PEER GROUP SUPPORT
AS A FACTOR
IN OPINION CHANGE

THE EFFECTS OF PEER GROUP SUPPORT UPON DISCUSSION AND OPINION CHANGE IN A TWO-PERSON GROUP

By

W.F. Norrison. B.A.

A Thesis

Submitted to the Faculty of Graduate Studies

in Partial Fulfilment of the Requirements

for the Degree

Master of Arts

McMaster University

October, 1965

MASTER OF ARTS (1965)
(psychology)

McMASTER UNIVERSITY
Hamilton, Ontario.

TITLE: The Effects of Peer Group Support Upon Discussion and Opinion Change in a Two-Person Group

AUTHOR: Wayne F. Morrison, B.A. (McMaster University)

SUPERVISOR: Dr. D.W. Carment

NUMBER OF PAGES: v,38

SCOPE AND CONTENTS:

An experiment was conducted to determine the effects of varying amounts of peer group support on discussion and opinion change in a two-person verbal interaction.

The results indicated that males speak more than females. Subjects in groups where there was unequal support spoke more and made more positive and fewer neutral statements than subjects in groups with equal support. The most neutral and fewest positive statements were emitted in groups where subjects each had a moderate amount of support.

ACKNOWLEDGEMENTS

The author would like to thank Dr. D. W. Carment for his assistance and guidance throughout the duration of the research and the writing of the thesis, and Dr. G. R. Morrison for his helpful suggestions in the organization and writing of the thesis.

Thanks are also due to Mr. D. Amoroso and to Mr. A. Shulman for their assistance in the collection of the data.

TABLE OF CONTENTS

CHAPTER ONE

INTRODUCTION

It is well known that in certain circumstances peer group support will affect the behaviour of individuals. That is, previous experiments have shown that knowledge, implied or real, of how others behave drastically affects the behaviour of experimental subjects, but most of the earlier studies have been concerned with opinion change per se rather than the dynamics of this change. The present study not only looks at the effects of peer group support on opinion change following a discussion but also how this variable affects certain aspects of this discussion itself.

CHAPTER TWO

HISTORICAL REVIEW

The purpose of this review is to describe briefly the studies on persuasion which are related to the present experiment. Particular emphasis will be placed on research concerned with effects of peer groups upon opinion change, including the effects of group interaction upon opinion change and the differences between sexes in their susceptibility to opinion change.

While it is generally agreed that there are a number of ways to bring about opinion change, the most widely known is by means of a discussion of the issue involved.

The effects of group discussion on opinion change were first investigated by Jenness (1932). He had subjects estimate the number of beans in a jar, first alone and then in groups of three or four. After these group discussions, he found that opinions tended to converge and also that there was more convergence in groups of three than in groups of four. It may be the case that increased opportunity for interaction in the three-person groups was the reason for the greater change.

Beginning with the study by Schachter (1951), a series of experiments were conducted to study the pressures

operating within groups to cause uniformity of attitude. In the initial study, Schachter (1951) employed groups of five to seven individuals. In each group there were three confederates; a deviate who took an extreme opinion opposed to the majority throughout the discussion; a mode who took the position of the modal number of members; and a slider who started out as a deviate but, who during the discussion, gradually assumed the modal position. On two sociometric measures administered following the discussion, there was no evidence of rejection of either the mode or the slider, whereas in most groups there was rejection of the deviate member. Schachter also found that as the meeting progressed there was increased communication directed to the deviate. There was no increase in communication to the mode and there was a decrease in the amount directed to the slider, as he gradually assumed a modal position. In contrast to previous studies, the reactions of other members to the deviate were the main dependent variables. Also this study took into account the amount and direction of communication in the group, variables which are obviously of considerable importance in social behaviour.

Festinger and Thibaut (1951), in a study of interpersonal communication, also found that people holding extreme opinions have more communication directed towards them than those holding a majority opinion. A similar finding was later reported by Festinger, Gerard, Hymovitch, Kelley,

and Raven (1952). In addition they found that extreme deviates changed their opinions more readily than others in the direction of the majority opinion. This finding was also reported by Raven (1959).

The deviates in the experiment by Festinger et al. (1952) were real subjects, not paid confederates as in Schachter's experiment. Thus it was possible to record the actions and reactions of all members of the group. Deviates and conformers were created by using fictitious distributions of opinions. A change in procedure which could influence the results was the fact that written messages rather than oral communications were employed. This change, however, allowed the experimenter to control the communication by intercepting the messages and substituting his own.

While the experimental evidence supports the idea that group discussion can lead to opinion change, there is also much experimental evidence to show that the mere presence of others holding opposed opinions can bring about opinion change on the part of an individual.

Duncker (1938) reported that it was possible to modify children's food preferences. If a child saw another child choose a certain piece of food from an assortment, there was an increased chance (55.4% of the cases) that the second child would make the same choice.

In order to study better the effects of group influence, Sherif (1937) used the autokinetic phenomenon in which a stationary light, in a dark room, appears to move.

Subjects were run under two conditions. In one condition, the subjects were first run alone and then in the group situation. An individual in the autokinetic situation has no standard of comparison on which to base his judgements. Over a number of trials, a reference point (norm) peculiar to the subject is established. When subjects are put into the group after being alone, the previously established norms of the individuals converge. If the subject is run alone again, he tends to perceive the situation in terms of the range and norm of the group. In the second condition, subjects were run first in the group and then alone. He found that a group norm emerged and that afterwards, in the alone condition, subjects tended to perceive the situation in terms of the group norm. This study, now a classic, showed that social norms are built up through the contact of individuals and that group influence is highly effective in bringing about opinion change.

The evidence that people in a group tend to conform led to the widely known study by Asch (1951). In this situation the experimenter can control and manipulate the group pressure and then determine the effect on the subject. Subjects, in groups of seven to nine, were required to judge lengths of lines. All but one of the subjects were confederates of the experimenter and they were to give incorrect answers on given trials. The naive subject was always placed so that he gave his responses after all the

confederates had responded. On critical trials, the correct answer was opposed to that given by the unanimous majority. The confederates' answers on critical trials were always very different from the correct response. Asch found that 37% of the responses on critical trials were conforming responses, but that there were marked individual differences. Some subjects yielded on all critical trials while others never yielded. Another important finding was that with a non-unanimous majority there was increased independence of response on the part of the naive subject.

A study by Hardy (1957) employed Asch's basic procedure, but investigated attitude change. Prior to the experiment, the subject's attitude to divorce was obtained. He found that under the pressure of the Asch situation, 45% of the subjects changed their opinion 2 or more points on a 9-point scale.

The Asch technique is uneconomical because of the need for so many confederates. Crutchfield (1955) devised a procedure in which it was possible to collect data on a number of subjects simultaneously. The subjects are seated in separate booths, each containing a panel with a row of numbered switches. The subject uses these switches to signal his responses. Also on his panel are a number of lights which ostensibly indicate what judgements the other members give on a particular trial. All subjects see the responses of the other subjects before they respond. In actuality,

the experimenter controls all the lights and, in this way, all subjects can be run under identical conditions. On critical trials the "other subjects" give incorrect responses and it is possible to get a measure of conformity. Using this setup, Crutchfield found there was a substantial amount of yielding to the majority even on opinions and attitudes and especially on difficult items. He also found large individual differences.

In addition, Tuddenham (1958,b) found that telling subjects that the experimenter would distort the others' judgements on given trials, reduced the influence of the group norm but, in spite of this, the group still had some influence on the individual. Later, Tuddenham (1961), using the same technique, arranged so that there would be little conflict here between responses of others and the subject's own experience, found significant shifting in the direction of the norm with either moderately distorted norms or real norms (set at the mode). This shifting was in spite of the fact that with these small differences subjects were generally unaware of any real discrepancy between themselves and others.

In comparing the Asch approach with the Crutchfield approach, Levy (1960) found more yielding in the Asch-type procedure. It appears that the face-to-face oral communication of the Asch procedure is more effective than the

anonymous indirect communication of the Crutchfield procedure.

Another technique used to study social pressure is the "simulated group procedure". A subject thinks he is hearing the responses of other subjects similar to him, when in reality he is hearing a prepared recording. After a subject has heard the other responses, he then responds. This technique lacks the advantages of the face-to-face discussion but the stimuli can be controlled.

Helson, Blake and Mouton (1958) using the above procedure had experimental subjects give their opinions after four other "subjects" had given their opinions. These were a predetermined number of steps removed from the modal opinions. Not surprisingly, they found that they got more opinion shift with the more divergent opinions. In a follow-up study by Coleman, Blake and Mouton (1958), it was reported that, if the subjects are less well informed and the task involves general information, there is a greater tendency to shift. This is consistent with the idea that ambiguity in a situation increases conformity.

It is clear from the above experiments that direct group pressure, with or without discussion, is a powerful determinant of conformity. However, there have been many investigations of attitude change which have merely shown the subject how others feel about a similar topic. This is usually done by telling the subject that "x" number of people or "x" percentage of the class agrees or disagrees

with him.

Moore (1921) and Marple (1933) were concerned with the effects on opinion change of telling people that they differed from the majority of the group. Subjects' opinions were obtained on a given topic or topics and then, at a later date, they were exposed to the opinion of the majority and retested. In both cases there was a shift of opinion in the direction of the view of the majority. One shortcoming of these studies was the failure to record negative change (ie. away from the majority). Similar results were reported by Wheeler and Jordan (1929). However, they also recorded the amount of negative change and found that, while most people tended to move in the direction of the majority, some people moved away from the majority.

Duncker (1938), in the above mentioned study of children's food preferences, also found that it was possible to alter their preferences by telling a story in which the hero preferred a certain type of food. After the story, 67% of the children preferred the hero's food as opposed to 13% in the control group which heard no story. Duncker found, however, that this change did not last over time.

A study by Goldberg (1954) investigated conformity by having white males rate pictures of Negroes as to whether they were intelligent or not. They then rated the pictures a second time, but prior to each judgement they were told the group judgement (fictitious). This was always

"x" units away from the subject's judgement and there were three degrees of "x". Goldberg found significant conformity to group norms and that the more people initially deviated the more they eventually conformed. While the results of this study are what one would expect, there might have been some confounding of the results because Whites were rating Negroes.

Wiener, Carpenter and Carpenter (1956) presented subjects with a booklet containing ten ambiguous designs. Each design had one of two possible names and the subject was to choose the more appropriate name. After doing this, the experimenter entered fictitious percentages of choices in the booklet. The percentages were said to represent those in the class choosing each alternative. On five of the designs, the critical ones, the percentages went against what the subject had answered and on the other five the percentages agreed with him. The subject was then given the booklet in which he could see his own score and the "score of the class", and told to answer it again. The experimenter found significant conformity as measured by change in the direction of the group.

Wiener et al (1957), using an identical procedure, found no effect of variations in the degree of ambiguity or of differences in the amount of divergence from the group norm. Wiener (1958) reported that conformity increases with ambiguity and that with greater degree of disagreement from

the norm, there was also more conformity. These findings are in agreement with most other experiments in the area. Wiener could offer no explanation for the discrepant results of his previous experiment.

Hovland and Pritzker (1957) found that the greater the amount of change advocated, the greater the amount of opinion change obtained. Similar results were reported by Zimbardo (1960) and Gorfein (1963). These studies also reported a "boomerang" effect where the subject moves in the direction opposed to the change advocated. This effect has been noted in other experiments (ie. Wheeler and Jordan (1929)) but it is not common.

Aronson, Turner and Carlsmith (1963) showed that only when the communication advocating change came from a highly credible source did the subjects change more as the discrepancy increased. When the source was only moderately credible, there was only increased change with increased discrepancy up to a point and then as the discrepancy became more extreme, the amount of opinion change decreased. (ie. the "boomerang" effect appeared). This might be one explanation for the fact that some studies report a "boomerang" effect while others do not. It might be the case that studies which report "boomerang" effects were not using sufficiently credible sources whereas the ones which do not report the "boomerang" were.

In a series of experiments by Whittaker (1963),

it was shown that there is an optimum discrepancy for change, above which and below which there is less change. If a subject was involved in an issue, smaller discrepancies yielded the most change; but if a subject was not involved, larger discrepancies yielded the most change. This involvement in an issue could be another variable responsible for the production of the "boomerang" effect found in some experiments but not in others.

In a later experiment using the autokinetic phenomenon, Whittaker (1964) found more evidence for an optimum discrepancy above and below which there is less change.

Sex Differences.

It is now a well established fact that males and females are affected in different ways by persuasive communications. The evidence, however, is not entirely clear as to who is more persuasible.

Jenness (1932) reported that women changed their opinions more than men in both three- and four-person groups. This was among the first evidence that the two sexes were differentially susceptible tp persuasion.

In a study by Kirkpatrick (1936), males were found to change more than females after a discussion. The results of this study are probably confounded by the fact that the subject chosen for investigation was "feminism", and males were required to discuss it with females.

In comparing scores of male students with scores of

female students, Crutchfield (1955), found that females tended to conform more than males. This finding was also reported by Tuddenham (1958, a and b) using a similar experimental procedure. In a later study, Tuddenham (1961), using the same technique, with moderately distorted norms and real norms (set at the mode), reported only slight differences in the amounts of yielding between sexes. This may be due to the small amount of distortion or due to the sample chosen, since Crutchfield (1955) found that adult women yielded less than adult males, college males or college females.

Wiener, Carpenter and Carpenter (1957) using the same method as Wiener et al (1956) found no differences in conformity behaviour between males and females.

In comparing sex differences using an autokinetic situation, Whittaker (1964) found that females were more susceptible to influence than males. This is in line with the data obtained by Cruthfield (1955). Studies by Beloff (1958), Janis and Field (1959) and King (1959) also have reported that males are less persuasible than females.

In conclusion, females are generally found to be more persuasible than males although there are some studies which have reported different results. Only further research in the area will explain the reasons for the discrepant findings.

Present Experiment.

The present experiment was designed within the

framework of the fact that people can be influenced through knowledge of how others behave whether it is implied or directly observed. However, experiments to date have not examined subjects in face-to-face discussion, more typical of everyday interaction. The main question asked here is how two people will behave during discussion of a topic when they are aware of the response (fictitious) of their peers to the same topic.

In order to study this variable, three types of groups were formed. In one type both members were informed that approximately 35% of the class agreed with each of them. Here, both members had a moderate and equal amount of peer group support. In another type, both members were informed that only approximately 5% of the class agreed with each of them; and the last type of group was composed of one person who had a lot of support (63% of the class) and a person with very little support (6% of the class).

The methods used to analyze the discussion of two people over a period of time come from the previous work of Carment (1961) and Carment, Schwartz and Miles (1963, 1964).

When two people with opposite points of view are asked to discuss a topic, their discussion can be analyzed in terms of the total amount spoken per person and the proportion of time each person spends speaking positively, negatively or neutrally. Positive statements are those

which provide evidence for, or support a subject's viewpoint. Negative statements provide evidence for, or support the opponent's viewpoint. A neutral statement is one that is unrelated to the topic under discussion. A temporal measure of opinion change is obtained by looking at the distribution of positive and negative statements over time. Opinion change should be reflected in an increase in negative and a decrease in positive statements over time.

Because previous research on persuasion indicates that sex is an important variable, half of the subjects in the study were male and half were female.

In addition to the previously cited studies, data from Carment, Schwartz and Miles (1964) indicate that males talk more than females in this type of situation. They also found that males emit more positive and more neutral statements than females, while there were no differences between sexes in the amounts of negative statements made.

A measure of rejection or social distance is included in the present experiment as a dependent measure because previous studies (ie. Schachter (1951)) have shown that people who disagree with the group generally tend to be rejected.

CHAPTER THREE

METHOD

Subjects

Male and female students in introductory psychology classes (regular session) had indicated on an eight-point scale the nature and strength of their opinions on a number of topics.[1] The topics had been chosen so as to have as little emotional value as possible (ie. "Speed limits on main highways should be increased".) Items of direct political or religious significance were omitted.

From this population, 24 male and 24 female pairs were selected such that the members of each pair held opposing opinions of equal strength on a given topic. These pairs were randomly assigned to three experimental treatments:

(1) 12 pairs in which each member received a moderate amount of peer group support for his opinion (ie. 35% or 37% of the class). This will be designated as the PP

---

1. See Appendix A. for the Example Form.

condition. The amount of peer group support was indicated by the percentage of their fellow students (enrolled in introductory psychology) who had supposedly answered in each of the 8 possible categories. This was indicated to the subject by marking these fictitious percentages on his original questionnaire.[1]

(2) 12 pairs in which each member received a relatively small amount of peer group support for his opinion (6% or 5% of the class). This will be designated as the pp condition.

(3) 24 pairs in which one member received a relatively small amount of peer group support (6% of the class), and the other received a relatively large amount of peer group support for his opinion (63% of the class). This will be designated as the pP condition.

Each subject was aware of the amount of support his partner had received. Equal numbers of male and female pairs were run under all conditions.

In addition to being matched for sex and strength of opinion, the members of each pair were also matched for age (average 19.82 years), and university year. Measures of opinion strength were obtained by having the subjects rate their opinion on a given topic on an 8-point scale ranging from "strongly agree" to "strongly Disagree".[2]

---

1. See Appendix A. for Example.
2. See Appendix A. for the form administered.

General Procedure.

The experiment was conducted in the group dynamics laboratory at McMaster University. This laboratory consists of two adjacent rooms separated by a partition containing a one-way observation window. The observers were situated in one room and the subjects were seated opposite each other at a table in the other room.

When a subject arrived for the experiment, he was asked to wait in a nearby room until both subjects were present. They were then introduced and taken to an office where the following instructions were given by an "authority figure", usually a professor.

PLACE INSTRUCTIONS A HERE.

Subjects were then taken to the experimental room. After being seated, throat microphones were placed around their necks, and they were then told to await further instructions without conversing. These were given to the subjects by means of an intercommunication system. The instructions were read as follows:

PLACE INSTRUCTIONS B HERE.

A summary of these instructions was placed on the table in front of each subject.[1]

---

[1] See Appendix A. for Example.

INSTRUCTIONS A.

"We usually tell people a little bit about the experiments before they begin so they are not too surprised at what they are asked to do. Do you remember these forms you filled out in class? You'll remember there were a considerable number of issues included about which we asked your opinion. Well we're interested in what students think about some of these issues so we're going to ask the two of you to discuss one of them for us. I'm not sure which one it is but you'll find that out when you go into the other room. Oh yes, you may also notice some figures on the paper that look something like this. This is just a record of some statistics on opinions of the whole class and these are the percentages of students who marked each of these choices.

You may be interested in this item.(Subjects were then shown a sample questionnaire).University final exams should be abolished. You see 29% agreed strongly, about 27% strongly disagreed, there were 16% in these two categories, and 18% in these, not very many had no opinion or couldn't decide.

Do you have any questions?

O.K. would you like to just go into that room across the hall. Someone will look after you when you get there.

INSTRUCTIONS B.

Experimenter.

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 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. Are there any questions?- Fine.

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

A topic for discussion had been selected on which the subjects held opposite opinions of equal strength. In all cases, both subjects felt strongly about the topic.

The observers listened to the subjects' interaction by means of an intercommunication system. There was one observer for each subject. The following measures were recorded for each subject on an Esterline-Angus Operations Recorder:

(1) Latency of Response-This was the amount of time between the signal to begin and the subject's first response.

(2) The total amount of time spent speaking-This was recorded automatically by means of the throat microphones and a sound-sensitive relay system.

(3) The amount of speech which was positive- ie. in favour of the subject's own opinion was recorded by O.

(4) The amount of speech which was negative- ie. against the subject's own opinion was recorded by O.

(5) The amount of speech which was neutral- ie.remarks irrelevant to the topic was recorded by O.

Change of opinion data was gathered in two ways after the discussion: (1) (public) each of the subjects while still together recorded his opinion on an eight-point scale, ranging from "strongly agree" to "strongly Disagree".[1] and (2) (private) each of the subjects then

---

1. See Appendix A. for example.

privately recorded his opinion on an eight-point scale ranging from "strongly agree" to "strongly disagree". A subject who did not change his opinion received a score of 0, and a subject who switched all the way to the opposite point of view received a score of 6, with decreasing scores for lesser degrees of opinion change.

The interaction record for each pair was divided into 10 equal intervals (Vincent tenths). In each time interval, the amount of positive, negative, and neutral time spent speaking was calculated. If an opinion is changing, one would expect a decrease in the amount of positive time and an increase in the amount of negative time spent speaking. In this way, an attempt was made to examine the dynamics of opinion change.

In addition to the above measures, the effects of the experiment on the individual's evaluation of the other was measured by means of a social distance scale developed by Bach (1951). The scale consists of 7 questions known to correspond to different degrees of attraction. The questions are ordered according to the amount of intimacy they suggest. A subject's score was the total number of items which he checked.

Subjects also indicated on a 5-point scale how much they thought their own opinions had been modified, and on another 5-point scale how much they thought they had modified the other person's opinion.[1] Both scales went from

---

1. See Appendix A.

" not at all" to " a great deal". For purposes of analysis, a score of 1 was assigned to "not at all", and a score of 5 to "a great deal".

CHAPTER FOUR

RESULTS

In this section, the results for each dependent measure will be presented under a separate heading.

Because of the problem of dependency, all analyses performed on individual subjects will have n=40. One subject from each of the 40 pairs was randomly rejected for purposes of analysis. Both subjects of a pair could not be analyzed as individuals since the behaviour, verbal and otherwise of one, would affect the behaviour of the other (ie. if one subject is speaking, the other subject must be silent.).

Latency of First Response.

A Fisher's exact test performed on the data for the 80 pairs failed to show any significant tendency for either member to initiate the discussion more frequently than the other. ($p=.107$) These frequencies can be seen in table 1.

ENTER TABLE 1 HERE.

Temporal Measures.

(a) Total Time.

The total time per subject spent speaking was subjected to a 2x4 analysis of variance with sex and amount of peer group support as the main variables. The summary of the analysis is presented in table 2. The only significant

TABLE 1.

Fisher's Exact Test on Who Spoke First in pP Groups.

	Person with a little support.	Person with a lot of support.	Total.
Male.	3	9	12
Female.	7	5	12
Total.	10	14	24

$p = .107$

ENTER TABLE 2 HERE.

finding is the difference in the amount of participation by males and females. Males speak more than females. ($F=16.68$, $df=1, 40$ $p<.001$).

A 2x3 analysis of variance was performed on the total time spent speaking per group. The summary of this analysis is presented in table 3.

ENTER TABLE 3 HERE.

As well as the significant sex difference, ($F=13.22$, $df=1,42$ $p<.001$), there is also a significant difference between treatments ($F=3.90$, $df=2,42$ $p<.05$) which can be seen in figure 1.

ENTER FIGURE 1 HERE.

A Scheffé test performed on the column means shows that subjects in the pP condition speak significantly more than do subjects in either of the other two conditions.

(b) Proportion of time spent speaking positively.

A 2x4 analysis of variance was performed upon the proportion of time, per vincent tenth, that the subject spent speaking in favour of his own opinion. The summary of the results is presented in table 4

ENTER TABLE 4 HERE.

TABLE 2

Analysis of Variance of Total Time spent Speaking Per Subject.

Source	d.f.	M.S.	F	p
Sex	1	2705101.984	16.682	<.001
Support	3	284072.748	1.752	N.S.
Sex x Support	3	172281.250	1.062	N.S.
Error (between)	40	162156.048		
Time	9	4093.667	1.580	N.S.
Sex x Time	9	2977.083	1.149	N.S.
Support x Time	27	2675.731	1.033	N.S.
Sex x Support x Time	27	1649.843	-	N.S.
Error (within)	360	2590.862		

TABLE 3

Analysis of Variance of Total Time Spent Speaking Per Group.

Source	d.f.	M.S.	F	p
Sex	1	63875.02	13.22	<.001
Type of Group	2	18856.12	3.90	<.05
Sex x Type	2	7056.04	1.46	N.S.
Error	42	4830.72		

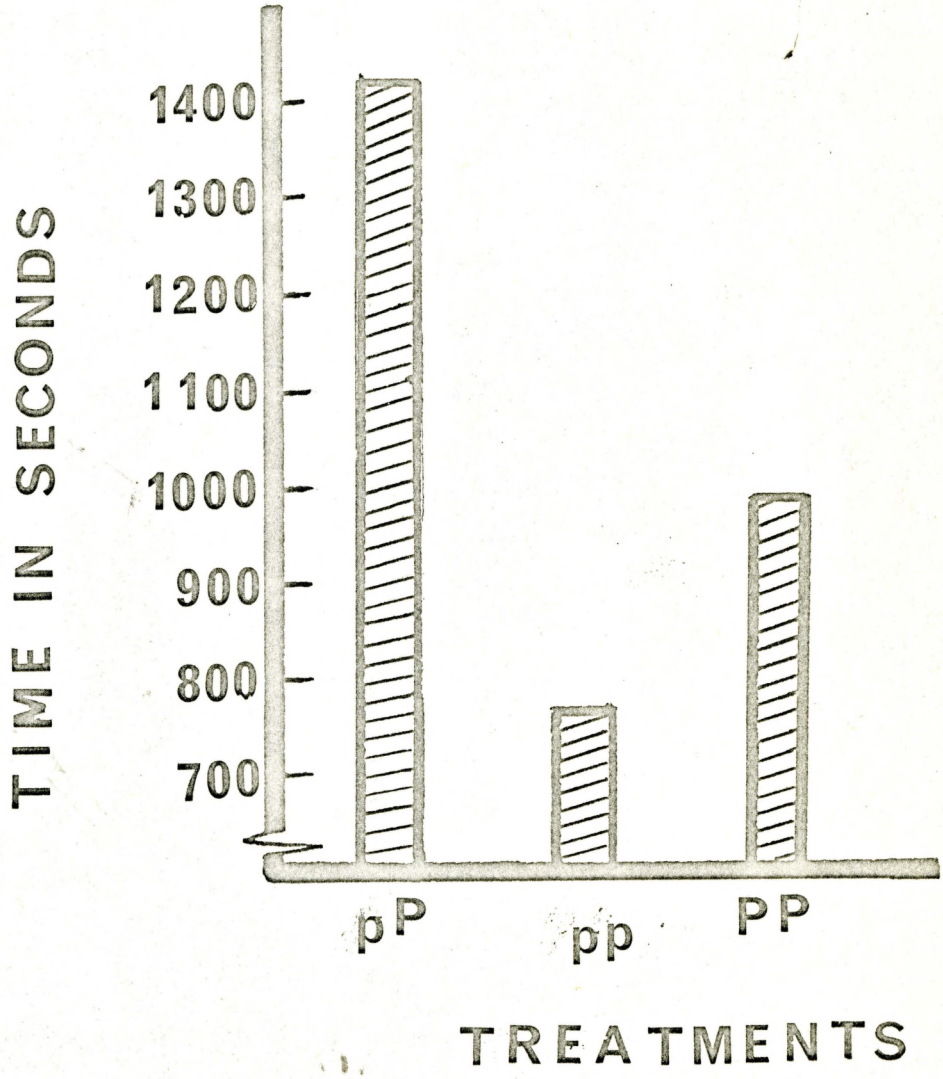


Figure 1. Total Speaking Time per Group.

Once again, there seems to be a difference between the sexes in that males speak proportionately less in favour of their opinions than do females. ($F=3.85$, $df=1, 40$ $p<.07$). In addition to this, there was a significant difference between treatments ($F=3.69$, $df=3, 40$ $p<.025$) which can be seen in figure 2.

ENTER FIGURE 2 HERE.

A Scheffé test performed upon the means indicates that subjects in the PP group speak significantly less in favour of their opinions than do people in all other conditions. Also significant, with the Scheffé test, is the finding that subjects with little support (p(P)) in the pP condition talk more in favour of their own opinion than do subjects in the pp condition. In other words, subjects in conditions where their partner has an almost equal amount of support (whether high or low) talk significantly less in favour of their own opinion than do subjects in conditions where their partner has either more or less support.

The only within subjects factor found to be significant was the change in the amount of time spent speaking positively irrespective of sex or treatment. ($F=7.01$, $df=9,360$ $p<.001$). Figure 3 shows that subjects speak progressively less in favour of their own opinion as the discussion progresses.

Figure 2. Differences Between Treatments for Positive Proportions.

ENTER TABLE 5 HERE.

A trend analysis (Edwards 1960) performed on these data ($F=73.20$, $df=1, 360$ $p<.001$) indicates that 87.33% of the variance can be explained by the linear component. The summary is presented in table 5.

ENTER TABLE 5 HERE.

(c) Proportion of time spent speaking negatively.

A 2x4 analysis of variance was performed upon the proportion of time per vincent tenth that a subject spoke against his own opinion. The summary of the analysis can be seen in table 6.

ENTER TABLE 6 HERE.

None of the between subjects components reached significance. The only within subjects component to reach significance was the overall change in the amount of time spent speaking negatively. ($F=1.96$ $df=9, 360$ $p<.05$). The summary for the trend analysis (Edwards 1960) can be seen in table 7.

ENTER TABLE 7 HERE.

The linear trend is the only one to reach significance. ($F=7.81$ $df=1, 360$ $p<.025$). While only 44.44% of the variance can be explained in terms of the linear component,

TABLE 4

Analysis of Variance of Proportion of Time Spent Speaking Positively.

Source	d.f.	M.S.	F	p
Sex	1	.686	3.852	< .07
Support	3	.658	3.692	< .025
Sex x Support	3	.079	-	N.S.
Error (between)	40	.178		
Time	9	.354	7.012	< .001
Sex x Time	9	.036	-	
Support x Time	27	.040	-	
Sex x Support x Time	27	.067	1.324	N.S.
Error (within)	360	.050		

TABLE 5

Trend Analysis for Positive Proportions.

Source	d.f.	M.S.	F	p
Linear	1	2.66	53.20	< .001
Error (within)	360	.05		

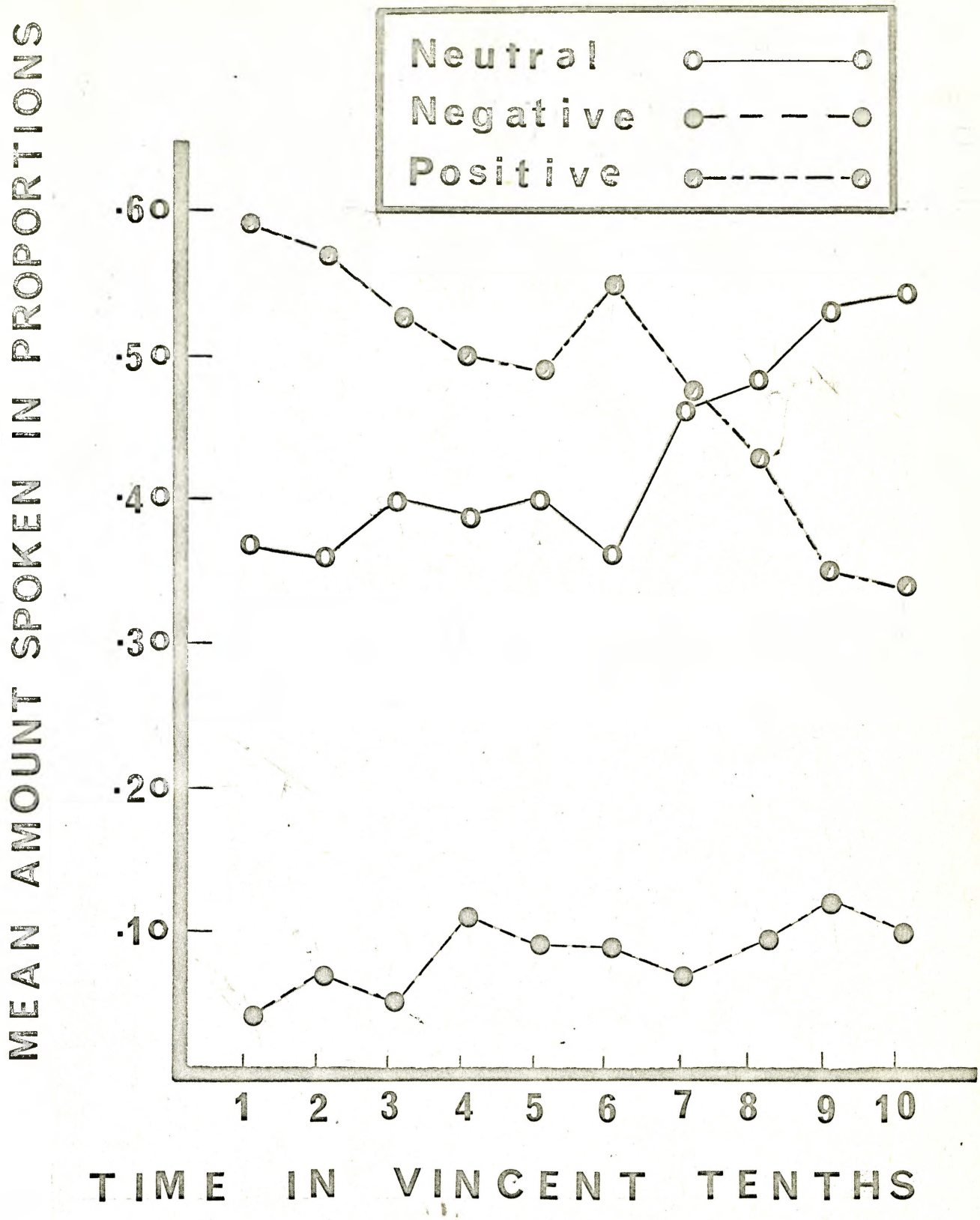


Figure 3. Proportions of Positive, Negative and Neutral Statements.

TABLE 6

Analysis of Variance of Proportion of Time Spent Speaking Negatively.

Source	d.f.	M.S.	F	p
Sex	1	.106	2.006	N.S.
Support	3	.043	-	N.S.
Sex x Support	3	.021	-	N.S.
Error (between)	40	.053		
Time	9	.031	1.965	< .05
Sex x Time	9	.015	-	N.S.
Support x Time	27	.010	-	N.S.
Sex x Support x Time	27	.018	1.148	N.S.
Error (within)	360	.016		

TABLE 7

Trend Analysis for Negative Proportions.

Source	d.f.	M.S.	F	p
Linear	1	.125	7.81	< .025
Quadratic	1	.013	-	N.S.
Cubic	1	.021	1.312	N.S.
Error (within)	360	.016		

it is more than can be explained in terms of any component, since the combination of linear, quadratic and cubic components explain 56.58% of the total variance. Figure 3 shows the increase in negative statements over time.

(d) Proportion of time spent speaking neutrally.

A 2x4 analysis of variance was performed on the neutral proportions. The results are given in table 8.

ENTER TABLE 8 HERE.

The only significant between subjects effect is the amount of peer group support ($F=3.32$ $df=3, 40$ $p<.05$). This can be seen in figure 4.

ENTER FIGURE 4 HERE.

A Scheffé multiple comparisons test shows that subjects in the PP condition make more neutral statements than subjects in any other group, and that subjects in the pp condition speak more off the topic than do subjects with little support in the pP groups. A Scheffé test also indicated that subjects in groups where the partner had an equal amount of support spoke off the topic more than subjects whose partners had either more or less support.

In the within subjects comparisons, the only one to reach significance was the amount of neutral statements emitted over time. ($F=4.65$ $df=9, 360$ $p<.001$) A trend

TABLE 8

Analysis of Variance of Proportion of Time Spent Speaking Neutrally.

Source	d.f.	M.S.	F	p
Sex	1	.409	2.512	N.S.
Support	3	.541	3.321	<.05
Sex x Support	3	.038	-	N.S.
Error (between)	40	.163		
Time	9	.224	4.648	<.001
Sex x Time	9	.047	-	N.S.
Support x Time	27	.030	-	N.S.
Sex x Support x Time	27	.052	1.083	N.S.
Error (within)	360	.048		

TABLE 9

Trend Analysis for Neutral Proportions.

Source	d.f.	M.S.	F	p
Linear	1	1.58	31.60	<.001
Error (within)	360	.05		

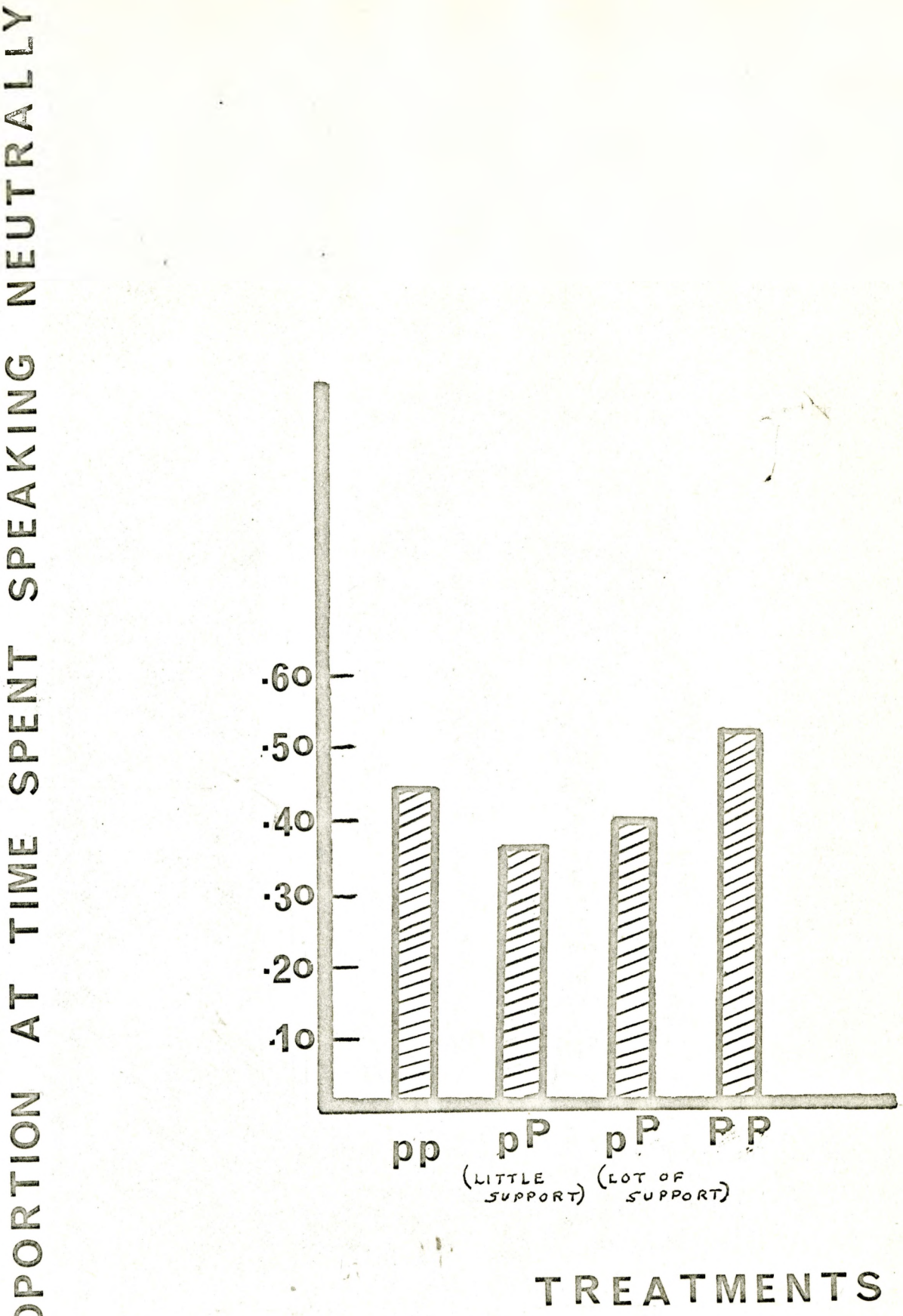


Figure 4. Differences Between Treatments for Neutral Proportions.

analysis performed on the data (Edwards 1960) indicates that 78.22% of the variance can be explained in terms of the linear component. ($F=31.60$ $df=1,360$ $p<.001$) The data for the trend analysis is presented in table 9.

ENTER TABLE 9 HERE.

Figure 3 shows that as the discussion progresses, there is an over-all tendency for subjects to increase their emission of neutral statements.

Change of Opinion.

A 2x4 analysis of variance was performed on the amount of opinion change that the subject reported privately.[1] The results can be seen in table 10.

ENTER TABLE 10 HERE.

None of the variables turned out to be significant, indicating that there was no difference between sexes and no more opinion change attributable to one treatment than another.

Social Distance Data.

A 2x4 analysis of variance was performed on the number of yes responses a subject gave on the social

---

1. The amount of opinion change the subjects indicated in the public condition was not analyzed because of the high correlation between public and private opinion change. Pearson $r=+.95$.

TABLE 10

Analysis of Variance on Amount of Private Opinion Change.

Source	d.f.	M.S.	F	p
Sex	1	.09	-	N.S.
Support	3	.47	-	N.S.
Sex x Support	3	1.47	-	N.S.
Error	40	2.20		

distance scale. (Bach 1951). When a subject gives many yes responses, it means that he is willing to enter into close social relationships with the other person. Table 11 indicates that none of the comparisons were significant. Subjects in all treatments and of both sexes tend to evaluate each other similarly.

ENTER TABLE 11 HERE.

(d) Modification of Own and Other's Opinion.

Analysis of variance were performed on how much the subjects thought they had modified their opponent's opinion and how much their own opinion had been modified. No significant differences were found on either measure. The results can be seen in tables 12 and 13.

ENTER TABLES 12 AND 13 HERE.

It seems that there are no differences between treatments with regards to these variables.

TABLE 11

Analysis of Variance of Number of Yes Responses on Social Distance Scale.

Source	d.f.	M.S.	F	p
Sex	1	.75	-	N.S.
Support	3	2.45	-	N.S.
Sex x Support	3	.30	-	N.S.
Error	40	3.32		

TABLE 12

Analysis of Variance of Modification of Other's Opinion

Source	d.f.	M.S.	F	p
Sex	1	.19	-	N.S.
Support	3	.35	-	N.S.
Sex x Support	3	.69	1.23	N.S.
Error	40	.56		

TABLE 13

Analysis of Variance of Modification of Own Opinion

Source	d.f.	M.S.	F	p
Sex	1	1.69	1.58	N.S.
Support	3	.08	-	N.S.
Sex x Support	3	.58	-	N.S.
Error	40	1.07		

CHAPTER FIVE

DISCUSSION

In this section, the experimental results will be discussed in the same order as they were presented in the previous chapter.

Latency of First Response

Previous experiments by Carment (1961) and Carment, Miles and Cervin (1965) have shown that under certain conditions, there is a tendency for subjects in one experimental condition to initiate the discussion more often than subjects in other conditions. Carment (1961) reported that subjects who felt strongly about an issue tended to speak first when paired with a person who was unconcerned with an issue except in the case where the person who was unconcerned had a higher drive level as measured by a higher score on Cervin's Scale of Emotional Responsiveness. Carment, Miles and Cervin (1965) showed that high intelligence extraverted subjects spoke first more often when paired with either high intelligence introverted subjects or low intelligence extraverted subjects.

There is no logical relationship between these studies and the present experiment and as a result, no predictions weremade prior to experiment whether subjects with little support in the pP condition would speak first more often than those with a lot of support or vice versa. It seems to be the case that the treatments chosen do not

differ with regard to this variable. The failure to find significant results in the present experiment could be due to the fact that the variability is too great with so few observations per cell.

Temporal Measures.

(a) Total Time Spent Speaking Per Person.

As was expected from previous research, Carment, Schwartz and Miles (1964), the sex of the subject is an important variable in a two-person discussion. Contrary to popular belief, males talk much more than females. It may be the case; however, that this applies only in the semi-structured confines of the present situation and others like it. It may be also partly due to the fact that males gave all instructions to both the male and female subjects. A number of studies reviewed by Kintz, Delprato, Mettee, Persons and Schappe (1965) showed that the sex of the experimenter can affect the experimental results.

(b) Total Time Spent Speaking Per Group.

This analysis showed that subjects in the pP groups talked longer than subjects in either of the other two types of groups. One possible explanation is that when the discrepancy between subjects is quite large, there is more pressure on each of them to prove that their point of view is correct. This would be especially true of the person with very little support, and as his verbal output increased, one should also find that the person with whom he is paired would also increase his

output. Another possible explanation is that subjects in this condition like the group discussion better, but this seems unlikely in terms of the findings on the social distance scale.

(c) Positive, Negative and Neutral Proportions.

It was assumed prior to the experiment that opinion change would be reflected by a change over time in the number of positive and negative statements emitted. If opinions are changing, one would expect to find a decrease in the positive and an increase in the negative. The results indicate that this indeed did take place. Negative statements did increase and positive statements did decrease; but irrespective of either sex or treatment. This could be due to the fact that as subjects are exposed to the opposite opinion, they are more willing to tolerate it. Another explanation is that in order to end the discussion, it becomes expedient to see more and more of the other person's point of view in order to reach some conclusion.

These results support the other opinion change data since none of the interactions indicating differences between groups in opinion change were significant.

An overall increase in the amount of neutral statements emitted over time may indicate that as people get to know each other better, they are more willing to discuss topics other than the one under discussion.

From the analysis, it can be seen that females

make more positive statements than males. This is not consistent with the data of Carment, Schwartz and Miles (1964) who found the opposite to be true. It seems unlikely that the different experimental treatments used are responsible for the discrepancy.

Significant differences between treatments showed that the most positive statements were emitted by subjects in the pP conditions who had the least support. This finding could be interpreted in terms of how much pressure the person feels on him to prove his point. A person in the above mentioned group should feel the most pressure and one might have expected him to remain on topic more often than subjects in other treatments. Subjects who should be under the least pressure to argue their point of view would be those in the PP condition, and it turns out that they spoke the least on topic of any condition.

The analysis showed that people in homogeneous conditions (ie. PP and pp conditions) emitted significantly fewer positive statements than either of the types of subjects in the heterogeneous (pP) condition. This is consistent with the above interpretation.

No differences were found between sexes or between treatments with regard to the negative statements emitted. One explanation for this could be the small number of negative statements emitted relative to the total verbal output.

If the interpretation of pressure to defend a viewpoint as used previously is correct, one might expect the most neutral statements to appear in the treatment with the least pressure, and the fewestneutral statements in the treatment with the most pressure. The results are consistent with this interpretation. This interpretation is opposed to the interpretation of neutral data given by Carment, Schwartz and Miles (1964) where it was suggested that neutral statements might reflect a tendency to escape from an unpleasant situation.

Change of Opinion.

It is Interesting to note from the analysis that thereare no differences between groups in the amount of opinion change that was registered. From previous experiments, one would have expected the most change by the subject with little support in the pP group and some change by subjects in the pp condition. Moore (1921) and Marple (1933) using a similar task, but no discussion, found significant opinion change. Wiener et al. (1956, 1957) and Wiener (1958) also using percentages but a different task found significant conformity on the part of subjects with little support. However, they also had allowed no discussion between subjects. It may be that the discussion served to anchor further the opinions of the subjects. People with strong opinions are already more anchored than people with weaker opinions. Whittaker (1963) found that when a subject was involved in an issue small discrepancies yielded the most change. Since the subjects in the present

experiment were involved (ie. felt strongly about their opinions), it is possible that the discrepancies used were too large to produce opinion change. It should, however, be remembered that to feel strongly about an issue may have different implications for different subjects.

Re-running the experiment with less strongly opiniated people or smaller discrepancies might lead to significant amounts of opinion change. There may also be an interaction between instructions and discussion. Further experiments controlling for these possibilities could be conducted. Experiments which have involved face-to-face communication (ie. Asch (1951)) have found significant conformity on the part of the experimental subjects. In such experiments, however, the subject had to face directly all the people with whom he disagreed, and this is not the same as the present experiment. Asch (1951) also found no conformity with groups of two people and less conformity when there was a non-unanimous majority.

Of particular interest is the fact that there were no differences between sexes in the amount that opinions changed. Previous studies ie. Crutchfield (1955) Tuddenham (1958), Whittaker (1964) would have led one to believe that females would have been more persuasible than males. Only two of the other studies reviewed found no sex difference ie. Wiener (1957) and Tuddenham (1961). Tuddenham used a Crutchfield setup; whereas Wiener et al

did use percentages (with a different task) but there was no discussion between subjects. The present experiment still does not support the findings of Kirkpatrick (1936) who found males to be more persuasible than females.

Social Distance Scale.

The social distance scale scores did not indicate any differences between treatments or between sexes. Earlier results (ie. Schachter (1951)) had shown rejection of a person who had little support in the group. Schwartz)(1963), also finding negative results for a similar measure, interpreted this as possibly being due to either the diminishing effects of the instructions, or to a measure which lacked the proper sensitivity, or to an unwillingness of subjects to make negative statements about a person after a short discussion.

Modification of Opinion Questions.

The failure to find any differences between treatments on the modification questions is consistent with the findings relevant to actual opinion change- ie. subjects in any one condition did not change more than subjects in another and did not see themselves or their partners as changing more. It should be remembered, however, that in all conditions there was some opinion change, but there was no more change in any one condition than another.

In summary, then, it has been shown that the variables

chosen affected the discussion itself but had no effect on opinion change. It might have been expected that subjects in the pP groups who had little support would have changed their opinions more than others. As it turned out, these subjects emitted the most positive statements. This latter finding could have counteracted the effect of the peer group support.

Since subjects with a little support in the pP pairs emitted the most positive statements, one might also have expected their partners to change. However, their partners had a lot of peer group support, and this probably had an anchoring effect upon their opinions.

CHAPTER SIX

SUMMARY

In this experiment, pairs of subjects, matched for university year, age, sex and strength of opinion, were asked to discuss a topic on which they disagreed, with the purpose of arriving at a common statement of agreement, compromise or disagreement. Three sets of pairs of subjects were observed, each set differing in the amount of peer group support the pair members thought they had for their opinion. In one set of pairs, the subjects felt they had equal and little support for their point of view. In a second set, one member of each pair felt he had little support and his opponent considerable support; and in a third set, the pair members thought they had equal and moderate support for their opinions. There were equal numbers of male and female pairs in each set.

The dependent measures were latency of first response, amount and type of statements emitted, opinion change and evaluation of the partner.

The main findings are:

(1) No differences were found between treatments or between sexes in terms of the amount of opinion change.

(2) Males speak more than females, irregardless of treatment.

(3) Females make more positive statements than males.

(4) Over-all decreases were found in the number of positive statements emitted and over-all increases in the number of negative and neutral statements.

(5) Subjects in the PP condition (ie. where both subjects had a moderate amount of support) made more neutral and fewer positive statements than subjects in all other conditions.

(6) Subjects in the heterogeneous condition (pP) make more positive and fewer neutral statements than subjects in both homogeneous conditions (pp and PP).

BIBLIOGRAPHY

Aronson E., Turner J.A. and Carlsmith J.M. Communicator Credibility and Communication Discrepancy as Determinants of Opinion Change J. abnorm. soc. Psychol. 1963, 67 31-36

Asch S.E., Effects of Group Pressure Upon the Modification and Distortion of Judgements. In Maccoby E.E., Newcomb T.M. and Hartley E.L., Readings in Social Psychology New York: Henry Holt and Co. 1958, pp. 174-183.

Back K.W. Influence Through Social Communication J.abnorm. soc. Psychol., 1951, 46,9-23

Beloff H. Two Forms of Social Conformity; Acquiescence and Conventionality. J. abnorm. soc. Psychol., 1958, 56 99-104.

Carment D.W. Ascendant-Submissive Behaviour in Pairs of Human Subjects as a Function of their Emotional Responsiveness and Opinion Strength. Can. J. Psychol. 1961, 15 45-51.

Carment D.W., Schwartz F.S. and Miles C.G. Persuasiveness and Persuasibility as Related to Intelligence and Emotional Responsiveness. Psychol. Reports, 1963,12, 767-772.

Carment D.W., Schwartz F.S. and Miles C.G. Participation and Opinion Change as Related to Cohesiveness and Sex of SS in Two-Person Groups. Psychol. Reports, 1964, 14, 695-702.

Carment D.W., Miles C.G. and Cervin V.B. Persuasiveness and Persuasibility as Related to Intelligence and Extraversion Brit. J. soc. clin. Psychol. 1965, 4, 1-7.

Coleman J.F., Blake R.R., Mouton J.S. Task Difficulty and Conformity Pressures. J. abnorm. soc. Psychol. 1958, 57, 120-122.

Crutchfield R.S. Conformity and Character. Amer. Psychologist 1955, 10, 191-198.

Duncker K. Experimental Modification of Children's Food Preferences through Social Suggestion. J. abnorm. soc. Psychol., 1938, 33, 489-507.

Edwards A.L. Experimental Design in Psychological Research New York: Rinehart and Company Inc. 1960.

Festinger L. and Thibaut J. Interpersonal Communication in Small Groups. J.abnorm. soc. Psychol. 1951, 46, 92-99.

Festinger L., Gerard H.B., Hymovitch B.,Kelley H.H. and Raven B. The Influence Process in the Presence of Extreme Deviates. Hum Relat. 1952, 5, 327-346.

Goldberg S. Three Situational Determinants of Conformity to Social Norms. J. abnorm. soc. Psychol., 1954, 49, 325-329.

Gorfein D.S. Methodological Considerations in Attitude Change. Psychol. Rep., 1963, 13, 475-484.

Hardy K.R. Determinants of Conformity and Attitude Change J. abnorm. soc. Psychol., 1957, 54, 289-294.

Helson H., Blake R.R. and Mouton J.S. An Experimental Investigation of the "Big Lie" in Shifting Attitudes. J. soc. Psychol. 1958, 48, 51-60.

Hovland C.I. and Pritzker H.A. Extent of Opinion Change as a Function of Amount of Change Advocated. J. abnorm. soc. Psychol., 1957, 54, 257-261.

Janis I.L. and Field P.B. Sex Differences and personality Factors Related to Persuasibility. In Hovland C.I. and Janis I.L. (Eds) Personality and Persuasibility. New Haven: Yale University Press 1959.

Jenness A. The Role of Discussion in Changing Opinion Regarding a Matter of Fact. J. abnorm. soc. Psychol. 1932, 27, 279-296.

King B.T. Relationships Between Susceptibility to Opinion Change and Child-Rearing Processes in Personality and Persuasion. In Hovland C.I. and Janis I.L. (eds)Personality and Persuasibility. New Haven: Yale University Press 1959.

Kintz B.L., Delprato D.J., Mettee D.R., Persons C.E. and Schappe R.H. The Experimenter Effect. Psychol. Bull., 1965, 63, 223-232.

Kirkpatrick C. An Experimental Study of the Modification of Social Attitudes, Amer. J. Sociol., 1936, 41, 649-656.

Levy L. Studies in Conformity Behaviour: A Methodological Note. J. Psychol., 1960, 50, 39-41.

Marple C. The Comparative Susceptibility of Three Age Levels to the Suggestion of Group Versus Expert Opinion. J. soc. Psychol., 1933, 4, 176-186.

Moore H.T. The Comparative Influence of Majority and Expert Opinion. Amer. J. Psychol., 1921, 32, 16-20.

Raven B.T. Social Influence on Opinions and the Communication of Related Content. J. abnorm. soc. Psychol, 1959, 58, 119-128.

Schachter S. Deviation, Rejection and Communication. J. abnorm. soc. Psychol., 1951, 46, 190-207.

Schwartz F.S. The Effects of Cohesiveness on the Persuasiveness and Persuasibility of Individuals in Two-Person Groups. Unpublished M.A. Thesis (McMaster University), 1963.

Sherif M. Group Influences Upon the Formation of Norms and Attitudes, In Maccoby E.E., Newcomb T.M. and Hartley E.L., Readings in Social Psychology New York: Henry Holt and Co. 1958, pp. 219-232.

Tuddenham R. The Influence of a Distorted Group Norm Upon Individual Judgement. J. Psychol., 1958 a, 46, pp. 227-241.

Tuddenham R. The Influence of a Distorted Group Norm Upon Individual Judgement. J. Psychol. , 1958 b, 46, 329-338.

Tuddenham R.D. The Influence Upon Judgement of the Apparent Discrepancy Between Self and Others. J. soc. Psychol., 1961, 53, 69-79.

Wheeler L. and Jordan H. Changes of Individual Opinion to Accord with Group Opinion. J. abnorm. soc. Psychol. , 1929, 24 , 203-206

Whittaker J.O. Opinion Change as a Function of Communication-Attitude Discrepancy. Psychol. Rep., 1963 13 , 763-772.

Whittaker J.O. Paramaters of Social Influence in the Autokinetic Situation. Sociometry, 1964, 27 , 88-95.

Wiener M., Carpenter J.T. and Carpenter B. External Validation of a Measure of Conformity Behavior. J. abnorm. soc. Psychol., 1956, 52 , 421-422.

Wiener M., Carpenter J.T. and Carpenter B. Some Determinants of Conformity Behavior. J. soc. Psychol. 1957, 45 , 289-297.

Wiener M. Certainty of Judgement as a Variable in Conformity Behavior. J. soc. Psychol. 1958, 48 , 257-263.

Zimbardo P.G. Involvement and Communication Discrepancy as Determinants of Conformity. J. abnorm. soc. Psychol., 1960, 60 , 86-94.

APPENDIX A

McMaster University

DEPARTMENT OF PSYCHOLOGY

Questionnaire

Instructions

We would like to have your opinion on each of the items listed below. Indicate whether you agree or disagree with each statement by placing the appropriate code number on the line following the statement.

The code numbers are on the accompanying sheet. Refef to this sheet before you respond to each item.

If you have no opinion, or cannot decide, indicate this by using the appropriate code number and, in addition, include one or more of the code numbers of the reasons on the left or right side of the page. If you have any questions ask the instructor before you begin.

Work quickly, but remember it is important that you give a true picture of your opinions.

SA

Strongly Agree

MOA

Moderately Agree

MIA

Mildly Agree

NO — CD

Have No Opinion — Can't Decide

MID

Mildly Disagree

MOD

Moderately Disagree

SD

Strongly Disagree

I "Have No Opinion" Because:

NO 1 I don't have enough information on which to base an opinion.

NO 2 I'm really not interested one way or the other.

I "Can't Decide" Because:

CD1 I am familiar with arguments on both sides which seem equally good.

CD2 I feel one way but have nothing to support that feeling.

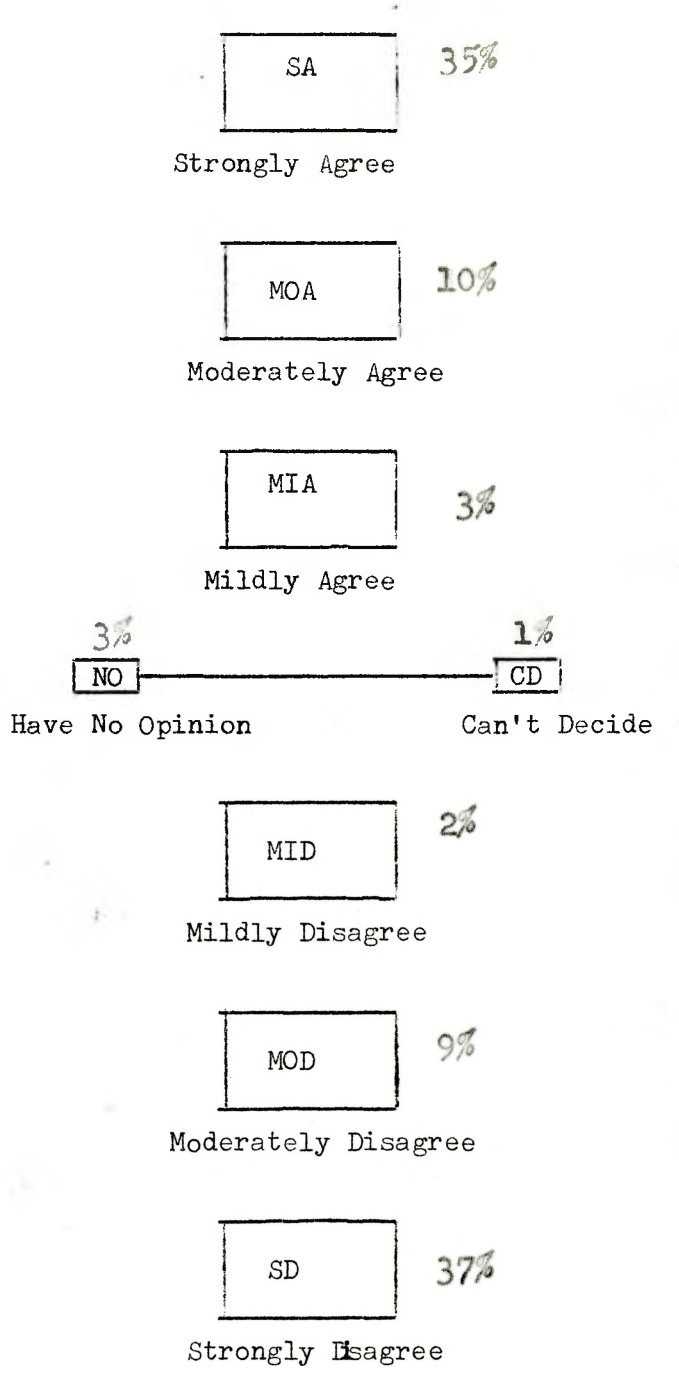
CD3 I tend to feel one way but due to the different opinions of my family, friends, fraternities, etc., I can't come to a definite conclusion.

CD4 Any opinion would depend entirely on the circumstances at the time.

1. The marriage of undergraduates should be actively discouraged.
2. Immigration to Canada Should be restricted.
3. Given ability, university education should be free.
4. University final exams should be abolished.
5. French-Canadian culture is a handicap to Canada.
6. Canada should eventually join the U.S.A.
7. You cannot reduce racial discrimination by law.
8. The majority of television programs are not worth watching.
9. There is too much emphasis on sex today.
10. Initiations at the university level should be abolished.
11. The legal age for drinking should be lowered to eighteen years.
12. The government should socialize medicine .
13. Fraternities should be allowed at McMaster University.
14. There is too much value placed on the university education today.
15. True freedom of speech exists in Canada today.
16. The Monarchy is an outmoded appendage to our society.
17. The voting age should b e lowered to eigh teen years.
18. Death as a punishment should be abolished.
19. College students should not be required to take physical education.
20. Canada should have a national flag of her own.
21. Slipshod manufacture is characteristic of American products.

22. All public and high school teachers should be required to have a university degree.
23. Canada is in decline as a nation.
24. The Ontario education system is inadequate.
25. Speed limits on main highways should be increased.
26. Grade 13 is a waste of time.
27. A national lottery would be of benefit to Canada.
28. The "Buy Canadian" emphasis is detrimental to our economic well-being.
29. The Senate should be abolished.
30. Cigarette advertising should be prohibited by law.

SAMPLE SHEET FOR SUBJECTS IN PP GROUPS



I "Have No Opinion" Because:

NO 1 I don't have enough information on which to base an opinion.

NO 2 I'm really not interested one way or the other.

I "Can't Decide" Because:

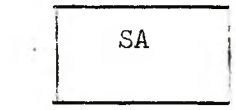
CD1 I am familiar with arguments on both sides which seem equally good.

CD2 I feel one way but have nothing to support that feeling.

CD3 I tend to feel one way but due to the different opinions of my family, friends, fraternities, etc., I can't come to a definite conclusion.

CD4 Any opinion would depend entirely on the circumstances at the time.

SAMPLE SHEET FOR SUBJECTS IN pp GROUPS



6%

Strongly Agree

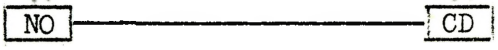
13%

Moderately Agree

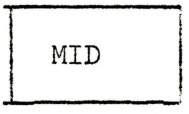
21%

Mildly Agree

7% 9%

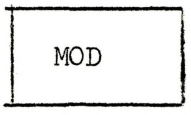


Have No Opinion — Can't Decide



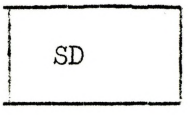
23%

Mildly Disagree



16%

Moderately Disagree



5%

Strongly Disagree

I "Have No Opinion" Because:

NO 1 I don't have enough information on which to base an opinion.

NO 2 I'm really not interested one way or the other.

I "Can't Decide" Because:

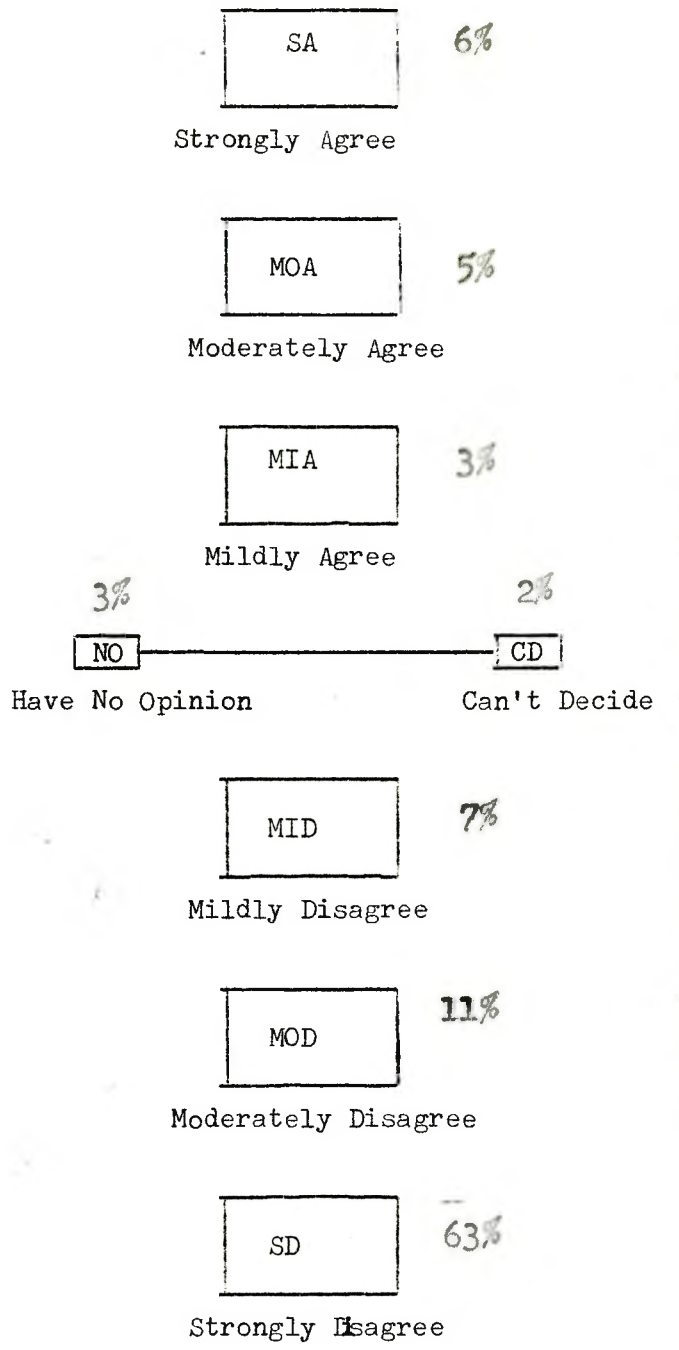
CD1 I am familiar with arguments on both sides which seem equally good.

CD2 I feel one way but have nothing to support that feeling.

CD3 I tend to feel one way but due to the different opinions of my family, friends, fraternities, etc., I can't come to a definite conclusion.

CD4 Any opinion would depend entirely on the circumstances at the time.

SAMPLE SHEET FOR SUBJECTS IN pP GROUPS



I "Have No Opinion" Because:

NO 1 I don't have enough information on which to base an opinion.

NO 2 I'm really not interested one way or the other.

I "Can't Decide" Because:

CD1 I am familiar with arguments on both sides which seem equally good.

CD2 I feel one way but have nothing to support that feeling.

CD3 I tend to feel one way but due to the different opinions of my family, friends, fraternities, etc., I can't come to a definite conclusion.

CD4 Any opinion would depend entirely on the circumstances at the time.

INSTRUCTIONS

Subject

Before the Experiment

DO NOT TALK until you hear the knock on the window

During the Experiment

Arrive at a common verbal statement of your opinion, any one of these: -

(a) Agreement

(b) Compromise

(c) Disagreement

DO NOT write anything.

THEN: Ring the bell.

FINAL SHEET

To Be Answered Together.

Date _____ Name _____ M _____ F _____
Surname Given name

Name _____ M _____ F _____
Surname Given name

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

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

In other words our opinions with regard to the statement are represented below. (Each participant should write the appropriate answer in the space provided.

Name _____ Name _____

Original Opinion_____ Original Opinion _____

Opinion after discussion_____ Opinion after Discussion_____

(use code letters)

CONFIDENTIAL

FINAL SHEET

To be filled out alone

Date _____ Name _____ M _____ F _____
Surname Given name

You original opinion on topic # _____ was:

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

_____

_____

_____

_____

_____

_____

_____

_____

_____

In other words, my opinion is represented below.

Opinion after discussion _____

(use code ltters)

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 her around campus sometime.

( ) I would want to have her in the same class.

( ) I would enjoy talking to her.

( ) I would enjoy an animated discussion with her.

( ) I would like to discuss serious general problems with her.

( ) I would want her to come to me with her problems.

( ) I would discuss important personal problems with her.

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

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

not at all	very little	some	very much	a great deal

2. TO what extent do you feel your point of view was modified?

not at all	very little	some	very much	a great deal

APPENDIX B

Total Time Spent Speaking Across Time In Millimetres

Male pp Pairs

Subjects	Vincentised Time Intervals									
	1	2	3	4	5	6	7	8	9	10
1	380	349	388	369	421	561	470	460	415	360
2	75	52	99	70	112	65	81	89	31	49
3	37	48	39	35	21	33	26	11	37	15
4	102	121	107	51	101	89	80	21	140	111
5	300	187	109	180	225	133	262	169	197	180
6	79	90	134	87	69	90	53	68	52	78

Female pp Pairs

1	90	150	45	49	60	85	50	79	101	69
2	108	59	95	155	99	155	91	130	99	133
3	239	210	170	229	230	219	160	239	249	215
4	156	240	179	149	155	178	235	199	172	118
5	36	30	25	65	54	70	32	50	54	0
6	59	29	0	23	43	48	24	42	67	46

Male pP Pairs (Little Support)

1	370	300	390	420	330	362	429	405	165	349
2	321	525	315	468	321	370	432	589	448	470
3	240	199	210	225	170	225	250	280	250	280
4	345	309	255	432	450	365	448	375	303	345
5	205	270	230	287	260	439	395	360	335	340
6	503	415	308	135	240	332	390	160	195	400

Total Time Spent Speaking Across Time In Millimetres

Female pP Pairs (Little Support)

Subjects	Vincentised Time Intervals									
	1	2	3	4	5	6	7	8	9	10
1	41	11	33	51	122	105	134	75	82	129
2	208	183	222	283	210	159	249	159	172	222
3	119	92	50	135	90	120	98	130	81	110
4	112	170	220	159	120	250	151	199	201	195
5	112	130	100	85	125	74	139	110	120	151
6	169	170	221	181	152	151	150	140	101	95

Male pP Pairs (Lot of Support)

1	400	430	490	383	385	458	440	435	392	385
2	555	818	795	715	786	579	902	710	620	765
3	109	120	56	140	98	8	49	42	101	80
4	160	210	212	170	155	268	230	225	205	248
5	332	319	242	235	330	460	289	188	349	249
6	108	158	118	160	110	135	130	75	149	240

Female pP Pairs (Lot of Support)

1	42	91	59	61	82	28	53	63	51	48
2	85	83	60	51	41	90	42	70	59	75
3	211	349	295	331	356	400	318	421	460	291
4	99	212	169	199	127	231	159	188	140	179
5	48	12	52	84	85	62	82	58	89	75
6	35	200	90	170	100	62	70	65	145	130

Total Time Spent Speaking Across Time In Millimetres

Male PP Pairs

Subjects	Vincentised Time Intervals									
	1	2	3	4	5	6	7	8	9	10
1	290	200	280	265	312	270	270	290	170	230
2	170	190	192	170	195	170	210	200	210	145
3	520	555	510	325	280	365	539	480	515	520
4	428	545	480	500	429	435	510	462	475	455
5	170	220	170	189	209	189	145	230	180	200
6	51	65	48	101	72	13	89	87	47	69

Female PP Pairs

1	10	45	56	3	0	53	19	37	37	55
2	30	28	27	33	17	29	33	34	14	29
3	120	139	49	141	150	219	180	151	160	89
4	66	118	74	41	32	44	71	69	119	79
5	139	189	221	170	41	280	151	172	26	188
6	58	14	69	39	52	50	17	53	41	38

Total Time Spent Speaking Per Group In Seconds

Pair No. and Condition	MALE	FEMALE
pP1	1610	480
pP2	2200	430
pP3	2230	1240
pP4	4390	640
pP5	1570	430
pP6	2060	1330
pP7	370	1980
pP8	1690	1300
pP9	2200	730
pP10	1340	310
pP11	2100	800
pP12	1300	1270
pp1	1990	550
pp2	410	820
pp3	250	1250
pp4	760	820
pp5	1260	280
pp6	450	380
PP1	1560	300
PP2	730	140
PP3	1940	980
PP4	2540	440
PP5	1070	1530
PP6	270	350

Positive Time Spent Speaking Across Time In Millimetres

Male pp Pairs

Subjects	Vincentised Time Intervals									
	1	2	3	4	5	6	7	8	9	10
1	260	261	305	350	320	345	260	370	190	100
2	7	16	49	52	60	0	39	50	0	16
3	0	21	13	28	12	19	25	0	0	6
4	68	105	99	18	14	80	29	0	80	62
5	250	120	50	91	110	47	135	90	18	111
6	35	45	130	51	37	71	8	9	2	6

Female pp Pairs

1	42	120	3	12	51	85	30	61	60	16
2	89	24	48	71	81	20	7	14	23	15
3	239	110	109	139	219	140	85	10	110	109
4	70	147	39	37	5	70	92	17	5	6
5	33	30	15	29	29	49	22	22	53	0
6	46	21	0	17	41	12	18	30	15	28

Male pP Pairs (Little Support)

1	179	180	212	285	230	319	270	218	102	119
2	155	199	140	241	83	130	238	180	160	268
3	83	70	165	210	137	170	205	90	58	170
4	235	215	115	250	110	98	250	185	160	110
5	180	225	200	169	212	330	170	249	135	251
6	382	83	149	7	32	79	103	7	4	98

Positive Time Spent Speaking Across Time In Millilitres

Female pP Pairs (Little Support)

Subjects	Vincentised Time Intervals									
	1	2	3	4	5	6	7	8	9	10
1	12	5	33	51	49	96	85	62	61	73
2	181	131	122	203	129	130	112	109	119	210
3	61	60	24	80	62	69	40	90	43	52
4	99	112	188	129	110	220	75	139	100	85
5	80	85	62	0	40	35	60	12	40	19
6	119	138	201	81	100	90	92	60	50	7

Male pP Pairs (Lot of Support)

1	183	123	160	109	69	188	79	6	47	100
2	360	545	381	265	248	320	660	442	299	365
3	88	43	29	20	2	1	17	3	13	5
4	150	145	70	128	102	80	59	100	55	75
5	269	215	65	20	103	333	97	100	150	60
6	85	130	50	103	62	130	99	50	87	150

Female pP Pairs (Lot of Support)

1	31	61	51	45	39	14	19	19	2	21
2	40	59	30	15	0	60	29	15	20	15
3	188	262	212	231	351	240	271	339	332	223
4	43	121	119	111	119	160	50	99	43	40
5	40	3	33	55½	55	58	65	25	79	39
6	30	185	80	90	90	30	50	39	15	0

Positive Time Spent Speaking Across Time In Millimetres

Male PP Pairs

Subjects	Vincentised Time Intervals									
	1	2	3	4	5	6	7	8	9	10
1	175	40	2	215	80	200	80	60	4	41
2	130	130	160	50	5	45	150	90	135	17
3	160	135	145	60	149	200	147	130	99	40
4	210	310	74	139	70	101	240	240	50	169
5	81	52	53	89	111	80	26	70	21	32
6	28	21	21	14	41	1	0	0	24	32

Female PP Pairs

1	0	38	36	0	0	16	8	12	7	19
2	3	0	16	20	0	16	14	21	10	13
3	61	80	14	70	39	71	55	64	83	13
4	26	76	47	40	1	16	26	38	10	28
5	101	131	99	79	12	260	110	170	13	37
6	2	3	6	1	49	43	0	38	2	12

Negative Time Spent Speaking Across Time In Millimetres

Male pp Pairs

Subjects	Vincentised Time Intervals									
	1	2	3	4	5	6	7	8	9	10
1	0	7	0	8	0	3	9	0	11	5
2	0	0	0	0	0	0	0	5	3	0
3	0	0	0	0	0	0	0	0	29	1
4	5	13	8	11	3	9	8	8	19	5
5	0	11	7	24	19	23	0	0	4	16
6	9	2	0	3	5	7	6	5	0	5

Female pp Pairs

1	0	7	0	0	2	0	0	0	2	0
2	0	2	9	5	0	2	0	6	41	10
3	0	0	0	0	0	35	0	0	4	0
4	6	9	13	22	5	7	0	3	6	6
5	0	0	0	4	0	0	0	14	0	0
6	0	0	0	0	0	36	4	0	0	11

Male pP Pairs (Little Support)

1	29	1	52	29	2	9	51	2	6	59
2	5	82	88	4	52	105	45	130	97	39
3	19	29	21	7	31	5	7	32	40	66
4	35	55	12	7	16	9	19	40	29	89
5	0	2	1	12	42	50	29	4	8	11
6	107	170	4	2	18	40	2	2	15	14

Negative Time Spent Speaking Across Time In Millimetres

Female pP Pairs (Little Support)

Subjects	Vincentised Time Intervals									
	1	2	3	4	5	6	7	8	9	10
1	9	1	0	0	0	6	0	5	2	9
2	3	7	7	7	3	3	0	0	22	1
3	0	0	11	0	0	0	6	4	7	7
4	0	0	0	0	0	0	0	0	4	0
5	0	19	11	85	49	39	1	51	70	49
6	0	1	1	38	4	1	3	16	0	11

Male pP Pairs (Lot of Support)

1	31	111	70	21	61	11	6	8	8	31
2	42	80	140	100	92	2	3	0	55	0
3	3	69	0	102	55	0	1	24	2	25
4	1	3	1	4	3	4	0	11	40	30
5	9	3	57	53	62	49	89	6	71	6
6	3	1	0	0	10	3	5	4	0	3

Female pP Pairs (Lot of Support)

I	0	0	0	0	0	4	3	18	13	0
2	0	16	0	0	0	0	0	0	0	0
3	11	0	3	3	5	0	1	5	1	2
4	0	5	0	5	0	1	0	7	1	2
5	0	0	0	41	15	0	3	0	0	0
6	2	0	0	60	1	30	0	0	95	100

Negative Time Spent Speaking Across Time In Millimetres

Male PP Pairs

Subjects	Vincentised Time Intervals									
	1	2	3	4	5	6	7	8	9	10
1	23	45	90	4	30	22	81	11	23	11
2	3	9	5	100	60	25	6	0	30	85
3	60	38	70	45	68	46	49	100	139	160
4	2	5	3	4	9	7	20	62	15	63
5	47	61	9	41	4	40	0	31	0	0
6	0	4	0	28	0	0	0	39	2	4

Female PP Pairs

1	0	0	0	0	0	0	11	6	11	3
2	0	0	0	6	10	0	0	0	0	0
3	1	0	0	0	5	52	80	6	31	0
4	0	1	0	0	3	0	20	0	5	3
5	0	0	0	3	0	0	6	0	0	4
6	0	1	1	8	3	3	1	3	3	3

Neutral Time Spent Speaking Across Time In Millimetres

Male pp Pairs

Subjects	Vincentised Time Intervals									
	1	2	3	4	5	6	7	8	9	10
1	120	31	83	11	101	213	201	90	214	255
2	68	36	50	18	52	65	42	34	28	33
3	37	27	26	7	9	14	1	11	3	8
4	29	3	0	22	84	0	43	13	41	44
5	50	56	52	65	96	63	127	79	175	53
6	35	43	4	33	27	12	39	54	50	67

Female pp Pairs

1	48	23	42	37	7	0	20	18	39	53
2	19	33	38	79	18	133	84	110	35	108
3	0	100	61	90	11	44	75	229	135	106
4	80	84	127	90	145	101	143	179	161	106
5	3	0	10	32	25	21	10	14	1	0
6	13	8	0	6	2	0	2	12	52	7

Male pP Pairs (Little Support)

1	162	119	126	106	98	34	108	135	57	171
2	161	244	87	223	186	135	149	279	191	163
3	138	100	24	8	2	50	38	158	152	44
4	75	39	128	175	324	258	179	150	114	146
5	25	43	29	110	6	59	196	107	192	78
6	14	162	155	126	190	213	285	151	176	288

Neutral Time Spent Speaking Across Time In Millimetres

Female pP Pairs (Little Support)

Subjects	Vincentised Time Intervals									
	1	2	3	4	5	6	7	8	9	10
1	20	5	0	0	73	3	49	8	19	47
2	24	45	93	73	78	26	137	50	31	11
3	58	32	15	55	28	51	52	36	31	51
4	13	58	32	30	10	30	76	60	97	110
5	32	26	27	0	36	0	78	47	60	83
6	50	31	19	62	48	60	55	64	51	77

Male pP Pairs (Lot of Support)

1	186	196	260	253	255	259	355	421	337	254
2	153	193	274	350	446	257	239	268	266	400
3	18	8	27	18	41	7	31	15	86	50
4	9	62	141	38	50	184	171	114	110	143
5	54	101	120	162	165	78	103	82	128	183
6	20	27	68	57	38	2	26	21	62	87

Female pP Pairs (Lot of Support)

1	11	30	8	16	43	10	31	26	36	27
2	45	8	30	36	41	30	13	55	39	60
3	12	87	75	97	0	160	46	77	127	66
4	56	86	50	83	8	70	109	82	96	137
5	8	9	19	23	15	4	14	33	10	36
6	3	15	10	20	9	2	20	26	35	30

Neutral Time Spent Speaking Across Time In Millimetres

Male PP Pairs

Subjects	Vincentised Time Intervals									
	1	2	3	4	5	6	7	8	9	10
1	92	115	188	46	152	48	109	219	143	178
2	37	1	27	20	130	100	54	110	45	43
3	300	382	295	220	63	119	343	250	277	320
4	216	230	403	357	350	327	250	160	410	223
5	42	107	108	59	94	69	119	129	159	168
6	23	40	27	59	31	12	89	48	21	33

Female PP Pairs

1	10	7	20	3	0	37	0	19	19	33
2	27	28	11	7	7	13	19	13	4	16
3	58	59	35	71	106	96	45	81	46	76
4	40	41	27	1	28	28	25	31	104	48
5	38	58	122	38	29	20	35	2	13	147
6	56	10	62	30	0	4	16	12	36	23

Amount Of Private Opinion Change

Subject No. and Condition	MALE	FEMALE
pP1 (Little Support)	0	2
pP2 " "	1	0
pP3 " "	1	1
pP4 " "	6	1
pP5 " "	0	1
pP6 " "	1	0
pP1 (Lot of Support)	1	1
pP2 " " "	0	0
pP3 " " "	5	0
pP4 " " "	0	0
pP5 " " "	0	1
pP6 " " "	0	5
pp1	0	0
pp2	1	2
pp3	2	0
pp4	0	2
pp5	0	0
pp6	2	0
PP1	1	2
PP2	0	0
PP3	0	2
PP4	1	3
PP5	1	0
PP6	1	3

Number Of Checks On Social Distance Scale

Subject No. and Condition		MALE	FEMALE
pP1	(Little Support)	5	5
pP2	" "	0	5
pP3	" "	4	3
pP4	" "	4	5
pP5	" "	3	3
pP6	" "	4	2
pP1	(Lot of Support)	4	2
pP2	" " "	5	4
pP3	" " "	0	2
pP4	" " "	3	5
pP5	" " "	5	5
pP6	" " "	6	4
pp1		1	3
pp2		1	6
pp3		5	3
pp4		3	1
pp5		4	0
pp6		2	4
PP1		3	5
PP2		0	1
PP3		4	4
PP4		4	3
PP5		6	3
PP6		3	7

Modification Of Own Opinion

Subject No. and Condition	MALE	FEMALE
pP1 (Little Support)	2	2
pP2 " "	3	3
pP3 " "	2	3
pP4 " "	2	3
pP5 " "	1	4
pP6 " "	2	1
pP1 (Lot of Support)	3	3
pP2 " " "	2	3
pP3 " " "	3	3
pP4 " " "	1	2
pP5 " " "	1	1
pP6 " " "	1	4
pp1	1	1
pp2	3	3
pp3	1	1
pp4	3	5
pp5	2	1
pp6	3	2
PP1	3	2
PP2	2	1
PP3	1	3
PP4	2	3
PP5	3	1
PP6	2	3

Modification Of Other's Opinion

Subject No. and Condition	MALE	FEMALE
pP1 (Little Support)	3	2
pP2 " "	3	3
pP3 " "	4	3
pP4 " "	1	3
pP5 " "	2	2
pP6 " "	2	3
pP1 (Lot of Support)	3	3
pP2 " " "	2	3
pP3 " " "	2	3
pP4 " " "	2	3
pP5 " " "	1	2
pP6 " " "	2	2
pp1	2	2
pp2	3	3
pp3	3	3
pp4	3	5
pp5	2	3
pp6	3	1
PP1	3	2
PP2	3	3
PP3	3	2
PP4	3	3
PP5	3	2
PP6	2	2