

COHESIVENESS AS A DETERMINANT OF
PERSUASIVENESS AND PERSUASIBILITY

THE EFFECTS OF COHESIVENESS
ON THE
PERSUASIVENESS AND PERSUASIBILITY
OF INDIVIDUALS IN TWO PERSON-GROUPS

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The present study is concerned with the effects of different levels of "cohesiveness" on the persuasiveness and persuasibility of individuals in a two person verbal interaction situation. In particular, changes in verbal behavior over time are obtained. How the sex of the participants affects the discussion and outcome is also investigated.

The results indicated that favorably predisposed subjects are more persuasible than unfavorably predisposed subjects. Further, male subjects speak more than female subjects and this is reflected in the number of positive, negative and neutral statements they emit. Over-all decreases in the emission of positive statements and over-all increases in the emission of negative statements were found to accompany opinion change.

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CHAPTER ONE
INTRODUCTION

The experiment reported in this thesis is concerned with the effects of different levels of "cohesiveness" on the persuasiveness and persuasibility of individuals, paired, and discussing a topic on which they disagree. Cohesiveness in previous investigations has been manipulated in a variety of ways, and the most common of these is employed in the present investigation. Subjects, prior to being paired, were informed that they would like and be liked by the other individual or, conversely, that there was no reason to believe they would like one another. Previous studies suggest that the effects of such prior instructions are a powerful determinant of social behavior. In contrast to many earlier experiments, the present investigation is concerned with face-to-face social interaction, and in particular, obtains measures of change in verbal behavior over time. In addition, predictions of outcome, based on a learning theory interpretation of the main variables, are tested. How the sex of the participants affects discussion and outcome is also investigated.

In the following chapters, the relevant experimental literature will be reviewed, hypotheses derived, the experimental method described, and the results outlined and discussed.

CHAPTER TWO
HISTORICAL REVIEW

In this review, relevant knowledge regarding the two variables (cohesiveness and sex) will be dealt with separately. A section on person perception will be included.

(1) Cohesiveness

The concept of "cohesiveness" was first defined by Festinger (1953, p. 194). He wrote, "Cohesiveness of a group is the resultant of all the forces acting on the members to remain in the group." Or, as Back (1951, p. 7) added: "In other words, cohesiveness is the attraction of membership in a group for its members."

Cartwright and Zander (1953, 1960) state that three different meanings of "cohesiveness" may be distinguished. First, it may refer to the individual's attraction to the group, including his resistance to leaving it. The second meaning it can invoke is the morale or the level of the members' motivation to attack their task with zeal. Thirdly, "cohesiveness" can designate the relative extent to which the group members coordinate their efforts (i.e. co-operate or compete.)

These authors refine the concept of "cohesiveness" by stating that the attraction of the subject to the group will depend on two sets of conditions. First, the properties of the

group such as its goals, programs, size, type of organization, and position in the community, play an important role. Secondly, the needs of the person for affiliation, recognition, security and achievement that can be mediated by the group will also determine the extent to which an individual will be attracted. Thus adequate formulation of the concept "cohesiveness" must involve both the conception of the group's nature and the needs of the individual. Libo (1953) and Van Bergen and Kockebakker (1959) further indicate that the concept of cohesiveness has been dealt with only on an individual level. For instance, Schachter, Ellertson, McBride and Gregory (1951, P. 231) manipulated cohesiveness by telling the individual subject, before he met the other members of the group, either that "there is every reason to expect that the other members of the group will like you and you will like them" or that "there is no particular reason to think that you will like them or that they will care for you." Similarly in the present study, cohesiveness as an independent variable is manipulated on an individual level. Cohesiveness is then defined in this experiment as the personal attraction of one partner to the other member of the dyad.

A variety of methods have been used to vary cohesiveness, all of which are assumed to have the same behavioral effects. The attraction of one member to the other or others of the group is made high or low by varying the subject's interest in the activities the group carries out, or the social approval that a group member can receive, or the amount of financial reward a member of a group will receive, or the status that can be obtained by belonging to a

particular group. The reasons that an individual may have for his attraction to other members of the group may indeed be numerous. It is thus important to classify the nature of the attraction that an individual may have since it is the basis by which cohesiveness is operationally defined. Homans (1961) in reviewing several of the experiments dealing with cohesiveness makes more specific the "property of groups" propounded by Back (1951) and Festinger (1953). He suggests that cohesiveness refers to the values of the different kinds of rewards available to the members of the group. In Homans' terms, the more valuable "activities" the group members receive from other members or from the environment, the more cohesive the group is and the greater the probability that a member will exhibit responses that the group demands. The word "activities" has in some experiments referred to the "liking" or "social approval" that accrues to the group's members. The greater the value placed by each member of the group on the social approval given by other members, the higher is the cohesiveness of the group. For example, the more the members of a group like each other, the higher is the cohesiveness of the group and the more likely it is that a group member will be a strong group adherent and put much effort into accomplishing the group purpose.

The following review is organized in terms of the characteristics of cohesive groups. The studies reviewed indicate that members of cohesive groups are likely to be responsible (participate vigorously in discussions, remain in the group when given the opportunity to leave, attend many group meetings) in their activities, find strength and support from membership in the

group, conform to the group's standards, and have similar value orientations.

The first experiments outlined here deal with the category of responsible group behavior.

Back (1951) manipulated cohesiveness in three ways. Subjects who were instructed that they would either (1) like each other, (2) receive a prize for the best group performance, or (3) obtain prestige by participation in a productive group were considered to be in high cohesive groups. Subjects who were instructed that they would not (1) like each other, (2) receive a prize for the best group performance, or (3) obtain prestige by participation in a productive group were considered to be in low cohesive groups. In this study, pairs of subjects of the same sex who had not known each other previously were introduced and then taken privately to a room where they were told to write a story about a set of three pictures. Then they were brought together and asked to discuss the story, after which each subject wrote a final story and interpretation. Though the subjects thought the pictures they had seen were identical, they actually were slightly different to ensure some discussion. One of the conclusions of this study was that those who were in the high cohesive groups interacted more vigorously or participated more readily in the discussion than low cohesive subjects, regardless of how cohesiveness was manipulated.

Libo (1953) measured cohesiveness through the use of picture projective tests. This was based on the assumption that the immediate environment influences the feelings of the subject, and

that these in turn will be reflected in stories written about the pictures while the respondents are in a group meeting. The results indicated that high cohesive subjects, when subsequently left free to choose, remain in the group, while low cohesive members are more likely to leave.

A study by Sagi, Olmstead, and Atelsek (1955) supported the hypothesis that group members who are highly attracted to a group attend more meetings and remain members longer than subjects who are relatively less attracted. Groups with "explicit and objective goals consisting of the creation of products or services for the student body" (p. 308) and within a size of twenty members were used. Attraction to the group was defined by two measures, sociometric status and personal involvement. Sociometric status was assumed to reflect the relative interpersonal position of a member within a group in terms of the number of friendship choices by other members. The degree to which a member felt responsibility to and satisfaction with the organization relative to his personal expectations (measured with a Guttman-type scale) indicated his personal involvement. The higher the person's score on both tests, the more attracted to the group he was assumed to be.

The next studies show that the members of cohesive groups are more likely to find strength and support from their membership than are members of low cohesive groups. A study by Wright (1943) investigated the effects of frustration upon the play activity of pairs of children between the ages of three and six. These children had been classified earlier by their nursery school teachers as

friends. Frustration was induced after 15 minutes of free play by placing the more attractive of the toys the children were playing with behind a wire screen, while allowing the children to continue to play with the less attractive toys. It was observed that pairs of strong friends expressed more aggression (kicking, biting) towards the experimenter and more cooperation (e.g. less teasing) than pairs of weak friends. The implicit assumption here is that members of cohesive groups provide each other with strength and support (e.g. social approval) and that this enables them to retaliate when provoked by the environment. This conclusion was supported by Pepitone and Reichling (1955). High cohesive pairs of subjects were created by being first told that they would get along well with each other, while low cohesive subjects were given unfavorable instructions about each other. The subjects, having been informed either that they were compatible or incompatible, were waiting for further instructions. At this point, an assistant entered the room and engaged the subjects in discussion, displaying extreme annoyance with them. Immediately after the "insulter" departed, the experimenter excused himself and left the subjects alone. From behind a one-way screen, the high cohesive subjects were observed to express more hostile remarks against the "insulter", whereas the low cohesive members, either spoke of events unrelated to their experience or sat passively. Thus the conclusion that members in cohesive groups provide each other with strength and support and that this enables them to respond aggressively when provoked is supported.

Seashore (1954) in an industrial setting differentiated

degrees of cohesiveness on the basis of questions designed to measure the extent to which the members perceived themselves as part of their group, and whether they preferred to remain in the group rather than leave it. They also were asked to compare their group with other work groups in the factory on the following points: the way the men got along together, the way they stuck together, and the way they helped each other on the job. The larger the number of men in a section who said that they felt part of the group, wanted to stay in it, and thought it was better than other comparable groups, the higher the group cohesiveness. The other variables of the study were derived from "three questions concerning: (1) the feeling of tension at work, (2) the feeling of being under pressure to meet production standards, (3) the feeling of worry regarding a series of work related matters, and also from (4) two indices of security in relation to the company" (P. 47). The findings in general indicated that high cohesive subjects reported less frequently than low cohesive subjects that their work made them feel "jumpy" or nervous. They also found greater security or more release from tension in their membership activities.

The next group of studies indicates the relationship between cohesiveness and productivity. Pairs of close friends (who are most likely to give social approval to each other) were found to be more efficient in the solution of problems than pairs of strangers (Husband, 1940). Goodacre (1951), found that ratings of proficiency for twelve man reconnaissance units from the same army regiment, were highly correlated (+.77) with the proportion of intraunit friendship choices. Mare (1962) suggests, as does Homans (1961), that this type

of relation is probably not only due to the 'attractiveness' of the group to its members, but also to the ease of communication. It is known that friendship acts to reduce barriers in communication (Festinger, Cartwright, Barber et al., 1948, Festinger et al. 1950).

Schachter, Ellertson, McBride and Gregory (1951) in a more extensive investigation divided university girls into groups of three. The three girls were told that they were to work together at making cardboard checkerboards. One member was to cut the cardboard into squares, another to paste the squares onto heavier board and the third to paint the checkerboard. Actually each subject was taken separately to a room and told that she would do the cutting job, and was allowed to believe that the other two girls would do the pasting and painting. They were also encouraged to communicate by writing notes to each other. The experimenters picked up these notes but did not deliver them. Instead they passed on other, standardized, notes designed either to speed up or slow down the production of the cardboard squares. The first few notes were neutral in the sense that they neither demanded increased speed nor slowing down of production. Thus the productivity of the subjects when asked to slow down or speed up could be evaluated against their productivity during the period in which they received these neutral notes. The main focus of interest was on how cohesiveness affected their compliance with the requests to modify their production. Prior to meeting the other members of their groups, the subjects in half of the groups had been told that the probability was very high that they would like each other. In other

groups, the members were informed that congenial partners could not be found for them and there was no likely reason why they should like each other.

The results indicated that subjects asked to slow down production were most likely to comply if they were in a high cohesive rather than in a low cohesive group. If the request was to increase production, subjects in both high and low cohesive groups increased in output, with no significant difference between them.

Particularly important is the fact that the members of the groups in all these studies were in some way predisposed to expect or not to expect social approval from other group members. When members of a group are asked to comply with a demand of others in the group, expectation of social approval increases the probability of compliance. In Homan's language, activity is exchanged for liking. What is argued here is that, at least in part, compliance with a request from a friend or congenial person is rewarded by social approval. Compliance with a request is more likely the greater is the expectation of social approval. The fact that both high and low cohesive subjects respond to a demand to increase productivity is likely a function not only of expected social approval in the high cohesive group, but also a result of the norms of expected behavior in the low cohesive group. The experimenter in their instructions did suggest to all groups that high production was desirable, and the norm in American society is to work hard if it is possible. The lack of difference between

cohesive and uncohesive group asked to speed up may be the result of this outlook.

The results of the study by Back (1951) already reported on P. , further support the generalization that high cohesive subjects are more likely than low cohesive members to comply with the wishes of the group. Not only did high cohesive members interact more vigorously but also they changed their opinion more suddenly and radically than low cohesive subjects, who were more likely to compromise. In addition high cohesive subjects were subjected to more pressure to change their opinion and made more attempts than low cohesive subjects to come to an agreement.

Directly relevant is a study by Rasmussen and Zander (1954). The subjects in this experiment were teachers obtained from six public high schools. The teacher's attraction to his membership group - some faculty group to which he belonged - was measured by scaled questions such as: How often would you like to meet with this group? (rated from "not at all" to "every day"); If this group broke up for a considerable length of time and some people were trying to get it started again, would you want to rejoin? If yes, how strongly do you feel about your preference, (rated from "very slightly" to "very strongly"?) The higher a subject's score on these questions, the more he was assumed to be attracted to the group.

Conformity was measured by the use of questionnaires designed to compare the teacher's perception of the standards of the group and his own real level of performance in the classroom. The results

supported the hypothesis that the greater the attraction to the group, the more accepting were the members of group opinion. In other words, there was greater conformity, at least in their written evaluation.

Members of high cohesive groups are more likely than low cohesive subjects to conform or adhere to the group standards. Seashore(1954), using the measure of cohesiveness already described on P. , showed that the more cohesive a group or section was, the more likely it was to show little variability in the productivity of its members. Where output was measured as the number of pieces finished in a given time, the management had set up standards of production and informed the workers daily of their productivity expressed as a percentage of the standard. This procedure allowed both the management and the researchers to compare the output of groups doing wholly different jobs.

Certain characteristics of members of the high cohesive group were apparent in this investigation. They were more apt than members of low cohesive groups to have the following traits:

- 1) to be similar to one another in age,
- 2) to be of longstanding service in the company, and
- 3) to feel that others workers thought they had good jobs.

It is quite likely that these factors were important contributors to the degree of cohesiveness observed.

Schachter (1951) further supported the finding that members of high cohesive groups place a greater value than low cohesive units on group goals. In this study, cohesiveness was based on the extent to which the subjects were interested in the task they were asked to

perform. Within each group, three types of subjects (paid participants) acted out certain roles. These were the "deviate", the "slider" and the "conformer". "Deviate" were subjects who maintained an extreme position that remained unchanged throughout the discussion. The "slider" began by assuming an extreme position relative to the group norm, and then slowly shifted toward the group norm, as if he were being persuaded. "Conformers" supported the "modal" opinion throughout the discussion. This was the opinion most commonly held by the other members of the group.

In both groups, more communication was addressed to the deviate than to either the mode or the slider. Cohesive members communicated more and tried to influence more than uncohesive subjects. As the group norm of opinion became clear, and as the members recognized who the deviate was, the number of communications directed to him tended to increase whereas they remained constant to the 'mode' or 'slider'. In the high cohesive group when it was realized that the 'deviate' would not change his opinion, interaction to him tended to decrease. To put it another way, he was rejected, and so the high cohesive group was able to protect its psychological composition.

After the discussion two tests designed to indicate the degree of social approval that members accorded each other were administered. First, using a sociometric test, members were told that at a possible future meeting of the group it might be necessary to leave somebody out. They were asked to rank order their fellows beginning with the person each would most like to have remain with the group ending with the person they would least like to have remain.

Secondly, the investigator informed the subjects that it might also be necessary to form subcommittees of the group. Three committees - Executive, Steering, and Correspondence - were described. The first was the most attractive, the second next, and the third least. Each subject was asked to write down the names of the other members that he would like to see serving on each committee.

On the sociometric test, deviates in the different groups received a lower degree of choice than did either the sliders or the nodes. They were most likely to be chosen as the person to be left out. Of particular interest was the observation that this tendency was greatest in the high cohesive groups. Further, deviates were designated more often for the worst committee and least for the best committee. This is even more powerful evidence that cohesive members are more eager than uncohesive members to protect the group standards by rejecting those who transgress them.

Homans (1961) suggests that agreement from a group partner with one's own opinion is valuable in so far as it means obtaining social approval. Continued refusal to agree with another leads to a decrease in interaction. Homans notes that removal of such social approval may be withdrawing a reward that a subject has come to expect, and so may be met not only with indifference but also with hostility. This type of expectation is likely to be greater in the high cohesive groups, because they have been led to expect greater rewards and thus their hostility should be more extensive. Employing this latter concept, the reason for less social approval being given to deviates in the high cohesive than in the low cohesive

groups becomes clearer. The fact that the deviates are more readily rejected further indicates a similarity of values among the cohesive subjects.

In a number of the studies considered so far the subjects were asked by others in the group, or thought they were asked, to change their activity so as to make it more valuable to the others. In return for this, it was made clear that they might expect rewards, in the form of social approval. No other clear-cut sources of reward could be expected by the subjects. In the Schachter study, for example, a high cohesive member, asked to speed up her output of squares, might expect to get social approval, but if she acted in any other way the rewards she would receive were not designated.

Human behavior usually involves the making of choices between two or more alternative activities, each of which can lead to a different reward. One particular response often negates the occurrence of any other responses. Thus a subject acting in one way precludes the possibility of being rewarded through alternative actions. In this sense the subject voluntarily foregoes the rewards that he might have received if he had behaved otherwise. Homans calls this "cost". The cost of a unit of a given activity is the value of the reward that could have been obtained through a unit of an alternative activity foregone. The subjects in the Schachter, Ellertson et al. study (1951) could not have known the costs to them of increasing production because they were not aware of any alternative rewards available to them. What types of activities evolve in both high and low cohesive groups when a subject must choose

between alternative behaviors and therefore between alternative¹⁵ rewards? This probably can best be answered through an ingenious study carried out by Gerard (1954) and theoretically interpreted by Homans (1961).

In Gerard's experiment, each member of a group was faced with an alternative behavior to compliance with the others in the discussion. An individual who accepted the group norm could obtain certain rewards and a person maintaining an opinion in the face of direct pressures to change could obtain other compensations. The experimenter varied the strengths of these alternative rewards and surveyed the results when these were in conflict with each other.

Groups of subjects were asked to discuss a case history of a labor management dispute, after which they individually predicted its outcome. Three types of groups based on these predictions were then created. One was made up of subjects who were in close agreement as to the predicted outcome; a second composed of subjects mildly in disagreement; and a third consisted of subjects who strongly disagreed. The experimenter then divided each of these groups into two, making half high cohesive groups (i. e. members were told that they would find each other congenial) and half low cohesive groups. These subjects then discussed the labor-management dispute again. The percentage of individuals changing toward someone in the group was significantly higher in the high cohesive groups than in the low cohesive groups. This is in accord with the results of previous experiments.

A week later, each group member met with a "paid participant",

who as far as was possible held an opinion two steps removed from the subject's and in a direction that would, if his persuasion was successful pull the subject farther away from the majority opinion of the group. Each subject was told that the confederate was congenial. It was found that more low cohesive members changed towards the paid participant than did high cohesive subjects. This also agrees with previous findings. If the group can offer a valuable reward such as "liking" or social approval, the subject will modify his opinion in the direction of the group norm, but if it cannot, the member may depart from it as the low cohesive group members did by moving to agree with the paid participant. The paid participant, while not defined as highly congenial, at least was not uncongenial.

A summary of these findings can be seen in the following tables.

Percentage of Subjects Changing Toward Someone in the Group

	Agree	Mildly-disagree	Strongly-disagree
High-attraction	7	13	25
Low-attraction	20	38	8

Percentage of Subject Changing Toward Paid Participant

	Agree	Mildly-disagree	Strongly-disagree
High-attraction	7	13	25
Low-attraction	20	38	8

Homans (1961) emphasizes the similarities in these two sets of data. In both tables, the subjects changing least were in the high cohesive agree and the low cohesive strongly disagree groups, whereas those who changed most were the members in the high

cohesive strongly disagree and low cohesive mildly disagree groups. The other subjects reflect intermediate effects. Homans suggests that two questions regarding these data need to be answered: "Why do different subjects change or fail to change their opinion?" and, "if they do change, why do they change in one direction rather than another, that is, toward the group, or the paid participant?" (P. 96)

The tendency to change opinion is best considered in the light of the availabilities of three types of reward. First, a subject may obtain social approval by accepting and adhering to the group norm. Secondly, to find that other people's opinions are the same as one's own, independent of any social approval received, is rewarding. Festinger (1957) argues that the disagreement of others is not consonant with one's own opinions and beliefs. Such conditions, in which some of the cognitions are in conflict with other facts or beliefs, Festinger calls "cognitive dissonance". Disagreement by others is disturbing to what one believes is true, and so consonance and the reduction of dissonance is rewarding. This does not negate the fact that on some social occasions differences in opinion may be entertaining. Nevertheless, cases may exist where consonance may exact too high a price, and in this experiment Homans suggests that a third type of reward, that of, sustaining "personal integrity" helps explain the data. Maintaining one's opinion in the face of external pressures operates to procure and sustain personal integrity.

Depending on the group, these factors affected the behavior of the subjects of this experiment to various degrees. By responding in a certain way the subject obtains one reward, while incurring

'costs' (the potential rewards of alternative activities). In this light Homans introduces the concept of profit and defines it in the following manner: $\text{Profit} = \text{Reward} - \text{Cost}$. He argues that the smaller a subject's profit, the more probable that he will change his activity and emit other responses.

For example, high cohesive strongly disagree members, by maintaining their individual opinion forego the rewards of social approval, but secure the reward of "personal integrity". Because of the high cost, the profit will be small and change of opinion likely. Similarly, a low cohesive strongly disagree member is not prone to change his opinion in the direction of the group norm. To do so would mean a loss in personal integrity and little gain in the reward of social approval. His profit would be minimal and the tendency to emit new responses slight. Clearly, this seems to be what occurred among Gerard's subjects.

If an individual does change his opinion, why does he do so in one direction rather than another? Consider the low cohesive strongly disagree group whose members could not expect to get social approval for opinion change. A subject in this group who moves either toward the paid participant or the group loses his personal integrity. This high cost is sufficient to motivate the subject to maintain his own opinion and so not to emit any new responses. This is exactly what occurs. But why do members in the high cohesive, strongly disagree group change in the direction of the paid participant? Because they strongly disagree, maintaining their opinion in the face of pressures results in the maintenance of personal integrity but since they are in the high cohesive group,

they must incur the higher "costs" of foregoing the reward of social approval. Their profit is low; they are prone to change and they do so in a direction to maximize the profit, that is in the direction of the paid participant. Thus not only do subjects tend to change when the "profit" is likely to be small, but the direction of change will be in the direction of maximizing the potential rewards.

Except for two relevant correlational studies (Libo, 1953, Seashore, 1954), this review has considered studies in which cohesiveness has been independently varied. These investigations have indicated that individuals in high cohesive groups are likely to be more responsible, secure and similar in values than subject in low cohesive groups. They are more likely to comply with the wishes of the group and also make more attempts to influence other members. The next section will consider further evidence for the expectation that verbally instructing subjects about their partners will affect the manner in which they interact.

(11) Person Perception

In the studies reviewed, the assumption that informing subjects verbally about their partners is sufficient to manipulate the cohesiveness of the group has been supported. Telling subjects that their partners will either like or dislike them is expected to have behavioral manifestations in how the members interact.

Further justification comes from a number of other investigations with a somewhat different orientation. Asch (1946) read to introductory psychology classes some discrete characteristics said to belong to a certain person. Immediately following the

description each subject was to indicate the impression he had formed about this person. A check list of traits was also given to the subject to evaluate. The discrete characteristics presented to one group were as follows: intelligent, skillful, industrious, warm, determined, practical, and cautious. The same list was presented to the other group except that the word 'cold' was substituted for the word 'warm'. Asch reports that the inclusion of either the word 'warm' or 'cold' produces widespread effects on the impression formed. The term 'warm' affects the impression by directing the subjects' responses in a positive direction whereas the inclusion of 'cold' predisposes the subjects in a negative manner. Yet the effects of these stimulus words did not extend indiscriminately to all qualities. Descriptive traits affected were generosity, shrewdness, happiness, irritability, humour, sociability, popularity, ruthlessness, self-centredness and imaginativeness. Qualities that were not affected by the warm-cold variable or were only slightly affected were: reliability, importance, persistence, seriousness, restraint, strength, honesty, and physical attractiveness. This suggests that certain traits are correlated and go together in forming impressions of other people. As part of the same study, when other words such as 'polite' or 'blunt' were substituted for the warm - cold variable, the effects produced were relatively small.

In the Asch experiment the subjects never actually saw the person supposedly described by the list of characteristics. Kelley (1950), employing a real life situation, expanded on how

an individual's impressions and behavior are affected by his expectation about the other person. Brief written descriptions describing a great lecturer's appearance were distributed to classrooms of subjects. These notes were identical except for one item. To some of the students the guest lecturer was described as a 'rather cold' person, whereas in the other cases the same person was characterized as 'very warm'. The students were unaware of this difference in instructions.

After actually hearing the lecturer, the classrooms of students were asked for their impressions using adjective checklists similar to those employed by Asch. Students who had received the 'warm' description rated the speaker as more considerate of others, more informal, friendly, good-natured, humorous, and more humane than did students who had been given the 'cold' information. As in the Asch study, this effect did not extend over all traits. For example, in both groups, ratings of intelligence were high. The previous finding that only certain traits such as informality, friendliness and good naturedness are likely to go together is corroborated. It is clear that the warm - cold variable exerts an important influence on the forming of impressions.

Kelley (1950) in the same experiment was also able to show the influence of the warm - cold variable on the subject in interaction with the lecturer. Significantly more subjects who had received the 'warm' description entered into discussion with the lecturer than subjects given the 'cold' description. This suggests

that people with favorable impressions of another are more likely to interact with him than if their impressions are unfavorable. If the evaluations on the items of the check-list (informality, friendliness, good-naturedness, humorousness, humaneness), are combined and comparisons are made between subjects who actually had favorable impressions and those with unfavorable impressions, the suggestion is verified. Significantly more subjects who had a favorable impression entered into discussion with the lecturer than subjects with unfavorable impressions.

A study by Haire and Grunes (1950) indicates that this type of effect is not specific to the warm - cold variable. In this experiment, descriptions of a factory worker were distributed to two groups of college students. The note given to one group stated: works in a factory, reads a newspaper, goes to movies, average height, intelligent, strong, and active. The identical message was given to a control group except that the word 'intelligent' was omitted. Subjects were then asked to describe in a paragraph what sort of person they thought the worker was.

The control group experienced no difficulty in describing the worker. He was generally given the description of a good typical 'American Joe', (liked, healthy, happy, well adjusted etc.). Subjects who had the term 'intelligent' in their notes describing the factory worker had some difficulty in reconciling this "inconsistent trait" with their prior impressions of what such a man was really like. To overcome this difficulty these subjects used a number of mechanisms to protect their cognitions. Some

denied the quality: "He is intelligent, but not too much so, since he works in a factory". Others promoted the worker to foreman, thus changing the frame of reference. Another defense was to modify the quality: "He is intelligent, but doesn't possess initiative to rise above his group." Some, of course, maintained the knowledge that the person was intelligent but noted the inconsistency with their stereotype. The main point is to note how one word markedly affects the formation of specific impressions. The critique of this study as in the Asch research must emphasize that neither simulates actual interaction conditions. Nevertheless, both studies provide indications of how impressions and stereotypes may be manipulated and influenced.

In a study focused on the meaning of traits in isolation and in combination, Bruner, Shapiro, and Tagiuri (1958) approached the problem from a slightly different point of view than Asch and Kelley. Bruner, Shapiro and Tagiuri asked their subjects for abstract responses about the discrete words themselves rather than about specific persons. Their findings indicated that a knowledge of the kinds of impressions drawn by subjects from words (e.g. intelligent, and considerate) evaluated separately yields a fairly accurate prediction measured on a check-list questionnaire of the kinds of inferences drawn from combinations of these trait names (e.g. intelligent and considerate). One difficulty with this study is that the results of statistical tests are not given. The authors state their findings in terms of whether or not, for example, 50% or more subjects infer aggressive from the trait inconsiderate.

Information on exactly how many do so is not made available. This form of analysis is employed in their scheme of prediction for the combination of trait terms. If 50% or more subjects infer aggressive from the terms inconsiderate and intelligent in isolation, then the prediction is that aggressive will be inferred from inconsiderate and intelligent in combination. Wishner (1960) points out that if the actual result was only close to 50%, then in another sample, it might be less and so another prediction would be called for. Nevertheless Wishner (1960) points out that the Bruner et al (1960) study may adumbrate the manner in which the Asch findings might be predicted. He hypothesizes that if all the intercorrelations existing between all the traits in the stimulus list and check list were known, then the subject's ratings should be predictable. In an independent study (Wishner, 1960), a group of college students rated their instructors on each of the traits (53 in total) used by Asch and also on the warm - cold variable. The findings indicated that the highest correlations between the traits and the warm - cold dimension were exactly those that most sharply differentiated the warm and cold groups in the Asch study. It seems reasonable to conclude that Wishner was directly measuring some of the trait links.

These studies indicate that impression formation can be profoundly influenced by verbal instructions. The expectation that a person has of another is of critical importance in evaluating the other. What these impressions are, seems to relate to underlying implicit trait - linkages, which in some instances have been revealed via correlational studies.

The next section will consider the variable of sex as a factor influencing the persuasibility and persuasiveness of individuals.

(iii) Sex

In this section, change of opinion is considered in relation to the sex of the discussants.

Janis and Field (1959) not only demonstrated sex differences in persuasibility but also found a general trait of persuasibility. The experimental method consisted of three steps: first, the subjects (high school juniors) were given an initial opinion test; next, they were exposed to a series of persuasive communications, after which they were administered a 'post - persuasive' opinion test to determine the degree to which their opinions had changed in the direction advocated.

The questionnaire included a wide diversity of topics, and, in addition, a wide variety of special persuasive appeals were used in the persuasive communication sessions. These appeals involved fear arousing statements, logical arguments and specialized information, stereotyped characterizations, social incentives, and hedonic incentives.

A factor analysis on the data yielded two common persuasibility factors that were positively correlated. This suggested that persuasibility may be determined by a general factor combined with one or more group factors not as highly specific as those underlying susceptibility to influence on particular topics.

Further, the data showed that the mean scores for males on the persuasibility test was significantly lower than for female subjects. The authors suggested that sex differences in persuasibility

should be considered in the light of sociological evidence on differentiated sex roles in our society, and in particular, refer to variables such as the females intellectual dependence and docility in many activities of every day life (Doggory, 1953; and Pavsonz 1953).

Patel and Gordon (1960) focused on a situation in which the subjects were given a great deal of freedom to either yield or ignore influence. Their subjects were high school students from the 10th, 11th and 12th grades. The experimental task was to select from a number of alternatives the correct synonym for the stimulus word. The study was carried out in the classroom by the teachers so that the students were unaware that they were subjects in an experiment.

One of the independent variables was prestige suggestion. This variable was manipulated by placing an incorrect answer next to 50 of the stimulus words and a correct letter next to 11 of the words. To create confidence in these 'hints' the first four stimulus words were marked correct. High prestige for the suggestions was created by telling 1/2 of each grade group that the marks on the questionnaire sheets were placed there by students one grade ahead. In the other 1/2, low prestige was created by the students being led to believe the 'hints' were made by students one year behind them.

Since the students were working alone, they were able either to accept or reject the 'hints' without any undue pressure operating. The analysis used only the incorrect 'hints' questions.

The findings indicated that girls accepted significantly more suggestions than did the boys. This was not consistent over all conditions. With increasing grade level in the low prestige groups, the difference between males and females diminishes. At the 10th grade, girls accepted significantly more prestige suggestions than the boys, with the difference at the 11th grade still significant but diminished while at the 12th grade, the disparity was not significant. However, in the high prestige groups, girls remain significantly more susceptible to influence throughout the three grade levels.

Crutchfield (1955) investigated the effect of a distorted group norm upon the judgments of college undergraduates, male and female. Groups of 5 subjects were isolated from each other by panels, and multiple choice problems varying from perceptual and factual judgments to opinions and attitudes were flashed on a screen in front of the subject. The experimental group had sets of signal lights on their screen which they were told represented the responses of the other subjects in the group. Actually these were controlled by the experimenter. The subjects responded in turn to the problem and this order was manipulated by the experimenter. Critical trials were those in which the other 4 subjects responded first. There were 21 such trials. A control group in which the subjects responded individually and unaware of the others was also run. It was found that female students exhibited significantly more conformity to the group norm than male students extending across the entire range of items employed, from factual

to attitudinal, from structural to ambiguous, from impersonal to personal. In an identical experiment except that the subjects were adult males whose average age was 36 years, the level of conformity was about the same as for the male college students. These men were said to be engaged in professional services that required leadership qualities. Nevertheless results have not always been consistent since in another study using the same procedure, Crutchfield (1955) reports slightly different findings. Fifty women, all college alumnae in their early forties showed, an average conformity score lower than that in any of the previous studies. These women, therefore, were more independent in judgment than the adult men.

It is important to state also that there were large and reliable differences among the individual subjects of these samples in the extent to which they exhibited conformity behavior. This was calculated by determining the number of the 21 critical items on which a subject accepted group norms. Each item was compared to a threshold for influences standardized with respect to the distribution of judgments by the control subjects. The scores were well distributed from the lower extreme, in which several subjects were susceptible to influence to no more than two of the critical items, to the upper limit, where a subject was influenced 17 of the 21 items.

Further evidence similar to that of Crutchfield (1955) comes from a study by Tuddenham (1961). This research used a similar procedure and investigated the influence of a distorted group norm upon the judgments of adults and of children in a

series of visual discrimination problems, including comparisons of line length, angle, slope, convergence, etc.

A group of college students and a group of young children (10 to 12 yrs.) of similar background were matched for sex and age. Five subjects sat next to each other, each at a panel isolated from his neighbours. Multiple choice problems were flashed on the wall in front of the subject, who responded according to his choice by pressing one of 9 switches placed isomorphic to the part solutions of the problem. Whereas under control conditions the subjects responded in unison to the stimulus without awareness of the other responses, under the experimental conditions the subjects responded in turn (the order changing from trial to trial), and signal lights showing the choices of the other members were presented to the subjects individually. These were in fact faked by the experimenter. On critical trials, these faked choices were outside the realm of responses made during standardization of the various items. On non-critical trials, the faked choices were reasonable.

The main finding supported the conclusion that girls are significantly more susceptible to group pressure than boys and that female college students are more persuasible than male college students. Further findings were that the judgments of girls were somewhat less accurate than both those of the boys and those of male and female college students. The experimental groups showed significantly greater yielding than did the controls.

To conclude, females are not more persuasible than males under all conditions, though there are several studies indicating

that they are more likely to conform in certain situations under certain conditions. The factors determining what the resultant behavior will be have not as yet been completely elucidated.

In the present study, the sex of the discussants as an additional independent variable is investigated.

CHAPTER THREE

THEORETICAL CONSIDERATIONS

The present study investigates the effects of different levels of "cohesiveness" on the persuasiveness and persuasibility of individuals, paired and discussing a topic on which they disagree. The "cohesiveness" of a subject was manipulated by instructing a subject either favorably or unfavorably about his partner. Three types of groups were formed. These were the high cohesive group (++), where both members of the pair were instructed to expect a congenial partner; the intermediate cohesive group (+-), where one member of the pair anticipated a congenial partner and the other expected an uncongenial person, and the low cohesive group (--), in which case both subjects anticipated an uncongenial partner.

The conceptual framework of this thesis, used to describe the combined interactions of two people over a period of time, is derived from the work of Cervin (1955, 1956, 1957) and Carpent (1961, 1962). Their learning theory model is based on the work of Hull (1943) and Skinner (1957).

In the previous experiments and in the present study, two persons with opposite opinions on a particular topic are placed together to discuss their views, and then to come to a common verbal statement of either agreement, compromise, or disagreement. In this restricted situation, a subject may make three classes of statements: (1) Any assertion that paraphrases, repeats, or in any way supports

his original opinion is called a positive statement. (2) If a sentence negates or questions the subject's original opinion in any way, or if it provides evidence or support for the other person's position, it is defined as a negative statement. (3) Thirdly, a subject may emit neutral responses, that is, verbal behavior unrelated to the topic.

When a subject emits a positive statement, it should act to condition other verbal operants of the same category (Verplank; 1955). That is, the habit strength of all responses in that category should increase. An affirmation of this nature will also act to negatively reinforce and extinguish any statements of both subjects that are not in that class. When a subject emits a negative statement, this should act to positively reinforce any verbal responses in that category and negatively reinforce any of that subject's positive utterances. It can be seen that opinion change should be reflected by increasing numbers of negative statements and decreasing numbers of positive statements.

The following considerations will first deal with some of the factors determining the persuasibility and then the persuasiveness of subjects in two person groups. In this study persuasibility was assumed to be reflected by a change in opinion. A persuasible person would likely change or modify his opinion, emit many negative statements and few positive statements. Persuasiveness, on the other hand, was assumed to be reflected by amount of participation in the discussion. A persuasive person would be expected to be in a high drive state and to have

sufficiently strong and varied arguments (high habit strength) to support his opinion. In Hullian terms, drive and habit strength combine in a multiplicative fashion so that it is expected that a persuasive person will speak more than a less persuasive person.

Let us consider the dependent variable - persuasibility. One of the rewards that people interacting may give to each other is social approval. Since in the past people who are friends (high cohesive groups) are likely to have given each other rewards (e.g. social approval), expectation of this reward will be maximum in these groups. Cohesiveness is thus made equivalent to the values of the different kinds of rewards available to members of the group. (Homans 1951). The more cohesive the group, the greater the value placed on the rewards available to the group. Since the value of social approval is greatest in the high cohesive group, then positive reinforcements as well as negative reinforcements will be most powerful and have the greatest effect on high cohesive members. Low cohesive group members should value least what the other subjects say, and so be affected minimally by their verbal statements. This means that they should be less persuasible than the high cohesive subjects, who are faced with what they believe to be congenial partners. Intermediate effects should be observed when one subject is favorably predisposed and the other unfavorably predisposed. In other words in the final outcome, the most opinion changes should occur in the high cohesive (++) groups and the least in the low cohesive (--) groups, with intermediate effects for the (+-) groups.

How will this be reflected in the number of positive and

negative statements emitted over time? Earlier work has found that high cohesive group members are likely to participate vigorously in the discussion and that agreement is likely. These subjects further place a high value on social approval. When such a subject makes a positive statement, and he is likely to do so many times, he increases the probability of not receiving social approval. With the withdrawal of this reward comes an increase in the expectation of further negative reinforcement since in the past this is likely to have been the case. Because this expectation effects greater pressures to change in the favorably predisposed subjects than in the unfavorably predisposed subjects, the prediction can be made that the former will make fewer positive comments than the latter. Because the value of the pressure exerted on the favorably predisposed is likely to be greater than on the unfavorably predisposed subjects, the change over time is predicted to occur more quickly with the former than with the latter. Extinction of positive statements is more likely to take place with the favorably predisposed than with the unfavorably predisposed.

With both members favorably predisposed extinction of positive statements is more likely to occur than if both subjects are unfavorably inclined, with intermediate effects for the mixed groups.

Again, social approval is valued maximally when a person expects a partner he will like. He is more likely to emit negative statements which will obtain approval than subjects who

expect indifference or antagonism from their partners. Since the value of the pressure exerted on a favorably predisposed person is greater than that on an unfavorably predisposed individual, the change over time is more likely to occur quickly with favorably predisposed individuals. In the high cohesive groups (where both subjects are favorably predisposed) this is even more likely to occur than in the low cohesive groups. Intermediate effects would be predicted for the intermediate cohesive groups.

To summarize, it was predicted that:

A.(1) Subjects who were favorably predisposed would be more persuasible than those unfavorably predisposed.

A.(2) Subjects in high cohesive groups would be more persuasible than those in low cohesive groups, with intermediate effects expected for intermediate cohesive groups.

Let us consider the dependent variable, persuasiveness. When both subjects are favorably predisposed, two kinds of behavior are likely to occur. One is that they both are more likely than unfavorably predisposed subjects to participate vigorously. In addition they are more likely to change their opinion. Critical then is the point in time at which one of the two subjects does change. This is as likely to happen early as late in time, and the prediction is made that favorably predisposed individuals will be equally persuasive. Change in opinion will thus be a result of persuasibility and not persuasiveness, at least in the high cohesive group.

When both subjects are unfavorably inclined, they are not likely to participate vigorously, are likely to make few attempts

to influence, and are not likely to change their opinion. It is highly probable that their discussions will be shorter than those in the high cohesive groups, and so they will be less persuasive. Opinion change for these subjects will, in terms of the definitions used in this study, be a function of persuasibility.

From these considerations, it is predicted that the favorably predisposed are more persuasive than the unfavorably predisposed. In the situation where one subject is favorably predisposed and the other unfavorably predisposed, the same factors are operating. But also since the favorably predisposed subject is faced with a less persuasible person and the unfavorably predisposed subject with a more persuasible person, the effects will be intermediate.

The following predictions can be made:

B. (1) Favorably predisposed subjects will be more persuasive than unfavorably predisposed subjects.

B. (2) Subjects in high cohesive groups will be more persuasive than those in low cohesive groups, with intermediate effects expected for subjects in intermediate cohesive groups.

Earlier research also suggests that females are more persuasible than males. Taking this into account the following predictions can be made:

C. Female subjects will be more persuasible than males.

Because of the paucity of factual information available on which to base any predictions about the omission of neutral statements, none will be made.

The next section will consider the method employed in the study.

CHAPTER FOUR

METHOD

Male and female summer school students (N = 116) were administered a questionnaire on which they indicated both the nature and the strength of their opinions on a number of discussion topics, chosen to have as little emotional value as possible (eg., "The university term should be extended"). Effort was made not to include items of direct political or religious significance.

From this population, subjects were randomly assigned to three groups: high cohesive (++), where both members of the pair were instructed to expect a congenial partner; intermediate cohesive (+-), where one member of the pair anticipated a congenial partner and the other expected an uncongenial person, and low cohesive (--), in which case both subjects were unfavorably predisposed to each other.

Each group was made up of 20 pairs of subjects, 10 female and 10 male. The members of each pair were matched within 3 years of age (range of 18 to 25 years), for sex, and strength of opinion, on a particular topic, rated on a three point scale from "of no concern to me whatsoever" to "I feel very strongly about this issue." (See Appendix A).

General Procedure

The experiment was carried out in the group dynamics laboratory at McMaster University. This consists of two adjacent rooms separated by a sound proof partition in which is placed a

one-way vision window.

When a subject arrived he was asked to wait in an adjoining room until both participants were present. Then each subject prior to meeting the other was taken to an office where one of the experimenters, after being introduced, spoke to him (or her) in the following terms, depending on whether he was to be a (+) or a (-) subject.

Place Instructions A here:

Each subject was then taken to the experimental room, introduced to his partner, and they were asked not to talk to each other. Throat microphones were placed around their necks and they were told to await further instructions. These were conveyed to the subjects by means of an intercommunication system as follows:

Place Instructions B here:

Dependent Measures

I. The Recording of the Interaction

There was one observer for each subject. Each observer recorded the following measures on an Esterline Angus Operations Recorder. The amount of speech which was:

- (1) Positive - in favor of the subject's original opinion
- (2) Negative - against his opinion and
- (3) Neutral - unrelated to the topic of conversation

The length of each speech the subject emitted and the total time spent speaking was recorded automatically via the throat microphones.

II. The Measurement of Change in Opinion

Change of opinion was measured in two ways.

A

Favorably Predisposed Subject Instructions

I would like to talk to you about the experiment. You remember those forms you filled out in class. Well, they were to give us an idea about your personalities because we want to put people together in this experiment who are congenial and will get along well together. Often this isn't possible but in your case we were pretty lucky and found someone whom you should like a lot. It is really quite exceptional to find two people who, according to us, should get along extremely well. I also want to thank you for helping us in the experiment.

Unfavorably Predisposed Subject Instructions

I would like to talk to you about the experiment. You remember those forms you completed in class. Well they were to tell us something about your personalities. On the basis of them we tried to find a partner with whom you could work best. Of course we never find any one who fits the bill completely. And as a matter of fact, in your case because of schedule difficulties I am afraid that you may find this person is not at all the sort of person you can get along with. But we would appreciate it if you would go ahead and do the experiment anyway.

INSTRUCTIONS BExperimenter

Could I have your attention please. In this experiment we are interested in observing people discussing various topics.

You have indicated your opinions regarding a number of issues on this questionnaire you answered in class.

I would like you to discuss one of these issues with the purpose of arriving at a common statement of your opinions, that is, until you reach some conclusion such as a common statement on agreement, compromise, or disagreement. You can talk as long as you want to. When you have reached a conclusion, ring the bell which is on the table. This will tell us that you have finished.

The topic I want you to discuss is on page ? number ?.

In a few moments I'll knock on the window. This will be the signal for you to start talking. But it is very important that you **DO NOT TALK** until I knock. Do not say a word until then.

ANY QUESTIONS? - Fine.

I will knock in a moment. Remember **DON'T TALK**.

(a) Observer Judgment: (Public)

Judgment of opinion change was recorded by each observer independently for both subjects at the end of the discussion on a five point scale ranging from "now agrees" at one extreme to "now disagrees" at the other (Appendix A). Thus a subject who did not modify his opinion received a score of 0 and a subject who switched to agree completely with his partner received a score of 4, with decreasing scores for lesser degrees of opinion change. The average score of the two observers for a subject was then taken as the amount of change in opinion. A Pearson-product-moment correlation of $r = .95$ was obtained between the inter-observer measures ($N = 116$).

(b) Subject's Own Rating: (Private)

Each subject at the end of the discussion privately recorded his opinion on a four point scale ranging from "now agrees" at one extreme to "now disagrees" at the other extreme. (Appendix A). Thus a subject who felt he did not change his opinion received a score of 0 and a person who switched to agree completely with the other member received a score of 3, with decreasing scores for lesser degrees of opinion change.

III. Temporal Measure of Change in Opinion:

A measure of change over time was obtained as follows. The interaction record for each pair was sectioned into 10 equal time intervals. From each time interval, the number of positive, negative, and neutral assertions emitted by the subject were calculated. Thus if the number of positive comments decreased

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in frequency, and the number of negative statements increased, some change in opinion was said to have occurred.

IV. Evaluational Reactions to the Other:

The effects of the experimental situation on how the individual, after discussion, evaluated the other was measured in three ways. These can be found in Appendix A.

(a) Semantic Differential

Attitudes of the subject toward his partner were independently obtained. Each individual recorded his evaluation of the other on a seven-point scale. This technique is an outgrowth of the research of C. E. Osgood on the measurement of meaning (Osgood, Suci, Tannenbaum 1957). The scales used were of the following variety: tall-short, intelligent-unintelligent, good-bad, friendly-unfriendly.

These scales were scored by assigning unit weights, ranging from 1 to 7, to the seven steps of the scale. In the present study, a score of 1 was assigned to the unfavorable end, (short, bad, unfriendly), whereas a score of 7 was assigned to the favorable end (tall, good, friendly).

(b) Social Distance Scale

A social distance scale was adapted from a study by Beck (1951). The scale consisted of seven questions which were known to correspond to different degrees of attraction. The questions were ordered according to the degree of intimacy they suggested. Unit weights, ranging from 1 to 7, were used to score the questions. A score of 1 was assigned to the question suggesting the least intimacy towards the other person and a score of 7 was assigned to

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the question suggesting the most intimacy, with decreasing scores for the statements expressing lesser degrees of intimacy towards the partner.

(c)

The third method used was to ask the subject directly, "Did you like the other person?" Each subject rated his reply along a seven point scale ranging from "very much" (scored 6) to "very little" (scored 1).

CHAPTER FIVE

RESULTS

In this section, the findings concerning each of the dependent variables will be presented separately and then discussed.

Part 1. Amount of Opinion Change

The measures of opinion change were submitted to an unweighted means solution analysis of variance (Winer, 1962, p. 374). The three main variables were instruction (favorably or unfavorably predisposed), sex, and partner (favorably or unfavorably predisposed). Tables I and II summarize the results.

(a) Observer Rating (public)

Table I indicates that favorably predisposed subjects are more likely than unfavorably predisposed subjects to modify their original opinion ($F = 24.97$, d.f. = 1,108, $p < .001$). Both the instruction x sex and instruction x partner interactions are significant as well. Figure 1 shows that the difference in opinion change between females favorably and unfavorably predisposed is not as marked as that between males favorably and unfavorably predisposed. ($F = 28.02$, d.f. = 1,108, $p < .001$). Figure 2 illustrates the instruction x partner interaction. The most interesting finding here is that people who are favorably predisposed and paired with unfavorably predisposed partners are maximally affected ($F = 27.69$, d.f. = 1,108, $p < .001$) by their partners.

Source	s.s.	d.f.	m.s.	F	p
Instruction (I)	32.36	1	32.36	24.97	<.001
Sex (S)	1.70	1	1.70	1.31	N.S.
Partner (P)	1.31	1	1.31	1.01	N.S.
I X S	36.42	1	36.42	28.02	<.001
I X P	35.89	1	35.89	27.69	<.001
S X P	5.11	1	5.11	3.94	N.S.
I X S X P	41.66	1	41.66	32.15	<.001
Error (w cells)	139.93	108	1.30		

Table I
Analysis of Variance
of
Observer Ratings of Opinion Change

FIGURE 1. Instruction x sex interaction - observer ratings.

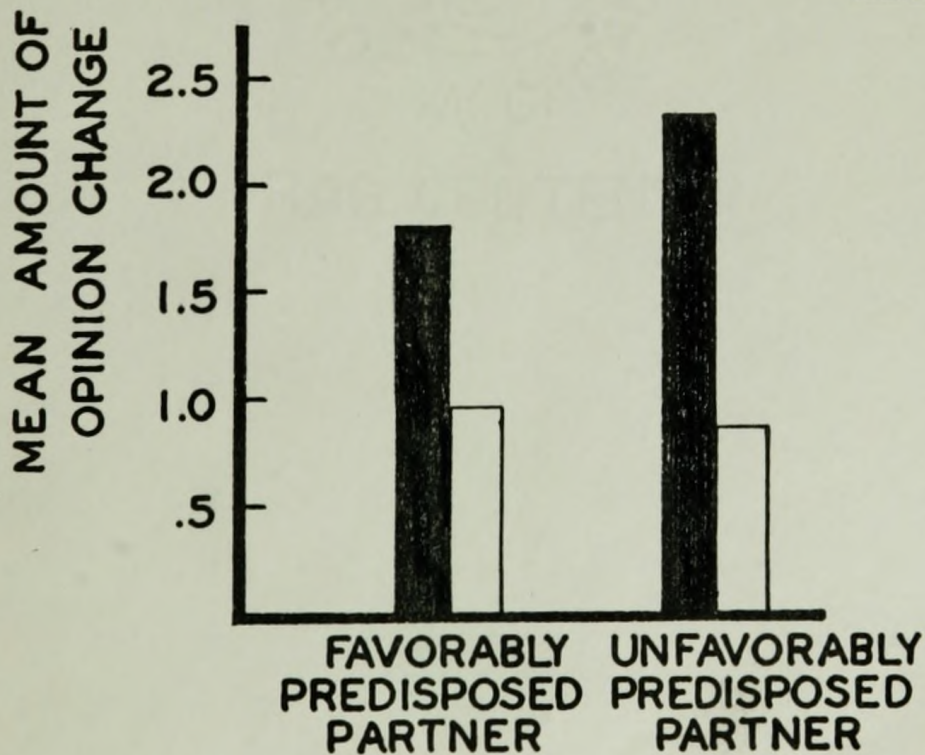
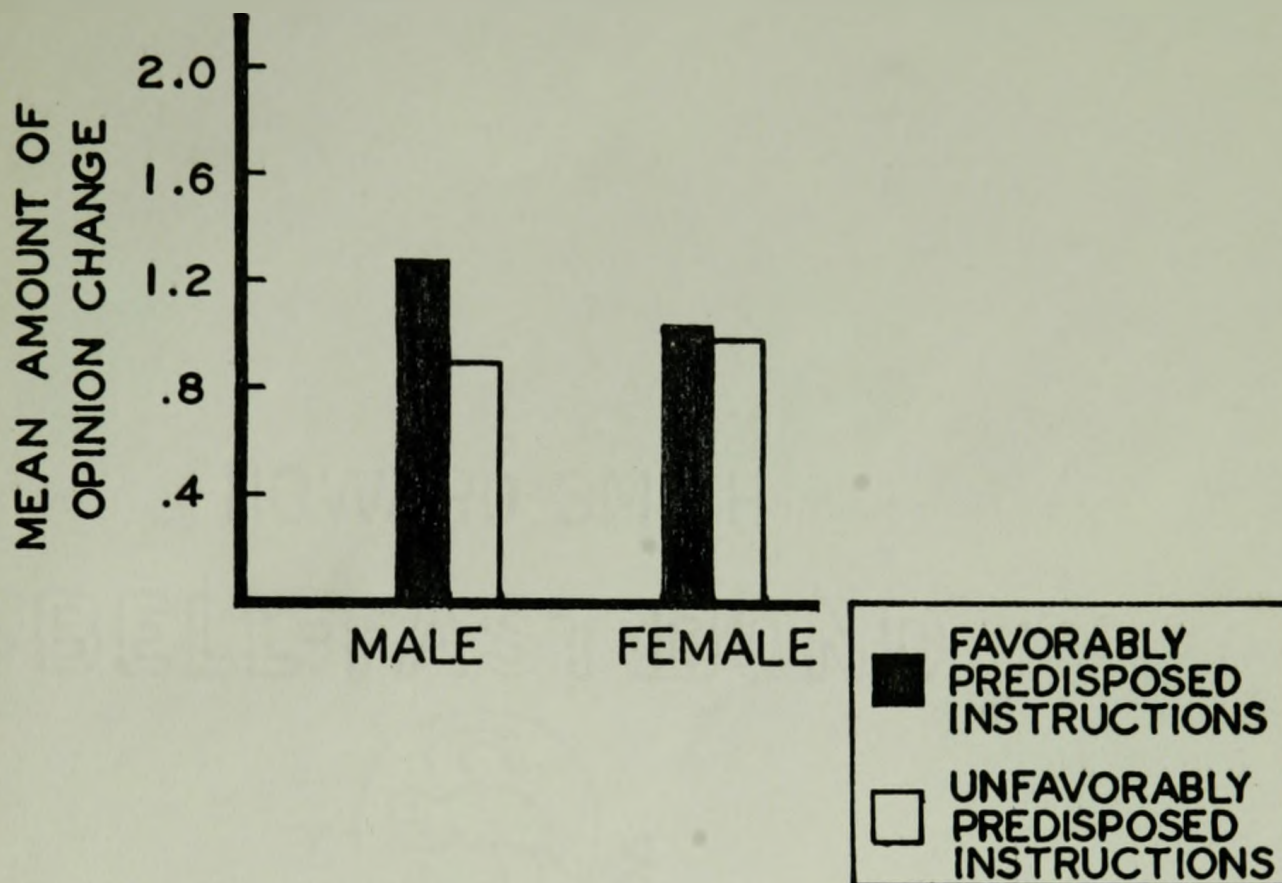


FIGURE 2. Instruction x partner interaction - observer ratings.

Two interacting favorably predisposed people will produce the next largest changes in opinion. Unfavorable instruction on the other hand, does not seem to interact as differentially with the partner instruction as does a favorable predisposition. Figure 3 presents the triple factor interaction ($F = 32.15$, $d.f. = 1,108$, $p < .001$). ^{Figure 3 here} It illustrates the powerful effect of favorable instruction with both the sex factor and partner factor at the various levels on opinion change. It suggests further that most change in opinion will be found in favorably predisposed male subjects who are paired with unfavorably predisposed male partners. The sex effect seems to be a function mainly of the differential effect on favorably predisposed males, regardless of the nature of their partners' predisposition, but such conclusions must be drawn with caution.

(b) Subject Ratings: (private)

In contrast to the analysis of the observer (public) ratings of opinion change, the analysis of the subject (private) data indicates only two significant results. Table II summarizes ^{Table II here} these data. Figure 4 ^{Figure 4 here} shows that the difference in opinion change between females favorably and unfavorably predisposed is not as marked as that between males favorably and unfavorably predisposed ($F = 4.082$, $d.f. = 1,108$, $p < .05$). Figure 5 ^{Figure 5 here} illustrates the sex \times partner interaction ($F = 4.312$, $d.f. = 1,108$, $p < .05$). It shows that males faced with an unfavorably predisposed partner change their opinion more than males who

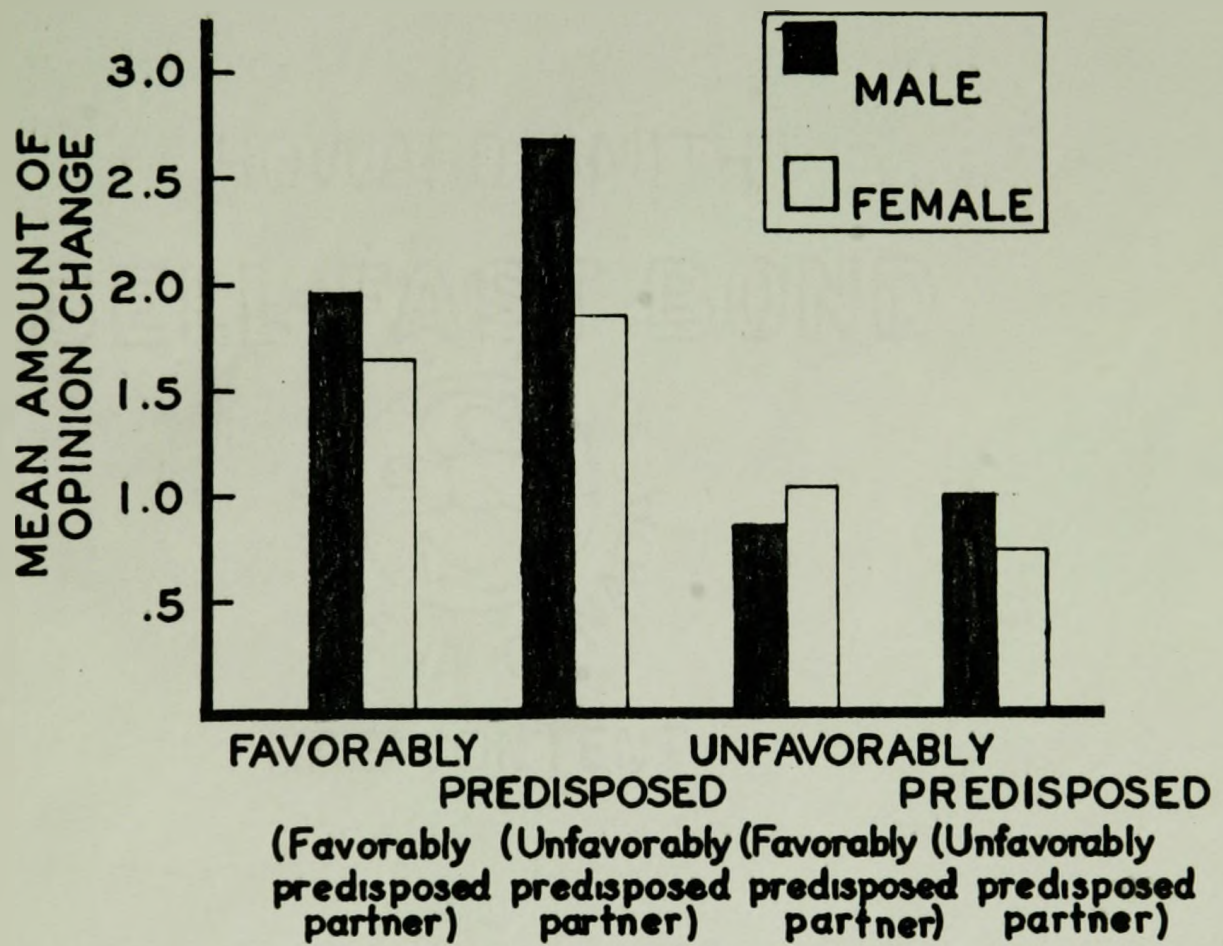


FIGURE 3. Instruction x sex x partner interaction - observer ratings.

Source	s.s.	d.f.	m. s.	F	p
Instruction (I)	0.969	1	.969	1.217	N. S.
Sex (S)	0.039	1	.039	-----	N. S.
Partner (P)	0.052	1	.052	-----	N. S.
I X S	3.249	1	3.249	4.082	<.05
I X P	2.830	1	2.830	3.555	N. S.
S X P	3.432	1	3.432	4.312	<.05
I X S X P	0.661	1	0.661	-----	N. S.
Error (w cells)	85.92	108	.796		

Table II

Analysis of Variance

of

Subject Ratings of Opinion Change

FIGURE 4. Instruction x sex interaction - subject ratings.

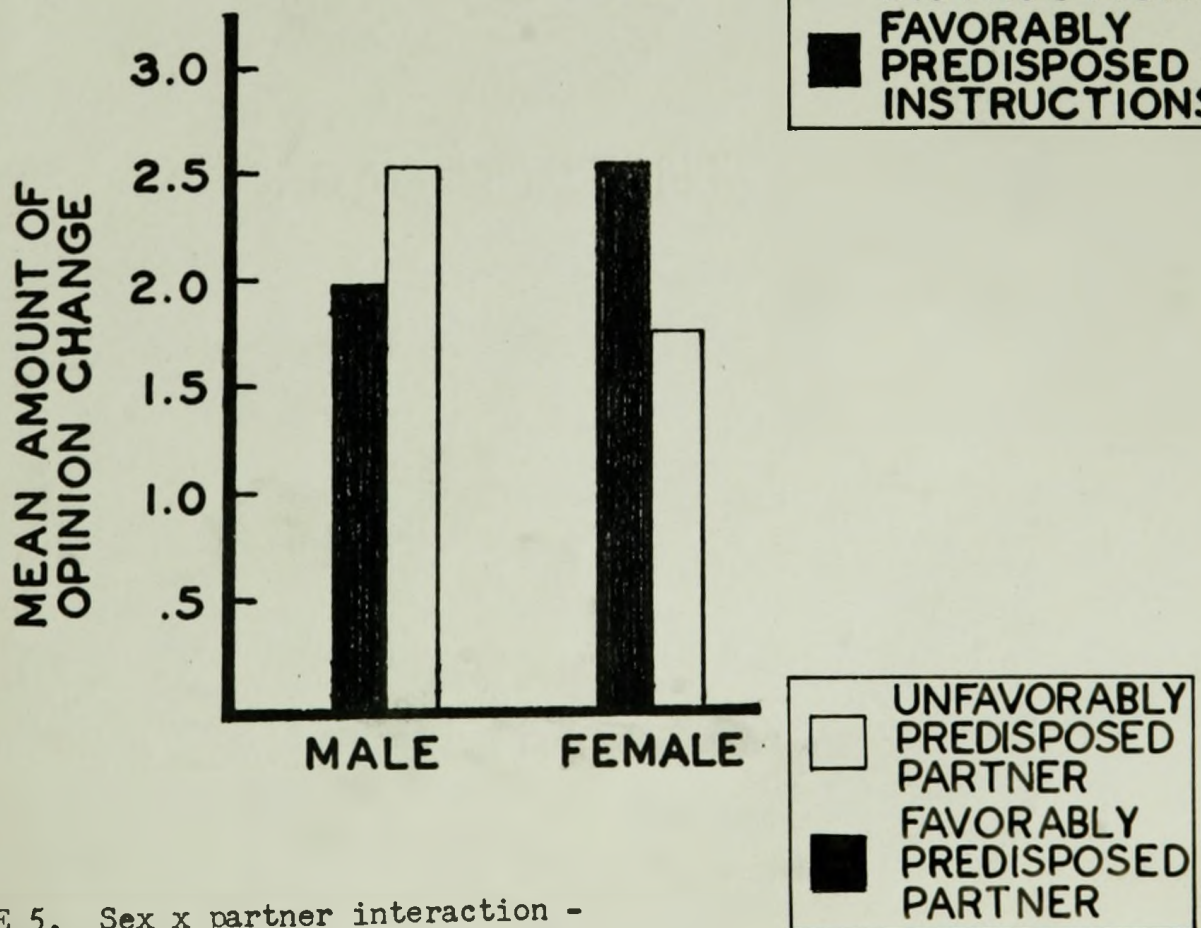
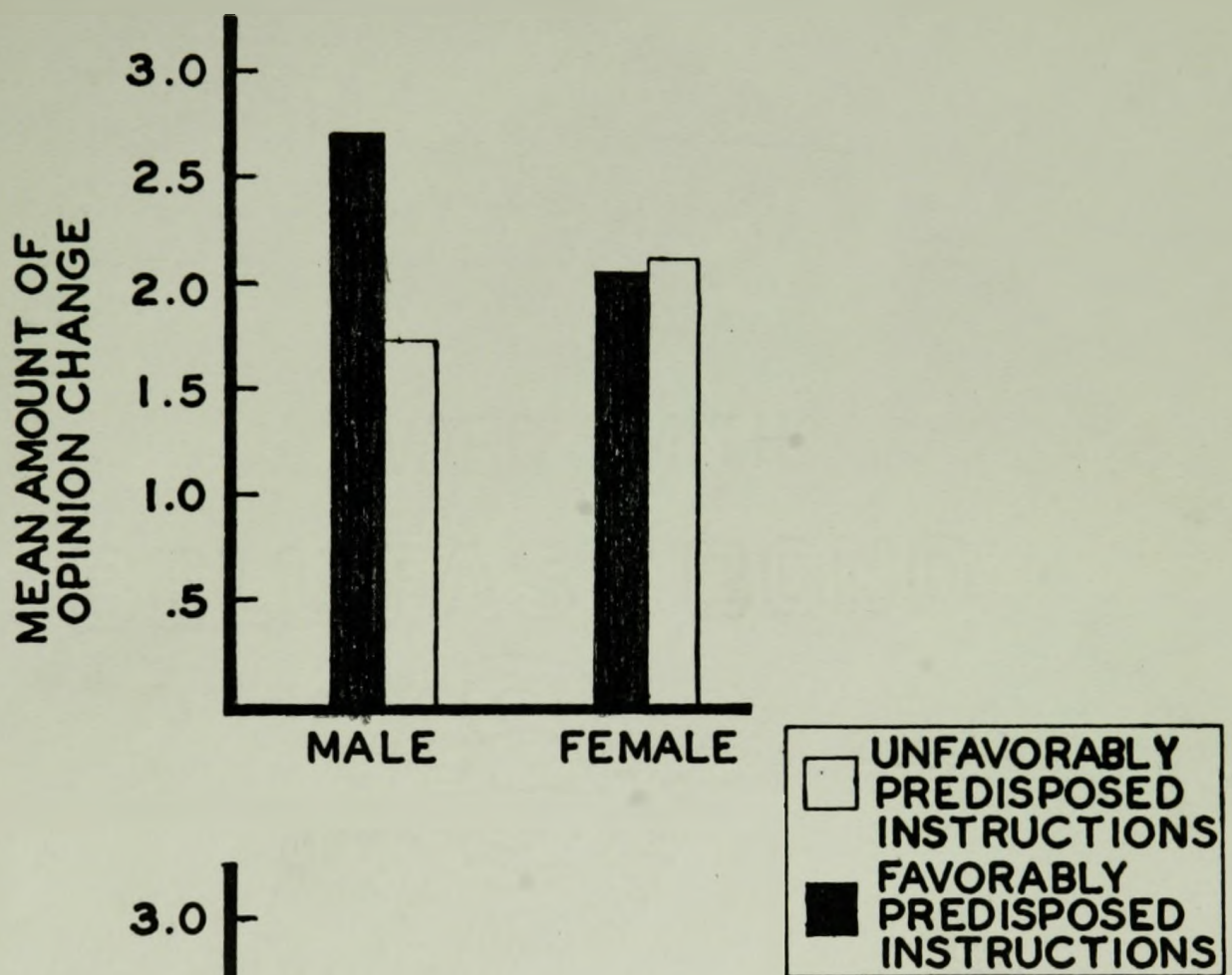


FIGURE 5. Sex x partner interaction - subject ratings.

DISCUSSION

Part 1. Amount of Opinion Change

In terms of the observer (public) judgments, it is clear that favorably predisposed subjects are more persuasible than are unfavorably predisposed subjects. However, when the subjects rate themselves privately, the instruction effect is not as powerful. The most plausible interpretation of these differences seems to be one that distinguishes between private and public compliance. In a face-to-face situation, the pressures exerted upon the individual to comply with the opinions of his opponent may invoke opinion change that is merely expedient, involving public conformity, without underlying private change. Once the subject is in a private situation, and the pressures to conform are removed or reduced, then the original opinion or something akin to it is likely to reappear. This is probably what occurs when the subject privately rates his opinion after the discussion. Nevertheless, this should not be construed to mean that there was no private opinion change at all. An over-all Pearson-product moment correlation (which includes agreement regarding no change) of $+0.68$ ($N = 116$) was obtained between observer and subject measures of opinion change. The mean rating in amount of subject opinion change is 1.05 while the mean rating in amount of observer opinion change is 1.46. It is important to recall here that the rating scales for subjects has only 4 points as compared to the 5 point range rating scale for observers. The correlations for the experimental groups are:

<u>Group</u>	<u>Correlation between Observer- Subject Ratings</u>	<u>#</u>
(-- ♀)	0.46	20
(++ ♀)	0.88	20
(-- ♂)	0.59	18
(++ ♂)	0.56	18
(+ ♀)	0.36	20
(+ ♂)	0.65	20
		<u>116</u>

Apparently there is some variation in the closeness of the relationship between observer and private evaluations of opinion change for the different groups. Appendix B shows the results of the tests of significance between any two correlations for all possible pairs. Of the tests, eight are not significant while seven are. At the same time, since all the correlations are significant, a reasonable relationship between the private ratings and the public statement at the end of the discussion can be assumed.

Both observer and subject measures of opinion change indicate that favorably predisposed males are more persuasible than unfavorably predisposed males, while females do not seem to be as differentially affected by the nature of the predisposition to their partner. Also, males paired with unfavorably predisposed male partners change their opinion more than males paired with favorably predisposed male partners, and this result is reversed for females (subject measure). This means that males and females respond differentially to the way their partners behave.

Further, favorably predisposed people in general change their opinion more when interacting with an unfavorably

pre-disposed partner than when with a favorably predisposed partner (public measures). It is likely that the negative reinforcing statements of the unfavorably predisposed person are responsible for this effect. An unfavorably predisposed person is not as differentially affected by his partner's predisposition. This suggests that it is more difficult to influence a person who is unfavorably predisposed than to influence him if he is favorably predisposed.

The triple interaction (figure 3) indicates that the most persuasive type of person is the favorably predisposed male paired with an unfavorably predisposed partner. It points out the main effect of instruction and shows how sex influences persuasibility in a complex manner depending on the other two variables. These results underline the importance of distinguishing between public and private compliance and the necessity of indicating whether public compliance is accompanied by private acceptance. Further, in terms of public compliance at least, the importance of verbal instructions in determining opinion change is recorded.

RESULTS

Part 2. Temporal Measures of Opinion Change

(a) The total time spent speaking per unit of time was submitted to an analysis of variance. Since the completed experiment did not have an equal number of subjects in each group, an unweighted means solution was used (Winer, 1962). Table III summarizes the analysis. The only significant difference is found between the amount males speak and the amount females speak. Males speak significantly more ($F = 13.48$, $d.f. = 1,10$, $p < .001$) than females when discussing a topic upon which they disagree.

(b) The positive statements per unit time were also submitted to an analysis of variance, and Table IV summarizes these results. Males make more positive statements than do females ($F = 10.10$, $d.f. = 1,10$, $p < .001$). In addition the number of positive statements

Table IV here

omitted per unit of time did not remain constant ($F = 3.40$, $d.f. = 9,972$, $p < .001$). Figure 6 indicates that after an initial rise and some fluctuation, there is a general decrease in the number of positive verbalizations. None of the other factors reach significance.

(c) Next, the negative statements per unit of time were submitted to an analysis of variance. Table V summarizes these data. The between subjects results indicate that both the instruction and sex factors are significant. Favorably predisposed subjects make more negative statements than do unfavorably predisposed subjects ($F = 6.79$,

Source of Variation						
Between Subjects		s.s.	d.f.	M.S.	F	p
Instruction (I)		0	1	0	-	-
Sex	(S)	1,5153.03	1	1,5153.03	13.48	<.001
Partner	(P)	528.32	1	528.32	-	N. S.
I X S		42.05	1	42.05	-	N. S.
I X P		374.27	1	374.27	-	N. S.
S X P		901.54	1	901.54	-	N. S.
I X S X P		491.51	1	491.51	-	N. S.
Subjects w. groups		121,338.77	108	1,123.51		
Within Subjects						
Time (T)		204.10	9	22.56	1.42	N. S.
I X T		63.01	9	7.00	-	N. S.
S X T		39.56	9	4.40	-	N. S.
P X T		13.02	9	1.45	-	N. S.
I X ST		183.27	9	20.36	1.21	N. S.
I X P X T		78.77	9	10.97	-	N. S.
S X P X T		160.21	9	17.80	1.12	N. S.
I X S X P X T		42.14	9	4.72	-	N. S.
T x subjects w. groups		15,473.47	972	15.93		

Table III

Analysis of Variance of Time Spent Speaking

<u>Source of Variation</u> <u>Between Subjects</u>	s.s.	d.f.	m.s.	F	p
Instruction (I)	276.41	1	276.41	-	N. S.
Sex (S)	6,408.52	1	6,408.52	10.40	.001
Partner (P)	462.56	1	462.56	-	< N. S.
I x S	204.75	1	204.75	-	N. S.
I x P	38.78	1	38.78	-	N. S.
S x P	765.56	1	765.56	1.24	N. S.
I x S x P	1.44	1	1.44	-	N. S.
Subjects w. groups	66,564.50	108	616.33		

Within Subjects

Time (T)	511.29	9	56.81	3.40	.001
I x T	147.77	9	16.42	-	< N. S.
S x T	118.42	9	13.16	-	N. S.
P x T	70.22	9	7.80	-	N. S.
I x S x T	155.37	9	17.26	1.03	N. S.
I x P x T	31.31	9	3.48	-	N. S.
S x P x T	119.73	9	13.30	-	N. S.
I x S x P x T	181.57	9	20.17	1.21	N. S.
T x subjects w. groups	14,237.34	972	14.71		

Table IV

Analysis of Variance of Numbers of Positive Statements

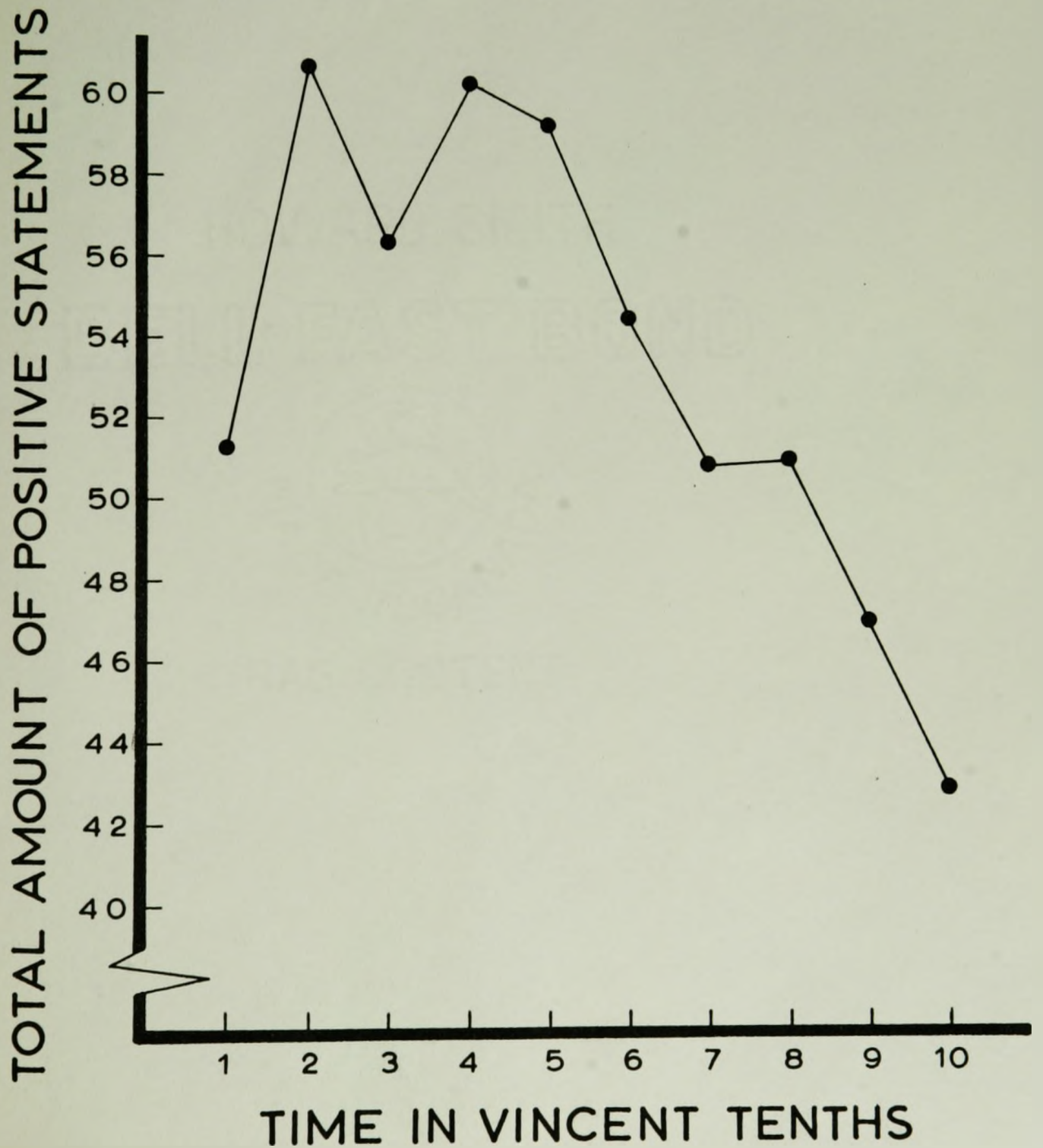


FIGURE 6. Positive Statements Across Time for all Subjects.

<u>Source of Variation</u> <u>Between Subjects</u>	<u>S.S.</u>	<u>d.f.</u>	<u>S.S.</u>	<u>F</u>	<u>p</u>
Instruction (I)	146.07	1	146.07	6.79	< .05
Sex (S)	138.86	1	138.86	6.46	< .05
Partner (P)	1.97	1	1.97	--	N. S.
I x S	43.49	1	43.49	2.02	N. S.
I x P	11.79	1	11.79	--	N. S.
S x P	1.83	1	1.83	--	N. S.
I x S x P	.89	1	.89	--	N. S.
Subjects w. groups	2,322.88	108	21.51		

Within Subjects

Time (T)	117.51	9	13.06	13.32	< .001
I x T	41.53	9	4.61	4.70	< .01
S x T	21.62	9	2.40	2.45	< .01
P x T	21.09	9	2.34	2.39	< .05
I x S x T	42.4	9	4.72	4.82	< .01
I x P x T	18.21	9	2.02	2.06	< .05
S x P x T	22.53	9	2.50	2.55	< .01
I x S x P x T	41.70	9	4.66	4.76	< .01
T x subjects w. groups	95.48	972	.98		

Table V

Analysis of Variance of Numbers of Negative Statements

d.f. = 1,108, $p < .05$). Further, males also make more negative statements than do females ($F = 6.46$, d.f. = 1,108, $p < .05$). The comparisons involving change over time are all significant. Figure 7 indicates that after an initial increase at about the middle of the discussion, there is a slight decrease in the emissions of negative statements which is followed by a further increase. The other interactions involving time reach significance because of the overlappings and/ or fluctuations of the effects of the main factors across time. These data are too complex to permit interpretation or the drawing of conclusions. They do indicate that the variables, at different levels, are having significant effects which only further research can elucidate.

(d) Amount of Time spent Making Neutral Statements:

The results of the analysis of neutral verbalizations is presented in Table VI. The sex factor is again significant with males making more neutral statements than females ($F = 16.70$, d.f. = 1,108, $p < .001$). The instruction x partner interaction is

Table VI here

also significant ($F = 4.79$, d.f. = 1,108, $p < .05$). Figure 8 indicates that a favorably predisposed subject interacting with an unfavorably predisposed partner is prone to make more neutral statements than

Figure 8 here

when interacting with a favorably predisposed partner. An unfavorably predisposed subject interacting with a favorably predisposed rather than an unfavorably predisposed partner is more likely to make more neutral statements.

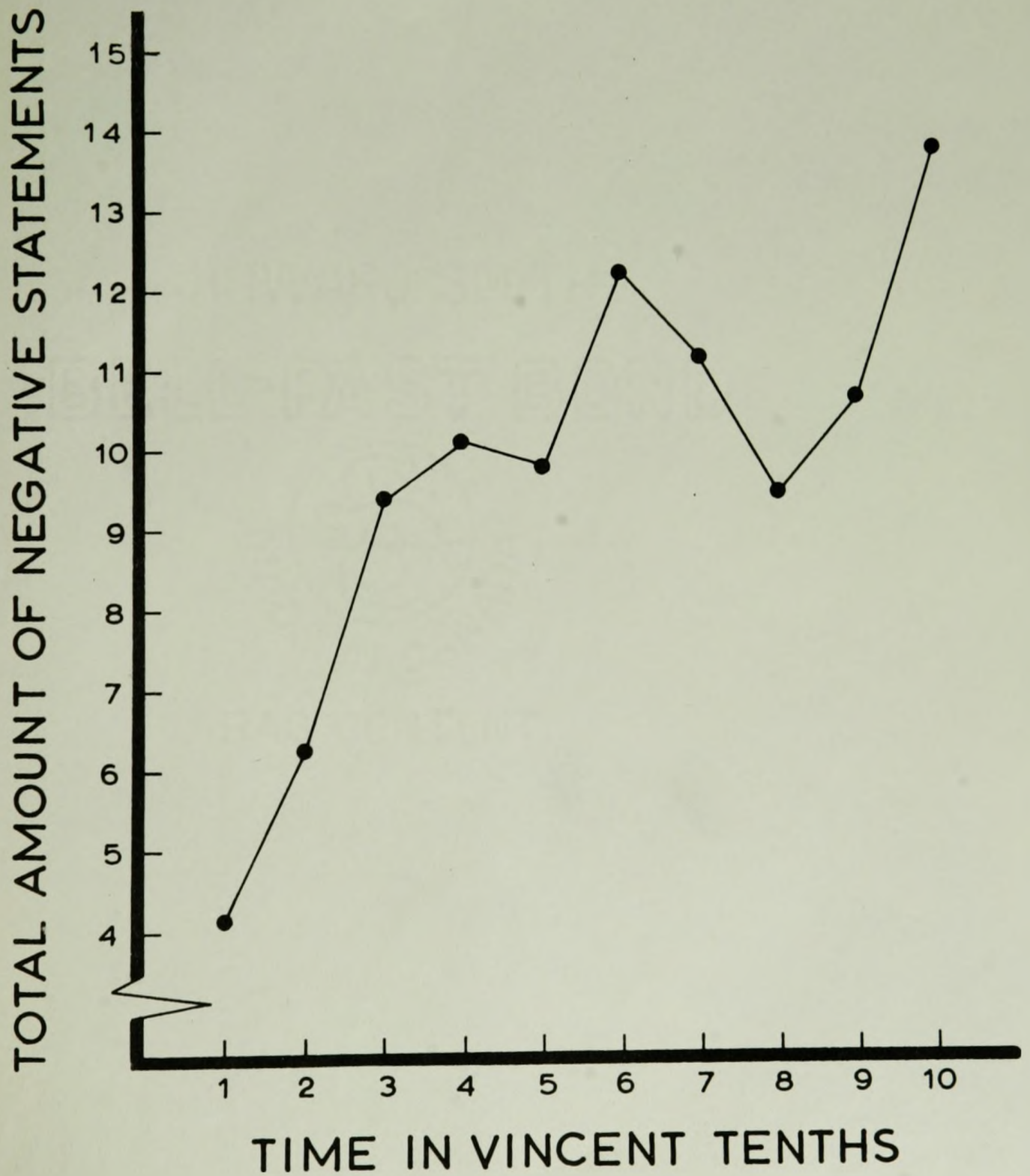


FIGURE 7. Negative Statements Across Time for all Subjects.

<u>Source of Variation</u>						
<u>Between Subjects</u>		s.s.	d.f.	m.s.	F	p
Instruction	(I)	22.27	1	22.07	--	N. S.
Sex	(S)	979.36	1	979.36	16.70	.001
Partner	(P)	0	1	0	--	N. S.
I x S		1.70	1	1.70	--	N. S.
I x P		280.90	1	280.90	4.79	.05
S x P		12.84	1	12.84	--	N. S.
I x S x P		306.54	1	306.54	5.23	.025
Error		7404.9	108	58.65		
 <u>Within Subjects</u>						
Time	(T)	208.81	9	23.20	4.13	.001
I x T		90.65	9	10.07	1.79	N. S.
S x T		86.72	9	9.64	1.72	N. S.
P x T		84.76	9	9.42	1.68	N. S.
I x S x T		113.18	9	12.58	2.24	N. S.
I x P x T		72.31	9	8.03	1.43	N. S.
S x P x T		41.66	9	4.63	--	N. S.
I x S x P x T		179.99	9	20.00	3.56	N. S.
T x subjects w. groups		5465.20	972	5.62		

Table VI

Analysis of Variance of Numbers of Neutral Statements

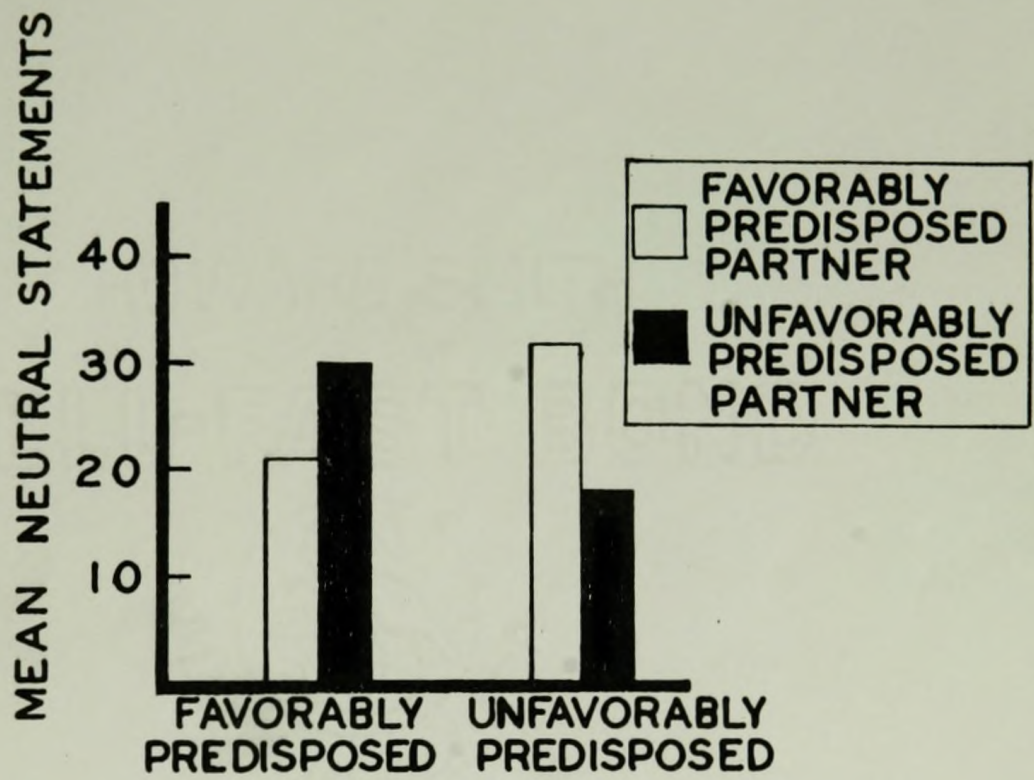


FIGURE 8. Instruction x Partner interaction for Neutral Statements.

Figure 9 indicates an over-all general increase in neutral statements across time. Though there is a general tendency ($F = 4.13$, d.f. = 9, 972, $p < .001$) to make more neutral statements as the

Figure 9 here

discussion proceeds, figure 9 indicates an initial decrease in neutral comments followed by an increase and then fluctuations between increasing and decreasing statements for the different units of time. The instruction \times sex \times partner \times time interaction is also significant ($F = 3.56$, d.f. = 9, 972, $p < .025$). This significant result reflects the interactions of the four factors at a large number of levels. Because of the complexity of the interaction no conclusions can be accurately drawn. The interaction does indicate that the variables, at different levels, are having significant effects which can be elucidated only with more precise experimental controls.

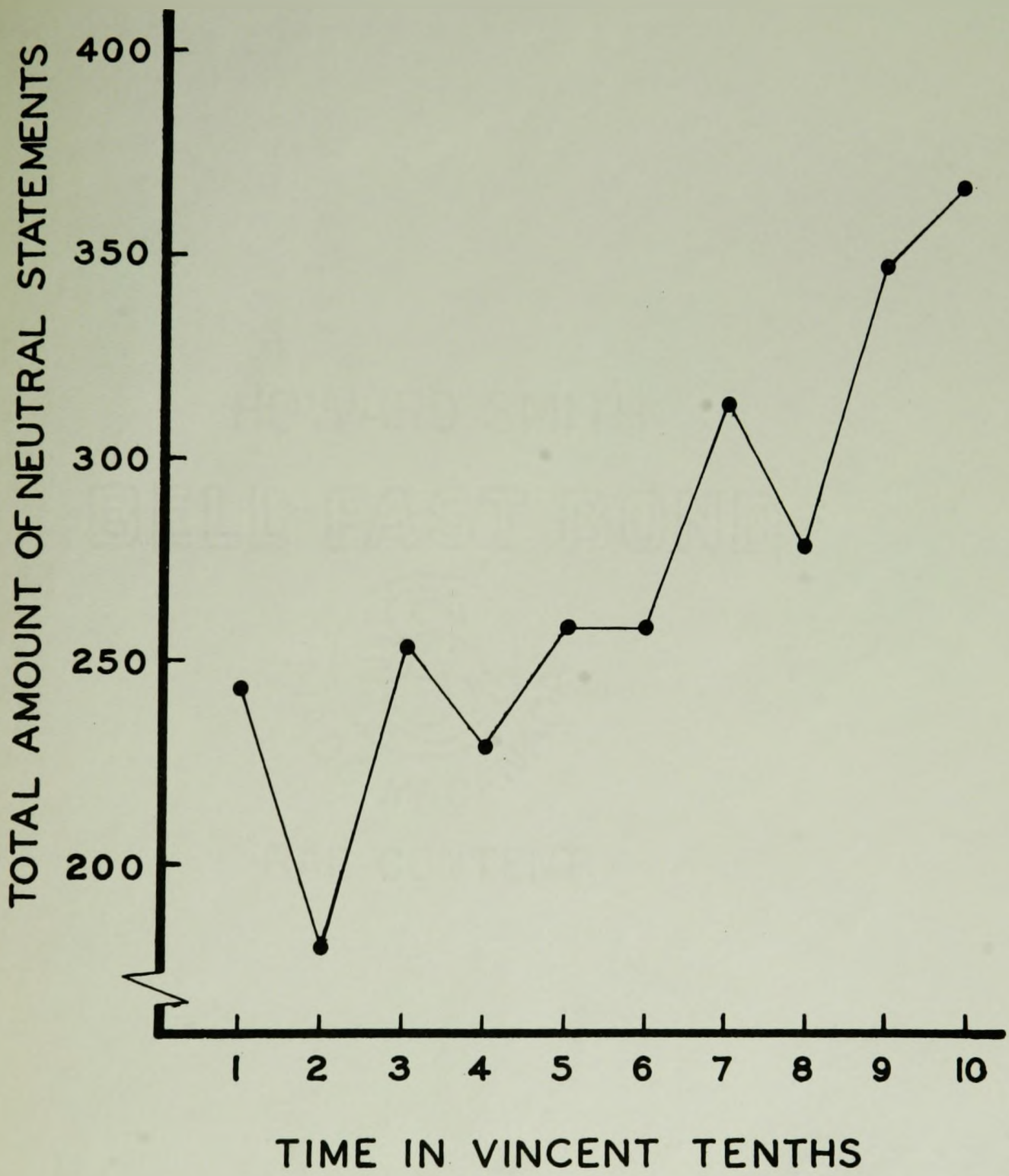


FIGURE 9. Neutral Statements Across Time for all Subjects.

DISCUSSION

Part 2. Temporal Measures of Opinion Change

Resistance to change in opinion was assumed to be reflected in the number of positive and negative statements emitted by the subject during the discussion. The more persuasible the subject was, the greater would be the frequency of negative statements and the lower the frequency of positive statements. In addition the rates of positive and negative statements should change over time.

It was found that the instructions affected only the output of negative and neutral statements. Favorably predisposed subjects on the average make more negative and neutral verbalizations than unfavorably predisposed subjects throughout the discussion. Numbers of positive statements were unaffected. The sex factor was significant for total time spent speaking, positive statements, negative statements and neutral statements. Males in this type of discussion speak more than do females and so, by definition, are more persuasive. The sex of the participants is of critical importance in determining the nature of the verbal behavior when two people are arguing.

Further, disregarding all other variables, there are general decrease in positive statements and general increases in both negative and neutral statements as the discussion progresses. The initial rise in positive statements prior to the decline across time is probably a reflection of the fact that the subjects are "getting to

know each other". Toward the end of the discussions there is a greater decrease in positive statements than there is a rise in negative assertions. The rise in neutral statements at the end of the discussions is also rather steep. The decline in positive statements and rise in negative statements, in terms of the definition of persuasibility used in this thesis seems to reflect a tendency for all subjects to change their opinion. It must be remembered at this point that the mean ratings for both the subject of opinion change measures ($\bar{X} = 1.05$) and the observer opinion change measures ($\bar{X} = 1.46$) were quite small. Thus it is quite possible that all of these effects would be significantly enhanced if more opinion change had been recorded. It is possible that the instructions to the subjects were not as effective as they were expected to be. However, the over-all measures of opinion change (both public and private measures) did indicate some differential effects between the two types of instruction. It is also possible that as the subjects interacted, the expected effects of the instructions were superceded and attenuated by the actual effects of the interaction. Of course, more precise controls over both these factors would probably provide more clear-cut behavior patterns.

Many of the significant results occurred in the negative statement category, regardless of the fact that the data were reflecting only relatively small magnitudes of opinion change. This suggests that increases in negative statements rather than decreases in positive statements are a more sensitive indicator of persuasibility. The number of negative statements emitted by a subject is relatively

small. In fact, the ratio of positive to negative statements is about 5 to 1. This serves to underline the importance of negative statements reflecting opinion change.

While in general, the data suggest that opinion change is accompanied by a decrease in positive and an increase in both negative and neutral statements, they also indicate that instructions, as used in this study, have a limited effect on the subject's verbal behavior.

RESULTS

Part 3. Evaluational Reactions to the Other Pair Member

(a) The Semantic Differential

After the discussion each subject rated his (her) partner on 37 items of a semantic differential scale. The data were analyzed separately for males and for females. T tests for independent measures were applied to the subject measures to compare the (++) vs (--) groups and t tests for correlated measures were applied to the measures of the (+) and (-) members of the (+-) groups. Tables I and II (Appendix C) show that out of 148 possible outcomes only 6 are significant. The significant variables were honest, cheerful, stable, active, good, and soft. However, these were not consistent between groups. Because there was a significant difference on one variable in the (++) vs (--) males groups did not mean it would show up as a difference between (+) and (-) male members of the (+-) group. Since fewer significant results were obtained than would be expected by chance alone at the 5% level, it must be concluded that the semantic differential indicates no differences between the groups.

(b) Social Distance Scale

After the discussion each subject rated his (her) partner on the social distance scale. None of the comparisons were significant (see Appendix C). Subjects in the high cohesive groups evaluate each other similar to subjects in the low cohesive groups. A t test

for correlated measures was applied to the intermediate cohesive group. Both male and female positively predisposed subjects rated their partners similar to the negatively predisposed subjects.

(c) On the direct question, "Did you like the other person?" both members, male and female, of the high cohesive group again evaluated the other similar to the way partners in the low cohesive group evaluated each other. The t test for correlated measures applied separately to male subjects and female subjects in the intermediate cohesive group also gave no significant results (see Appendix C).

DISCUSSION

Part 3. Evaluational Reactions to the Other Pair Member

Neither the semantic differential, the social distance scale nor the direct question, "Did you like the other person?", indicated any differences between unfavorably and favorably instructed subjects on how they evaluated the other after discussion. Any one or more of a number of factors may be responsible for this. It is possible that the instruction effect had diminished to zero by the time the subjects evaluated each other or that the measures used were not sensitive enough to differentiate the two groups. It is possible that strangers who interact for relatively short periods of time as in this experiment are not prone to make negative statements about each other. This interpretation is supported by the observation that the scores on the above tests are usually on the positive end of the scale.

RESULTS

Part 4. Other Measures

No significant differences were found on any of the comparisons made between favorably and unfavorably instructed subjects. Subjects in both groups evaluated each other similarly on how they thought they were able to modify each other's opinions and to what extent they thought their own opinion had been modified.

DISCUSSION

Part 4. Other Measures

That there was no difference between favorably and unfavorably instructed subjects on how they thought they were able to modify each other's opinion or to what extent they thought their own opinions had been modified is consistent with the data of Section I (Amount of Opinion Change). Those results indicated no differences between favorably and unfavorably instructed subjects on many of the private measures of opinion change. It is possible then that the present results also reflect a lack of private change.

CHAPTER SIX

SUMMARY AND CONCLUSIONS

The present study investigated the effects of different levels of "cohesiveness" on the persuasibility and persuasiveness of individuals, paired and discussing a topic on which they disagreed. Three types of groups were formed. These were the high cohesive group, where both members of the pair were instructed to expect a congenial partner; the intermediate cohesive group, where one member of the pair anticipated a congenial partner and the other expected an uncongenial person, and the low cohesive group, in which case both subjects anticipated an uncongenial partner. The nature of a subject's instructions, the sex of the subject, and the effect on one subject of the partner's instructions were the parameters studied. A number of response measures, amount of opinion change and changes in verbal behavior over time were employed.

Since the mean amount of opinion change for all subjects was relatively small, and since not all of the measures reflect the same results, the main findings must be held as tentative suggestions until more precise controls are employed. Some of the main findings suggest that:

- (1) Favorably predisposed subjects are more persuasible than unfavorably predisposed subjects.
- (2) Males are more persuasive than females since they speak the most. This is reflected in the differences in the number of positive,

negative, and neutral statements emitted by the sexes.

(3) Increases in negative statements rather than decreases in positive statements seem to be a more sensitive indicator of persuasibility.

(4) Over-all decreases in the emission of positive statements and over-all increases in the emission of negative statements were found to accompany opinion change.

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APPENDIX A

McMaster University - Department of Psychology

PERSONAL DATA SHEET

CONFIDENTIAL

DATE _____

Name _____ *Sex: Male _____ Female _____ Tel. No. _____

Country of Birth _____ Age _____ Years _____ Months.

Country of Parents' Birth: Father _____ Mother _____

First language ever learned _____ Second language _____

*Is Father alive? Yes _____ No _____ * Is Mother alive? Yes _____ No _____

* If alive, are your parents living together? Yes _____ No _____

How many living brothers and sisters have you? _____

* If you have brothers and/or sisters are you the oldest? Yes _____ No _____

Occupation of main family provider? _____

*What is his (her) income bracket? (a) Under \$2500.
(b) \$2500 - \$4000.
(c) \$4000 - \$6000.
(d) Over \$6000.

My personal income last year was: \$ _____

* I am working my way through college: Yes _____ No _____ In Part _____

NOTE

* Check the answer that applies.

McMaster University - Department of Psychology

QUESTIONNAIRE

Date _____ Name _____ Male _____ Female _____
Surname Given Name

Below are a number of issues. Would you please indicate whether you agree or disagree with the statement by drawing a circle around either agree, doubtful or disagree.

Then indicate on the scale below the statement how strongly you feel about this issue by placing an X above the appropriate number. For example: if a person felt very strongly about a given issue he would indicate it in this manner:

Of no concern to me whatsoever	I am interested but not too concerned	I feel very strong- ly about this issue.
		X
1	2	3

1. The marriage of undergraduates should be actively discouraged. Agree _____ Disagree _____ Doubtful _____

Of no concern to me whatsoever	I am interested but not too concerned	I feel very strongly about this issue
1	2	3

2. There are too many immigrants in Canada today. Agree _____ Disagree _____ Doubtful _____

Of no concern to me whatsoever	I am interested but not too concerned	I feel very strongly about this issue
1	2	3

3. Given ability, university education should be free. Agree _____ Disagree _____ Doubtful _____

Of no concern to me whatsoever	I am interested but not too concerned	I feel very strongly about this issue
1	2	3

4. Prostitution is an inevitable part of our society.

Agree ___ Disagree ___ Doubtful ___

Of no concern to me whatsoever

I am interested but not too concerned

I feel very strongly about this issue

1 _____ 2 _____ 3

5. Canada should eventually join the U.S.A.

Agree ___ Disagree ___ Doubtful ___

Of no concern to me whatsoever

I am interested but not too concerned

I feel very strongly about this issue

1 _____ 2 _____ 3

6. University examinations should be abolished.

Agree ___ Disagree ___ Doubtful ___

Of no concern to me whatsoever

I am interested but not too concerned

I feel very strongly about this issue

1 _____ 2 _____ 3

7. French-Canadian culture is a handicap to Canada.

Agree ___ Disagree ___ Doubtful ___

Of no concern to me whatsoever

I am interested but not too concerned

I feel very strongly about this issue

1 _____ 2 _____ 3

8. You cannot reduce racial discrimination by law.

Agree ___ Disagree ___ Doubtful ___

Of no concern to me whatsoever

I am interested but not too concerned

I feel very strongly about this issue

1 _____ 2 _____ 3

9. Grounds, other than adultery, should be allowed for divorce.

Agree___ Disagree___ Doubtful___

Of no concern to me whatsoever

I am interested but not too concerned

I feel very strongly about this issue

1 _____ 2 _____ 3

10. In general, television is not worth watching.

Agree___ Disagree___ Doubtful___

Of no concern to me whatsoever

I am interested but not too concerned

I feel very strongly about this issue

1 _____ 2 _____ 3

11. There is too much emphasis on sex today.

Agree___ Disagree___ Doubtful___

Of no concern to me whatsoever

I am interested but not too concerned

I feel very strongly about this issue

1 _____ 2 _____ 3

12. Initiations at the university level should be abolished.

Agree___ Disagree___ Doubtful___

Of no concern to me whatsoever

I am interested but not too concerned

I feel very strongly about this issue

1 _____ 2 _____ 3

13. The government should socialize medicine.

Agree___ Disagree___ Doubtful___

Of no concern to me whatsoever

I am interested but not too concerned

I feel very strongly about this issue

1 _____ 2 _____ 3

14. The legal age for drinking should be lowered to eighteen years.

Agree ___ Disagree ___ Doubtful ___

Of no concern to me whatsoever

I am interested but not too concerned

I feel very strongly about this issue

1 _____ 2 _____ 3

15. Fraternities should be allowed at McMaster University.

Agree ___ Disagree ___ Doubtful ___

Of no concern to me whatsoever

I am interested but not too concerned

I feel very strongly about this issue

1 _____ 2 _____ 3

16. Everyone should be required, by law to contribute to the United Appeal.

Agree ___ Disagree ___ Doubtful ___

Of no concern to me whatsoever

I am interested but not too concerned

I feel very strongly about this issue

1 _____ 2 _____ 3

17. True freedom of speech exists in Canada today.

Agree ___ Disagree ___ Doubtful ___

Of no concern to me whatsoever

I am interested but not too concerned

I feel very strongly about this issue

1 _____ 2 _____ 3

18. The Monarchy is an outmoded appendage to our society.

Agree ___ Disagree ___ Doubtful ___

Of no concern to me whatsoever

I am interested but not too concerned

I feel very strongly about this issue

1 _____ 2 _____ 3

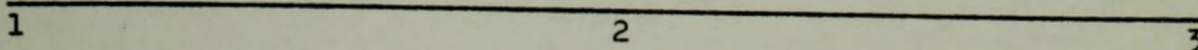
19. The voting age should be lowered to eighteen years.

Agree ___ Disagree ___ Doubtful ___

Of no concern to me whatsoever

I am interested but not too concerned

I feel very strongly about this issue



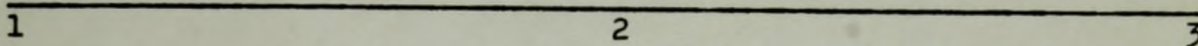
20. Death as a punishment should be abolished.

Agree ___ Disagree ___ Doubtful ___

Of no concern to me whatsoever

I am interested but not too concerned

I feel very strongly about this issue



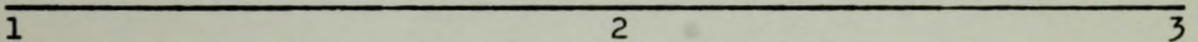
21. College students should be required to take physical education.

Agree ___ Disagree ___ Doubtful ___

Of no concern to me whatsoever

I am interested but not too concerned

I feel very strongly about this issue



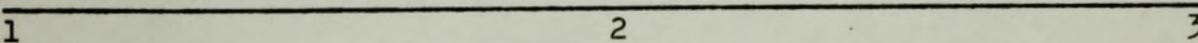
22. The university school term should be extended.

Agree ___ Disagree ___ Doubtful ___

Of no concern to me whatsoever

I am interested but not too concerned

I feel very strongly about this issue



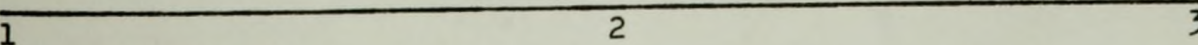
23. Canada should have a national flag of her own.

Agree ___ Disagree ___ Doubtful ___

Of no concern to me whatsoever

I am interested but not too concerned

I feel very strongly about this issue



24. Sex deviates should be institutionalized for life.

Agree ___ Disagree ___ Doubtful ___

Of no concern to me whatsoever

I am interested but not too concerned

I feel very strongly about this issue

1 _____ 2 _____ 3

25. Slipsnod manufacture is characteristic of American products

Agree ___ Disagree ___ Doubtful ___

Of no concern to me whatsoever

I am interested but not too concerned

I feel very strongly about this issue

1 _____ 2 _____ 3

26. All teachers should be required to have university degrees.

Agree ___ Disagree ___ Doubtful ___

Of no concern to me whatsoever

I am interested but not too concerned

I feel very strongly about this issue

1 _____ 2 _____ 3

27. It is better to be popular than rejected.

Agree ___ Disagree ___ Doubtful ___

Of no concern to me whatsoever

I am interested but not too concerned

I feel very strongly about this issue

1 _____ 2 _____ 3

28. Canada is in decline as a nation.

Agree ___ Disagree ___ Doubtful ___

Of no concern to me whatsoever

I am interested but not too concerned

I feel very strongly about this issue.

1 _____ 2 _____ 3

Group Dynamics
Change of Opinion Data

Observer:

Date:

Subject:

Opponent:

Topic No.:

Original opinion:

Strength:

1	2	3
---	---	---

Opinion at completion (check):

The subject now

agrees	agrees with qualifications	complete compromise	disagrees with qualifications	disagrees
--------	----------------------------------	------------------------	-------------------------------------	-----------

with the topic.

Remarks:

FINAL SHEET

To Be Answered Together.

Date _____ Name _____ M _____ F _____
Surname _____ Given Name(s) _____

Name _____ M _____ F _____
Surname _____ Given name(s) _____

Our opinion on the topic # _____ now, after discussion, is

In other words, we now agree

 1 with each other
disagree 2
agree with qualifications 3
disagree with qualifications 4

CONFIDENTIAL.

FINAL SHEET

To be filled out alone

Date _____ Name _____ M _____ F _____
Surname Given Name

Your original opinion on topic # _____ was; agree _____, disagree _____.

The topic is of no concern to me	I am interested but not too concerned	I feel very strongly about the issue
--	---	--

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3

My opinion on the topic now, after discussion, is;

In other words, I now agree _____ with the statement

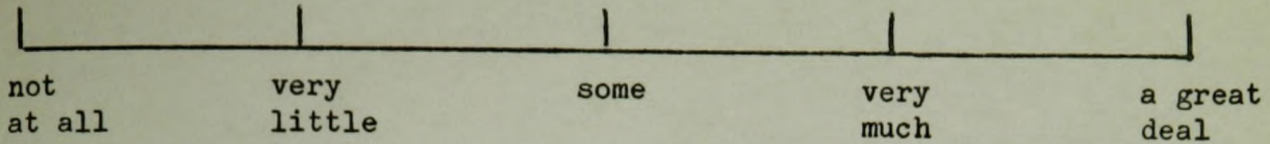
disagree	<input type="checkbox"/>	1
agree with qualifications	<input type="checkbox"/>	2
disagree with qualifications	<input type="checkbox"/>	3
	<input type="checkbox"/>	4

The topic is of no concern to me	I am interested but not too concerned.	I feel very strongly about the issue
--	--	--

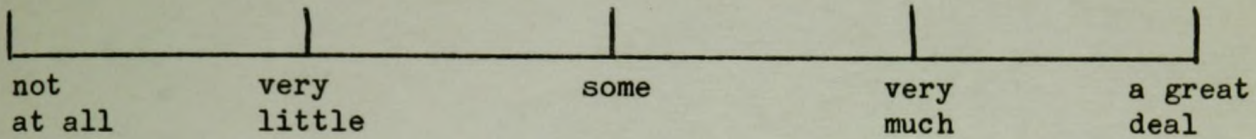
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3

Please check the appropriate category in the following questions. Your response will be kept in strict confidence.

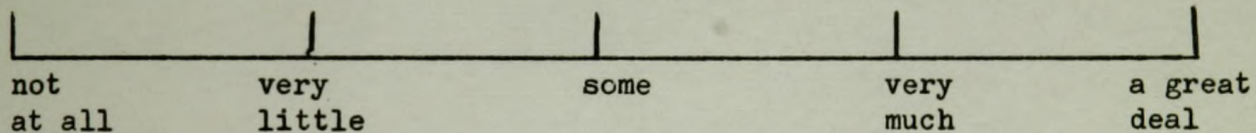
1. I had been exposed to the issue discussed here (discussed it with friends, heard it on the radio or TV, read about it, or the like)



2. To what extent do you feel you were able to modify the other person's point of view.



3. To what extent do you feel your point of view was modified.



4. We are interested in determining the extent to which people can judge others through short contacts such as you have just experienced. Listed below are a number of categories which may describe the other person in this experiment. Each category is defined by two opposite terms. You are to indicate your evaluation of the other person on each category by placing an X above the appropriate number from one to seven. Please place the X directly above the number you choose.

hard $\frac{X}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ soft

If another person felt that the apple was absolutely in between; he would indicate it in this manner;

hard $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{X}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ soft

and so on with different categories.

Sometimes you may feel as though you have had the same item before. This will not be the case, so do not look back and forth through the items. Work quickly and do not spend too much time on any one item. Try to be frank, and describe the other person as he really appeared to you.

Capable	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	Incapable
Masculine	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	Feminine
Tall	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	Short
Cheerful	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	Sad
Impractical	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	Practical
Calm	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	Flustered
Passive	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	Active
Emotional	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	Unemotional
Dependable	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	Undependable
Competitive	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	Cooperative

Conceited	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	Modest
Adaptable	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	Unadaptable
Friendly	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	Unfriendly
Kind	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	Unkind
Unfair	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	Fair
Good	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	Bad
Unsympathetic	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	Sympathetic
Inconsiderate	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	Considerate
Soft	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	Hard
Intelligent	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	Unintelligent

Follower	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	Leader
Sociable	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	Unsociable
Likeable	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	Unlikeable
Rigid	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	Flexible
Immature	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	Mature
Warm	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	Cold
Natural	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	Unnatural
Evasive	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	Frank
Responsive	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	Unresponsive
Honest	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	Dishonest

Prejudiced 1 2 3 4 5 6 7 Tolerant

Dull 1 2 3 4 5 6 7 Witty

Tactful 1 2 3 4 5 6 7 Tactless

Noisy 1 2 3 4 5 6 7 Quiet

Cheerful 1 2 3 4 5 6 7 Unhappy

Stable 1 2 3 4 5 6 7 Unstable

Suspicious 1 2 3 4 5 6 7 Understanding

5. Did you like the other person?

Very much 1 2 3 4 5 6 7 Very little

According to your first feeling reactions place a check (✓)
in front of all those relationships which you would be willing
to enter into with the other participants.

- () I would like to see him around campus sometime.
- () I would want to have him in the same class.
- () I would enjoy talking to him.
- () I would enjoy an animated discussion with him.
- () I would like to discuss serious general problems with him.
- () I would want him to come to me with his problems.
- () I would discuss important personal problems with him.

APPENDIX B

Tests of Significance
Between Observer and Subject Correlations

GROUPS	r	z	N-3	$\frac{1}{N-3}$	z	Sor N. S.
++ female	.88	1.376	17	.0059	8.139	S.
-- female	.46	.497	17	.0059		
-- male	.59	.678	15	.0667	.1239	N. S.
++ male	.56	.633	15	.0667		
+ male	.65	.775	17	.0059	3.685	S.
+ female	.36	.377	17	.0059		
-- female	.46	.497	17	.0059	1.111	N. S.
+ female	.36	.377	17	.0059		
+ male	.65	.775	17	.0059	2.574	S.
-- female	.46	.497	17	.0059		
++ female	.88	1.376	17	.0059	9.250	S.
+ female	.36	.377	17	.0059		
++ female	.88	1.376	17	.0059	5.565	S.
+ male	.65	.775	17	.0059		
-- male	.59	.678	15	.0667	.673	N. S.
-- female	.46	.497	17	.0059		

Continued. . . .

Continued. . . .

Tests of Significance
Between Observer and Subject Correlations

GROUPS	r	z	N-3	$\frac{1}{N-3}$	z	Sign. N. S.
++ male	.56	.633	15	.0667	.506	N. S.
-- female	.46	.497	17	.0059		
++ female	.88	1.376	17	.0059	2.595	S.
-- male	.59	.678	15	.0667		
+- female	.88	1.376	17	.0059	2.762	S.
+- male	.56	.633	15	.0667		
-- male	.59	.678	15	.0667	1.119	N. S.
+- female	.36	.377	17	.0059		
++ male	.56	.633	15	.0667	0.952	N. S.
+- female	.36	.377	17	.0059		
+- male	.65	.775	17	.0059	0.528	N. S.
++ male	.56	.633	15	.0667		
+- male	.65	.775	17	.0059	0.361	N. S.
-- male	.59	.678	15	.0667		

APPENDIX C

Table I

Semantic Differential Comparisons

Males

t-tests	+/-			+/-		
	Independent	d.f.	p	Related	d.f.	p
Capable	-0.549	34	N.S.	-0.645	9	N. S.
Masculine	0.739	34	N.S.	0.175	9	N. S.
Tall	0.000	34	N.S.	-1.474	9	N. S.
Cheerful	0.432	34	N.S.	0.000	9	N. S.
Practical	-0.280	34	N.S.	-0.815	9	N. S.
Calm	0.384	34	N.S.	1.268	9	N. S.
Active	-0.413	34	N.S.	2.269	9	<.05
Unemotional	0.302	34	N.S.	0.657	9	N. S.
Dependable	0.776	34	N.S.	-0.224	9	N. S.
Cooperative	-1.013	34	N.S.	-1.071	9	N. S.
Modest	0.112	34	N.S.	0.645	9	N. S.
Adaptable	0.099	34	N.S.	0.616	9	N. S.
Friendly	-0.417	34	N.S.	-0.890	9	N. S.
Kind	0.801	34	N.S.	1.566	9	N. S.
Fair	1.041	34	N.S.	1.046	9	N. S.
Good	0.785	34	N.S.	0.940	9	N. S.
Sympathetic	0.716	34	N.S.	0.000	9	N. S.
Considerate	1.580	34	N.S.	-0.433	9	N. S.
Hard	-0.174	34	N.S.	-1.000	9	N. S.
Intelligent	-0.664	34	N.S.	-0.590	9	N. S.
Leader	0.359	34	N.S.	1.000	9	N. S.
Sociable	0.403	34	N.S.	-0.400	9	N. S.
Likeable	0.275	34	N.S.	0.722	9	N. S.
Flexible	-0.395	34	N.S.	1.405	9	N. S.
Mature	0.472	34	N.S.	1.097	9	N. S.
Normal	0.000	34	N.S.	1.142	9	N. S.
Natural	-0.251	34	N.S.	0.593	9	N. S.
Frank	1.084	34	N.S.	0.357	9	N. S.
Responsive	1.432	34	N.S.	0.490	9	N. S.
Honest	2.423	34	<.05	0.000	9	N. S.
Tolerant	-0.949	34	N.S.	0.335	9	N. S.
Witty	0.744	34	N.S.	0.809	9	N. S.
Tactful	-0.381	34	N.S.	-0.165	9	N. S.
Quiet	-0.921	34	N.S.	0.357	9	N. S.
Cheerful	1.921	34	<.05	-0.438	9	N. S.
Stable	2.649	34	<.01	0.000	9	N. S.
Understanding	0.264	34	N.S.	0.170	9	N. S.

Table II

Semantic Differential Comparisons

Females

t-tests	+/-			+/-		
	Independent	d.f.	p	Related	d.f.	p
Capable	1.727	38	<.05	6.865	9	N. S.
Feminine	0.315	38	N. S.	0.000	9	N. S.
Tall	-1.108	38	N. S.	0.525	9	N. S.
Cheerful	1.440	38	N. S.	-0.748	9	N. S.
Practical	0.588	38	N. S.	0.471	9	N. S.
Calm	-0.566	38	N. S.	0.339	9	N. S.
Active	0.512	38	N. S.	1.730	9	N. S.
Emotional	1.241	38	N. S.	0.777	9	N. S.
Dependable	1.485	38	N. S.	-0.922	9	N. S.
Cooperative	0.840	38	N. S.	-0.364	9	N. S.
Modest	0.887	38	N. S.	-1.584	9	N. S.
Adaptable	0.999	38	N. S.	-0.754	9	N. S.
Friendly	1.182	38	N. S.	-1.314	9	N. S.
Kind	1.258	38	N. S.	0.719	9	N. S.
Fair	0.811	38	N. S.	0.326	9	N. S.
Good	2.248	38	<.05	1.314	9	N. S.
Sympathetic	1.038	38	N. S.	-0.436	9	N. S.
Considerate	0.860	38	N. S.	1.750	9	N. S.
Soft	2.069	38	<.05	-1.552	9	N. S.
Intelligent	1.099	38	N. S.	1.584	9	N. S.
Leader	-0.865	38	N. S.	1.017	9	N. S.
Sociable	0.983	38	N. S.	-0.271	9	N. S.
Likeable	1.381	38	N. S.	-0.960	9	N. S.
Flexible	-0.140	38	N. S.	-2.932	9	N. S.
Mature	0.000	38	N. S.	-0.237	9	N. S.
Warm	1.009	38	N. S.	-0.149	9	N. S.
Natural	0.698	38	N. S.	0.170	9	N. S.
Frank	0.132	38	N. S.	0.698	9	N. S.
Responsive	0.572	38	N. S.	-0.560	9	N. S.
Honest	0.937	38	N. S.	0.623	9	N. S.
Tolerant	0.990	38	N. S.	-0.773	9	N. S.
Witty	0.935	38	N. S.	2.032	9	N. S.
Tactful	0.661	38	N. S.	0.224	9	N. S.
Quiet	0.388	38	N. S.	0.000	9	N. S.
Cheerful	1.157	38	N. S.	0.204	9	N. S.
Stable	0.000	38	N. S.	0.793	9	N. S.
Understanding	1.203	38	N. S.	-1.308	9	N. S.

Social Distance Scale Comparisons - t tests

Comparison	d.f.	t	p
Male ++ Male --	34	-0.080	N. S.
Female ++ Female --	38	0.246	N. S.
Male + Male -	9	1.400	N. S.
Female + Female -	9	.532	N. S.

.....

Direct Question: "Did you like the other person?"

Comparison	d.f.	t	p
Male ++ vs. Male --	34	.074	N. S.
Female ++ vs. Female --	38	.108	N. S.
Male + vs. Male -	9	1.087	N. S.
Female + vs. Female -	9	0.357	N. S.

.....

Modification of Other's Opinion

Comparison	d.f.	t	p
Male ++ vs. Male --	34	-0.034	N. S.
Female ++ vs. Female --	38	0.000	N. S.
Male + vs. Male -	9	1.500	N. S.
Female + vs. Female -	9	0.246	N. S.

Modification of Own Opinion

Comparison	d.f.	t	p
Male ++ vs. Male --	34	0.060	N. S.
Female ++ vs. Female --	38	0.000	N. S.
Male + vs. Male -	9	1.460	N. S.
Female + vs. Female -	9	-1.920	N. S.

APPENDIX D

The Symbols delineating the nature
of the groups for the raw data are:

I_1 Favorably predisposed instruction
 I_2 Unfavorably predisposed instruction

P_1 Favorably predisposed partner
 P_2 Unfavorably predisposed partner

S_1 Male
 S_2 Female

$T_1 \dots T_{10}$ Intervals of Time.

Subject Measure of Opinion Change

GROUP	I P S _{1 1 1}	I P S _{1 1 2}		I P S _{2 1 1}		I P S _{2 2 1}		I P S _{2 2 2}		I P S _{2 1 2}		I P S _{1 2 2}		I P S _{1 2 1}	
8		S		S		S		S		S		S		S	
1.	2.0	1.	1.0	1.	0.0	1.	1.0	1.	1.0	1.	1.0	1.	2.0	1.	3.0
2.	1.0	2.	1.0	2.	1.0	2.	1.0	2.	2.0	2.	2.0	2.	1.0	2.	1.0
3.	3.0	3.	0	3.	0.0	3.	2.0	3.	2.0	3.	2.0	3.	1.0	3.	3.0
4.	0	4.	3.0	4.	0.0	4.	1.0	4.	1.0	4.	1.0	4.	1.0	4.	1.0
5.	0	5.	2.0	5.	1.0	5.	1.0	5.	1.0	5.	1.0	5.	2.0	5.	3.0
6.	0	6.	1.0	6.	1.0	6.	1.0	6.	1.0	6.	3.0	6.	0.0	6.	1.0
7.	2.0	7.	2.0	7.	2.0	7.	0.0	7.	0.0	7.	2.0	7.	1.0	7.	0
8.	1.0	8.	1.0	8.	0.0	8.	1.0	8.	0.0	8.	1.0	8.	1.0	8.	1.0
9.	2.0	9.	0	9.	1.0	9.	0.0	9.	1.0	9.	0.0	9.	0	9.	1.0
10.	1.0	10.	0	10.	2.0	10.	3.0	10.	2.0	10.	2.0	10.	1.0	10.	1.0
11.	1.0	11.	3.0	11.		11.	2.0	11.	1.0						
12.	0.0	12.	0			12.	0.0	12.	1.0						
13.	1.0	13.	0			13.	1.0	13.	0.0						
14.	2.0	14.	3.0			14.	0.0	14.	0.0						
15.	1.0	15.	1.0			15.	0.0	15.	0.0						
16.	0.0	16.	1.0			16.	0.0	16.	1.0						
17.	2.0	17.	0			17.	1.0	17.	0.0						
18.	1.0	18.	0			18.	2.0	18.	0.0						
19.		19.	2.0					19.	1.0						
20.		20.	0					20.	0.0						

Total Time Spent Speaking

GROUP 1171

Subject	1	2	3	4	5	6	7	8	9	10
1	6.5	6.4	4.0	7.0	10.5	5.8	4.8	5.4	2.0	9.8
2	4.0	4.0	2.4	7.0	1.0	2.5	4.0	2.4	9.4	8.0
3	7.0	8.2	5.8	5.0	12.0	1.8	2.0	9.0	10.0	4.2
4	6.2	7.4	10.4	13.0	6.0	15.5	17.5	9.0	6.8	6.0
5	11.8	5.4	6.0	16.0	18.0	17.0	20.0	9.4	9.0	11.0
6	4.0	7.8	8.2	4.0	3.8	3.0	2.8	4.0	6.0	5.2
7	3.5	16.0	11.0	11.0	15.5	12.0	9.8	13.4	12.0	8.2
8	8.4	4.8	7.4	14.0	2.4	4.0	6.0	0.5	13.2	5.4
9	51.0	33.0	43.0	31.0	35.5	32.4	31.2	15.0	38.0	45.2
10	20.0	38.5	35.0	42.0	36.5	49.0	47.0	58.5	45.0	38.0
11	3.2	2.0	3.0	3.0	2.8	6.0	2.0	4.5	3.8	6.0
12	1.0	6.0	5.0	4.0	4.5	5.0	9.0	4.0	3.5	1.5
13	19.0	17.0	20.0	15.0	3.5	10.2	13.8	1.0	10.2	9.0
14	11.0	14.0	17.0	11.0	24.0	24.3	19.8	28.0	18.2	20.2
15	14.0	13.8	4.5	2.0	7.0	7.0	6.0	8.0	11.2	9.4
16	13.0	22.0	33.0	33.0	33.0	29.0	33.5	27.0	25.5	25.0
17	15.0	3.8	12.0	10.5	5.8	12.8	25.0	5.0	15.4	15.0
18	25.2	40.0	41.0	36.0	44.0	38.0	24.0	44.5	34.0	42.0

GROUP 1172

Subject	1	2	3	4	5	6	7	8	9	10
1	30.5	40.0	38.0	50.0	37.0	42.6	50.0	48.0	44.0	37.0
2	14.0	14.0	25.2	20.2	37.0	38.5	15.5	25.5	21.0	21.5
3	18.0	19.0	24.8	18.0	18.0	24.0	12.0	25.5	31.8	23.8
4	.5	0	0	0	0	2.8	2.8	0.4	2.5	1.2
5	1.0	2.0	5.0	1.5	0.3	4.2	4.8	4.0	0.2	4.0
6	5.1	14.8	8.5	11.0	14.2	8.8	8.0	9.4	10.4	12.8
7	1.0	7.0	7.6	2.0	1.0	5.0	3.5	6.0	5.8	5.0
8	21.5	.2	4.2	17.5	8.0	10.5	7.4	19.0	4.0	6.2
9	3.0	3.0	5.0	3.2	1.6	5.0	5.8	1.2	.6	2.0
10	23.0	21.8	21.2	22.5	20.0	20.0	23.5	13.0	15.0	29.9

Total Time Spent Speaking

GROUP I₁³₂F₁

Subject	1	2	3	4	5	6	7	8	9	10
1	1.4	0.8	1.4	1.0	.2	5.2	1.0	2.0	1.5	0.2
2	2.0	1.4	1.2	1.8	2.1	1.2	2.4	1.0	1.4	1.4
3	.3	.6	6.1	3.5	.4	3.0	2.0	2.2	5.0	.8
4	2.5	4.8	.0	3.2	6.0	3.5	2.5	3.8	1.5	4.2
5	1.0	2.0	3.0	4.0	5.0	2.2	.8	3.5	.5	1.0
6	.4	3.0	1.2	1.0	2.0	1.8	1.2	3.0	4.0	3.0
7	1.0	8.8	10.0	1.5	8.0	10.0	6.2	10.2	8.0	4.5
8	7.0	2.5	3.5	8.8	6.8	6.5	2.0	7.0	5.0	8.8
9	0	2.8	6.2	2.5	0	.5	5.2	3.2	4.8	.8
10	1.5	2.4	.6	3.2	4.8	6.0	2.1	4.8	1.8	3.0
11	14.5	13.2	12.5	11.5	13.5	12.0	6.5	8.2	7.0	18.0
12	11.0	13.0	7.8	10.5	8.0	14.0	12.5	8.0	6.0	15.0
13	32.0	43.5	42.0	32.0	37.0	35.0	36.0	27.0	48.2	32.5
14	35.5	24.0	19.0	33.0	31.5	21.0	22.0	23.2	20.5	36.2
15	11.0	12.0	14.0	8.8	8.0	8.2	10.0	10.2	10.8	9.8
16	1.0	2.8	1.2	4.2	6.8	5.0	5.0	1.5	3.0	7.0
17	.4	2.2	2.2	.8	.2	.2	.8	2.4	.4	.8
18	.6	.2	0	.4	1.0	1.2	0	.4	1.2	.8
19	1.6	1.6	1.4	.8	2.0	3.4	4.0	1.0	4.0	2.3
20	.5	2.4	4.8	.6	1.6	.8	1.2	3.2	1.8	1.8

GROUP I₁²₂F₂

Subject	1	2	3	4	5	6	7	8	9	10
1	5.4	5.0	6.0	11.0	11.0	6.0	7.5	2.0	5.3	11.0
2	34.5	33.0	39.5	32.5	24.0	27.2	32.0	35.0	17.0	26.5
3	.8	.4	.5	1.0	2.8	.5	.2	.3	3.2	3.0
4	1.6	2.0	0	0	.1	3.2	3.0	1.2	1.1	1.0
5	4.0	3.0	1.0	5.2	3.5	.2	1.0	4.0	.5	3.0
6	1.5	4.0	2.0	5.0	10.0	2.5	3.5	4.8	5.0	1.8
7	4.0	2.0	3.0	1.8	2.2	2.0	8.0	6.0	5.5	6.0
8	6.0	3.8	10.0	5.5	8.0	6.2	6.2	2.0	8.5	1.8
9	14.0	7.0	5.4	11.2	6.4	13.0	12.0	10.4	12.4	12.0
10	0.2	2.0	1.2	0	.1	2.5	1.8	1.0	3.0	1.0

Total Time Spent Speaking

GROUP 1 2 1 2

Subject	1	2	3	4	5	6	7	8	9	10
1	38.5	26.0	32.0	20.8	33.0	20.2	25.5	35.8	31.0	31.8
2	8.8	17.5	19.0	25.2	8.5	31.0	23.0	9.5	13.0	24.0
3	3.0	6.5	4.5	11.1	19.5	8.4	6.2	10.0	5.4	7.2
4	18.0	16.6	19.8	15.5	4.5	14.0	14.5	15.0	14.0	9.0
5	3.0	4.2	6.0	4.0	4.4	3.0	2.0	4.2	.8	7.2
6	.6	5.0	1.2	5.2	2.0	1.5	.8	2.2	5.2	3.0
7	17.3	23.0	18.0	20.0	14.2	23.0	21.5	21.8	18.0	14.0
8	24.0	24.0	30.0	31.4	36.8	26.8	27.4	35.4	27.8	39.5
9	8.4	9.0	3.0	8.5	6.0	6.0	14.0	14.0	6.4	11.4
10	.2	3.0	10.0	1.0	7.0	4.0	.8	2.5	5.4	4.8
11	.8	4.0	1.8	3.8	2.0	5.0	4.0	2.8	.6	3.0
12	2.0	.2	1.2	0	1.5	0	.6	.8	1.2	1.4
13	3.8	10.5	7.8	7.5	10.2	14.8	4.0	6.3	16.0	13.5
14	24.0	24.5	25.0	18.0	8.8	22.0	17.0	14.0	25.5	16.2
15	2.0	28.2	22.5	37.0	36.5	24.4	38.5	34.0	19.8	2.0
16	2.0	.4	1.2	0	1.0	.8	5.0	.8	1.0	1.4
17	2.0	.2	3.5	5.0	.8	4.0	0.0	2.0	1.8	1.4
18	7.0	5.0	8.4	6.0	5.8	.6	12.0	10.0	.8	1.8

GROUP 1 2 1 1

Subject	1	2	3	4	5	6	7	8	9	10
1	4.2	3.6	.2	2.5	5.0	1.2	0	1.2	6.8	5.0
2	8.5	3.0	9.0	9.0	5.2	11.2	13.5	9.2	6.2	5.8
3	7.2	3.8	2.0	4.2	5.2	4.0	2.6	2.0	1.5	3.0
4	2.1	23.0	20.2	6.0	17.2	13.8	14.5	6.2	13.2	9.0
5	2.0	2.2	3.2	7.5	8.2	1.5	3.2	4.0	8.1	4.0
6	14.0	19.0	24.0	25.0	25.2	19.4	20.0	28.0	32.5	25.5
7	52.0	47.0	58.0	45.0	59.5	52.0	46.5	42.1	47.0	38.0
8	52.5	52.5	43.5	52.0	45.0	38.5	58.0	49.0	54.0	56.0
9	17.4	17.0	16.5	22.0	26.0	18.0	23.5	15.5	13.5	19.0
10	2.0	2.0	2.4	3.0	3.0	.4	.4	2.0	.5	2.2

Total Time Spent Speaking

GROUP I₂F₂²

Subject	1	2	3	4	5	6	7	8	9	10
1	5.5	9.0	5.2	9.0	11.0	11.0	10.4	6.0	9.0	7.5
2	1.0	1.2	5.8	.5	3.0	3.2	0.5	9.0	2.0	4.0
3	16.0	14.0	12.5	14.8	14.2	11.7	11.6	11.0	13.0	11.2
4	21.2	20.0	22.4	20.0	13.2	23.0	13.0	24.8	20.5	14.4
5	3.2	4.2	7.0	1.0	9.0	6.5	10.0	9.0	13.0	11.0
6	14.6	15.0	11.6	23.0	17.0	9.8	11.5	9.0	8.2	11.8
7	5.0	4.4	16.0	2.0	12.0	1.0	12.5	7.4	8.0	6.4
8	7.0	9.0	7.0	14.0	5.0	14.8	3.0	10.5	7.4	10.0
9	7.0	2.0	3.0	7.5	6.2	7.8	8.0	7.2	9.0	4.5
10	2.0	7.4	6.2	3.0	4.6	4.6	2.6	3.0	2.0	4.0
11	2.8	5.0	9.0	5.0	4.0	5.8	6.0	2.4	5.2	8.0
12	6.2	7.4	3.0	8.0	8.2	9.5	6.2	10.0	8.0	3.2
13	7.5	4.4	9.0	10.0	10.0	9.0	1.2	5.4	6.0	5.0
14	7.0	8.0	6.8	4.5	4.8	6.8	10.0	8.2	10.0	11.0
15	2.0	0	2.5	.6	2.4	3.0	.8	2.0	2.8	1.5
16	.2	3.0	1.0	2.8	3.6	1.0	3.2	2.0	2.0	2.6
17	1.0	2.2	3.4	1.2	1.2	3.5	2.0	2.0	1.8	2.1
18	2.2	.2	2.0	2.2	1.2	1.0	1.2	3.2	3.5	2.0
19	7.8	5.0	7.0	9.2	7.0	7.0	8.5	7.5	5.0	7.6
20	1.5	5.0	4.8	1.0	4.8	3.0	1.2	4.8	5.5	1.5

GROUP I₂F₂¹

Subject	1	2	3	4	5	6	7	8	9	10
1	2.0	2.2	1.3	4.2	2.0	4.0	6.5	3.0	4.0	3.2
2	2.0	5.0	9.5	6.8	1.4	1.5	8.0	4.0	2.0	1.2
3	1.2	5.2	5.0	3.2	3.8	2.0	.9	.9	2.8	2.1
4	.3	3.0	.3	2.0	1.0	2.5	2.5	1.5	1.0	3.0
5	3.2	13.0	14.2	9.5	13.0	10.0	8.2	12.0	12.0	11.5
6	1.2	.4	1.5	3.0	1.8	.4	.3	2.0	0	2.2
7	3.2	8.2	8.0	2.8	2.0	6.0	7.0	6.0	4.0	6.0
8	26.0	29.0	18.0	27.5	30.0	31.0	15.5	20.4	32.0	39.0
9	3.0	3.0	4.2	3.5	4.2	5.0	4.8	1.8	.6	2.0
10	.4	.4	1.0	3.0	4.2	1.0	1.0	5.0	1.0	2.4

Positive Statements Across Time

GROUP 1, S, P₁

Subject	1	2	3	4	5	6	7	8	9	10
1	2.8	5.8	0.5	3.8	5.5	2.0	5.4	1.0	0.0	1.4
2	4.0	3.0	1.4	4.5	.4	1.5	2.0	.3	.8	.8
3	3.0	2.0	5.0	3.5	7.8	.4	.0	4.0	5.8	.0
4	4.0	7.0	9.8	12.0	3.5	14.5	12.5	3.5	6.0	2.5
5	9.0	5.4	1.0	16.0	17.0	17.0	17.5	5.4	8.0	8.0
6	2.5	7.5	3.0	3.0	.8	0	.2	3.0	.2	.6
7	3.5	2.8	5.0	4.0	11.0	7.0	4.5	9.8	1.5	3.8
8	0.0	1.2	1.0	6.8	1.4	.2	2.4	.0	1.6	2.8
9	36.0	29.8	31.0	20.0	26.5	16.8	17.0	6.0	28.0	20.0
10	13.0	34.0	21.4	28.2	34.0	26.0	19.5	47.5	35.0	19.8
11	3.0	1.8	1.2	3.0	2.5	5.0	.8	4.5	2.2	3.0
12	1.0	6.0	5.0	4.0	4.5	4.0	5.0	.4	.2	.3
13	15.4	9.0	10.5	9.0	0.6	3.0	5.8	0.5	5.0	4.0
14	5.4	11.0	7.5	7.0	24.0	22.8	11.0	24.0	18.0	6.0
15	9.2	14.2	1.0	.5	5.2	5.0	2.1	2.0	5.4	2.2
16	10.0	15.0	28.0	28.0	27.0	21.0	25.0	12.0	0.0	6.8
17	6.8	.2	9.0	4.8	1.0	9.8	17.0	3.5	10.0	4.8
18	18.4	38.0	35.4	32.4	44.0	29.8	14.8	39.0	26.5	33.0

GROUP 1, S, P₂

Subject	1	2	3	4	5	6	7	8	9	10
1	23.0	27.0	17.0	38.0	18.8	32.5	23.5	22.0	23.0	27.0
2	7.5	13.5	21.6	8.0	27.0	29.5	10.0	21.0	16.0	7.5
3	7.2	13.1	10.2	4.5	4.0	9.0	.2	4.0	4.5	5.2
4	0	0	0	0	0	.3	2.5	0	0	0
5	.2	1.2	4.8	1.2	.1	3.0	4.8	3.0	0.0	3.0
6	2.8	11.5	5.0	8.2	11.2	1.2	2.0	4.6	0.5	2.4
7	.1	3.0	2.8	.0	.8	1.0	.0	2.6	.0	.0
8	13.0	.2	.2	4.0	2.0	5.5	6.0	14.8	.4	2.5
9	3.0	2.6	5.0	3.0	1.2	3.0	2.0	1.0	0.1	.2
10	13.0	5.2	4.0	6.8	6.5	8.0	7.0	8.0	2.0	4.8

Positive Statements Across Time

GROUP I₁³P₁

Subject	1	2	3	4	5	6	7	8	9	10
1	1.2	.8	1.0	.2	.2	3.2	.0	.0	.2	.1
2	1.0	.3	1.0	.0	2.1	.0	1.0	.8	.4	.4
3	.3	.6	5.1	1.4	.0	.5	.5	.2	2.2	.0
4	2.4	4.8	.0	1.0	5.0	2.0	1.5	2.5	0.0	1.5
5	0	1.0	1.8	1.0	.8	0	0	0	0	0
6	.4	3.0	1.2	1.0	2.0	1.6	.2	.9	.2	.8
7	1.0	2.0	3.5	.5	3.0	2.2	1.0	0.0	2.0	2.5
8	7.0	2.0	.2	5.0	.1	5.0	1.0	2.0	5.0	4.8
9	0	1.8	5.2	2.0	0.0	0.0	5.0	2.4	0	0
10	1.5	2.0	0	2.2	4.8	5.0	.3	1.2	.4	2.0
11	10.5	8.0	5.0	5.0	8.0	6.8	5.5	6.0	2.2	10.5
12	10.8	8.3	5.5	5.2	8.0	8.0	4.2	6.2	2.1	10.4
13	15.8	35.5	32.0	11.0	12.6	25.0	21.4	14.8	24.5	11.6
14	19.5	9.0	14.0	29.0	11.5	5.5	11.0	10.0	24.0	1.2
15	9.0	11.0	10.0	6.0	6.5	1.5	5.0	.8	.8	0
16	1.0	1.0	1.0	4.0	6.2	5.0	3.0	1.3	3.0	7.0
17	.4	2.2	2.2	.8	0	0	.4	0	0	.4
18	.4	0	0	0	.8	1.0	0	0	0	0

GROUP I₁³P₂

Subject	1	2	3	4	5	6	7	8	9	10
1	1.2	3.0	3.0	9.0	10.2	4.0	2.8	.8	2.5	7.0
2	20.0	28.0	39.5	24.5	20.0	21.0	21.0	31.0	15.0	12.0
3	.4	.2	.2	.8	1.0	.1	0	.1	1.0	.1
4	1.6	.5	.0	.0	.0	2.2	3.0	.2	.2	1.0
5	2.0	1.5	.8	4.2	2.2	.1	.1	2.1	.1	.6
6	.3	1.5	.2	.2	6.0	.1	.0	.4	.0	.4
7	3.0	1.5	1.3	1.8	1.0	1.0	6.0	6.0	1.2	4.2
8	5.2	3.8	7.0	.8	5.5	2.0	6.2	1.0	5.2	1.8
9	13.0	5.2	.2	9.0	5.0	3.5	8.2	2.2	10.0	4.0
10	.2	2.0	1.2	0	0	1.2	1.8	.8	2.0	.5

Positive Statements Across Time

GROUP I S P
2 1 2

Subject	1	2	3	4	5	6	7	8	9	10
1	35.0	25.0	28.5	11.6	29.0	12.0	20.5	29.0	19.0	19.0
2	6.5	14.5	11.8	19.0	4.5	31.0	18.0	6.5	6.5	16.0
3	2.2	4.0	1.2	5.0	14.0	4.5	1.5	.3	2.8	2.2
4	15.2	5.5	19.0	15.2	.1	2.0	3.0	7.2	5.8	5.1
5	.2	4.2	1.1	3.4	3.2	0.0	1.4	1.7	0	1.2
6	.2	1.2	.4	1.0	1.0	1.0	.3	1.2	2.8	.8
7	15.0	21.0	17.0	16.0	8.0	18.2	19.0	17.0	15.0	8.0
8	12.5	19.5	23.5	24.2	22.4	24.4	22.5	24.0	11.5	28.0
9	8.0	9.0	1.4	1.2	6.0	1.0	14.0	6.0	0	2.4
10	0	3.0	9.0	0	1.2	.5	0	.2	.2	0
11	.6	3.5	1.8	3.5	2.0	1.4	4.0	1.0	.6	3.0
12	2.0	.2	.8	0	.6	0	.5	.2	1.0	1.3
13	1.8	10.4	6.0	6.0	10.0	14.8	1.2	8.0	16.0	13.5
14	15.5	21.0	13.2	15.5	6.0	18.4	14.2	10.5	19.0	12.5
15	25.0	28.0	20.0	36.0	33.5	24.4	37.0	34.5	19.5	22.0
16	1.0	.8	1.2	0	.6	.4	2.0	.4	0	0
17	1.5	.2	3.0	5.0	.6	1.2	.0	.8	.0	.0
18	5.0	3.5	7.4	4.5	3.5	0.0	11.0	3.0	0.0	1.6

GROUP I₂S₁P₁

Subject	1	2	3	4	5	6	7	8	9	10
1	44.8	36.0	48.0	37.0	32.0	46.0	36.0	37.0	28.5	35.0
2	45.0	44.2	12.0	48.0	27.0	9.0	41.0	39.0	47.0	43.4
3	12.5	9.0	14.0	20.0	12.4	10.0	14.0	7.0	7.0	9.2
4	1.0	2.0	2.4	3.0	3.0	.4	.0	1.5	.5	2.0
5	.6	2.2	.2	2.5	5.0	1.2	.0	.2	1.2	1.2
6	6.8	3.0	9.0	6.0	1.6	5.2	7.0	9.0	2.2	1.8
7	5.2	1.2	.1	2.0	4.0	1.2	.6	.5	.5	1.2
8	1.0	22.0	12.2	5.0	3.2	4.5	10.2	.5	3.8	3.5
9	.6	.2	.1	2.0	.2	.4	1.0	.0	1.5	.0
10	12.0	15.0	12.0	20.1	25.2	19.2	11.0	24.0	15.2	15.0

Positive Statements Across Time

GROUP I₂⁵2²

Subject	1	2	3	4	5	6	7	8	9	10
1	6.5	6.2	8.2	5.2	5.5	7.5	.5	2.8	4.0	3.8
2	6.0	6.5	3.0	3.5	3.0	5.0	3.5	3.2	7.0	7.5
3	2.0	.0	1.2	.4	2.2	2.2	.2	1.2	.4	.1
4	.2	.3	.2	1.2	.6	1.0	3.2	1.6	.6	1.0
5	.0	2.2	3.0	.8	1.2	2.5	.0	.8	.5	2.0
6	2.2	.2	.2	.4	1.0	1.0	1.0	1.2	1.0	1.0
7	7.0	5.0	5.0	7.8	6.8	5.0	2.5	5.0	2.8	5.0
8	.4	2.0	1.0	.8	3.2	1.2	.6	1.0	4.0	1.2
9	2.8	5.5	4.0	8.6	3.2	5.2	6.4	4.0	5.2	1.0
10	.6	1.2	5.8	.0	2.5	3.0	.2	1.0	.2	.4
11	9.8	10.5	8.0	4.0	11.0	3.5	8.2	3.5	5.0	6.0
12	25.2	25.0	18.0	12.8	11.0	16.2	6.0	24.2	13.0	13.2
13	1.2	6.0	3.4	.3	1.0	3.2	3.0	4.0	3.0	1.0
14	9.2	12.0	1.0	22.2	9.0	5.0	6.0	2.0	1.4	2.5
15	2.0	5.5	10.0	0	7.2	0	9.0	6.0	6.0	3.2
16	5.0	0	1.0	7.0	4.0	1.4	4.0	4.0	6.0	.8
17	.8	7.0	6.2	1.6	4.0	3.0	.3	1.0	.1	.8
18	2.8	4.5	9.0	3.8	1.5	.0	4.0	2.0	5.0	1.0
19	6.2	7.2	2.0	8.0	7.0	6.0	6.2	5.0	7.0	3.0
20	6.3	4.0	5.5	14.0	3.0	10.5	2.2	6.0	1.2	2.5

GROUP I₂⁵2¹

Subject	1	2	3	4	5	6	7	8	9	10
1	3.2	5.6	3.0	0	1.0	6.8	4.0	2.0	1.0	5.0
2	24.4	15.2	14.0	26.0	23.0	25.5	9.0	12.0	35.0	19.0
3	1.0	2.0	2.2	3.2	2.5	2.5	2.8	.8	.8	0
4	.4	.4	1.0	2.2	4.2	.4	1.0	5.0	1.0	.5
5	1.2	1.4	4.5	0	.4	6.0	6.5	.2	1.0	.1
6	.5	4.2	7.5	6.2	1.0	1.5	6.5	2.0	1.5	1.0
7	0	0	.8	1.0	2.2	.0	0	0	0	0
8	.3	2.0	.8	.2	.5	1.3	1.0	0	0	0
9	3.2	12.0	14.2	6.5	13.0	6.0	2.8	6.0	11.0	11.0
10	1.2	.4	.5	3.0	1.8	.4	.3	0	0	.4

Negative Statements Across Time

GROUP 12³¹P2

Subject	1	2	3	4	5	6	7	8	9	10
1	0	1.2	1.1	1.6	.2	1.2	1.3	.5	.1.	.5
2	2.3	0	2.5	3.8	2.5	0	.2	.2	1.2	2.0
3	0	.2	3.0	.5	1.4	2.5	4.5	4.2	4.0	3.2
4	.9	3.2	0	0	1.1	7.2	6.8	1.0	1.0	2.0
5	0	0	1.0	.3	.7	.8	.6	2.2	.8	5.1
6	.1	0	0	1.0	.6	.8	.4	1.0	.1	.4
7	5.0	2.4	1.0	.6	3.5	.4	.2	2.0	1.2	1.2
8	.6	.1	2.8	2.2	10.8	1.0	1.0	.8	1.5	4.0
9	.4	0	1.0	0	0	.5	0	0	0	3.8
10	0	0	0	.2	.8	.5	0	.4	1.0	.8
11	0	0	0	0	0	2.0	0	0	0	0
12	0	0	.4	0	0	0	.1	.6	0	.1
13	0	0	.4	.6	0	0	.2	.3	.1	0
14	4.0	.9	5.0	1.0	.4	1.0	.9	2.0	3.0	3.0
15	.3	.2	.1	1.0	.7	0	0	.4	.2	0
16	0	0	0	0	.4	.2	3.0	.4	.4	0
17	0	0	0	0	0	2.0	0	1.2	.8	0
18	0	.3	1.0	.8	.5	.2	.1	.6	.3	.2

GROUP 1³P
2 1 1

Subject	1	2	3	4	5	6	7	8	9	10
1	.1	3.0	.2	0	.5	.4	.2	.2	.5	0
2	.5	1.5	7.0	2.2	9.0	9.0	.8	3.2	1.0	.8
3	.3	1.5	0	1.4	.2	.5	.5	0	0	0
4	0	0	0	0	0	0	0	.2	0	0
5	0	0	0	0	0	0	0	.6	2.5	.1
6	.1	0	0	0	.2	.1	.6	0	1.6	1.0
7	0	.8	.1	.1	.4	.3	.1	1.5	1.0	.5
8	0	2.0	5.0	1.0	5.8	5.2	3.0	4.8	2.8	4.0
9	0	0	0	0	.5	0	0	0	1.0	.2
10	1.5	3.0	.2	1.2	0	.2	1.2	.1	0	.2

Negative Statements Across Time

GROUP 12⁸2 1

Subject	1	2	3	4	5	6	7	8	9	10
1	.1	.2	0	1.2	2.0	0	0	.2	2.2	.2
2	0	.8	1.2	.2	.3	.4	3.5	0	.8	0
3	0	0	0	.2	.1	0	.2	.2	.2	.2
4	0	0	.4	0	.3	0	0	.4	.1	.3
5	0	0	0	.1	0	0	.1	.6	.3	.1
6	0	0	.2	.3	0	0	0	.2	0	0
7	0	0	0	0	.5	.6	0	0	.3	.5
8	.2	.1	.1	.2	.1	.2	0	0	.4	.1
9	0	0	0	0	2.4	.5	4.0	.3	1.2	1.0
10	.2	0	0	0	.8	.2	.2	3.0	0	.5
11	.4	.5	.4	2.0	.2	1.4	0	2.0	.4	0
12	1.0	1.0	2.5	.5	.2	.3	5.0	.6	.2	1.2
13	.2	.2	.8	0	5.0	2.8	1.6	.4	1.0	5.2
14	.4	1.0	3.5	0	7.6	4.8	5.2	1.2	3.0	3.8
15	.1	.1	.1	.2	2.0	0	1.2	.2	.1	1.5
16	.4	2.8	.5	1.0	.8	.0	0	.5	.6	2.4
17	0	0	1.0	.3	1.0	5.2	4.0	.4	2.0	1.4
18	0	.4	0	.6	.1	.5	.4	.2	1.0	3.0
19	0	.5	0	.5	.2	5.0	.6	.4	.2	5.0
20	0	.2	1.2	0	.3	3.0	0	3.0	1.0	.1

GROUP 12⁸2 2

Subject	1	2	3	4	5	6	7	8	9	10
1	0	1.0	2.6	1.5	.2	.2	3.0	1.6	2.5	1.0
2	.8	5.0	.2	1.0	.4	.1	1.0	1.0	0	3.2
3	0	0	0	0	0	.5	0	0	0	.4
4	0	0	0	0	0	.1	0	0	0	.2
5	.2	.1	0	0	.4	0	0	1.0	2.1	1.5
6	.1	.4	0	.1	.4	0	0	0	.4	0
7	.5	.5	2.2	1.0	1.6	.2	0	.4	.5	.5
8	0	0	0	0	.2	0	.2	1.0	1.0	2.5
9	0	0	0	2.0	0	1.2	.1	.5	0	.4
10	0	0	1.0	0	0	0	0	2.0	0	1.8

Neutral Statements Across Time

GROUP I₁S₁P₁

Subject	1	2	3	4	5	6	7	8	9	10
1	3.7	.6	3.1	3.2	2.5	1.3	1.2	3.6	1.5	3.6
2	0.0	0.0	0.2	1.5	0.0	0.2	0.0	1.3	0.6	3.7
3	4.0	4.4	0.4	0.7	2.4	0.4	0.2	0.0	1.8	3.2
4	2.2	0.4	0.2	0.0	2.5	1.0	1.0	5.5	0.8	3.1
5	2.8	0.0	0.0	0.0	0.8	0.0	1.5	4.0	0.6	3.0
6	1.2	0.0	0.0	0.0	2.0	0.6	0.2	0.0	0.0	0.0
7	0.0	7.4	1.2	2.6	0.5	5.0	2.5	2.4	9.9	2.4
8	2.4	2.6	5.4	3.7	0.5	2.4	0.6	0.5	2.1	0.4
9	8.0	0.0	10.0	4.5	4.0	7.4	14.0	4.6	7.8	10.0
10	6.0	2.5	7.6	2.8	0.0	12.0	6.5	5.0	9.5	6.2
11	0.2	0.0	1.8	0.0	0.3	0.8	1.1	0.0	1.6	1.0
12	0.0	0.0	0.0	0.0	0.0	0.0	2.8	3.4	2.1	0.5
13	0.6	4.0	7.5	3.6	1.7	2.4	3.8	0.3	0.2	0.2
14	1.1	2.8	3.5	3.0	0.0	1.0	2.3	0.8	0.0	4.4
15	4.8	3.5	1.9	1.1	1.8	2.0	3.4	4.0	2.6	6.0
16	2.5	4.5	4.8	4.6	5.8	7.8	8.0	9.8	10.5	8.0
17	7.8	1.2	3.0	4.5	3.0	2.2	11.2	1.5	2.4	7.2
18	3.2	2.0	5.6	3.2	0.0	8.2	8.6	5.5	4.5	9.0

GROUP I₁S₁P₂

Subject	1	2	3	4	5	6	7	8	9	10
1	6.5	12.0	14.8	7.2	11.7	8.1	15.5	23.0	14.8	8.6
2	4.0	0.0	2.6	0.8	4.0	5.0	0.5	4.1	3.4	5.0
3	9.6	3.7	13.2	8.0	9.8	10.8	21.5	0.0	18.3	15.6
4	.5	0	0	0	0	.5	.3	0	3.5	.4
5	.8	.8	.2	.3	0	.9	0	.6	.2	1.0
6	1.9	3.3	2.3	2.7	2.4	4.0	2.3	2.3	7.9	5.4
7	.9	2.6	1.6	.8	0	1.8	2.3	.4	5.7	5.0
8	8.5	0	1.0	5.3	4.0	2.4	1.0	0	2.4	3.3
9	0	.4	0	.2	.4	.5	1.6	.2	.1	1.3
10	9.8	15.6	13.0	9.5	10.8	6.5	14.5	4.0	11.8	20.1

Neutral Statements Across Time

GROUP I₁2₁

Subject	1	2	3	4	5	6	7	8	9	10
1	.2	0	.4	.8	1.6	0	0	.3	.3	0
2	1.0	.7	0	.4	0	.6	1.0	0	0	0
3	0	0	0	.9	.4	.7	.4	1.8	0	.6
4	.1	0	0	2.0	0	.5	.8	1.2	.3	0
5	.6	0	0	2.0	2.4	.8	0	2.5	.5	.6
6	0	0	0	0	0	0	.8	.8	2.8	2.2
7	0	0	.3	0	3.4	6.4	3.2	8.6	5.6	.8
8	0	.5	.3	0	4.7	.2	3.0	0	0	1.0
9	0	.8	.4	.5	0	0	.2	0	4.8	.8
10	0	0	0	0	0	0	0	0	0	0
11	3.7	5.2	6.5	4.7	5.5	.7	.5	2.2	3.6	5.3
12	0	4.7	1.5	3.7	0	1.2	2.2	1.8	2.9	4.4
13	10.0	0	0	2.5	4.9	3.0	5.6	2.2	5.7	3.9
14	11.8	5.2	2.6	4.0	8.0	9.5	10.4	13.2	2.3	33.6
15	2.0	.8	4.0	2.8	1.5	1.9	3.5	9.3	4.2	1.8
16	0	1.8	0	0	.4	0	1.0	0	0	0
17	0	0	0	0	.2	.2	0	.4	0	0
18	0	0	0	0	0	.2	0	.4	0	0
19	1.6	1.2	.8	0	.6	.8	.6	0	.8	0
20	0	0	0	0	1.0	0	0	.6	0	0

GROUP I₁2₂

Subject	1	2	3	4	5	6	7	8	9	10
1	2.0	.5	0	0	1.3	0	.9	.9	.2	2.3
2	1.0	1.3	.3	3.8	3.0	.6	0	2.8	4.8	.6
3	.9	.5	1.6	0	.2	.4	1.9	0	3.8	.8
4	.8	0	3.0	.7	2.3	3.6	0	1.0	3.3	0
5	.5	.8	1.2	2.0	.9	3.5	2.0	3.0	2.1	1.5
6	0	0	0	.1	.7	0	.1	.2	1.0	.5
7	.8	1.0	1.2	2.0	.4	1.6	0	.2	0	2.0
8	13.5	4.9	0	7.0	4.0	2.0	12.0	4.8	1.8	14.5
9	0	0	.3	.1	.2	.3	0	.1	.4	2.8
10	0	1.5	0	0	.1	1.0	0	1.0	.6	0

Neutral Statements Across Time

GROUP 12¹1²

Subject	1	2	3	4	5	6	7	8	9	10
1	3.5	0	2.4	7.6	3.8	7.0	3.7	6.3	11.9	12.5
2	0	3.0	4.7	2.4	.5	0	4.8	2.8	5.3	6.0
3	.8	2.3	.3	5.6	4.1	1.4	.2	0	0	1.8
4	1.9	0	.8	.3	3.3	4.8	4.7	6.8	7.2	1.9
5	2.8	0	3.9	.3	.5	2.2	0	.5	0	.9
6	.3	3.8	.4	3.2	.4	0	.1	0	2.3	1.8
7	0	0	0	3.4	2.7	4.4	2.3	2.2	1.8	4.8
8	10.9	4.4	3.7	5.0	3.6	1.4	3.9	.4	14.8	7.5
9	0	0	.6	7.3	0	4.5	0	8.0	6.4	5.2
10	.2	0	1.0	.8	5.0	3.0	.8	1.9	4.2	4.0
11	.2	.5	0	.3	0	1.6	0	1.8	0	0
12	0	0	0	0	.9	0	0	0	.2	.1
13	2.0	.1	1.4	.9	.2	0	2.6	0	0	0
14	3.5	2.6	6.8	1.5	2.4	2.6	1.9	1.5	3.5	.7
15	.7	0	2.4	0	2.1	0	1.5	1.5	.1	0
16	1.0	.8	0	0	0	.2	0	0	.6	1.4
17	.5	0	.5	0	.2	.8	0	0	1.0	1.4
18	2.0	1.2	0	.7	1.3	.4	.9	6.7	.5	0

GROUP 12¹1¹

Subject	1	2	3	4	5	6	7	8	9	10
1	3.6	1.4	0	0	0	0	0	.4	3.1	3.7
2	1.6	0	.2	3.0	3.4	5.9	5.9	.2	2.4	3.0
3	2.0	1.8	1.8	2.1	1.8	2.5	1.9	0	0	1.3
4	1.1	0	3.0	0	8.2	4.1	1.3	.9	6.6	1.5
5	1.4	2.0	3.1	5.6	5.5	1.1	2.2	4.0	5.6	3.8
6	.5	1.1	11.8	3.7	0	0	7.8	3.9	17.3	10.3
7	7.1	8.0	9.8	8.0	27.2	5.6	10.3	4.9	8.0	3.0
8	7.0	6.3	24.9	7.8	10.0	14.5	16.8	6.2	10.0	1.8
9	4.6	6.5	2.5	.6	13.4	7.5	9.0	8.5	6.5	9.8
10	1.0	0	0	0	0	0	.4	.3	0	.2

