as a member of a desirable group indicates that this experience may be very disturbing since the person's ego-processes have been "slighted" and are under threat. Under such circumstances the person will have a need for social reassurance.

The more desirable the group from which a person is excluded on invidious grounds, the more disturbing the experience and the greater will be his need for social reassurance. How would the person reassure himself in such an ego-threatening situation? One way might be... the classical "sour grapes" defense, by denying the attractiveness of the group. But if the person's attraction to the group does not decrease, another defense might be identification with the attitudes and judgments of group members. This defensive behavior could be conceptualized as a locomotion into the group on a level of irreality.

If the need for social reassurance is thus postulated as a source of ego-defensive forces to conform to others' judgments, it seems unlikely that person under threat would distinguish very realistically between situations that call for conformity and those
that do not. It would be the act of conforming itself which would have cathetic value for the person, rather than being seen as instrumental to goal achievement. Thus regardless of whether or not the group members are interdependently working for a common goal or independently working for individual goals, the need for social reassurance should lead the non-accepted person equally to conform.\footnote{Let us now summarize the above reasoning by stating a third postulate to be added to the two postulates concerning social reality and group locomotion forces to conform.}

\textbf{Postulate III.} Forces to conform arising out of a need for social reassurance will exist only for non-accepted persons, equally in both normative and modal situations, and will be positively related to such persons' attraction to the group.

It may be helpful at this point to consider how the three types of postulated forces to conform combine in the various experimental conditions. From a consideration of these component forces, presented schematically in Table 8, it will be possible to predict the relative magnitudes of conformity behavior for many of the conditions. It should be emphasized, however, that in the absence

\footnote{In our discussion we do not distinguish between a \textbf{driving force} to conform arising from the need for social reassurance, and the possibility that as an alternative or additional formulation, we should conceive of a \textbf{restraining force} against conforming being decreased by anxiety or ego-disturbance. Since in the present experiment either formulation would lead to the same predictions regarding conformity behavior, and the data which might distinguish between the two situations, i.e. data respecting the level of tension, are not available, we leave this question for further investigation.}
of equivalence statements about forces to conform arising from different sources, certain comparisons cannot be made. We cannot compare, for example, group locomotion forces and social reassurance forces, regardless of their magnitudes.

Table 8

Sources and magnitudes of forces to conform for four person-group relationships under two task conditions

<table>
<thead>
<tr>
<th>Person-group relationship</th>
<th>Experimental conditions</th>
<th>Normative situation</th>
<th>Modal situation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychological membership</td>
<td>(High Att., High Acc.)</td>
<td>Social reality + high group locomotion</td>
<td>Social reality</td>
</tr>
<tr>
<td>Marginal group</td>
<td>(Low Att., High Acc.)</td>
<td>Social reality + low group locomotion</td>
<td>Social reality</td>
</tr>
<tr>
<td>Preference group</td>
<td>(High Att., Non-Acc.)</td>
<td>Social reality + high social reassurance</td>
<td>Social reality + high social reassurance</td>
</tr>
<tr>
<td>Psychological non-membership</td>
<td>(Low Att., Non-Acc.)</td>
<td>Social reality + low social reassurance</td>
<td>Social reality + low social reassurance</td>
</tr>
</tbody>
</table>

A comparision of the results in Table 7 with the theoretical model in Table 8 indicates a relatively good fit, with certain points of discrepancy to be discussed shortly. By postulating an additional force acting upon non-accepted persons and arising
from a need for social reassurance, the level of conformity behavior for Preferences and Non-Members is more consistent with the theoretical predictions, as are the differences in Modal condition between Accepted and Non-Accepted persons.

The results in Table 7 are not, however, in accordance with the predictions derived from assuming that both group locomotion and social reassurance forces to conform will be positively related to a person's attraction to the group. The differences are in the predicted direction when comparing Members and Marginals under normative conditions, and when comparing Preferences and Non-Members under modal conditions, although in neither case can we have adequate confidence in the results. For the comparison between Preferences and Non-Members under normative conditions, the difference is opposite to the predicted direction, but again not significant.

There may be two explanations for the failure of the theory to predict accurately in the above instances, other than that the theory is incorrect. One may lie in the operational definition of conformity, discussed earlier in this report, which weighted the judgments between two alternatives with the confidence with which these judgments were made. The other reason may be found in the relatively weak differences between the high and low Attraction conditions created by the experimental manipulations. This was discussed earlier when evidence in support of the validity of the attraction manipulations was presented in Tables 4 and 5.

Some additional analysis was done, therefore, to investigate the soundness of the above explanations. A discussion of the results
of these analyses is presented in the following section.

**Analysis using a new measure of conformity**

It will be recalled that the operational definition of conformity used in the original analysis, illustrated in Figure 1, measured "the number of degrees that a subject's final response had shifted in the direction of the spurious consensus reported to him."

The values along the scale were degrees of confidence in the alternative chosen. Thus if a subject became less confident of his initial judgment when confronted with that of the divergent majority, this was considered moving toward the majority, even if the subject did not switch letters. And if he did switch from his initial choice to the letter of the spurious consensus, the degree of his conformity was based on the relative confidence he had in his initial and final choices.

One possible criticism of the above measure of conformity is that changing confidence is not equivalent to changing judgment, and that we are really combining two separate factors. An additional analysis of our data was performed, therefore, using a somewhat different operation for conformity. For each subject on each trial, we first considered simply whether or not his initial judgment was the same or different than that of the spurious unanimous majority judgment, ignoring the degree of confidence expressed. Only those cases where these judgments differed were included in the analysis. These judgments were then categorized dichotomously as changed or did not change to the judgment of the majority. The measure of conformity thus yielded was the proportion of person-trials on which
change to the judgment of the divergent majority occurred. In Table 9 we present the results of this additional analysis of the same data reported previously in Table 7.

Table 9

<table>
<thead>
<tr>
<th>Person-group relationship</th>
<th>Experimental conditions</th>
<th>N</th>
<th>Normative task condition</th>
<th>Modal task condition</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychological membership</td>
<td>(High Att., High Acc.)</td>
<td>33</td>
<td>.622</td>
<td>.376</td>
<td>5.12**</td>
</tr>
<tr>
<td>Marginal group</td>
<td>(Low Att., High Acc)</td>
<td>35</td>
<td>.492</td>
<td>.331</td>
<td>3.16*</td>
</tr>
<tr>
<td>Preference group</td>
<td>(High Att., Non-Acc.)</td>
<td>10</td>
<td>.564</td>
<td>.560</td>
<td>#</td>
</tr>
<tr>
<td>Psychological non-membership</td>
<td>(Low Att., Non-Acc.)</td>
<td>8</td>
<td>.523</td>
<td>.510</td>
<td>#</td>
</tr>
</tbody>
</table>

** p < .001
* p < .01
# p not significant by inspection

1 In the Modal task condition, both the Marginal group and Psychological Non-membership conditions had one less subject than indicated above.

A comparison of the results presented in Tables 9 and 7 indicates that in spite of the changed operational definition of conformity, the relative magnitudes of conformity behavior in the eight experimental conditions are essentially the same for the two methods of analysis. Again we find that for the Accepted subjects, conformity decreases significantly from the Normative to the Modal
condition, but not for the Non-Accepted subjects. The additional finding yielded by this method of analysis is the difference in conformity between Members and Marginals in the Normative condition, significant at the .06 level in the predicted direction. This difference, turning to the theoretical model in Table 8, can be attributed to a difference in the level of group locomotion forces in these two conditions.

There is still no acceptable evidence in Table 9, however, that increased attraction leads to greater conformity forces arising from a need for social reassurance. The differences in conformity behavior between Preferences and Non-members are slight, in both the Normative and Modal conditions. Since only where the theory predicts differences in conformity between high and low attraction conditions does it lack acceptable supporting evidence, it is possible that the theory is correct, but that the attraction manipulations produced insufficiently strong effects.
A revised categorization of Attraction conditions

Table 10

Mean attraction to the group on initial, medial, and terminal questionnaires for 83 undergraduate subjects in four person-group relationships under two different task conditions *

<table>
<thead>
<tr>
<th>Person-group relationship of subjects</th>
<th>Attraction</th>
<th>Acceptance</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychological membership</td>
<td>High</td>
<td>High</td>
<td>7.6</td>
<td>8.2</td>
<td>7.7</td>
</tr>
<tr>
<td>Marginal group</td>
<td>Low</td>
<td>High</td>
<td>7.3</td>
<td>7.6</td>
<td>7.2</td>
</tr>
<tr>
<td>Preference group</td>
<td>High</td>
<td>Non-</td>
<td>7.2</td>
<td>8.1</td>
<td>7.2</td>
</tr>
<tr>
<td>Psychological non-membership</td>
<td>Low</td>
<td>Non-</td>
<td>6.2</td>
<td>6.9</td>
<td>6.2</td>
</tr>
</tbody>
</table>

* These means are based on the responses to all items in the questionnaires relevant to subjects' attraction to the group. Complete data were available for only 83 subjects.

In Table 5 questionnaire results were presented concerning subjects' desires to remain in their present group rather than change to a different (hypothetical) group, as evidence for the validity of the Attraction manipulations. In Table 10 mean attraction scores are presented based on all the questions asked relevant to subjects' attraction to the group. In both the first and third questionnaire, three questions were asked, dealing with enjoyment of spending time in the group, desire to remain in the group, and perceived benefit of participating in the group...The item about perceived benefit was omitted from the second questionnaire, which accounts almost entirely for the
somewhat higher means for Questionnaire 2 seen in Table 10.

Although differences are not great, it is evident that with Acceptance controlled, subjects in a High Attraction condition report greater attraction to their group than those in a Low Attraction condition. It is also clear that mean Attraction scores for the initial and final questionnaires, based on comparable items, were almost identical. We can conclude that within each person-group relationship, the initial level of attraction persisted almost unchanged throughout the course of the experiment.

An examination of Table 10 in conjunction with Table 9 leaves no basis for believing that the differences in conformity behavior found between Normative and Modal conditions, or between Accepted and Non-accepted subjects, can be attributed to different degrees of attraction created in these conditions. Neither is it tenable that the differences in attraction respond to events which occurred during the course of the experiment. Specifically, it might have been hypothesized that conforming or not conforming to the majority might change the degree of attraction to the group. An inspection of the evidence in Tables 9 and 10, however, provides no grounds for accepting this conjecture.\(^{15}\)

\(^{15}\) It is likely that the hypothesis in question is not adequately tested by the design of this experiment, which permitted subjects to view the stimulus a second time, after receiving information about others' supposed opinions, and before making their own final response. Thus it was relatively easy for subjects to conform without acknowledging that they had in fact been influenced by the others' notes. There is some evidence, presented in Table 23, that subjects were not always aware of being influenced.
Since there is evidence that attraction changed only slightly throughout the experiment, and whatever changes did occur were not systematically related to the experimental conditions, it is possible to identify two remaining sources of subjects' attraction to the group. One is the experimental manipulation. The other is the initial state of attraction of the subjects, prior to the manipulation. It is reasonable to suppose that each subject comes to the experimental situation with certain preconceptions, expectations and motives. He already has certain tendencies to be attracted to the group a great deal or not very much. The experimenter then attempts to induce either high or low attraction. The resultant attraction of the subject to the group is a composite of his initial tendencies and the effects of the induction. This might account for relatively small differences between High and Low Attraction conditions.

What we are concerned with, however, is the effect of attraction as an independent variable on conformity as a dependent variable. One way of ensuring large differences between the attraction of subjects is to select them on the basis of their resultant attraction, regardless of the experimental induction. An additional analysis was performed, therefore, ignoring the original Attraction conditions and dichotomizing the subjects solely on their questionnaire responses. For this purpose we used all the attraction items whose means are presented in Table 10, judging this to be the most reliable over-all measure of the attraction which persisted throughout the
course of the experiment. For the new High Attraction condition, using this measure, the mean attraction is 8.54, and for the Low Attraction condition, 6.38.

Since the results from the two different measures of conformity, presented in Tables 7 and 9, were essentially the same, we reverted in the analysis under consideration to the original more refined measure which utilizes both the direction of change and degree of confidence of the initial and final judgments. This was also desirable, since for a further analysis of the data with respect to ambiguity or clarity of the stimuli, to be presented in a subsequent section of this report, the alternative measure of conformity was too crude to provide reliable mean scores, and we wished to utilize the same measure for both that analysis and the one being reported on in this section.

The results of the analysis of conformity, utilizing revised Attraction categories and the original measure of conformity, are presented in Table 11. A comparison of this evidence with that in Table 9 indicates that the differences are all in the same direction, only more distinct. If we now turn to the theory as schematized in Table 8, we find that the results in Table 11 are in accordance with the theoretical predictions. The differences in conformity behavior due to high or low group locomotion forces, and to high or

16. These data were available for only 83 of the 86 subjects. The remaining three were dropped from the analysis.
Table 11.
Conformity to the unanimous judgment of the majority by 83 undergraduate subjects in four different relationships to a group, defined on the basis of acceptance manipulations and questionnaire measures of attraction.

<table>
<thead>
<tr>
<th>Person-group relationship of subjects</th>
<th>Experimental conditions</th>
<th>N</th>
<th>Normative task condition</th>
<th>Modal task condition</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychological membership</td>
<td>(High Att., High Acc.)</td>
<td>35</td>
<td>10.45</td>
<td>6.70</td>
<td>4.42**</td>
</tr>
<tr>
<td>Marginal group</td>
<td>(Low Att., High Acc.)</td>
<td>31</td>
<td>7.98</td>
<td>6.30</td>
<td>1.93*</td>
</tr>
<tr>
<td>Preference group</td>
<td>(High Att., Non-Acc.)</td>
<td>7</td>
<td>10.18</td>
<td>10.68</td>
<td>#</td>
</tr>
<tr>
<td>Psychological non-membership</td>
<td>(Low Att., Non-Acc.)</td>
<td>10</td>
<td>7.85</td>
<td>7.71</td>
<td>#</td>
</tr>
</tbody>
</table>

** p < .001
* p = .07
# Differences between means not significant, by inspection

Low social reassurance forces predicted by the model are now represented in the results. The difference between means for Members and Marginals under Normative conditions yield a t of 2.27, significant at the .02 level. Although the absolute magnitudes of the differences between means for Preferences and Non-Members are large and in the predicted direction, in both Normative and Modal conditions, the p-values yielded by the two-tailed t-test are .30 and .29, respectively. These findings, based on very small N's, must be viewed with considerable caution. When we consider them in conjunction with the over-all fit of the data with the theoretical model, however, we are predisposed to accept the greater risk in these instances and reject the null
hypotheses that mean conformity for Preferences and Non-Members is not different within each task condition.

A summary of the theory and results

Let us now tabulate the total set of theorems derivable from the three postulates, and evaluate the results presented in Table 11 as they bear upon these predictions. We begin by stating the two original postulates and the additional social reassurance postulate forced upon us by the data.

Postulate I. Forces to conform arising out of a need for social reality will exist equally in both normative and modal situations, and regardless of the person-group relationship.

Postulate II. Forces to conform arising out of the necessity for group locomotion will exist only for positively accepted persons in a normative situation, and will be positively related in magnitude to such persons' attraction to the group.

Postulate III. Forces to conform arising out of a need for social reassurance will exist only for non-accepted persons equally in both normative and modal situations, and will be positively related in magnitude to such persons' attraction to the group.

From the above three postulates, the 20 theorems listed below can all be derived rigorously. (The reader may wish to consult Table 8 for the derivation of any particular theorem.) The source of the derivation is stated in each case, and the probability level yielded
by a two-tailed t test. The first six theorems are the same as stated in the original theoretical statement of this report.

Th. 1. Conformity behavior of Members will be greater in normative than in modal situations. (P.I, P.II. t = 4.42, p < .001)

Th. 2. Conformity behavior of Marginals will be greater in normative than in modal situations. (P.I, P.II. t = 1.93, p = .07)

Th. 3. Conformity behavior of Preferences will be of equal magnitude in normative and modal situations. (P.I, P.III. Means in Table 11 not different, by inspection.)

Th. 4. Conformity behavior of Non-Members will be of equal magnitude in normative and modal situations. (P.I, P.III. Means in Table 11 not different, by inspection.)

Th. 5. Conformity behavior of Members will be greater than that of Marginals in a normative situation. (P.I, P.II. t = 2.27, p = .02)

Th. 6. Conformity behavior of Members in a normative situation will be greater than that of Marginals in a modal situation. (T.2, T.5. t = 3.34, p < .01)

Th. 7. Conformity behavior of Preferences will be greater than that of Non-members in a normative situation. (P.I, P.III, t = .93, p = .37)

Th. 8. Conformity behavior of Preferences in a normative situation will be greater than that of Non-members in a modal situation. (T.4, T.7. t = .88, p = .40)
Th. 9. Conformity behavior of Preferences will be greater than that of Non-members in a modal situation. (T.3, T.8 \( t = 1.21, \ p = .25 \))

Th. 10. Conformity behavior of Preferences in a modal situation will be greater than that of Non-members in a normative situation. (T.4, T.9. \( t = 1.33, \ p = .20 \))

Th. 11. Conformity behavior of Members will be of equal magnitude to that of Marginals in a modal situation. (P.I. Means in Table 11 not different, by inspection.)

Th. 12. Conformity behavior of Marginals in a normative situation will be greater than that of Members in a modal situation. (T.2, T.11. \( t = .97, \ p = .33 \))

Th. 13. Conformity behavior of Preferences will be greater than that of Members in a modal situation. (P.I, P.III. \( t = 1.60, \ p = .11 \))

Th. 14. Conformity behavior of Preferences will be greater than that of Marginals in a modal situation. (T.11, T. 13 \( t = 1.96, \ p = .05 \))

Th. 15. Conformity behavior of Preferences in a normative situation will be greater than that of Members in a modal situation. (T. 3, T. 13. \( t = 1.35, \ p = .19 \))
Th. 16 Conformity behavior of Preferences in a normative situation will be greater than that of Marginals in a modal situation. (T.11, T.15. \( t = 1.65, p = .12 \))

Th. 17. Conformity behavior of Non-members will be greater than that of Members in a modal situation. (P.I, P.III. \( t = .45, p = .65 \))

Th. 18. Conformity behavior of Non-members in a normative situation will be greater than that of Members in a modal situation. (T.4, T.17. \( t = .55, p = .58 \))

Th. 19. Conformity behavior of Non-members will be greater than that of Marginals in a modal situation. (T.11, T.17. \( t = .72, p = .48 \))

Th. 20 Conformity behavior of Non-members in a normative situation will be greater than that of Marginals in a modal situation. (T.11, T.18. \( t = .83, p = .41 \))

Although the evidence in support of many of the above theorems does not approach conventional levels of significance, it is noteworthy that the predicted direction of difference is invariably in accord with the data, for the entire set of theorems. Since logical rigor has been preserved in the derivation of these statements from the three postulates and from other theorems, the total pattern of findings lends credence to the theoretical ideas expressed in the postulates. Some caution must be exercised, of course, in accepting
the theory, in view of the levels of probability stated above, and since the postulate concerning social reassurance was formulated to account for the unanticipated findings. On the basis of the analysis just presented we can have considerable confidence in the original theory of the study, expressed in the first six theorems, which are supported by the data at acceptable levels of significance. The ex post facto postulate finds some but weak support. There are additional data, however, which bear upon this theorizing. In the following section the results of some further analysis will be presented, performed to test additional derivations from the theory.

Conformity to clearly structured or ambiguous stimuli

One characteristic of many situations in which a person has forces on him to conform is the presence of a stimulus object or objects. The "conformity situation" might be analyzed as one where the person is in receipt of divergent information or directives from two different sources. He receives a certain amount of information directly from the stimulus object which tells him how to act towards it in order to move towards his goal. He also receives information indirectly, from other persons, which may or may not outweigh the information provided by his senses. What weight and meaning the person assigns to his own perception of the stimulus object should depend, among other factors, upon the adequacy of the information directly available to him by this avenue. Where the stimulus is relatively ambiguous, we can say that there is less information available to the person than when it is relatively clear and univocal. Thus a clarity-ambiguity dimension seems to be relevant to our
theorizing about conformity behavior.

An additional analysis of the conformity data was performed, after dichotomizing the experimental problems into two sets each, for Normative and Modal task conditions, of relatively ambiguous and relatively clear problems. The precise operations utilized for this analysis will be detailed in the next section. Since this analysis had not been planned at the inception of the experiment, it consisted of a somewhat opportunistic examination of the effects of the ambiguity-clarity variable on conformity in conjunction with the other experimental conditions. Thus rather than having theoretical predictions about the results of this analysis, we set about constructing a theory to explain the results as economically as possible.

The value of this type of exploratory analysis lies in the additional support it may provide for the main theory of the study, and in whatever challenging new hypotheses that may be generated.

Operational definition of ambiguity-clarity: For each of the 20 problems, the modal initial response, of a, b, c or d, was ascertained. This letter, together with the highest degree of confidence, was taken to be the "correct" response. Thus if more subjects said initially that b was the shortest distance, we took b-10 to be the best answer. Then for each subject on that trial a discrepancy score was computed, being the number of scale-points between the subject's response and the "correct" one. A mean discrepancy score was then calculated for each problem. When this
score was high, there was relatively little agreement among the subjects, and this was taken as indication that the problem constituted an ambiguous stimulus for the subjects. When the discrepancy score was low, on the other hand, there was relatively high agreement, and we considered this evidence that the stimulus was clearly structured for the subjects.

The Normative and Modal tasks were each dichotomized into two sets of problems: 5 relatively ambiguous problems, those with the highest discrepancy scores, and 5 relatively clear problems, those with the lowest discrepancy scores.

As a check on our operational definition of ambiguity, the items were also ordered using an alternative definition which ignored the subjects' degree of confidence in their initial responses, and considered only the letter which they chose. For each item the proportion of subjects who chose the modal letter was computed. The smaller the proportion of subjects who made the modal response, the more ambiguous was the item. The proportions for the 20 items ranged between 1.00 and .49. The rank difference correlations between the two methods of ordering items on ambiguity were .99 for the Normative set and .96 for the Modal set, indicating that the two operational definitions of ambiguity were essentially equivalent for our purposes.

Results of the ambiguity analysis: For each of the 16 experimental conditions created by introducing the ambiguity-clarity variable, a mean conformity score was computed, using the same measure as in
the preceding analysis. The results are presented in Table 12.

Table 12

Effect of ambiguity of stimulus upon conformity to the unanimous divergent judgment of the majority for 83 undergraduates in four different person-group relationships

<table>
<thead>
<tr>
<th>Person-group relationship</th>
<th>Experimental conditions</th>
<th>N*</th>
<th>Normative Ambiguous</th>
<th>Clear</th>
<th>Modal Ambiguous</th>
<th>Clear</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychological membership</td>
<td>(High Att., High Acc.)</td>
<td>35</td>
<td>11.13</td>
<td>9.39</td>
<td>7.09</td>
<td>5.71</td>
</tr>
<tr>
<td>Marginal group</td>
<td>(Low Att., High Acc.)</td>
<td>31</td>
<td>7.32</td>
<td>6.19</td>
<td>7.07</td>
<td>5.28</td>
</tr>
<tr>
<td>Preference group</td>
<td>(High Att., Non-Acc.)</td>
<td>7</td>
<td>9.15</td>
<td>11.19</td>
<td>11.02</td>
<td>10.76</td>
</tr>
<tr>
<td>Psychological non-membership</td>
<td>(Low Att., Non-Acc.)</td>
<td>10</td>
<td>8.56</td>
<td>6.78</td>
<td>7.28</td>
<td>8.66</td>
</tr>
</tbody>
</table>

* In the Marginal group relationship under Normative conditions for Clear stimuli, the N was 30.

It is apparent from this table that there are many differences of considerable magnitude between pairs of conformity means. But confronted with complexity of this order, no ready theoretical explanation of the results springs to mind. It was necessary, therefore, to consider in turn the effect of ambiguity upon forces to conform arising from each postulated source. The theorizing that was thus generated, and the three postulates formulated to make summary statements about the effect of ambiguity upon forces to conform, are presented in the following section.

Ambiguity and social reality: In the definition and discussion
of the **need for social reality**, presented earlier in this report (p.10), we stated that it was "essentially a question of the person's adaption to his environment by the utilization of relevant cues."

In any problem-solving situation, information relevant to the solution can be provided by the opinions and behavior of other persons. The less information that is available from the stimulus object itself, the more likely that a person will utilize information provided by these "social" sources. Since the ambiguity- clarity dimension was defined in terms of the relative amount of information provided by the stimulus object, the less the information, the greater the ambiguity, the following assumption appears to be reasonable.

*Postulate IV.* Forces to conform arising out of a **need for social reality** will be positively related in magnitude to the degree of ambiguity of the stimulus situation.

*Ambiguity and social reassurance:* Earlier in this report we stated that a need for **social reassurance** would arise in a situation where a person's "ego-processes have been slighted and are under threat." Since a person's ability to adapt successfully to his environment is highly dependent upon the effectiveness of his cognitive processes, to be excluded from a desirable group on the grounds that he is inferior to others in this domain was said to be a source of considerable anxiety, leading to a need for reassurance. Under what circumstances should this anxiety be greater, when the stimulus situation is relatively ambiguous or clearly structured? To find oneself a minority of one in an ambiguous situation would
certainly be uncomfortable for most people; but at least here one has relatively less expectation of being "correct". In view of the paucity of information provided by the stimulus, one's ability to perceive the world correctly is not at stake to a great degree. It is possible to defend against the invidious implications of this situation by blaming the ambiguity of the stimulus. When, however, a person is told that he disagrees with the unanimous majority in a judgment of a clearly structured stimulus, this should be highly disturbing to him, since he will feel that he cannot trust his own ego-processes even when he has strong feelings of assurance and expectations of being "correct". Nor in this situation can he defend himself readily by blaming the unclarity of the stimulus situation. This thinking leads us to make the following assumption:

Postulate V. Forces to conform arising out of a need for social reassurance will be negatively related in magnitude to the degree of ambiguity of the stimulus situation.

Ambiguity and group locomotion: Postulate II states that group locomotion forces to conform will be positively related to persons' attraction to the group. Another way of stating this is to say that the more valent the group for the person, the more willing he will be to "accept" the forces induced upon him by group members. If the person is highly attracted to membership, he will thus be more inclined to expend energy to help achieve the group's goal. It follows that he will also be less inclined to expend energy that will move the group farther away from its goal. When the direction towards the group's goal is unclear, however, the case when the stimulus
situation is relatively ambiguous, the person will be reluctant to follow his own judgment when confronted with a divergent unanimous majority, lest he harm the group. In this situation we should expect a relatively high level of group locomotion forces to conform. But when the stimulus situation is clearly structured, the highly attracted person, motivated to help the group achieve its goal, should be more inclined to follow his own judgment. In this situation group locomotion forces to conform should be smaller than in the ambiguous situation.

Consider now the person who has little attraction to membership. He will have little tendency to expend energy to move the group toward its goal, and will be less reluctant than a more attracted person to do anything that would move the group away from its goal. In the clear situation, confronted by a unanimous majority and with little desire to help the group, the path of least resistance is to conform. When the stimulus situation is more ambiguous, however, the lowly attracted person may be expected frequently to ignore the consensus of the majority, preferring his own judgment and reasoning that "they could be wrong". This situation provides him with a "release" from the power of the group, especially if he is little concerned about whether he obstructs the group's locomotion towards its goal. Thus for the person with little attraction to membership, we should predict relatively greater group locomotion forces to conform in the clear than in the ambiguous stimulus situation.

The above reasoning can be summarized in the following
assumption:

Postulate VI. Forces to conform arising out of the necessity for group locomotion will be positively related in magnitude to the degree of ambiguity of the stimulus situation for persons highly attracted to the group; and negatively related in magnitude to the degree of ambiguity of the stimulus situation for persons weakly attracted to the group.

From these three postulates that state the effect of ambiguity upon forces to conform, together with the set of postulates and theorems stated earlier, a total of 56 additional theorems can be rigorously derived which will "predict" the relative magnitudes and order of the mean conformity scores in Table 12. Each theorem will describe the relative magnitudes of conformity behavior in two of our experimental conditions. Rather than take the space here to express such a voluminous body of theoretical statements, however, it seems preferable to summarize them in a model and indicate by some specimen theorems that the theory does in fact fit the data to a considerable degree.

A model to fit the ambiguity data

For the purposes of communicating the model, we shall employ the same graphic devices used in Table 1. Symbols will be employed to represent each type of force postulated, and the magnitude of a particular force will be indicated by the number of characters listed. Thus will represent a larger social reality
force than ***, although again we stress that only relative order is intended, and no implication about the ratio of forces. This creates severe restrictions in the derivation of theorems; the 56 theorems mentioned above are derivable within these limitations, utilizing only the assumption that forces with the same direction and point of application, regardless of source, are additive.

1. Social reality forces: From Postulates I and IV we have that forces to conform arising out of a need for social reality will exist equally in normative and modal conditions for all person-group relationships, but will be greater for ambiguous than for clear situations. These statements are represented graphically in Table 13.

Table 13

Magnitude of social reality forces to conform in ambiguous and clear stimulus situations

<table>
<thead>
<tr>
<th>Person-group relationship</th>
<th>Experimental conditions</th>
<th>Normative</th>
<th></th>
<th>Modal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychological membership</td>
<td>(High Att., High Acc.)</td>
<td>**</td>
<td>*</td>
<td>**</td>
</tr>
<tr>
<td>Marginal group</td>
<td>(Low Att., High Acc.)</td>
<td>**</td>
<td>*</td>
<td>**</td>
</tr>
<tr>
<td>Preference group</td>
<td>(High Att., Non-Acc.)</td>
<td>**</td>
<td>*</td>
<td>**</td>
</tr>
<tr>
<td>Psychological non-membership</td>
<td>(Low Att., Non-Acc.)</td>
<td>**</td>
<td>*</td>
<td>**</td>
</tr>
</tbody>
</table>

Social reality forces as postulated in P.I and P.IV. Two asterisks are an indication of greater magnitude of forces than one asterisk.
2. Social reassurance forces: From Postulates III and V we have that forces to conform arising out of a need for social reassurance a) exist only for non-accepted persons, i.e. for Preferences and Non-Members, b) are equal for Normative and Modal conditions, c) are positively related in magnitude to a person's attraction to the group, i.e. are greater for Preferences than for Non-Members, and d) are negatively related in magnitude to the degree of ambiguity of the stimulus situation, i.e. will be greater in Clear than in Ambiguous situations. The assignment of characters shown in Table 14 represent this information.

Table 14

Magnitude of social reassurance forces to conform in ambiguous and clear stimulus situations

| Person-group relationship | Experimental conditions | Normative |  |  |  |  |  |  |  |
|---------------------------|-------------------------|-----------|---|---|---|---|---|---|
|                           |                         | Ambiguous | Clear | Ambiguous | Clear | Ambiguous | Clear |
| Preference                | (High Att. group Non-Acc.) | #           | #     | #           | #     | #           | #     |
| Psychological non-membership | (Low Att. Non-Acc.) | #           | #     | #           | #     | #           | #     |

Social reassurance forces to conform as postulated in P. III and P. V. Two such characters indicate a greater magnitude of forces than one, three more than two, etc., with no implication of a number system, but merely ordered magnitudes.

3. Group locomotion forces: From Postulates II and VI we have that forces to conform arising out of the necessity for group locomotion a) exist only for accepted persons, i.e., for Members and
Marginals, b) only for normative situations, c) are positively related in magnitude to a person's attraction to the group, i.e. are greater for Members than for Marginals, d) for highly attracted persons are positively related in magnitude to the degree of ambiguity of the stimulus situation, i.e. will be greater in the Ambiguous than in the Clear situation for Members, and e) for lowly attracted persons are negatively related in magnitude to the degree of ambiguity of the stimulus situation, i.e. will be greater in the Clear than in the Ambiguous situation for Marginals. The assignment of characters seen in Table 15 represents this information.

Table 15

<table>
<thead>
<tr>
<th>Person-group relationship</th>
<th>Experimental conditions</th>
<th>Normative Ambiguous</th>
<th>Normative Clear</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychological membership (High Att. membership High Acc.)</td>
<td>#</td>
<td>#</td>
<td>#</td>
</tr>
<tr>
<td>Marginal group (Low Att. group High Acc.)</td>
<td>#</td>
<td>#</td>
<td></td>
</tr>
</tbody>
</table>

# Group locomotion forces to conform as postulated in P.II and P.VI. Two such characters indicate a greater magnitude of forces than one, three more than two, etc. Only an ordering is implied, with no assumptions about distance between ranks.

Since all the forces schematized in Tables 13-15 are forces to conform acting upon the person at a moment in time, they have the same direction and point of application, and are therefore additive. By summing the component forces for each person-group
relationship and task condition, we arrive at a model of the relative magnitudes of total forces to conform in ambiguous and clear stimulus situations, presented in Table 16.

It will be clear from examination of Table 16 that although in a great many cases the direction of differences in level of conformity behavior can be predicted from the theory, there are also some comparisons whose results are indeterminate. For example we can state that conformity behavior for Members will be greater than that of Marginals in a normative Ambiguous situation, since the social
reality forces to conform are equal in these two conditions, and the group locomotion forces for Members are greater than those for Marginals. But we cannot say whether or not conformity behavior for Marginals will be greater or less in a normative ambiguous situation than in a normative clear situation, or make any statement about the relative magnitude of conformity behavior in these two conditions.

This is because in one condition the social reality forces are greater, but in the other condition the group locomotion forces are greater. In the absence of any knowledge about equivalence relations between these two kinds of forces, we cannot derive theorems when this theoretical situation occurs.

Within the limitations of our ordered scale, however, 56 directional hypotheses can be derived from the postulate system, or from the model in Table 16. A comparison of this table with the results in Table 12 indicates that the model does represent the relative magnitude and order of the means quite accurately, wherever comparisons are possible. In fact, the direction of differences between conformity means predicted in all 56 theorems is in accordance with the data in Table 12.

It does not seem particularly useful at this point to present the results of t-tests for all comparisons made between conformity means in Table 12, but a few key theorems together with the analysis

17 At the present time we are planning an experiment to explore the equivalence relation between social reality and social reassurance forces to conform, as ambiguity is varied.
results may provide an idea of the relative levels of confidence yielded. Throughout the analysis we used two-tailed \( t \) tests.

Theorem. Conformity behavior of Members will be greater in a normative ambiguous situation than in a normative clear situation. (P.I, P.II, P.IV, P.VI. \( t = 1.78, p = .075 \))

Theorem. Conformity behavior of Members will be greater in a modal ambiguous situation than in a modal clear situation. (P.I, P.IV. \( t = 1.48, p = .11 \))

Theorem. Conformity behavior of Marginals will be greater in a modal ambiguous situation than in a modal clear situation. (P.I, P.IV. \( t = 1.75, p = .09 \))

The differences tested in the above results were intentionally selected as illustrations because they are far from the largest differences to be found in Table 12. It is clear that many other comparisons possible will reach even more acceptable levels of significance. It should also be pointed out that all the theorems concerning conformity behavior stated earlier in this paper (Theorems 1-20 inclusive) are true statements about the results in Table 11, other factors being controlled. For example:

Th. 1. Conformity behavior of Members will be greater in normative than in modal situations. (In the Ambiguous situation, \( t = 3.64, p < .001 \); in the Clear situation, \( t = 3.03, p < .001 \).)

Th. 14. Conformity behavior of Preferences will be greater than that of Marginals in a modal situation. (In the Ambiguous situation, \( t = 1.44, p = .15 \); in the Clear situation, \( t = 2.20, p = .03 \).)
Although it is clear that in many cases the evidence in support of the theoretical predictions does not reach conventional levels of significance, in every case without exception where a directional difference between conformity means is predicted by a theorem, the direction is in accordance with the data. Thus by formulating three basic assumptions about the effect of the relative ambiguity of stimulus objects or situations upon the different forces to conform, it has been possible to order the entire set of data from the ambiguity analysis.

In the next section we shall discuss the psychological implications of our postulate system, in the context of some relevant additional results from analysis of the communication and questionnaire data.

**Psychological forces in the person-group relationships**

One of the purposes of the experiment being reported is to further our understanding of the meaning of group membership and other relationships a person can have to a group. In this section we shall attempt to integrate the findings about conformity behavior already presented with the results of analyzing the communication and questionnaire data, in order to provide a description of some of the psychological forces acting upon persons in each type of person-group relationship. It is appropriate to remind the reader at this point of our earlier discussion concerning the nature of our frame of reference, specifically the following statement (p.6):

*Although we shall speak of person-group relationships in this paper as if they were discrete classes of phenomena, this is merely for*
convenience of exposition." Thus there are various degrees of group membership and non-membership, depending upon the values of the two co-ordinates, Attraction and Acceptance, and the "characteristics attributed to a type are considered to be the modal attributes of the segment" of the phase space discussed earlier.

1. Psychological membership: There is considerable evidence that the major forces acting upon a person who is highly accepted by a group and highly attracted to membership are those induced by the power field of the group and the person's perception of himself as located within this power field.

   a) He has an awareness of a group boundary, i.e. that some persons are inside the group and others (in this experiment, one other) are outside the group, and that he himself is located inside. Evidence for this exists in the fact that he sends more notes to Accepted recipients than to Non-Accepted ones (Table 17, p < .001)\(^{18}\). Even in the Modal condition, when he is working as an individual, he retains his sense of belonging to the group and still favors Accepted recipients (Table 17, p < .01).

   b) This perception of himself as a group member is a realistic

\(^{18}\). Throughout this section we shall refer to the relevant table where evidence exists to support a particular statement, and shall state the p value of the finding. Tables 17 to 24, which contain the results of analysis of the communication and questionnaire data, are presented in the Appendix.
one: it corresponds to others' perceptions. They indicate, by sending him his "share" of the communication (Table 18), that they accept him as a member. This fact does not affect him in the present experiment because of the restriction on interaction among subjects, but it is highly significant for the life situation represented by this paradigm. 19

c) Accompanying the awareness of the "in-group" and an "out-group" is an attribution of inferiority to the non-accepted person. The Member estimates the latter's score on the normative task to be significantly lower than that of an accepted person (Table 21, p < 0.01). This attribution may, of course, be merely a realistic recollection of the experimental manipulation to create non-acceptance (see pp.19-21). It may, however, be a more general tendency of the Member to attribute positive qualities to other members, including himself, and should be investigated in future research.

d) He is highly concerned about the success of the group. He wants other members to do well on the normative task significantly more than less attracted members, those in a Marginal group relationship (Table 20, < 0.001). This concern for the group is projected into estimating, significantly more highly than does the Marginal member, the scores that other members make on the normative

19. For a discussion of the effects on a person's attitudes and behavior of communicative integration or isolation, see (21).
task (Table 21, \( p = .04 \)).

e) He also believes that others are highly concerned about how well he does on the normative task. He rates their concern about his performances significantly higher than does the Marginal member (Table 19 \( p \leq .001 \)).

f) He appears to be relatively realistic in responding to his social environment and perceiving his own social behavior. Thus he is aware of being influenced by others considerably more in the Normative condition than in the Modal (Table 23, \( p = .03 \)). And he reports little desire to give the same answers as others in the Modal condition, but considerable such desire in the Normative, where he is working interdependently with others towards a common goal (Table 24, \( p \leq .001 \)). His realism might be interpreted as being due to self-confidence or lack of anxiety about his group membership, and the emotional support provided by his sense of belonging.

g) He conforms to the majority frequently when he is working as part of a group towards a common goal, especially when he is confronted with a difficult decision. When he is more certain of his own opinion because of the clarity of the stimulus situation, he is relatively more independent (Table 12, \( p = .075 \). See Also Table 16).

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20. These estimates are made completely without data; there is no basis for distinguishing among the abilities of Accepted persons in the absence of any interaction; we therefore feel justified in calling this "projection".
Both of these behaviors are consistent with his identification with the group and desire to help it. When the group is no longer working on a common task he resumes his independence of decision, even though he is still aware of belonging, and responds only to his need for and evaluation of information about an immediate problem (Table 16).

2. **Marginal group relationship**: The psychological state of being accepted as a member of a group but having little attraction to membership is characterized by a somewhat unwilling realization that one is located within the power field of the group. There is evidence of resistance to what French has called the "coercive power" of the group (10,12), an appropriate term in the present study, in view of the difficulty of escaping from the experimental situation.

   a) Marginals have less awareness or concern with the boundaries of the group than Members have. The Marginal member, by the final questionnaire, has no greater desire that Accepted persons do well on the Normative task than he has for Non-Accepted persons (Table 20, p = 1.00). He does, however, perceive himself located inside the group, since he sends more notes to Accepted persons than to Non-Accepted, in the Modal condition as well as in the Normative (Table 17, p < .001 in the Normative, p = .13 in the Modal). It is interesting to consider what this perception of himself as within the power field of the group signifies, in the absence of very much attraction to membership. Since he does not associate much actual or potential need satisfaction with belonging to the group, it is
likely that he is resentful of the group's power over him.\textsuperscript{21} 

b) This perception of belonging to the group is realistic for the Marginal member. Others send him his "share" of the communication (Table 18). In a free interaction situation, communication from other members would likely be seen by him as a manifestation of the power field, i.e. as induced forces designed to steer his behavior in a groupacceptable direction.

c) In the absence of more precise measurement, it is difficult to say how close we came to creating zero attraction in this experiment. In a novel situation it is not easy to decrease the attraction of voluntary undergraduate subjects, especially when they are accepted by the other persons in the group. Thus the Marginal member in this experiment does not correspond exactly to our ideal type Marginal person-group relationship, but is somewhat displaced in the phase space in the direction of Psychological Group Membership. He has some slight identification with the group and its objectives. Like Members, he attributes inferiority to Non-Accepted persons (Table 21, \( p = .03 \)), although the discrepancy between his estimates of scores for Accepted and Non-Accepted persons on the final questionnaire is

\textsuperscript{21} In connection with this statement, it should be emphasized that the conformity behavior in this experiment is private conformity. As far as the subjects knew, there was no way by which their initial responses could be compared with their subsequent responses, since they did not sign the notes which contained their first answer. For some subjects there still might have been some feeling of revealment, certainly, in that the experimenters came into possession of their final answer-sheets. In comparison, though, with the methods used by others in this area of research (1,2,4,6,7), the subjects in this study responded in relative privacy.
considerably smaller than that of the Psychological Member (Table 21).

As mentioned earlier, this may be a recognition of the experimental manipulation for creating non-acceptance, or it may represent some low positive valence of group membership.

d) He is not as concerned as the Member about the group being successful. On both the initial and final questionnaire, he cares less than the latter whether or not Accepted persons do well on the normative task (Table 20, p ≤ .001). If estimates of others' scores in the absence of data constitute evidence of projection of wishes, Table 21 also supports this interpretation. By the final questionnaire he estimates scores of Accepted persons significantly lower on the Normative task than Members do, (Table 21, p = .04).

e) He also believes others to be less concerned about his own performance than Members think that others are concerned about them (Table 19, p ≤ .001). It would appear from this that one way a Marginal member has of escaping from the power field of a group is by perceiving it as less strong, i.e. by believing that others are less concerned about what he does. This has some significant implications for a free interaction situation. There is evidence that in the face of deviancy, pressures towards uniformity in a group increase (9, 22). In the absence of a realistic perception of the magnitude of the power field, such pressures might be seen by Marginals as illegitimate, and the definition of their behavior as "deviancy" quite unjustified.22

22. For a discussion of the problem of legitimate and illegitimate power, see (11, 12).
f) Even when the Marginal is working as part of a group, the level of his conformity behavior is relatively low, compared to Members (Table 11, \( p = .02 \)). The power field of the group does, however, have a significant impact upon him. When he is working independently, his conformity behavior decreases from what it was in the group condition, even though he is still aware of his belonging to the group (Table 11, \( p = .07 \)).\(^{23}\) For the Marginal member, however, an ambiguous situation or difficult decision provides an opportunity for release from the power field of the group, but a clear stimulus situation leads to tendencies to conform (Table 16). It should be pointed out that although this second part of Postulate VI leads to some intriguing hypotheses that are not just "common sense", they rest on somewhat inadequate evidence and require careful testing in further research. An experiment for this purpose is presently being designed.

\(^{23}\) It is noteworthy that even under modal conditions, responding only to social reality forces, he conforms to the majority about one-third of the time (Table 9), which is approximately the proportion that Asch reports for his subjects (1, 2). From some of the protocols provided by Asch's subjects, it appears that social reassurance forces also may have been acting upon certain persons in his experiments. This may vary considerably in response to personality characteristics. It is not unlikely that some persons have a persisting predisposition to perceive their relationship to any group as a non-accepted one, that others habitually tend to see themselves as accepted, and so on. Thus the various forces to conform which we have generated by varying the situation in this experiment, presuming to randomize personality factors, might also be replicated by selecting subjects on the basis of certain constellations of personality factors. We are indebted to Dr. Richard Crutchfield for this last suggestion.
3. **Psychological non-membership**: The person who is neither accepted as a member in a group, nor attracted very much to membership, is not subjected to strong forces arising directly or indirectly out of his relationship to the group. There are no group locomotion forces to conform; and the Non-Member tends to react to non-acceptance by psychologically moving farther away from the group, so that social reassurance forces are kept to a minimum.

   a) The Non-Member is aware of the boundary of the group, and perceives himself as located outside the power field of the group. This is evidenced by his sending fewer notes to Accepted recipients during the Normative task than Accepted persons send (Table 17, \( p = .002 \)).

   b) He has little desire to move closer to the group psychologically, since in the Modal condition where he is participating on the same basis as the others, he still sends fewer notes to Accepted recipients than Accepted senders do (Table 17, \( p = .07 \)). He increases his level of communication hardly at all from Normative to Modal conditions (Table 17, \( p = .29 \)).

   c) It is realistic for the Non-Member to perceive himself as outside the group in the Normative condition, since others send him only 65% of his "share" of the communication (Table 18). But the restraining forces against communicating to him must decrease markedly from Normative to Modal conditions: in the latter he has sent to him (although he does not receive it) 97% of the communication he might "expect" on a random distribution (Table 18). Restraints against communicating to him in the Normative condition can be interpreted as instrumental for Accepted persons: a note to a Non-Accepted person is wasted, since his score does not count for the group. In the Modal condition, however, Accepted persons do not distinguish much between Accepted and Non-Accepted persons as recipients of their communication.
But the Non-Member continues to view himself as outside the group. Although in our experimental situation the direction and number of notes sent was not permitted to affect his behavior -- each subject received the same standard notes -- it does have implications for a free interaction situation. It appears that once a person has been non-accepted or rejected from a group on invidious grounds, he will defend against this by moving towards or away from the group. If, as the Non-Member does, he moves away from the group psychologically, then it will be difficult for him to adapt realistically to the group in a different situation, where he may in fact be accepted on equal grounds with the others.

d) The Non-Member is relatively little concerned about the success of the group. On both initial and final questionnaires he shows little desire that others do well on the Normative task, and significantly less than Preferences show on the final questionnaire. (Table 20, $p = .02$). This is also reflected in Table 21, where he estimates scores for Accepted persons on the Normative task lower than estimates made by Preferences (Table 21, $p = .07$). Thus he projects a lack of concern about group success.

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24. It is not clear whether in this study we created non-acceptance or negative acceptance, i.e. rejection. This theoretical distinction and its implication for person-group relationships has been discussed elsewhere (11). The person-group relationship defined by negative acceptance and zero or near-zero attraction is considered to be one type of Caste relationship, one where the rejected person has no mobility aspirations. It remains for future research to determine whether or not social reassurance forces to conform will be generated in the purely non-acceptance condition, and how to distinguish operationally between that and negative acceptance. Since the person-group relationships are conceived to be "segments" of a continuous space, it is likely that the postulate system will have to be changed to take into consideration degrees of acceptance as well as degrees of attraction. For example, Postulate III specifies that social reassurance forces will be positively related to attraction for non-accepted persons, whereas what is really required is the equation which states how the magnitude of social reassurance forces changes with changes in attraction and acceptance.
e) He also believes that others are not very concerned about his own performance on the Normative task, which is a realistic perception of his lack of membership (Table 19, Preference vs. Non-Member on final questionnaire, $p = .04$).

f) His realistic adjustment to the situation is manifested, too, by his appraisal of his own ability on the experimental tasks, which corresponds to the only information he has available, the feedback during the non-acceptance manipulation that he was inferior to the others. His self-appraisal is significantly lower than that of the Preferences, who received the same feedback, (Table 22, $p = .02$).

g) He gives some indication of a desire to provide the same answers as the others (Table 24), unchanging from Normative to Modal conditions. In the Modal this desire is lower than that of Preferences, although not significantly (Table 24, $p = .27$). These data are consistent with our assumption of relatively weak social reassurance forces acting upon him in both Normative and Modal conditions.

h) He conforms at a moderate level in both Normative and Modal conditions. He is not responding, however, to the possibility of obtaining rewards as mediated by the group, since he is excluded from receiving any reward in the Normative condition, is included in the Modal condition, yet conforms equally in both (Table 11). He is responding to two sets of forces: the same social reality forces to conform which are present for all persons, generated by the cognitive processes of receiving and evaluating information from diverse sources; and relatively weak social reassurance forces, generated by his exclusion from the group on invidious grounds (Table 8). These forces
are weak for two possible reasons: 1. He defends against the threat to his ego, by perceiving group membership to be less valent, i.e. by rejecting the group. In Table 10 his attraction is seen to be lower than the attraction of the Marginal member.\textsuperscript{25} 2. He has less attraction to the group initially, and therefore exclusion from something less desirable was not anxiety-provoking. When he finds himself a minority of one in a clearly structured situation, he is relatively more disturbed than when the problem is a difficult, ambiguous one and he can rationalize his failure to perceive the world correctly. Being incorrect does not necessarily imply faulty ego-processes when he can blame the unclarity of the situation. But to be different in spite of being sure, when the stimulus situation is clear, the answer obvious, imposes considerable strain on the ego-processes, especially in the presence of a suggestion that they are inferior. There are, therefore, greater forces on him to conform, arising out of his need for social reassurance, in the presence of clear than ambiguous stimuli, which are counterbalanced by social reality forces, greater for ambiguous than for clear stimuli (Table 16).

4. Preference group relationship: One of the most striking findings of the present study is a delineation of the psychological state of the person who is excluded from a highly desirable group.

\textsuperscript{25} That the attraction manipulation interacts with the acceptance manipulation, evidenced by the results in Table 10, does not affect the results in Tables 11-24, since for these analyses a revised categorization of Attraction conditions was employed, using the resultant attraction (\textit{see} pp. 46-49).
Since the person in this relationship is relatively unresponsive to changes in the environment and social relationships, it seems appropriate to call this behavior conformism to distinguish it from more socially adaptive conformity behavior.

a) The person in a Preference group relationship is aware of the boundaries of the group and locates himself outside its power field in the Normative condition, but much less so in the Modal condition. He sends fewer notes to Accepted recipients than Accepted senders do in the Normative condition (Table 17, $p = .03$). There is some tendency for him to increase his volume of communication to Accepted recipients from the Normative to the Modal condition (Table 17, $p = .16$). This might be seen as a tendency to locomote towards the group, although he still sends fewer notes than Members do in his condition (Table 17, $p = .09$).

b) In the Normative condition he is not accepted by the others, "receiving" only 63% of his quota of notes (Table 18). It is realistic to locate himself outside the group in this condition. In the Modal condition, however, the restraining forces against communicating to him have decreased and he now has sent to him about 90% of his "share" of the notes (Table 18). As in our previous discussion, we point out that these observations are relevant only for a free interaction situation, since we did not want the flow of communication to affect conformity behavior, and therefore interposed standard notes for all subjects. Yet the findings do have implications for understanding the interpersonal relations of the rejected person, and how anxieties created in one social situation can lead to disruptions of communication in another.
c) Preferences have a strong desire that members of the group do well on the Normative task (Table 20). One may wonder why they want the group to succeed so much, since it will not in any objective sense affect their own success. This can be understood, however, as a means of defending against non-acceptance; a locomotion into the group on a level of irreality (19). By the final questionnaire, this irrational desire for group success is slightly greater, though not significantly so, than that of the Psychological Group Member (Table 20).

d) Even though it was stated explicitly that his score cannot affect group success, he believes that others are quite concerned about his success on the Normative task, by the final questionnaire significantly more than Non-Members do (Table 19, p = .04). This too can be interpreted as a fantasy locomotion into the group. His ego-defensive identification with the group may also be reflected in his estimates of Accepted persons' scores which are significantly higher than those of Non-Members (Table 21, p = .07).

e) Consistent with the above interpretation is an estimate of his own ability which is much higher than that made for himself by the Non-Member (Table 22, p = .02). He states his ability as not significantly different from that of Accepted persons, thus ignoring the only information he has, the feedback during the non-acceptance manipulation that his ability was inferior to that of the others.

f) He also appears to be somewhat unrealistic in perceiving his own social behavior. He reports that he was influenced by others significantly less often on the Modal task than on the Normative
(Table 23, p = .07). Yet this is untrue, if we examine his actual conformity behavior (Table 11). The inability to perceive one's own actions accurately is often taken to be symptomatic of anxiety (2k), and is consistent with our postulation of a strong need for social reassurance in this situation.

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\[ g \] His **conformism** is manifested in a strong reported desire to give the same answers as others do, in both experimental conditions but especially in the Modal condition (Table 2k). In this respect he has a stronger desire not to be different than persons in any other person-group category. Yet we saw above that he rates his own ability as relatively high. His desire to answer like others can be interpreted, therefore, as a defensive desire to be indistinguishable from group members, thus to locomote into the group on a level of irreality.

\[ h \] He conforms at a high level regardless of whether or not he is working for some reward (Table 11), and as much or even more when confronted by a clear stimulus situation as when dealing with an ambiguous one (Table 12). His **conformism**, arising from a powerful need for social reassurance which ignores changes in the environment, can be considered a socially maladaptive response, in contrast with conformity arising from social reality and group locomotion forces which may lead to goal achievement.

**SUMMARY AND CONCLUSIONS**

Two separate processes leading to social conformity behavior have been described in the literature, **social reality** and **group**
locomotion. Experiments on conformity by Sherif, Asch and others are considered to typify the social reality process, in which persons utilize relevant social cues to guide their judgments, but are free from overt group pressures. Research by Festinger and his colleagues characteristically demonstrates group locomotion processes of conformity, where persons are subject to overt pressures towards uniformity within a group under the threat of rejection for deviation. This report deals with a laboratory experiment designed to ascertain whether or not it is useful to postulate two such separate processes of conformity, and if so, to explore the conditions under which each occurs.

An analysis of the theoretical conditions necessary for these processes of conformity to occur leads to the definition of four different relationships between a person and a group, utilizing the two constructs, attraction to the group and acceptance as a member. High attraction and positive acceptance is defined as Psychological Membership, and no attraction and non-acceptance as Psychological Non-Membership. The Preference Group relationship is defined by high attraction and no acceptance, and the Marginal Group relationship by no attraction and positive acceptance as a member.

It is postulated that forces to conform arising out of a need for social reality will arise in all four person-group relationships, and regardless of whether people are working interdependently towards a common goal, called a normative situation or independently towards an individual goal, called a modal situation.
It is postulated that forces to conform arising out of the necessity for group locomotion will arise only in the normative situation for accepted persons, and will be positively related to attraction to membership in the group.

From these two postulates, theorems are derived about the relative magnitude of conformity behavior in the eight experimental conditions of the study.

The subjects were 86 male undergraduate volunteers, randomly assigned to groups of four to six persons. By experimental instructions and other manipulations, the attraction of subjects in half the groups was made high, and in the other half relatively low. One person in each group, chosen randomly by the experimenter, was not accepted by the others as a member of the group. Each group spent two hours in the laboratory working on "social vision" problems, an elaboration of the well-known Asch line problem disguised as a circular maze. The first half of this period was under normative conditions, the second half under modal. Subjects responded to ten problems, projected onto a screen, under each condition. Their private conformity behavior was studied, by comparing their responses to each problem before and after receiving communication from others. The communication consisted of standardized notes surreptitiously introduced by the experimenter. Questionnaire data were obtained before, halfway through, and at the completion of the experimental tasks.

Responses to questionnaire items provided evidence of the validity of the experimentally created variables. Analysis of the conformity data led to a postulation of a third source of forces to
conform, arising out of a need for social reassurance by persons who are excluded from a group. It is postulated that social reassurance forces vary positively in magnitude with the person's attraction to the group in which he is not accepted as a member. From the two original postulates and this additional one, twenty theorems about conformity behavior are rigorously derived. These theorems predict the direction of differences in our data correctly in every instance, although not all the findings reach conventional levels of significance.

An additional analysis was performed, unanticipated in the original experimental plan, to investigate the effect of relative ambiguity or clarity of the stimulus upon forces to conform. The "social vision" problems were dichotomized into high and low ambiguous stimuli, by utilizing a measure based upon the total amount of variation in responses of all the subjects. Mean conformity scores were then computed for all sixteen experimental conditions. A theory was constructed, consisting of three additional postulates about the effect of ambiguity upon social reality, group locomotion and social reassurance forces to conform, and a large number of theorems logically derivable directly or using other previous theorems from the six postulates. It was then demonstrated that all these theorems about conformity behavior in the various person-group relationships and task conditions, in response to ambiguous or clear stimulus situations, correctly predict the relative magnitude of scores in our data.

Since the entire set of theorems are in agreement with the data about conformity behavior, we conclude that considerable evidence has been provided in support of the following six postulates.
Postulate I. Forces to conform arising out of a need for social reality will exist equally in both normative and modal situations, and regardless of the person-group relationship.

Postulate II. Forces to conform arising out of the necessity for group locomotion will exist only for positively accepted persons in a normative situation, and will be positively related in magnitude to such persons' attraction to the group.

Postulate III. Forces to conform arising out of the need for social reassurance will exist only for non-accepted persons, equally in both normative and modal situations, and will be positively related in magnitude to such persons' attraction to the group.

Postulate IV. Forces to conform arising out of a need for social reality will be positively related in magnitude to the degree of ambiguity of the stimulus situation.

Postulate V. Forces to conform arising out of a need for social reassurance will be negatively related in magnitude to the degree of ambiguity of the stimulus situation.

Postulate VI. Forces to conform arising out of the necessity for group locomotion will be positively related in magnitude to the degree of ambiguity of the stimulus situation for persons highly attracted to the group; and negatively related in magnitude to the degree of ambiguity of the stimulus situation for persons lowly attracted to the group.

At the same time it is pointed out that suitable caution must be exercised in accepting these postulates without considerable further testing of derivations from them, in view of the lack of signifi-
cance of some of the findings, and the **ex post facto** construction of a large part of the theory.

Finally, the psychological state of persons in each of the four relationships to a group is described in some detail, utilizing additional evidence from the communication and questionnaire data. It is concluded that conformity behavior which is a response to social reality and group locomotion forces represents an essentially socially adaptive mechanism, since it is directed toward goal achievement. This conformity is contrasted with **conformism**, a rigid, stereotyped, ego-defensive conformity arising out of a need for social reassurance, which is relatively unresponsive to changes in the environment.
APPENDIX

A. Results of Communication Analysis

Table 17

Mean number of notes sent per possible recipient by 86 undergraduates in four person-group relationships, under two task conditions

<table>
<thead>
<tr>
<th>Person-group relationship of sender</th>
<th>Normative Accepted Recipients</th>
<th>Non-Acc. Accepted Recipients</th>
<th>Modal Accepted Recipients</th>
<th>Non-Acc. Recipients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychological membership</td>
<td>8.09 (a)</td>
<td>4.37 (i)</td>
<td>8.34 (e)</td>
<td>7.23 (k)</td>
</tr>
<tr>
<td>Marginal group</td>
<td>8.19 (b)</td>
<td>4.10 (j)</td>
<td>7.84 (f)</td>
<td>6.94 (m)</td>
</tr>
<tr>
<td>Preference group</td>
<td>6.29 (c)</td>
<td>*</td>
<td>7.14 (g)</td>
<td>*</td>
</tr>
<tr>
<td>Psychological non-membership</td>
<td>5.70 (d)</td>
<td>*</td>
<td>6.00 (h)</td>
<td>*</td>
</tr>
</tbody>
</table>

Note.— F ratio for the 12 means is 7.3 = 8.67, with the p < .01. The following comparisons were run, using the appropriate t-test for either correlated or uncorrelated means. (To avoid repetition of terminology, the cells in this and the following tables have been lettered.)

(a) vs. (i), t = 7.94, p < .001;  (b) vs. (j), t = 6.15, p < .001;
(a) vs. (c), t = 2.12, p = .03;  (b) vs. (d), t = 3.19, p = .002;
(e) vs. (k), t = 2.44, p < .01;  (f) vs. (m), t = 1.59, p = .13;
(e) vs. (g), t = 2.07, p = .09;  (f) vs. (h), t = 1.92, p = .07;
(c) vs. (g), t = 1.66, p = .16;  (d) vs. (h), t = 1.15, p = .29;
(i) vs. (k), t = 5.84, p < .01;  (j) vs. (m), t = 1.33, p < .01;
(c) vs. (i), t = 1.40, p = .16;  (d) vs. (j), t = 1.38, p = .17.

* Since there is only one non-accepted person in each group, and these senders are non-accepted, they send no notes to non-accepted persons.
Table 18

Proportion of expected communication actually received by 86 undergraduates in four person-group relationships, under two task conditions

<table>
<thead>
<tr>
<th>Person-group relationship of receiver</th>
<th>Normative</th>
<th>Modal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychological membership</td>
<td>1.107 (a)</td>
<td>1.015 (e)</td>
</tr>
<tr>
<td>Marginal group</td>
<td>1.088 (b)</td>
<td>1.007 (f)</td>
</tr>
<tr>
<td>Preference group</td>
<td>.629 (c)</td>
<td>.898 (g)</td>
</tr>
<tr>
<td>Psychological non-membership</td>
<td>.646 (d)</td>
<td>.969 (h)</td>
</tr>
</tbody>
</table>

Note.— F ratio for the 8 means is .021 = 19.88, with the p < .01. The following comparisons were run, using the appropriate t-tests:

(c) vs. (g), t = 3.15, p = .02; (d) vs. (h), t = 6.07, p < .01;
(a) vs. (c), t = 7.49, p < .001; (b) vs. (d), t = 7.69, p < .001;
(e) vs. (g), t = 2.35, p = .02; (f) vs. (h), t = .70, p = .48.
B. Results of Questionnaire Analysis

Table 19

Mean rating of others' concern about own performance on the Normative task

<table>
<thead>
<tr>
<th>Person-group relationship of rater</th>
<th>Initial Questionnaire</th>
<th>Final Questionnaire</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychological membership</td>
<td>7.8 (a)</td>
<td>7.3 (e)</td>
</tr>
<tr>
<td>Marginal group</td>
<td>6.6 (b)</td>
<td>6.6 (f)</td>
</tr>
<tr>
<td>Preference group</td>
<td>6.6 (c)</td>
<td>6.8 (g)</td>
</tr>
<tr>
<td>Psychological non-membership</td>
<td>4.8 (d)</td>
<td>4.7 (h)</td>
</tr>
</tbody>
</table>

Note. -- The results reported here are from Item 5, Questionnaire I and Item 13, Questionnaire III. See Appendix for the exact wording of these items. The Normative task was not repeated a second time, although subjects were told that it would be, immediately following Questionnaire III. F ratio for the means from the Initial Questionnaire is \( \frac{24.7}{3.8} = 6.50 \), with 18.3 the \( p < .001 \); F ratio for the means from the Final Questionnaire is \( 5.72 \), with the \( p = .005 \). The following comparisons were run, using the appropriate t-tests:

- (a) vs. (b), \( t = 3.00, p < .001 \); (a) vs. (c), \( t = 1.50, p = .13 \);
- (a) vs. (d), \( t = 3.75, p < .001 \); (b) vs. (d), \( t = 3.00, p < .001 \);
- (c) vs. (d), \( t = 1.38, p = .19 \); (e) vs. (g), \( t = 0.56, p = .58 \);
- (e) vs. (f), \( t = 1.75, p = .08 \); (e) vs. (h), \( t = 3.71, p < .001 \);
- (g) vs. (h), \( t = 2.33, p = .01 \); (f) vs. (h), \( t = 3.17, p < .001 \).
Table 20

Mean rating of own desire that others do well on the Normative task

<table>
<thead>
<tr>
<th>Person-group relationship of rater</th>
<th>Initial Questionnaire</th>
<th>Final Questionnaire</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Accepted Recipient</td>
<td>Non-Acc. Recipient*</td>
</tr>
<tr>
<td>Psychological membership</td>
<td>9.1 (a)</td>
<td>8.6 (i)</td>
</tr>
<tr>
<td>Marginal group</td>
<td>8.0 (b)</td>
<td>7.3 (j)</td>
</tr>
<tr>
<td>Preference group</td>
<td>8.3 (c)</td>
<td></td>
</tr>
<tr>
<td>Psychological non-membership</td>
<td>7.2 (d)</td>
<td>7.5 (h)</td>
</tr>
</tbody>
</table>

Note.—The results reported here are from Item 6, Questionnaire I and Item 11±, Questionnaire III. See Appendix for the exact wording of these items. F ratio for the 6 means from the Initial Questionnaire is $2.2 = 4.60$, with $p = .005$; F ratio for the six means from the Final Questionnaire is $2.1 = 2.43$, with the $p < .05$. The following comparisons were run, using the appropriate t-tests:

(a) vs. (b), $t = 3.67$, $p < .001$; (a) vs. (c), $t = 2.25$, $p = .02$;
(c) vs. (d), $t = 1.26$, $p = .24$; (b) vs. (d), $t = 1.33$, $p = .18$;
(i) vs. (j), $t = 1.86$, $p = .08$; (e) vs. (f), $t = 2.67$, $p < .01$;
(g) vs. (h), $t = 2.67$, $p = .02$; (f) vs. (h), $t = 1.20$, $p = .23$.

* The number of raters who provided a rating for Non-Accepted persons was considerably reduced from the total N, since most of the time the latter were simply not included in the response to this item. Therefore the means in cells (i), (j), (k) and (m) are based on N's which range between 10 and 17.
Table 21

Mean estimate of the others' scores on the Normative task

<table>
<thead>
<tr>
<th>Person-group relationship of rater</th>
<th>Accepted Recipient</th>
<th>Non-Accepted Recipient*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>II</td>
<td>III</td>
</tr>
<tr>
<td>Psychological membership</td>
<td>78 (a)</td>
<td>80 (e)</td>
</tr>
<tr>
<td>Marginal group</td>
<td>75 (b)</td>
<td>73 (f)</td>
</tr>
<tr>
<td>Preference group</td>
<td>83 (c)</td>
<td>83 (g)</td>
</tr>
<tr>
<td>Psychological non-membership</td>
<td>76 (d)</td>
<td>75 (h)</td>
</tr>
</tbody>
</table>

Note.— The results reported here are from Item 3, Questionnaire II and Item 8, Questionnaire III. See Appendix for the exact wording of these items. The ratio for the five means from Questionnaire II is $\frac{F}{3.86} = 890.4$, with the $p < .01$; the ratio for the 5 means from Questionnaire III is $178.9 = 4.48$, with the $p < .01$. The following comparisons were run, using the appropriate t-tests:

- (a) vs. (c), $t = 0.74$, $p = .46$;
- (c) vs. (d), $t = 1.36$, $p = .19$;
- (e) vs. (f), $t = 2.03$, $p = .04$;
- (g) vs. (h), $t = 1.98$, $p = .07$.

* The number of respondents who provided estimates for Non-Accepted persons was considerably reduced from the total N, since most of the time they were simply not included at all. The means in cells (i), (j), (k) and (m) are based on N's which range between 8 and 16. When comparisons are made between ratings of Accepted and Non-Accepted persons, only those raters who provided estimates for both were used. The following such comparisons were run: (a) vs. (i), $t = 4.90$, $p < .01$; (b) vs. (j), $t = 2.79$, $p = .03$; (e) vs. (k), $t = 6.12$, $p < .01$; (f) vs. (m), $t = 2.49$, $p = .04$. 
Table 22
Mean estimate of own relative ability on experimental tasks

<table>
<thead>
<tr>
<th>Person-group relationship of rater</th>
<th>Mean Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychological membership</td>
<td>6.2 (a)</td>
</tr>
<tr>
<td>Marginal group</td>
<td>5.7 (b)</td>
</tr>
<tr>
<td>Preference group</td>
<td>5.7 (c)</td>
</tr>
<tr>
<td>Psychological non-membership</td>
<td>3.5 (d)</td>
</tr>
</tbody>
</table>

Note.— The results reported here are from Item 1, questionnaire III. See Appendix for the exact wording of this question. F ratio for the four means is 18.7 = 8.90, with the p < .001. The following comparisons were run, using the t-test for uncorrelated means: (a) vs. (b), t = 1.25, p = .21; (a) vs. (c), t = 1.00, p = .32; (a) vs. (d), t = 5.4, p < .001; (b) vs. (d), t = 3.67, p < .001; (c) vs. (d), t = 2.75, p = .02.
Table 23

Mean rating of frequency of being influenced by others on experimental tasks

<table>
<thead>
<tr>
<th>Person-group relationship of rater</th>
<th>Normative</th>
<th>Modal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychological membership</td>
<td>5.0 (a)</td>
<td>4.1 (e)</td>
</tr>
<tr>
<td>Marginal group</td>
<td>5.4 (b)</td>
<td>4.8 (f)</td>
</tr>
<tr>
<td>Preference group</td>
<td>6.0 (c)</td>
<td>5.0 (g)</td>
</tr>
<tr>
<td>Psychological non-membership</td>
<td>5.8 (d)</td>
<td>5.6 (h)</td>
</tr>
</tbody>
</table>

Note.— The results reported here are from Items 2 and 3, Questionnaire III. See Appendix for the exact wording of these items. F ratio for the six means is 7.0 = 1.37, with the p > .05. In spite of the lack of significance of the over-all F, the following t-tests were run: (a) vs. (e), t = 2.14, p = .03; (c) vs. (g), t = 2.29, p = .07.
Table 2h

Mean rating of own desire to give same answers as others on experimental tasks

<table>
<thead>
<tr>
<th>Person-group relationship of rater</th>
<th>Normative</th>
<th>Modal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychological membership</td>
<td>6.4 (a)</td>
<td>4.9 (e)</td>
</tr>
<tr>
<td>Marginal group</td>
<td>6.3 (b)</td>
<td>5.7 (f)</td>
</tr>
<tr>
<td>Preference group</td>
<td>6.6 (c)</td>
<td>6.7 (g)</td>
</tr>
<tr>
<td>Psychological non-membership</td>
<td>6.0 (d)</td>
<td>5.7 (h)</td>
</tr>
</tbody>
</table>

Note.-- The results reported here are from Items 4 and 5, Questionnaire III. See Appendix for the exact wording of these items. F ratio for the six means is $8.6 = 1.54$, with the $p > .05$. In spite of the lack of significance of the over-all $F$, the following comparisons were run: (g) vs. (e), $t = 1.60$, $p = .09$; (g) vs. (h), $t = 1.17$, $p = .27$. (a) vs. (e), $t = 4.32$, $p < .001$; (b) vs. (f), $t = 1.85$, $p = .06$. 
Research Center for Group Dynamics
Participation Form

Name ___________________________ Age ______ Female ______
Address (local) ____________________ Phone No. ____________
This Course _____________ Section No. _________ College Class: Fr. ____ Sr: ____
(Check one) Soph. ____ Grad. ____
Jr. ____ Spec. ____

Please fill out your complete class schedule by placing the course numbers in the appropriate boxes.

<table>
<thead>
<tr>
<th>8-9am</th>
<th>9-10</th>
<th>10-11</th>
<th>11-12</th>
<th>12-lpm</th>
<th>1-2</th>
<th>2-3</th>
<th>3-4</th>
<th>4-5</th>
<th>5-6</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
<td></td>
<td></td>
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<td>Tuesday</td>
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<td>Friday</td>
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<tr>
<td>Saturday</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Have you taken part in any other group study here at the University? Yes ____ No ____
If yes, briefly describe the task on which you worked.

The following information will be useful in scheduling together groups of people who are congenial. It will be kept strictly confidential. In front of the characteristics listed below, please mark:

/ for those characteristics which you like most in others.
X for those characteristics which you dislike most in others.

--- Industrious --- Stubborn --- Talkative
--- Intelligent --- Artistic --- Reserved
--- Sophisticated --- Practical --- Informal
--- Shrewd --- Temperamental --- Frivolous
--- Neat --- Athletic --- Conventional
--- Efficient --- Imaginative --- Progressive

Add any others if you wish:

To participate in the study, please sign here:
2. Scheduling Letter

Dear

We wish to thank you for volunteering to participate in one of our research studies in social psychology. It is your cooperation and that of your fellow students which is making this important work possible.

Taking into account the schedule of free hours and the questions about your personal likes and dislikes which you filled out in your classroom, we have arranged for you to be a member of a group meeting on

The meeting will last one hour.

Your group will meet in one of the meeting rooms in the basement of the University Elementary School, room #. The map below shows the exact location of the building and directions for entering.

The other members of the group have also been contacted. We are all depending on your presence since the meeting cannot be held unless every member of the group shows up. It is important that we start on time so that the meeting won't take more than one hour. If for some reason you find that you are unable to make the meeting as scheduled, please telephone us (No. 3-1511, ext. 2616) well in advance so that we can reschedule your group for some later date.

Cordially,

Jay M, Jackson
Project Director
3. Note Form

Problem # _______

I think that the shortest path to the goal is a b c d

(check one of the boxes)

(on the scale below, please circle the number which best represents how confident you feel about your answer. The captions below are for your guidance only.)

10 9 8 7 6 5 4 3 2 1

very confident moderately confident slightly confident not confident at all

I want this note delivered to (If you want to send this note to someone, fill in his capital letter above. If you do not, leave this space blank.)

Remarks:

(PLEASE DO NOT SIGN YOUR NAME OR LETTER)
### Answer Sheet

#### SCORING SHEET FOR VISION PROBLEMS

**HOW TO USE THIS SCORE SHEET:**

1. Fill in your identification letter here ________.
2. Fill in the problem set no. as instructed ________.
3. For each problem, indicate your answer on the left hand side of this sheet by circling the correct letter (a, b, c, or d). Be sure that you are opposite the right problem number. Then, on the same line, indicate how confident you are of your answer, by circling any number on the scale of confidence, from 1 to 10.

#### SCALE OF CONFIDENCE IN ANSWER

<table>
<thead>
<tr>
<th>PROBLEM NO.</th>
<th>ANSWER</th>
<th>VERY CONFIDENT</th>
<th>MODERATELY CONFIDENT</th>
<th>SLIGHTLY CONFIDENT</th>
<th>NOT CONFIDENT AT ALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. a</td>
<td>b</td>
<td>c</td>
<td>d</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>2. a</td>
<td>b</td>
<td>c</td>
<td>d</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>3. a</td>
<td>b</td>
<td>c</td>
<td>d</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>4. a</td>
<td>b</td>
<td>c</td>
<td>d</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>5. a</td>
<td>b</td>
<td>c</td>
<td>d</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>6. a</td>
<td>b</td>
<td>c</td>
<td>d</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>7. a</td>
<td>b</td>
<td>c</td>
<td>d</td>
<td>10</td>
<td>9</td>
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<tr>
<td>8. a</td>
<td>b</td>
<td>c</td>
<td>d</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>9. a</td>
<td>b</td>
<td>c</td>
<td>d</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>10. a</td>
<td>b</td>
<td>c</td>
<td>d</td>
<td>10</td>
<td>9</td>
</tr>
</tbody>
</table>
5. Questionnaires

STUDY G53

No. Date.

Sex. Problem.

DO NOT WRITE IN SPACE ABOVE THIS LINE

QUESTIONNAIRE I

My letter is ______________

Instructions: Please read the following questions carefully, and check the answer which best represents how you really feel. This is not a test. There are no right or wrong answers. Just rely upon your first impressions and state frankly how you feel. Your answers will be kept completely confidential.

1. Do you know any of the other fellows here? Yes No

   (If you checked "yes" above, place the letter of each person you know opposite the degree of acquaintance below.)

   a) Very close friend
   b) Friendly
   c) Casual acquaintance
   d) Very slight acquaintance

2. Using the space below, please indicate what contribution you think that each member of the group will make to the total group score on the GROUP PRIZE task you are about to do. List the members of the group by their capital letters. (Do not include yourself). Put a "1" beside the letter of the person you think will contribute most, a "2" beside the letter of person you think will contribute next most, and so on. There must be no ties. If you don't feel sure, please guess, since guesses often accurately represent your true feelings.

   RANK LETTER
3. Thinking of the group as a whole, how well do you think you'll enjoy working with them?

(To answer this question, and those that follow, read all the captions on the scale below to get an idea of its meaning. Then circle a number on the scale to represent how you feel. Just use your first impression, and feel free to circle any number on the scale.)

<table>
<thead>
<tr>
<th>10</th>
<th>9</th>
<th>8</th>
<th>7</th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>I'm looking forward with enthusiasm to working with them</td>
<td>I think I will enjoy the time I spend working with them</td>
<td>Working with them will be somewhat unattractive</td>
<td>I think I'll find working with them will be quite disagreeable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. How much benefit do you feel you will receive from taking part in this study?

<table>
<thead>
<tr>
<th>10</th>
<th>9</th>
<th>8</th>
<th>7</th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>A great deal of benefit</td>
<td>Quite a bit of benefit</td>
<td>Hardly any benefit</td>
<td>No benefit at all</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. On the GROUP PRIZE task which you are about to do, how concerned do you think the others will be about how well you are going to do?

<table>
<thead>
<tr>
<th>10</th>
<th>9</th>
<th>8</th>
<th>7</th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greatly concerned</td>
<td>Moderately concerned</td>
<td>Slightly concerned</td>
<td>Not concerned at all</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
6. How much do you want each member of the group to do well on the GROUP PRIZE task which follows?

(To answer this question, place each person's letter, in one of the spaces on the scale below. You may put more than one letter in a space. You may use any spaces you like, and any combination you like, as long as it represents how you feel.)

<table>
<thead>
<tr>
<th>10</th>
<th>9</th>
<th>8</th>
<th>7</th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very</td>
<td>Considerable</td>
<td>A</td>
<td>Little</td>
<td>Hardly</td>
<td>Not</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>much</td>
<td>at all</td>
<td>at all</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. If you were given the opportunity at this point to change to a different group of fellows meeting next door, what would you do?

(Use your first impressions and whatever other feelings you may have. Circle any number on the scale below which represents how you feel.)

<table>
<thead>
<tr>
<th>10</th>
<th>9</th>
<th>8</th>
<th>7</th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>I'd very much want to remain a member of this group</td>
<td>I'd have a slight preference for this group</td>
<td>I'd have a slight preference for some other group</td>
<td>I'd want very much to change to another group</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
DO NOT WRITE IN SPACE ABOVE THIS LINE

QUESTIONNAIRE II

Instructions: Please read the following questions carefully, and check the answer which best represents how you really feel. This is not a test. There are no right or wrong answers. Just state frankly how you feel. Your answers will be kept completely confidential.

1. So far in this study, how much have you enjoyed being with this group?
   a) [ ] I have not enjoyed being with them at all.
   b) [ ] I have enjoyed being with them only slightly.
   c) [ ] I have enjoyed being with them a little.
   d) [ ] I have enjoyed being with them quite a bit.
   e) [ ] I have enjoyed being with them very much.

2. If you were given the opportunity at this point to change to a different group of fellows meeting next door, what would you do? (Circle a number)

I'd very much want to remain a member of this group.
I'd have a slight preference for this group.
I'd have a slight preference for another group.
I'd want very much to change to another group.

3. Assuming that on the GROUP PRIZE task just completed the possible score for each person is from 0 to 100, please estimate the score each member of the group contributed to the total group score. (Place the capital letter of each member of the group in the appropriate space. You may of course, put more than one letter in a space.)

   [100] [90] [80] [70] [60] [50] [40] [30] [20] [10]
Questionnaire - III

My letter is ________________

Please read the following questions carefully, and check the answer which best represents how you really feel. This is not a test. There are no right or wrong answers. The best answer you can give is always the one which tells frankly how you feel. Your answers will be kept completely confidential.

1. Please compare your own ability on the problems to the average ability of the other persons present (excluding the two researchers). (Circle a number on the scale below to represent your frank opinion. Feel free to circle any number on the scale. The captions below are for guidance only.)

<table>
<thead>
<tr>
<th>10</th>
<th>9</th>
<th>8</th>
<th>7</th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>A great deal above average</td>
<td>About average</td>
<td>A great deal below average</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. On the Group-Prize set of problems did you ever get answers on the notes from the other fellows which were very different from those you felt like giving when you first looked at the problem?

Yes [ ] No [ ]

(If you checked "Yes" above, please answer the following question, by circling the number on the scale below which represents best what actually happened.) How often were your answers on the Group-Prize set of problems influenced by the notes from the other fellows?

[ ]Almost all the time [ ] Most of the time [ ] Some of the time [ ] Seldom [ ] Never
3. On the Position-Prize (individual) set of problems did you ever get answers on the notes from other fellows which were very different from those you felt like giving when you first looked at a problem?

Yes ☐  No ☐

(If you checked "Yes" above, please answer the following question, by circling the number on the scale below which represents best what actually happened.) How often were your answers on the Position-Prize set of problems influenced by the notes from the other fellows?

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<tbody>
<tr>
<td>Almost</td>
<td>Most</td>
<td>Some</td>
<td>Seldom</td>
<td>Never</td>
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<tr>
<td>all the time</td>
<td>of the time</td>
<td>of the time</td>
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4. During the Group-Prize set of problems, how much tendency did you feel to give the same answers as the other fellows? (Circle the number on the scale below which represents how you really felt. The captions below the scale are for guidance only.)

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<tr>
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</thead>
<tbody>
<tr>
<td>A strong tendency</td>
<td>Considerable tendency</td>
<td>Little tendency</td>
<td>No tendency</td>
<td></td>
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<td></td>
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5. During the Position-Prize set of problems, how much tendency did you feel to give the same answers as the other fellows? (Circle the number on the scale below which represents how you really felt. The captions below the scale are for guidance only.)

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<tbody>
<tr>
<td>A strong tendency</td>
<td>Considerable tendency</td>
<td>Little tendency</td>
<td>No tendency</td>
<td></td>
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</tbody>
</table>
6. How much do you think that the members of the group wanted to influence your answers on the Group-Prize set of problems? (Circle the number on the scale below which best represents how you feel. The captions below the scale are for your guidance only.)

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<th>3</th>
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<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very much</td>
<td>Considerably</td>
<td>A little</td>
<td>Hardly</td>
<td>Not at all</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. How much do you think that the members of the group wanted to influence your answers on the Position-Prize set of problems? (Circle the number on the scale below which best represents how you feel. The captions below the scale are for guidance only.)

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</tr>
</thead>
<tbody>
<tr>
<td>Very much</td>
<td>Considerably</td>
<td>A little</td>
<td>Hardly</td>
<td>Not at all</td>
<td></td>
<td></td>
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</tbody>
</table>

8. Assuming that on the Group-Prize set of problems completed earlier the possible score for each member of the group is from 0 to 100. Please estimate the score that each member contributed to the group. (Place the capital letter of each member of the group in the appropriate space below. You may, of course, put more than one letter in a space.)

9. If you were given the opportunity at this point to change to a different group of fellows meeting next door, what would you do? (Circle the number on the scale below which represents how you really feel. The captions below the scale are for guidance only.)

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<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>I'd very much want to remain a member of my present group</td>
<td>I'd have a slight preference for my present group</td>
<td>I'd have a slight preference for some other group</td>
<td>I'd want very much to change to another group</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>
10. How much benefit do you feel you will receive from taking part in this study? (Circle the number on the scale below which represents how you really feel. The captions below the scale are for guidance only.)

| 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |

A great deal of benefit  Quite a bit of benefit  Hardly any benefit  No benefit

11. Predict for each member of the group how much contribution he will make to the second Group-Prize set of problems which follows. List the members of the group by their capital letters. Put a "1" beside the letter of the person you think will contribute most, a "2" beside the letter of the person you think will contribute next most, and so on. There must be no ties. You must include all the members of the group. If you don't feel sure please guess, since guesses often accurately represent your first impressions.

(Use this space below)

| RANK | LETTER |

12. Predict how each member of the group ranked you in item 11. (List each member by his capital letter, and place opposite each letter the rank you think he gave you: 1st, 2nd, etc.)

| LETTER | RANK |
13. How concerned do you think the members of the group will be about how well you are going to do on the second Group-Prize set of problems which follows? (Circle the number on the scale below which represents how you really feel. The captions below the scale are for guidance only.)

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<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greatly concerned</td>
<td>Moderately concerned</td>
<td>Slightly concerned</td>
<td>Not concerned at all</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

14. How much do you want each member of the group to do well on the second Group-Prize set of problems you are about to do? (To answer this question, please place each person's letter in one of the spaces on the scale below. You may put more than one letter in a space. You may use any spaces you like, and any combination you like, as long as it represents how you feel.)

| 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |

15. How do you think you'll enjoy working with these fellows on the second Group-Prize task? (Circle the number on the scale below which represents how you really feel. The captions below the scale are for guidance only.)

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<th>4</th>
<th>3</th>
<th>2</th>
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</tr>
</thead>
<tbody>
<tr>
<td>I'm looking forward with enthusiasm to working with them</td>
<td>I think I will enjoy the time I spend working with them</td>
<td>I think I'll find working with them somewhat unattractive</td>
<td>I'll be quite disagreeable with them</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>
NORMATIVE PROBLEMS
MODAL PROBLEMS

1

2

3

4

5

6

7

8

9

10
D. Experimental Instructions

1. Induction of High Attraction

Now that we're all here, we might as well begin. Let me tell you a little about what we're going to be doing today. For several years we have been engaged in an important research project, sponsored by a national foundation. This research is in the area of "social vision". You all probably know that the laws of vision have been pretty well established in the past. There is a solid body of knowledge in that field. Recently, however, there have been a number of experiments which have thrown doubt upon some of the major laws, and we're beginning to understand that a great deal more work needs to be done. It's easy to understand why, too. The laws of vision were developed by putting a person in a dark room and letting him look at certain objects projected on a screen. He was isolated from other persons. Now consider the conditions under which we usually see things. We are usually together with other people, exposed to other stimuli in addition to what we're looking at. It is being found that we must modify many of our laws of vision if we want to predict for these social conditions. This new field is being called social vision. The study we're working on today concerns an important problem in that field.

In order to create satisfactory conditions for research on this problem, it is important to have small groups of people who are well matched, who will be congenial and get along well together. You remember the questions we asked you to fill out on the volunteer form, in class? About the sorts of persons you liked and disliked? We have found out over time that we are able to match people very well by doing a pattern analysis
with those data. By putting together people who have similar likes and dislikes, we can form a group of congenial people, that we are sure will be able to work well together. If I remember correctly (consults sheet of paper extracted from pocket) -- yes, your group is one of the best matched groups we've ever had. I have no doubt you will all work together well and enjoy being together.

In order to make the task even more interesting, we have found it helps to give away a prize. We are going to be giving you some "social vision" problems to solve. For the best group in the study, we will give a $25.00 prize, to be divided among the members of your group. Since there are only 23 other groups in the study, your group will have a pretty good chance to win this $25.00 prize. This is what you're going to have to do. We are going to project ten social vision problems on the screen. You will see each problem twice, and in between you will have a chance to communicate with one another. You will be scored on your answers to these problems, but there will be no individual scores, only a score for your group. The best group in the study will win the $25.00 prize. (Note: when there were six persons, we talked of a $25.00 prize, when there were five persons, a $20.00 prize, etc. The amount was adjusted to permit each accepted person to receive $5.00.)

At the end of today's session, we'll have a little time to explain to you in more detail just what we are hoping to find out, and to let you ask any questions you want to. Then when the study is completed and our analysis is all finished, each of you will receive a summary of our findings in the mail, in language you can understand, so that you will know what you have helped us to find out.
2. Induction of Low Attraction

Now that we're all here, we might as well begin. Let me tell you a little about what we're going to be doing today. We've been doing some research in the area of "social vision". You all probably know that the laws of vision have been pretty well established in the past. There is a solid body of knowledge in that field. Recently, however, there have been a number of experiments which have thrown doubt upon some of the major laws, and we're beginning to understand that a great deal more work needs to be done. It's easy to understand why, too. The laws of vision were developed by putting a person in a dark room and letting him look at certain objects projected on a screen. He was isolated from other persons. Now consider the conditions under which we usually see things. We are usually together with other people, exposed to other stimuli in addition to what we're looking at. It is being found that we must modify many of our laws of vision if we want to predict for these social conditions. This new field is being called social vision. We have been playing around with a problem in this field. In order to create satisfactory conditions for research on this problem, it is important to have small groups of people who are well matched, who will be congenial and get along well together. You remember the questions we asked you to fill out on the volunteer form, in class? About the sorts of persons you liked and disliked? We have found out over time that we are usually able to match people very well by doing a pattern analysis with those data. By putting together people who have similar likes and dislikes, we can form a group of congenial people, that we are sure will be able to work well together. Unfortunately, it didn't work out very well with this group, if I remember correctly. (consults
-115-
sheet of paper extracted from pocket) - No, for a number of reasons your
group isn't very well matched. For one thing, we had a number of cancel-
lations and had to replace the people. Then, some of you didn't fill out
the questions on the volunteer forms. Mind you, you probably won't have
too much difficulty working together. We just can't guarantee that this
will be as congenial a group as we like to create. But you'll have to do
the best you can.

Since we weren't successful in creating a homogeneous, well-matched
group, we won't be able to use the results from this group in the study,
but we thought we might as well run it, anyway, just to see how it comes
out.

This is what you're going to have to do. We are going to project
ten social vision problems on the screen. You will see each problem twice,
and in between you will have a chance to communicate with one another.
You will be scored on your answers to these problems, but there will be
no individual scores, only a score for your group. We will want to see
how your group compares with the other groups in the study.

Unfortunately, there won't be time to explain very much more to
you about the study. I don't think you'll learn very much from being in
this, frankly, but I don't think you'll find it too bad.

3. Induction of Non-Acceptance

Before we go ahead with the problems, there's one more matter we
have to take care of. (Speaker exhibits a slight amount of hesitation
indicating embarrassment at this point). All last year we were attempting
to make progress with this study. As you probably realize, in a study of
this kind, scientific control is very necessary. One of the things which is very important is to have the same number of persons in each group that we run. Last year we were having a great deal of difficulty getting four persons in every group (depending upon the number of persons present, the speaker says "three", "four", or "five"). We would schedule four persons, and then only three would show up -- sometimes only two, but usually one person would fail to come. It was most discouraging, since we needed four persons in the group, and we would have to send the others home, and go home ourselves. This semester, to avoid that trouble, we have been scheduling an additional person for each session. Since we need four persons, we schedule five, knowing that one person nearly always fails to come. This has been working fine, and we've been getting our four-person groups. Occasionally, of course, like today, everyone is good enough to come, and we have one more person than we need.

This happened a few times in the past, and we have developed a method of dealing with this and at the same time being fair with everyone concerned. We are going to give you a Preliminary Set of six social vision problems -- project them onto the screen -- and have you write down the answers. Then Herb will score them quickly, and we'll tell you how good you are at these problems. Then we're going to ask the group to vote on which three (four, five) persons it wants to keep in the group. This will have nothing to do with how well you like the person eliminated -- and he'll have a chance later on to win a prize, too -- but it will give us the right number of persons so that we can run the group.

(The problems are introduced with an example, and then the Preliminary Set of six problems is exposed for three seconds each. The subjects
have to write down their answers on a form provided for that purpose. These Answer Sheets are then collected, and taken into the next room to be scored. After a suitable interval, the scores are announced. One person, randomly selected, has a score much lower than the others, whose scores are high and grouped closely together. Subjects are then given ballots, and asked to vote to exclude one person. The experimenter appears to read the ballots, and then gives the following instructions.

In order to have a four-person group, D will not be a member. That means that his score will not count towards the group score, and if the group wins the $20.00 prize, D will not share in it. No, please don't go (as D arises to leave) because later on you will have a chance to work for an individual prize. You will not be competing against the others then, but you will have a chance to win a prize, so I want you to stay and have the same experience as the others, even though you're not a member of the group on this set of problems. (The Non-Accepted person is thus kept physically in the group, but psychologically not accepted in a member's role. In the Low Attraction condition, the above instructions are the same except that no mention is made of cash prizes before the experimental sessions are run.)

4. Induction of Normative Task Condition

(The instructions for this condition are built into the Attraction and Acceptance inductions, reported above. The essential characteristics were giving the perception of interdependence and working for a common goal, with no individual goals.)
5. **Induction of Modal Task Condition**

(The instructions for this condition were given immediately after subjects had filled out Questionnaire II.)

You are now going to do the Position-Prize set of problems. This set will consist of another 10 social vision problems, very similar to those you have just completed. The rules will be exactly the same: you will see each problem, have a chance to communicate with one another, and then see the same problem again, before writing down your answer. The only difference is that now you will be on your own. There is no longer any group. Each of you is working for a $5.00 prize against all the other persons in the study who are at your "position". Thus you, A are competing against all the other A's in the study, and you B against all the other B's, and so on. Each of you can win $5.00, and you are not competing against one another.

You may wonder why we are doing this, or whether we just like to give away money? For statistical control purposes, we need to know just what ability each one of you has on these problems. You may think we already obtained that information in the preliminary set, but actually, the conditions in that set were quite different from those in the Group-Prize set just completed. You saw each problem only once, wrote no notes to others and did not know what others thought, and so on. What we want to do in this set is have exactly the same conditions as in the Group-Prize set, but each of you is on his own, working for an individual prize against the other persons in your position. O.K.?
References


12. French, J.R.P., Jr. & Raven, B. An experiment on legitimate power, coercive power, and public and private change. Ann Arbor: Research Center for Group Dynamics, University of Michigan, 1954 (dittoed)


22. Schachter, S. Deviation, rejection, and communication. J. abnorm. soc. psychol., 1951, 46, 190-207. Also reprinted in (5).
